International Academy of Suicide Research

2023 IASR/AFSP

INTERNATIONAL SUMMIT ON SUICIDE RESEARCH

OCTOBER 15-18, 2023

WORLD TRADE CENTER BARCELONA

Barcelona, Spain

ABSTRACT BOOK

SUNDAY, OCTOBER 15, 2023

2:30 p.m. - 3:30 p.m.

1. PRESENTATION OF THE MORSELLI AWARD AND MORSELLI AWARD PLENARY

Chair: Holly Wilcox, Johns Hopkins Schools of Public Health, Medicine and Education

1.1 MORSELLI AWARD PLENARY

Gregory Brown, Perelman School of Medicine University of Pennsylvania

Individual Abstract: The Morselli Medal is awarded every two years by the International Academy for Suicide Research (IASR) to one or more individuals who have made an outstanding and important lifetime contribution to the study of suicidal behavior and/or suicide prevention. This year, the Medal will be awarded to Dr. Gregory Brown and the late, Dr. Barbara Stanley. In this session, Dr. Brown will focus on the most important research findings, the lessons learned and the next steps in this line of research.

3:30 p.m. - 4:00 p.m.

2. KEYNOTE PRESENTATION: NIMH´S VISION FOR SUICIDE PREVENTION - JOSHUA GORDON

Chair: John Mann, Columbia University and New York State Psychiatric Institute

Co-Chair: Ping Qin, National Centre for Suicide Research and Prevention, University of Oslo

2.1 NIMH´S VISION FOR SUICIDE PREVENTION

Joshua Gordon, National Institute of Mental Health

Individual Abstract: This plenary session will highlight progress in suicide research, including ways that strategic NIMH investments in health care have transformed suicide risk detection and follow-up care. Further, the session will highlight suicide prevention strategies across the lifespan, various settings, and among underserved and underrepresented populations. Examples may include research to address disparities in suicide outcomes, improve implementation of evidence-based strategies, and ensue access to and high quality of crisis services. The speaker will also describe NIMH's vision for the future of suicide research, outlining priority research areas and the value of emerging technology and precision medicine approaches.

4:15 p.m. - 5:00 p.m.

3. PLENARY SESSION: LIVED EXPERIENCE PANEL - CECILIA BORRAS and ENRIQUE BACA-GARCIA

Chair: Jill Harkavy-Friedman, American Foundation for Suicide Prevention

Discussant: Enrique Baca-Garcia, Fundacion Jimenez Diaz

3.1 LIVED EXPERIENCE PANEL

Cecilia Borras, Después del Suicidio Asociación de Supervivientes

Individual Abstract: The terrible experience of suicide confronts us with the many ideas we have about suicide and its prevention that do not correspond to reality.

Myths represent a great ignorance about this phenomenon, which undoubtedly hampers suicide prevention: the belief that only people with mental illness commit suicide, that vivid warnings and threats are attention-seeking behaviour, and that the deceased was brave because of the perceived aggressiveness of the act are still common. In addition, these beliefs are prevalent among some healthcare professionals, minimising the risk and undermining the ability of the person's own family and friends to support them, adding to the burden of bereavement.

"Every suicide entails emotional, social, and economic devastation for numerous family members and friends" is recognised by WHO.

The consequences of this dramatic and traumatic experience make it necessary to promote postvention, which is understood as: "activities carried out by, with, or for survivors to facilitate their recovery after a suicide and to prevent adverse outcomes, including suicidal behaviour" (Andriessen and Krysinska, 2012).

Survivors of suicide become an at-risk population that has to go through a long and complex grieving process.

Our organisation, Después del Suicidio - Asociación de Supervivientes (DSAS), is the pioneer in Spain. We have been providing support to suicide survivors for over 10 years, raising public awareness through social media and the press, conducting training activities on post-suicide grief and its consequences, as well as suicidal behaviour, and continuously advocating for government initiatives to promote prevention and support services for survivors.

As survivors, we often have a strong need to talk and share our lived experiences with other survivors. This peer support approach is what we offer in our organisation, with 5,849 support sessions since 2012. This peer-to-peer intervention model is recognised as the most effective (Linden et al, 2017).

In individual support sessions, we assess both risk and protective factors, taking into account whether the survivor is in a vulnerable situation or has co-morbid health conditions. During these sessions at DSAS, we provide information about grief and the phenomenon of suicide, offer guidance on how to access the organisation's support, and provide guidance on how to support other family members. Particularly where children are concerned, there is considerable concern about how to talk to them about the suicide of their family member.

Support groups work to stimulate exploratory experiences, encourage questions to delve deeper into shared feelings, and engage in narrative work to promote sharing of situations.

We have no doubt that supporting survivors also contributes to suicide prevention. However, resources are needed from government institutions to sustain our support role, which the health system itself recognises as a valuable asset. In line with this, 83% of survivors supported by our organisation in 2022 were referred by health professionals.

Survivors offer the opportunity to give personal testimony about the outcomes of suicide attempts or losses due to suicide. This testimony has, on the one hand, allowed the tragedy that

accompanies suicidal behaviour to be revealed to society. We are therefore an invaluable resource for prevention.

For a decade, our organisation has been driving change through our testimonies, our work and our advocacy, emphasising the importance of talking about suicide if we want to prevent it. It hasn't been an easy journey, but we, the survivors, remain committed to breaking the stigma and being agents of change for the emotional wellbeing of our society.

MONDAY, OCTOBER 16, 2023

10:15 a.m. - 11:15 a.m.

4. PLENARY SESSION: BIOLOGY OF GENETICS AND THE EXPOSOME IN SUICIDAL BEHAVIOR - GUSTAVO TURECKI and JOHN MANN

Chair: Fatemeh Haghighi, Icahn School of Medicine at Mount Sinai

4.1 BIOLOGY OF GENETICS AND THE EXPOSOME IN SUICIDAL BEHAVIOR

Gustavo Turecki, McGill University

Individual Abstract: Although suicidal behaviors demonstrate high heritability, identifying the genetic factors underlying these behaviors has been challenging. Recent genome-wide association studies have
identified candidate loci conferring significant risk for suicidal behavior. Most of the genome-wide significant SNPs, however, were primarily intergenic, complicating our understanding of how they confer risk. In this talk, I will provide an overview of the main significant loci identified in previous studies and the approach my lab has taken to further characterize their contribution using a combination of genomic and functional genomic approaches, including single-cell genomics to explore local and distal effects of the identified loci. I will focus on rs62474683, a SNP significantly associated with suicide attempt, independently of psychiatric disorders, and explore mechanisms whereby this locus confers risk.

4.2 NEW UNDERSTANDING OF THE NEUROBIOLOGY AND EPIGENETICS OF SUICIDAL BEHAVIOR

John Mann, Columbia University and New York State Psychiatric Institute

Individual Abstract: Genetics account for 30-50% of the risk for suicide and we are just starting to find some of the candidate genes. But environment plays a major role in suicide risk. There are enduring effects from childhood adversity that mold the brain to produce cognitive and emotion dysregulations that affect suicide risk. A second environmental domain lies in the effects that current life stressors have on suicide risk and thereby determine the timing of suicidal behavior. This presentation will focus on the latter domain of environmental effects and present findings related to recent life effects, there impact on stress response systems, including via epigenetic effects, and then describe how those impact current suicide risk.

TUESDAY, OCTOBER 17, 2023

10:15 a.m. - 11:15 a.m.

5. PLENARY SESSION: SYSTEM LEVEL SUICIDE PREVENTION - MICHAEL EDDLESTON and PING QIN

Chair: Jordi Alonso, Hospital del Mar Medical Research Institute (IMIM); CIBER Epidemiología y Salud Pública (CIBERESP)

5.1 SYSTEM LEVEL SUICIDE PREVENTION

Michael Eddleston, The University of Edinburgh

Individual Abstract: Restriction of access to highly lethal, commonly used suicide methods is one of the few proven approaches available to governments to reduce overall suicide rates. In high-income countries, means restriction has focused on restricting the sales of, or withdrawing, medicines that are commonly taken in fatal overdoses, restricting access to guns, and making high-risk locations safer. In low- and middle-income countries, it has focused on government regulation to remove acutely toxic highly hazardous pesticides from agriculture.

Means restriction works because suicidal impulses are often transient, lasting only minutes or hours. The easy accessibility of lethal means during periods of heightened risk can make the difference between survival and death. Making these methods difficult to access will often result in the use of less lethal means (such as self-poisoning with medicines) or prevent the act of self-harm from occurring altogether. Surviving a suicide attempt allows the person to return to their family and community and obtain the support they might need from mental health services.

Pesticide self-poisoning is responsible for around 150,000 deaths per year, down from 250-350,000 in the 1990s. The great majority occur in rural Asian communities where highly toxic pesticides are freely available. An estimated 14 million premature deaths have occurred globally from pesticide self-poisoning since they were introduced as part of the agricultural Green Revolution in the 1950s.

Public health efforts to prevent these deaths have focused on: improving treatment of poisoned patients; changing how communities access and use pesticides; and supporting governments to remove lethal pesticides from agriculture. Improving treatment has proved difficult, with many patients arriving at hospital very sick, without pre-hospital care and inadequate hospital resources. As indicated by the Hierarchy of Control, this approach is likely to be least effective.

Research efforts addressing community use of pesticides has focused on improved storage of pesticide and on training pesticide vendors to be gatekeepers. Locked household storage of pesticides has been demonstrated to be ineffective in a large cluster RCT involving 56,000 households and 180 villages (clusters); community level storage has also been proposed but is unlikely to work better than household storage (due in part to inconvenience). A large stepped-wedge cluster RCT on vendor gatekeeper training is underway and will report in the next 12 months.

As expected, means restriction via pesticide regulation is highly effective. Bans of just 10-20 pesticides in Sri Lanka between 1983 and 2011 resulted in a 75% reduction in total suicides and 83% of pesticide suicides. Similar major health benefits have been identified from similar

regulation in India, Bangladesh, and South Korea. Of note, the WHO has noted that pesticide regulation is a highly cost-effective approach when pesticides are responsible for at least 2% of national suicides. There is no evidence that carefully planned bans have any effect on agricultural outputs.

The evidence indicates that means restriction is the most effective way to prevent pesticide self-poisoning deaths. Lessons can be learned for some other forms of suicide.

5.2 FOLLOW-UP SUPPORT AND INTERVENTION FOR SELF-HARMING PATIENTS IN THE REAL WORLD

Ping Qin, National Centre for Suicide Research and Prevention, University of Oslo

Individual Abstract: Empirical evidence indicates that patients with a non-fatal deliberate self-harm are at a significantly heightened risk for self-harm repetition and premature death by suicide and other causes. With many millions of people presenting to emergency departments because of deliberate self-harm each year, follow-up care and support following self-harm somatic treatment is of great importance in clinical management and could have a profound influence on the patient's life both in short- and long-term. This underscores the significance of close coordination of somatic emergency departments with mental healthcare services treating self-harming patients. In some countries, certain acute or brief psychological intervention and support programs that were approved to be beneficiary in randomized clinical trials have been implemented as a part of care as usual for patients treated with suicide attempt or deliberate self-harm in the routine healthcare system. Referral to psychiatric services and follow-up psychiatric intervention of the patients in need are important recommendations in clinical guidelines for treatment of patients with self-harm in routine healthcare. Patient registries as well as other linkable longitudinal population registries, where available, constitute a valuable source of data, from routine care and in the real world, to study critical periods at high risk of mortality in the patients and to map what happened with the patients after emergency department visits. This plenary will provide insights into brief intervention, follow-up support and psychiatric healthcare that are delivered to self-harming patients in routine healthcare system and how such care and support have influenced the patients' risk for self-harm repetition and death by suicide and other causes prospectively.

3:15 p.m. - 3:45 p.m.

6. PLENARY SESSION: PERSPECTIVES ON THE FUTURE OF SUICIDE RESEARCH - JANE PIRKIS

Chair: Holly Wilcox, Johns Hopkins Schools of Public Health, Medicine and Education

6.1 PERSPECTIVES ON THE FUTURE OF SUICIDE RESEARCH

Jane Pirkis, University of Melbourne

Individual Abstract: The WHO Mental Health Action Plan 2013-2030 includes a target of reducing the global suicide rate by one third by 2030. In addition, the suicide mortality rate is included in the United Nations' Sustainable Development Goals as an indicator for the target

of reducing premature mortality from non-communicable diseases by one third by 2030. Some countries' national suicide prevention strategies also include targets for reductions in suicides. Are these targets realistic? How are we tracking towards achieving them? Is it desirable to even have targets? What are their benefits and what are their disadvantages? For example, do they commit governments to taking action on suicide prevention, or do they create the impression that someone else is responsible? Is there a risk that efforts to achieve an overall target may further exacerbate inequities for some groups? Who sets targets, and who should set them? How are they arrived at? Who monitors progress towards their achievement? Are reductions in suicide the right target, or are process-oriented targets more appropriate? How do targets sit with the notion that every suicide is preventable? And what can we learn from other areas of public health where targets have been set and met, or set and not met?

This presentation will address these and other questions around suicide-related targets. It will draw on empirical data about the targets that currently exist and will consider the extent to which they are being achieved. Where possible, it will also reference the views of different parties in the suicide prevention sector, including people with lived and living experience of suicide, researchers, service providers, planners and policy makers.

WEDNESDAY, OCTOBER 18, 2023

8:30 a.m. - 9:30 a.m.

7. PLENARY SESSION: PREDICATION OF ACUTE SUICIDE RISK - RORY O'CONNOR and RANDY AUERBACH

Chair: Maria Oquendo, University of Pennsylvania

7.1 PREDICTION OF ACUTE SUICIDE RISK

Rory O'Connor, University of Glasgow

Individual Abstract: Globally, too many people die prematurely from suicide and the physical comorbidities associated with mental illness and mental distress. In this Special Lecture, I will present findings from the Gone Too Soon project co-ordinated by the mental health research charity, MQ Mental Health Research who convened an international panel that used roadmapping methods and review evidence to identify key factors, mechanisms, and solutions for premature mortality across the social-ecological system. We identified 12 key overarching risk factors and mechanisms, with more commonalities than differences across the suicide and physical comorbidities domains. We also identified eighteen actionable solutions across three organising principles: integration of mental and physical health care; prioritisation of prevention while strengthening treatment; and optimisation of intervention synergies across social-ecological levels and the intervention cycle. The time to act is now, to rebuild health care systems, leverage changes in funding landscapes, and address the effects of stigma, discrimination, marginalisation, gender violence, and victimisation.

7.2 SUICIDAL THOUGHTS AND BEHAVIORS IN ADOLESCENTS: DEVELOPING NOVEL METHODS TO IMPROVE DETECTION, PREVENTION, AND TREATMENT

Randy Auerbach, Columbia University

Individual Abstract: Suicidal thoughts and behaviors (STB) continue to rise among adolescents, reflecting a global public health crisis. Although clinical research has identified factors that offer insight about who may be at risk, there are presently no tools to clarify when that risk is greatest. Developing effective methods to improve the short-term prediction of STB would address this public health crisis by revolutionizing clinical care and ultimately, saving lives. Toward addressing this gap, the presentation will highlight recent findings and methods relying on experience sampling and mobile sensor data collected through personal smartphones among high-risk, suicidal youth. First, keyboard input and GPS data were utilized to predict the occurrence of STB in high-risk adolescents. Acquisition of keyboard data was used to extract daily sentiment from messages, use of personal pronouns (i.e., reflecting self-focus), and absolutist language, whereas GPS data were decomposed to develop measures of home stay, entropy (i.e., regularity of one's schedule), and distance traveled. Preliminary findings showed that weekly sentiment in language and entropy predicted next week suicidal events (e.g., psychiatric hospitalizations, emergency department visits), and greater prior week home stay predicted next week suicidal behaviors (e.g., actual, interrupted, aborted attempts). Second, although acquisition of smartphone data provides unprecedented access to adolescents' lives, there are challenges related to missingness. Herein, we tested whether sociodemographic and clinical factors predicted missingness of either experience sampling or mobile sensor data. Results revealed that design features (e.g., length of study, summer) were related to missingness; however, neither sociodemographic data nor clinical acuity was predictive of missingness. Third, there is an enormous responsibility when collecting experience sampling data probing STB as well as mobile sensor data. Accordingly, safety protocols and data security features will be described. Last, leveraging recent real-time monitoring findings, ongoing clinical interventions integrating mobile sensor data will be described and preliminary data will be discussed. In summary, recent advancements in smartphone technology now provide unprecedented access to adolescents' lives. Our findings underscore the capacity to identify when adolescents may be at risk, and accordingly, provides critical opportunities to intervene, potentially reducing the needless loss of life among young people.

Sunday, October 15, 2023

CONCURRENT SYMPOSIUM SESSIONS

5:00 p.m. - 6:30 p.m.

1. EXPLORING THE ASSOCIATION BETWEEN IRRITABILITY AND SUICIDAL THOUGHTS AND BEHAVIORS

Chair: Massimiliano Orri, McGill University

Overall Abstract Details: Irritability is defined as increased proneness to anger and typically occurs in response to frustration. It encompasses mood (irritable, grouchy) and behavioral manifestations (aggression against property, self, or others). Irritability is found in internalizing and externalizing psychopathologies and is therefore considered as an important transdiagnostic marker of emotional dysregulation. Recently, a growing body of research has highlighted that irritability may have an important role as a risk factor for suicidal thoughts and behaviors. This symposium aims to discuss the state-of-the-art and emerging research on the association between irritability and suicidal thoughts and behavior. An international (from Canada, Germany, Israel, Switzerland, the United States) panel of speakers will present data based on both clinical and population-based samples, reporting on both long-term and short-term associations, and focusing on both childhood and adult irritability. Specifically, we will present 1) a study focusing on how the interplay between childhood irritability and parental behavioral responses is associated with suicide attempt in a population-based sample of individuals followed over 23 years of life, 2) a study on the role of irritability in children and adolescents with externalizing disorders and the mechanism leading to increased risk of suicidal ideation and attempt, 3) two studies using Ecological Momentary Assessment methods to identify, in a fine-grained and clinically relevant manner, within-person processes linking irritability and suicidal thoughts and behavior in clinical samples, and 3) a study exploring age-related differences in the association between irritability and suicidal ideation and the implicated neurocircuit mechanisms at play. Taken together, these presentations will comprehensively discuss the contribution of irritability to the risk of suicidal ideation and attempt, fostering interdisciplinary discussions and collaborations.

1.1 UNDERSTANDING PATHWAYS OF ASSOCIATION BETWEEN CHILDHOOD IRRITABILITY, HARSH PARENTING, AND YOUTH SUICIDE ATTEMPT: A 23-YEAR LONGITUDINAL STUDY

Cassandra Zephirin*[1], Marie-Claude Geoffroy[1], Michel Boivin[2], Richard E Tremblay[3], Sylvana Côté[3], Massimiliano Orri[1]

[1]McGill University, [2]Université Laval, [3]Université de Montréal

Individual Abstract: Background: Childhood irritability and harsh parenting have been identified as risk factors for adolescent suicide attempt. Since childhood irritability and parenting behavior influence one another, it is unclear how these associations contribute to suicide risk.

Objectives: To investigate the pathways of association through which irritability and harsh parenting in early and middle childhood increase suicide risk in adolescence/early adulthood.

Methods: Participants (N=1631) from the Québec Longitudinal Study of Child Development were followed from birth to 23 years. Mothers assessed irritability and harsh parenting in early (1.5-6 years) and middle (8 years) childhood. Children self-reported suicide attempt in adolescence/early adulthood (13-23 years). A cross-lagged panel model was used to estimate associations across time.

Results: Irritability in early childhood was associated with increased risk of suicide attempt in adolescence/young adulthood (OR 1.33, CI 1.04-1.73). In the cross-lag model, bidirectional associations were found between irritability and harsh parenting in early and middle childhood. We found that harsh parenting in early childhood increased suicide attempt in adolescence/young adulthood both via persistence of harsh parenting during middle childhood (b = 0.14, SE = 0.06, p = 0.029) as well as via increase in irritability in middle childhood (b = 0.053, SE = 0.026, p = 0.045). However, irritability in early childhood was associated with suicide attempt in adolescence/young adulthood via persistence of irritability (b = 0.21, SE = 0.10, p = 0.036) but not via increase in harsh parenting in middle childhood (b = 0.01, SE = 0.01, p = 0.222).

Conclusions: These longitudinal associations indicated that both irritability and harsh parenting contribute to increase risk of suicide attempt, but via different mechanisms. Interventions aimed at improving parenting behaviors early in life may have positive effects in increasing children's emotional regulation skills, thus potentially reducing long-term risk of suicide attempt.

1.2 WEEKLY LINKS AMONG IRRITABILITY AND SUICIDAL THOUGHTS AND BEHAVIORS IN HIGH-RISK YOUTH

Aleksandra Kaurin*[1]

[1]University of Wuppertal

Individual Abstract: Previous studies demonstrate a link between irritability and suicidal thoughts and behaviors (STBs) in youth samples. However, they have mostly assessed irritability in community samples and as a largely dispositional (i.e., trait-like) construct. Thus, it remains unclear to what extent links between irritability and STBs reflect within-person processes of elevated risk in clinically meaningful time periods. The present study used clinical data from 689 adolescents aged 12 to 19 years attending a total of 6128 visits at a specialty Intensive Outpatient Program for depressed and suicidal youth to examine patterns in weekly assessments of irritability and STBs throughout treatment, including associations among trends and fluctuations departing from these trends. Youth completed validated self-report measures of irritability, depression and STBs weekly as part of standard IOP clinical care. Overall, two-thirds of variance in weekly irritable mood was accounted for by stable between-person differences, and the remaining portion to weekly fluctuations. After controlling for depression, during weeks when youth were more irritable they experienced increased STBs. At the same time, youth who were generally more irritable also tended to experience more STBs. Rates of change in irritability and STBs tended to track together at early stages of treatment, but these effects were generally accounted for by depression severity. Our results suggest that although changes in STBs are best accounted for by depression, irritability can be understood as a specific, proximal risk factor for youth STBs that exacerbates youth STBs in clinically informative timeframes above and beyond depression.

1.3 IRRITABILITY AND SUICIDAL IDEATION IN DEPRESSIVE DISORDERS ACROSS LIFESPAN: CLINICAL SIGNIFICANCE AND POTENTIAL NEUROCIRCUIT MECHANISMS

Manish Jha*[1], Abu Minhajuddin[1], Cherise Chin Fatt[1], Madhukar Trivedi[1]

[1]The University of Texas Southwestern Medical Center,

Individual Abstract: Background: Recent reports have linked irritability to suicidal ideation (SI) in adults with major depression. Here, we seek to evaluate age-related differences in association between irritability and SI and identify the neurocircuit mechanisms that mediate association of irritability with SI.

Methods: Study 1 was cross-sectional and included individuals aged 12-to-95 years from primary care and psychiatric clinics who completed irritability [Concise Associated Symptom Tracking irritability domain (CAST-IRR)] measures (N=10,642) who were grouped as youths (aged 12-17 years, n=2935), adults (aged 18-64 years, n=7369), and elderly (aged 65+ years, n=338) individuals. Association with suicidal ideation, measured with 9th item of Patient Health Questionnaire (PHQ) and Concise Health Risk Tracking (CHRT) Suicidal Thoughts subscale, were assessed.

Study 2 included repeated measures of CAST-IRR and CHRT-SUI from individuals in Texas Resilience Against Depression study who completed monthly surveys (N=454 with 3429 observations). Repeated-measures mixed model analysis with age-by-CAST-IRR interaction and overall depression, gender, race, and ethnicity as covariates was used.

Study 3 included participants of the Establishing Moderators and Biosignatures of Antidepressant Response in Clinical Care (EMBARC) study with magnetic resonance imaging (MRI), CAST-IRR and CHRT-SUI data available (N=274). Resting-state functional connectivity (FC) among 121 cortical and subcortical regions were computed and linear regression analyses were used to identify FC pairs that were associated with irritability. Baron and Kenny approach was used to evaluate whether these FC pairs mediated the association between irritability and SI. Covariates included age, sex, race, ethnicity and site.

Results: In Study 1, higher CAST-IRR was associated with higher levels of SI based on the 9th item of PHQ (rspearman=0.36, $p<0.0001$, n=10610) and on CHRT suicidal thoughts (rspearman=0.38, $p<0.0001$, n=2330). These associations remained significant after controlling for other depressive and anxiety symptoms.

In Study 2, N=41, N=370, and N=43 individuals were between ages of 12-17 (pediatric), 18-64 (adult) and 65+(elderly) years, respectively. The age-by-CAST-IRR interaction was significant ($p=0.009$) where the association between CAST-IRR and CHRT-SUI was higher in pediatric ($\beta=0.10$, SE=0.03) and elderly ($\beta=0.15$, SE=0.02) groups versus adult ($\beta=0.05$, SE=0.01) group.

In Study 3, fifteen FC pairs were associated with irritability at $p<0.0005$ threshold of which nine FC pairs included the striatum. Functional connectivity of dorsal striatum to lingual and superior temporal regions significantly mediated ($p<0.05$) the association between symptoms of irritability and SI.

Conclusion: Association between irritability and SI was stronger in youths as compared to adults. Dysfunctions within the striatum may mediate this association and serve as targets for developing novel circuit-specific treatments.

1.4 IRRITABILITY AND SUICIDALITY IN CHILDREN AND ADOLESCENTS WITH EXTERNALIZING DISORDERS

Tomer Levy*[1], Brendan Andrade[2], Liat Itzhaky[3], Russell Schachar[4]

[1]Behavior Regulation Service, Geha Mental Health Center, [2]Centre for Addiction and Mental Health and the University of Toronto, [3]Columbia University, [4]Hospital for Sick Children and the University of Toronto

Individual Abstract: Objectives Irritability symptoms, defined as the propensity to respond with anger and anger outbursts, are a common reason for referral for mental-health services. Emerging evidence associate irritability symptoms with suicidal ideation and behavior. This talk will discuss the relationship between irritability and suicidality in children and adolescents with externalizing symptoms. Methods I. We examined (N= 1516) whether irritability, depression and anxiety symptoms would mediate between parent and teacher-reported ADHD symptoms and suicidality in adjusted multiple mediator models. II. We classified participants (N = 1249) by their irritability and other externalizing and internalizing symptoms, comparing the risk for self and parent-reported suicidal ideation or behavior, and examining if marital and parenting characteristics moderate this risk. III. We ranked (N = 2229) the importance of irritability among 25 other social, family-related, cognitive and psychiatric features in predicting suicidality. Results I. The association between ADHD symptoms and suicidality was fully mediated by symptoms of depression, irritability and anxiety. II. Children with high irritability and defiance symptoms, with or without conduct problems, showed greater risk for suicidal ideation and behavior compared to those with ADHD symptoms alone. Dysregulated or aggressive marital relationships imposed a greater risk in those with disruptive behavior. III. Irritability was ranked among the features improving the prediction of self and parent-reported suicidal ideation and behavior. Conclusions Irritability might pose a risk for suicidal ideation and behavior in children and adolescents with externalizing disorders. Studies accounting for the large number of potential risk factors of suicidality in this population are still needed.

1.5 A MICRO-LEVEL INVESTIGATION OF MOMENTARY IRRITABILITY AND SUICIDAL THOUGHTS IN ADOLESCENT IN-PATIENTS

Ines Mürner-Lavanchy[1], Christian Hertel*[1], Stefan Lerch[1], Selina Schär[1], Julian König[2], Michael Kaess[1]

[1]University Hospital of Child and Adolescent Psychiatry and Psychotherapy, University of Bern, [2]University of Cologne, Faculty of Medicine and University Hospital Cologne, Department of Child and Adolescent Psychiatry, Psychosomatics and Psychotherapy

Individual Abstract: Introduction: There is increasing evidence on irritability as a distal predictor of suicidal behavior. Little is known so far on irritability as a more proximal indicator, occurring immediately before suicidal behaviors. Ecological momentary assessment (EMA) has the potential to examine temporal changes of affective states at a micro-level, in a “natural” non-laboratory setting and unbiased by retrospective recall. Thereby, it might in the future improve short-term prediction of suicidal behavior. The present study seeks to investigate whether momentary irritability is associated with suicidal thoughts in adolescent in-patients.
Method: Intensive EMA on irritability (I feel irritable; 0 - not at all to 100 - very much) and suicidal thoughts (Since the last prompt, did you have suicidal thoughts? yes/no; How intense were these thoughts? 0 - not intense to 100 - very intense) were collected from n = 49 adolescent

in-patients. Patients were prompted hourly, twelve times a day for five consecutive weekdays. Logistic multilevel regression was used to test for associations between momentary irritability and suicidal thoughts and mixed linear regression was used to examine associations between momentary irritability and the intensity of suicidal thoughts. Lagged models were further used to test whether irritability from one EMA sampling was able to predict the presence and the intensity of suicidal thoughts in the next EMA sampling.

Results: In total, n = 2066 EMA samplings were obtained, with an average of 2.78 (SD = 1.40) days of participation and 29 (SD = 18.10) EMA prompts answered by each participant. N = 33 patients (67%) reported suicidal thoughts at least once during the assessment window. Higher irritability was associated with higher odds for suicidal thoughts (OR = 1.03 [95% CI = 1.03, 1.04], $p < .001$) and higher intensity of suicidal thoughts (b = 0.17 [0.14, 0.21], $p < .001$). Further, higher irritability predicted the presence of suicidal thoughts at the next sampling, i.e. one hour later (OR = 1.02 [1.01, 1.02], $p < .001$), as well as two, three and four hours, but not five hours later (OR = 1.0 [0.99, 1.01], p = .48). The intensity of suicidal thoughts was predicted by irritability reported during the previous hour (b = 0.06 [0.02, 0.09], p = .001) and two hours, but not three hours before (b = 0.02 [-0.02, 0.06], p = .39).

Conclusion: Self-reported states of momentary irritability were associated with the presence and intensity of suicidal thoughts. Irritability predicted the presence of suicidal thoughts in the next hour and up to four hours later as well as the intensity of suicidal thoughts up to two hours later. Across models, effect sizes were relatively small. Momentary irritability may have some potential as a proximal indicator of suicidal thoughts in adolescent in-patients. Future research will refine EMA measurement approaches of irritability and whether it ultimately serves to predict more severe suicidal behavior, including suicide attempts.

2. SUICIDE, ILLNESS, PAIN AND BEREAVEMENT

Chair: Jill Harkavy-Friedman, American Foundation for Suicide Prevention

2.1 PHYSICAL AND MENTAL HEALTH OF PEOPLE BEREAVED BY SUICIDE

Kairi Kolves*[1]

[1]Australian Institute for Suicide Research and Prevention, Griffith University

Individual Abstract: People bereaved by suicide experience adverse health reactions. While mental health related reactions have been often studied, physical health is considered less frequently, and studies have provided contradicting results. Furthermore, there is only limited number of longitudinal studies of people bereaved by suicide. The current presentation aims to focus on both physical and mental health of people bereaved by suicide and factors related to health over 2 years after their loss.

A longitudinal prospective study comparing suicide and sudden death bereaved close relatives was conducted in Queensland, Australia. The study included three assessments: first assessment was at 6-months (T0), and two follow-up assessments were carried out at 12- and 24-months (T1 and T2) after the critical event. At T0, 142 people bereaved by suicide and 63 bereaved by sudden death were interviewed using a semi-structured format including validated scales and questions different aspects of their life since the loss of a loved one.

Both suicide and sudden death bereaved were found to have similar levels of physical and mental showing improvements over the two-year study period. However, physical condition showed group and time interaction with a decrease in the suicide-bereaved and no change in the sudden death bereaved. Further results of factors associated with health during the bereavement will be presented. Better understanding of the mental and physical health of people bereaved by suicide and factors related to health are essential for designing postvention services.

2.2 TELLING THE STORY OF YOUNG PEOPLE'S EXPOSURE TO SUICIDAL BEHAVIOURS: FROM THE LAB TO EVERYDAY LIFE

Olivia Kirtley*[1]

[1]KU Leuven

Individual Abstract: Considerable research attention has been devoted to investigating the effect of exposure to the suicide of friends or family upon individuals' own suicidal thoughts and behaviours (STBs). Exposure to non-fatal suicide attempts among close others has also been associated with STBs, but has received far less attention. Typically, exposure to STBs and the consequences thereof are assessed using retrospective self-report questionnaires or health record data, however, we know that the psychosocial processes underlying STBs in young people are dynamic and fluctuate over short timeframes (days and hours) — periods missed by retrospective questionnaires. Therefore, to capture the dynamic daily life processes that may explain the relationship between exposure and STBs, we also need to take our research out of the lab and into young people's everyday lives. Here, I discuss how we can use new self-report methods and the experience sampling method (ESM) — a structured electronic diary technique — to understand the complex and dynamic psychosocial processes involved in exposure and STBs among young people. Using ESM can enhance our understanding of and ability to prevent STBs among youth, by shedding light on these complex, dynamic processes and their antecedents. This knowledge will lay the foundation for the development of new interventions to mitigate the effects of exposure on individuals' STBs.

2.3 TURNING A PERSONAL TRAGEDY INTO A TRIUMPH: PROLONGED GRIEF AND POSTTRAUMATIC GROWTH AMONG SUICIDE-LOSS SURVIVORS

Yossi Levi-Belz*[1]

[1]Ruppin Acedemic Center

Individual Abstract: Suicide-loss survivors are an at-risk population struggling with feelings of depression, guilt, shame, and even prolonged grief. However, little is known about ways to help them toward recovery from the personal trauma of losing a beloved family member to suicide. This presentation will highlight the psychological mechanisms and dynamics underlying the healing and growth processes among suicide-loss survivors and examine the characteristics of prolonged grief.

In this talk, we will address the major issues of suicide bereavement: the continuum of survivorship and the negative consequences of bereavement after suicide, focusing on suicide ideation and behavior, depression, and prolonged grief. We will present data derived from research endeavors worldwide and from the Israeli project (both cross-sectional and

longitudinal) that stress the deleterious effects of a loved one's suicide on that person's surroundings—including family and friends—such as shame, guilt, and stigmatization.

In addition, we will discuss the prospects of posttraumatic growth (PTG) among suicide-loss survivors and highlight the various factors and dimensions that could facilitate PTG after suicide bereavement. We will present data from research projects in this field worldwide, focusing on the novel longitudinal project in Israel, one of the first studies to address PTG among suicide-loss survivors. Finally, we will discuss an integrative model of PTG among suicide-loss survivors and emphasize the major psychological facilitators of PTG in this particular group (e.g., self-disclosure, self-forgiveness, and belongingness). Together, the project can shed light on recommended interventions, postvention strategies, and future research directions.

2.4 GRIEF PROCESSING IN THE AFTERMATH OF SUICIDE LOSS

Noam Schneck*[1], John Mann[2]

[1]College of Physicians and Surgeons, Columbia University, [2]Columbia University and New York State Psychiatric Institute

Individual Abstract: Bereavement research has long wrestled with the question of whether grief processing, i.e. the intense feelings and thoughts of grieving, helps people adjust to the reality of the loss. While clinical judgment and personal experience seem to support this idea, empirical research has struggled to find evidence. One possible explanation is that studies investigating the general grieving population may not be observing instances of grief that are severe enough to show the contributory role of grief processing. Potentially, when grief is more extreme and severe these emotions play a more critical role in facilitating post-loss adjustment. Two factors that contribute to the severity of grieving are the type of loss and the time since the loss. When someone loses a loved one to suicide, the emotions encompassed within that grieving tend to be wider-ranging and more severe and this intensity is especially accentuated during the time closest to the loss. In this talk, I will discuss two studies of suicide loss that we have conducted in people bereaved <12 months (study I, N=20) and <6 months (study II, N=45) post-loss. In study II, we find evidence that some of the unique feelings of suicide bereavement (such as guilt, shame, and responsibility) predict a better trajectory of adjustment to the loss. These findings may suggest that in highly intense instances of grieving, some of the painful feelings of grief processing contribute to adaption and recovery from the loss.

3. MULTI-OMICS APPROACHES TO DECIPHER THE NEUROBIOLOGY OF SUICIDE

Chair: Maura Boldrini, Columbia University

Overall Abstract Details: The pathogenesis of suicidal behavior involves biopsychosocial factors, involving genetic and epigenetic modifications, affecting cell biology, brain circuits and consequently mood, cognition, neurovegetative functions, and behavior.

This symposium will provide an in dept overview of cutting-edge technologies applications for studying human brain genetic and epigenetic modifications at a cellular level, to understand molecular mechanisms underlying specific brain circuit dysfunctions in subjects who die by suicide.

Giovanna Punzi, MD, PhD will present bulk and single nucleus RNA sequencing (snRNA-seq) data from postmortem dorsolateral prefrontal cortex (PFC) of violent and non-violent suicides and non-psychiatric controls (CTRL). She will discuss genomic risk-scores (GRS) for psychiatric disorders and suicide attempt, analyzing their predictive value. She suggests suicides by violent means may be biologically separable from others and their behavioral outcome may be dependent on genetic risk that is different from that of any psychiatric disorder.

Harry Pantazopoulus, PhD will present the first evidence for altered expression of extracellular matrix molecules and density of perineuronal nets (PNNs) in the amygdala-hippocampal circuit of suicide decedents, using RNAseq and stereology-based microscopy quantification. Extracellular matrix molecules are involved in synaptic plasticity, immune signaling, neuronal activity, and protection from oxidative stress which are altered in major depressive disorder (MDD).

Yogesh Dwivedi, PhD examined genome-wide DNA methylation in the PFC of depressed suicides, depressed non-suicides, and CTRL, to investigate epigenetic marks which might play a critical role in developing MDD and suicidal behavior. He identified methylation sites specific to suicide and to MDD. Functional analysis suggested Oxytocin, GABA, VGFA, TNFA, and MTOR pathways are differentially methylated in suicide MDD, and that epigenetic DNA modifications could be used to distinguish suicidality in MDD patients.

Panos Roussos, MD, PhD investigated the genetic regulation of chromatin accessibility and its impact on neuropsychiatric traits with increased risk for suicide. He will show how the coexistence of chromatin accessibility quantitative trait loci (caQTL) and gene expression quantitative trait loci (eQTL) signals reveal regulatory patterns linking risk variants to causal genes and disease mechanisms. In human neurons engineered from induced pluripotent stem cells (iPSCs) through neurogenin 2 (NGN2) overexpression, which are widely used to study neuronal differentiation mechanisms and to model neurological diseases, his lab tested the functional impact of 19,893 candidate variants and identified 476 variants with allelic effects.

Maura Boldrini, MD, PhD applied snRNA-seq, single nuclei assay for transposase-accessible chromatin with sequencing (snATAC-seq), spatial multiomics (Visium® and DBiT-seq), and RNA velocity to postmortem hippocampus from suicide and non-suicide MDD and CTRL, and identified canonical and immature cell clusters, 161 downregulated genes and 93 upregulated genes in suicide-MDD. Downregulated genes in MDD control neurotransmission, neurodevelopment and extracellular matrix organization. Inflammatory response-related genes were upregulated confirming previous bulk-sequencing reports in MDD. Downregulated genes in the neural progenitor cell cluster in MDD regulate in cell proliferation, differentiation, and survival. Velocity revealed more mature and repressed RNA than nascent and induced RNA in MDD, suggesting blunted hippocampus plasticity and neurogenesis.

3.1 THE SUICIDAL BRAIN: BIOLOGICAL INSIGHT FROM POSTMORTEM HUMAN TISSUE

Giovanna Punzi[1], Aurel Popa-Wagner*[2]

[1]Lieber Institute for Brain Development, [2]Center of Experimental and Clinical Medicine Craiova

Individual Abstract: Death by suicide in the absence of identifiable psychiatric disorders is not rare, and most patients with psychiatric conditions raising risk of suicide do not kill themselves. Suicidal behavior has been indeed associated with transdiagnostic biological features and risk factors, such as severe anxiety/agitation and poor impulse control. The transcriptomic and genomic features of suicide may be more clearly determinable in the context of completed behavior than in ideation or attempt, particularly when violent and more lethal methods are employed, implicating a high level of aggression. Parsing the method chosen (violent versus non-violent) might capture the molecular correlates of the distinctive frame of mind of individuals who died by suicide, while reducing phenotypical heterogeneity. We will present gene expression (RNA sequencing) data from postmortem dorsolateral prefrontal cortex of patients who died by suicide with violent versus non-violent means, of non-suicide patients with the same psychiatric disorders, and of neurotypicals. We will also discuss genomic risk-scores (GRS) for each psychiatric disorder tested, GRS for cognition (IQ) and GRS for suicide attempt, analyzing how they predict the respective diagnosis or traits. Our data in bulk tissue suggest that suicides by violent means are in part biologically separable from other patients with the same diagnoses, and that their behavioral outcome may be less dependent on genetic risk for conventional psychiatric disorders, while associated with altered cell to cell communication. We will also present single-nuclei level data that might provide further insight on these findings. Addressing suicide by violent means as a distinct condition may be decisive to understand its biological and genetic bases and inform prevention.

3.2 EXTRACELLULAR MATRIX ABNORMALITIES IN SUICIDE DECEDENTS WITH MAJOR DEPRESSIVE DISORDER AND SUBSTANCE USE DISORDER

Harry Pantazopoulos*[1], Jake Valeri[1], Sinead O'Donovan[2], Mahmoud Eladawi[2], Rammohan Shukla[2], Robert McCullumsmith[2], Barbara Gisabella[1], Craig Stockmeier[1]

[1]University of Mississippi Medical Center, [2]University of Toledo Medical Center

Individual Abstract: Suicide is one of the leading causes of death across the world, particularly in younger people. Recent preclinical models of depression and substance use disorder, two disorders associated with risk of suicide, point to alterations of extracellular matrix molecules as key features in these disorders. Extracellular matrix molecules are involved in a wide range of processes implicated in major depressive disorder including synaptic plasticity, immune signaling, neuronal activity, and protection from oxidative stress. During late adolescence, a period of heightened risk of suicide, these molecules form specialized structures called perineuronal nets (PNNs) that regulate the activity and synaptic plasticity of subpopulations of fast-firing neurons. Preclinical models suggest that PNNs are involved in strengthening synapses associated with rewarding experiences in substance use disorder and negative experiences in major depressive disorder. Evidence regarding extracellular matrix molecules and PNNs in the brain of suicide decedents however is currently lacking, limiting the development of therapeutic strategies.
We used a cohort of human postmortem amygdala samples from subjects with major depressive disorder and control subjects (n=15/group) and hippocampus samples from subjects with major depressive disorder, substance use disorder, co-morbid major depressive and substance use disorder, and control subjects (n=20/group) to test the hypothesis that expression of extracellular matrix molecules and the density of PNNs are altered in the amygdala-hippocampal circuit in suicide decedents. RNAseq and stereology-based microscopy quantification were used to quantify numerical density of PNNs and gene expression pathways

involved in the regulation extracellular matrix molecules. Potential confounding variables including sex, age, duration of illness, exposure to psychiatric medications, substances of abuse, and time of death were examined for potential effects on the outcome measures.

We will present the first evidence for alterations in PNNs and extracellular matrix molecules in the amygdala and hippocampus of suicide decedents. Our findings point to region-specific changes and diurnal expression rhythms of ECM molecules, along with effects of antidepressant use and substance use disorder.

Alterations in PNNs and extracellular matrix molecules in the amygdala and hippocampus of suicide decedents indicate a complex relationship with substance use disorder and circadian rhythm dysfunction which are commonly associated with major depressive disorder and risk of suicide. Furthermore, our findings provide a foundation in human subjects for preclinical models and suggest that targeting extracellular matrix molecule regulation may represent a therapeutic strategy for major depressive disorder, substance use disorder, and suicide.

3.3 HUMAN BRAIN DNA METHYLOME PROFILE CAN DISTINGUISH MOLECULAR PATHOLOGIES OF SUICIDE AMONG DEPRESSED PATIENTS

Yogesh Dwivedi*[1]

[1]University of Alabama at Birmingham

Individual Abstract: Background: Major depressive disorder (MDD) is a debilitating disorder affecting 8.4% of the US population and globally about 5% of the adult population. It is the single most important risk factor for suicide, where more than 60% of those who die by suicide meet the diagnostic criteria for MDD. Suicide attempt is 5-times higher in MDD patients than in the general population. Interestingly, even with a high prevalence of suicidality, not all MDD patients develop suicidal thoughts or complete suicide. Thus, it is important to study the risk factors that can distinguish suicidality among MDD patients. Although the molecular correlates of depression and suicide remain poorly understood, it has been hypothesized that epigenetic marks, such as DNA methylation, which can be influenced by the environment, might play a critical role in developing depression and suicidal behavior. A few studies have examined DNA methylation changes in the brains of depressed suicide subjects or suicide subjects with various mental illnesses. So far, no study has examined suicide-specific DNA methylation marks in the brains of depressed subjects. The present study examined genome-wide DNA methylation in the prefrontal cortex of depressed suicide (DS), depressed non-suicide (DNS), and nonpsychiatric control subjects.

Methods: Genome-wide DNA methylation was examined in the prefrontal cortex of age- and sex-matched depressed suicide (DS; n=15), depressed non-suicide (DNS; n=17), and nonpsychiatric control (NC; n=16) subjects using 850K Infinium Methylation EPIC BeadChip. Signal intensities and raw methylation β values were extracted from Illumina's Genome-Studio software R package ChAMP. The methylation β values were generated based on normalized signal intensities and background subtraction using negative control probes and were derived as the ratio of methylation probe intensity to the overall intensity. The hyper and hypo-methylated sites were also mapped across 22 autosomes using PhenoGram Plot. The significantly differentially methylated gene lists were used to determine the functional enrichment of genes for ontological clustering and pathway analysis.

Results: The chromosome-wise methylation sites and mapping of methylated sites based on the number of CpG content and their relative distribution from specific landmark regions of genes varied significantly between NC, DS, and DNS groups. 32958 methylation sites were identified across 12574 genes in NC vs. all MDD subjects, 30852 methylation sites across 12019 genes in NC vs. DNS, 41648 methylation sites across 13941 genes in NC vs. DS, and 49848 methylation sites across 15015 genes in DNS vs. DS groups. A comparison of methylation sites showed 33129 unique methylation sites and 5451 genes in the DNS group compared to the DS group. Functional analysis suggested Oxytocin, GABA, VGFA, TNFA, and MTOR pathways associated with suicide in the MDD group.

Discussion: Our data show a discrete pattern of DNA methylation, the genomic distribution of differentially methylated sites, gene enrichment, and pathways in MDD subjects who died by suicide compared to non-suicide MDD subjects and suggest that epigenetic DNA modifications could be used to distinguish suicidality in MDD patients.

3.4 GENETIC REGULATION OF CELL-TYPE SPECIFIC CHROMATIN ACCESSIBILITY SHAPES THE ETIOLOGY OF BRAIN DISEASES

Panos Roussos*[1]

[1]Icahn School of Medicine at Mount Sinai

Individual Abstract: Genome-wide association studies (GWAS) have led to the identification of hundreds of genomic loci that are linked to neuropsychiatric traits with increased risk for suicide, including schizophrenia, bipolar disorder and depression. However, due to linkage disequilibrium, in which all genetic variants in the associated locus are strongly correlated, pinpointing causal variants to interpret GWAS hits is challenging. In addition, the majority of identified common variants reside in non-coding regions of the genome and are enriched within regulatory elements, indicative of their impact on gene expression rather than on protein structure and function.

Gene expression quantitative trait loci (eQTL), have been used to facilitate interpretation of GWAS results. However, eQTL-GWAS integration solely examines the relationship between genes and traits, and leaves a gap in understanding underlying regulatory mechanisms. Non-coding disease risk variants are thought to affect gene expression by modifying cell type-specific transcription factor binding to regulatory elements. Since chromatin state is directly linked to transcription, the coexistence of similar chromatin accessibility quantitative trait loci (caQTL) and eQTL signals in a locus can reveal regulatory patterns linking risk variants to causal genes and disease mechanisms. Identifying disease-relevant regulatory elements can open up opportunities for targeted gene therapies with higher cell type specificity.

To investigate the genetic regulation of chromatin accessibility and its impact on neuropsychiatric traits with increased risk for suicide, we generated cell-type specific ATAC-seq data from neurons and glia isolated from 1,932 human postmortem brain samples derived from 616 donors and 4 distinct brain regions. Our analysis identified 34,539 OCRs with caQTL and revealed a high cell type specificity in the genetic regulation of chromatin accessibility. Integrating allele specific chromatin accessibility, eQTL and caQTL colocalization, and statistical fine-mapping, revealed putative molecular mechanisms for disease risk variants. We performed a massively parallel reporter assay (MPRA) in NGN2 neurons testing the functional impact of 19,893 candidate causal variants and identified 476 variants with allelic effects.

Overall, we provide a comprehensive catalog capturing variation in the human brain regulome, improving our understanding of the molecular basis of neuropsychiatric traits with increased risk for suicide.

3.5 SINGLE-CELL AND SPATIAL MULTI-OMICS PROFILING OF HUMAN HIPPOCAMPUS REVEAL PATHWAYS ASSOCIATED WITH THE NEUROBIOLOGY OF DEPRESSION AND SUICIDE

Madeline Mariani[1], Cheick Sissoko[1], Wenpin Hou[1], Yang Xiao[1], Graham Su[2], Yanxiang Deng[2], Yung-yu Huang[3], Andrew Dwork[1], Gorazd Rosoklija[1], Kam Leong[1], John Mann[3], Rong Fan[2], Maura Boldrini*[1]

[1]Columbia University, [2]Yale University, [3]Columbia University and New York State Psychiatric Institute

Individual Abstract: In humans, the anterior hippocampus is implicated in memory and emotional regulation which can be disrupted with Major Depressive Disorder (MDD). Previous studies have used immunostaining to reveal fewer mature granule neurons (GNs) and smaller dentate gyrus (DG) volume in anterior hippocampus in unmedicated MDD postmortem, and that antidepressant-treated MDD subjects have restored numbers of neural progenitor cells (NPCs) and GNs in anterior DG. We showed persistent neurogenesis throughout the human lifespan. However, conflicting results in the literature, regarding the abundance of human adult hippocampal neurogenesis indicated the need for using multimodal techniques which do not rely on previously known marker protein expression. Recent studies have identified primate-specific neurogenic niche markers not found in rodents, highlighting the importance of studying the human brain. Moreover, while many psychiatric patients present with suicidal ideation, a minority go on to attempt and die by suicide. Therefore, the pathogenesis of suicide is likely distinct from that of MDD and other psychiatric disorders.

To investigate the transcriptome and epigenome in the postmortem hippocampus from age-and sex-matched suicide and non-suicide MDD subjects and non-psychiatric controls, we applied high throughput single-nucleus RNA sequencing (snRNA-seq), assay for transposase-accessible chromatin with sequencing (snATAC-seq), and spatial RNA-seq using Visium® (10X Genomics), and RNA and ATAC spatial multiomics using DBiT-seq, together with RNA velocity to reveal transient cellular dynamics, and cell trajectories through different states and clusters. We used Seurat and Harmony for sample pre-processing, batch correction, and differential expression analysis. We computed RNA velocity based on the relative abundance of nascent (unspliced) and mature (spliced) mRNA, using the state-of-the-art method scVelo.

Unsupervised clustering of 304,200 nuclei identified mature GNs, excitatory and inhibitory neurons, astrocytes, microglia, oligodendrocytes, oligodendrocytes progenitors, as well as the controversial immature GNs, NPCs, and neural stem cells. Fewer mature GNs, oligodendrocytes, and excitatory neurons were found in suicide MDD. In MDD, 161 downregulated genes and 93 upregulated genes (Bonferroni-adjusted $p < 0.05$) were identified. Gene ontology (GO) analysis revealed that functions downregulated in MDD vs. controls across clusters were neurotransmission and neurodevelopment.

In the GN cluster, MDD had higher expression of inflammatory response-related genes, and lower expression of genes involved in extracellular matrix organization.

In the NPC cluster, MDD had 96 DEGs with lower expression of genes involved in cell proliferation, migration, differentiation, signaling, and growth, regulation of mitotic cycle, centrosome duplication and telomerase activity, and genes controlling cell survival and cell function under stress.

Canonical cell clusters mapped on Visium and DBiT-seq slides as expected, and immature clusters mapped in the subgranular zone of the DG.

Velocity revealed altered cell dynamics in MDD-suicides with lower proportion of spliced mRNA than in controls, indicating more mature and repressed RNA than nascent and induced RNA in MDD on average.

We identified and anatomically mapped immature cell clusters in human hippocampus. Increased neuroinflammation in MDD confirms previous bulk-sequencing reports. Fewer GNs, oligodendrocytes, and excitatory neurons may explain smaller anterior DG in MDD. Reduced NPC maturation and survival may result in fewer GNs. More repressed RNA supports blunted hippocampus plasticity and neurogenesis in MDD.

4 THE LEGACY OF DR. BARBARA STANLEY

Chair: B Brodsky, College of Physicians and Surgeons, Columbia University/New York State Psychiatry

Overall Abstract Details: The loss of Dr. Barbara Stanley has left an enormous void in suicide prevention efforts and in the scientific community. The impact of her research cannot be overstated. Dr. Stanley brought a unique blend of methodological rigor, innovation and compassion to her approach, and leaves behind an impressive body of work that has advanced both the scientific and public health fields. Her legacy lives on in her numerous contributions to the field, and also through the many young investigators she has mentored. This special symposium will showcase the impact of Dr. Stanley's contribution to developing the next generation of suicide researchers. In four scientific presentations, four of Dr. Stanley's mentees, all clinical psychologists from two Divisions at the New York State Psychiatric Institute/Columbia University, will demonstrate the width and depth of her areas of research, from clinical efficacy trials, Zero Suicide implementation work, best practice intervention development, and neurobiological correlates of suicidal behavior. First, Dr. Beth Brodsky, Associate Clinical Professor of Medical Psychology, will present findings from a randomized clinical trial conducted together with Dr. Stanley comparing Dialectical Behavior Therapy (DBT) to Selective Serotonin Reuptake Inhibitor (SSRI) treatment in reducing suicidal and self-harm behaviors in individuals with borderline personality disorder (BPD). Dr. Christa Labouliere, Assistant Professor of Psychology, works in public health implementation of evidence- based practices and will present the results of a Zero Suicide Implementation study conducted with Dr. Stanley across 165 outpatient mental health clinics in New York State. Dr. Liat Itzhaky, who worked closely with Dr. Stanley to adapt the Stanley Brown Safety Planning Intervention for young children, will share her collaboration with Dr. Stanley in preventing suicide in children. Dr. Sarah Herzog, a post-doctoral fellow , will present findings from her work with Dr. Stanley on studies examining neurobiological underpinnings of suicidal subtypes. A question and answer period will follow.

4.1 A 6-MONTH RANDOMIZED CLINICAL TRIAL COMPARING DIALECTICAL BEHAVIOR THERAPY AND SEROTONIN REUPTAKE INHIBITOR TREATMENT

IN REDUCING SUICIDAL BEHAVIOR IN BORDERLINE PERSONALITY DISORDER

Barbara Stanley[1], B Brodsky*[2], Hanga Galfalvy[3], John Mann[4]

[1]College of Physicians and Surgeons, Columbia University, [2]College of Physicians and Surgeons, Columbia University/New York State Psychiatry, [3]Columbia University, [4]Columbia University and New York State Psychiatric Institute

Individual Abstract: To date there are no randomized controlled trials comparing the efficacy of a 6 month trial of psychotherapy to psychopharmacological interventions in treating suicidal and non-suicidal self-injurious (NSSI) behaviors in borderline personality. We hypothesized that Dialectical Behavior Therapy (DBT) is more efficacious than Selective Serotonin Reuptake Inhibitors enhanced with supportive Clinical Management (SSRI/M) in reducing suicidal and NSSI behaviors. Secondary hypothesis was that treatment efficacy would be moderated by decreases in impulsivity and emotion regulation.

Method: Individuals with borderline personality disorder and with >1suicide attempt or related events (hospitalization, ED visit) and/or NSSI episode in prior six months, with at least another self-harm behavior in past year (N=84) were randomly assigned to one of two 6- month treatment trial conditions; DBT or SSRI/medication management. Intent- to -treat analysis was performed using the log-rank test for survival data, Poisson models for the count data with time in study as offset, and mixed effect regression models for quantitative outcomes. Main outcomes were number of suicide attempts, number of suicide events, number of NSSI behaviors. Secondary measures were: depression (Hamilton depression scale and Beck's Depression Inventory), impulsivity (Barratt Impulsivity Scale), emotion dysregulation (Difficulty in Emotion Regulation Scale), BPD symptomatology (Zan-BPD) and global clinical improvement (CGI Scale).

Results: The number of suicide attempts was significantly lower in DBT (4 attempts) than in the SSRI (11 attempts), (B=1.17, SE=0.58, z=2.03, p=0.042). Intent- to-treat survival analysis of time to attempt by group found a trend-level association with lower risk of suicide attempt ((X2= 2.9, df=1, p= 0.0890), and a significantly lower risk for suicide events (X2= 5.9, df=1, p= 0.015), and lower number of suicide events (5 in DBT, 16 in SSRI) (B=1.24, SE=0.51, z=2.42, p= 0.016) in the DBT condition as compared to the SSRI/M condition. After adjustment for the number of past NSSI acts at baseline, the count of NSSI acts during the study was significantly lower in the DBT (b=0.34, SE=0.14, z=2.49,p=0.0130) than the SSRI/M condition. Impulsivity and emotion dysregulation decreased significantly in the DBT condition but not in the SSRI/M condition. Depression decreased significantly in both conditions. A measure of global clinical improvement increased significantly in the SSRI/medication management condition during the first 2 months of the trial, a finding that was not sustained at the 4 and 6 month time periods. There was no evidence for the mediation hypothesis.

Conclusion: DBT is more efficacious than SSRI/M in reducing suicidal/NSSI behaviors, impulsivity, and emotion dysregulation in BPD in a six -month trial. Both are equally efficacious in reducing depression, and therefore the reduction of suicide events is more attributable to behavioral change through DBT psychotherapy than through decreases in depression due to DBT or psychopharmacological treatment.

4.2 IMPLEMENTATION AND EVALUATION OF ZERO SUICIDE IN OUTPATIENT MENTAL HEALTH

Christa Labouliere*[1], Hanga Galfalvy[2], Gregory Brown[3], Kelly Green[4], Molly Finnerty[5], Barbara Stanley[6]

[1]Columbia University Irving Medical Center, [2]Columbia University, [3]Perelman School of Medicine University of Pennsylvania, [4]University of Pennsylvania Perelman School of Medicine, [5]New York State Office of Mental Health, [6]College of Physicians and Surgeons, Columbia University

Individual Abstract: Background: Despite increased efforts, suicide rates have increased dramatically over the past 15 years. Suicide assessment and intervention research has made great strides in the development of "best practices" but, there remains a striking gap between intervention development and implementation in typical outpatient behavioral health settings. More than 25% of those dying by suicide and >50% of individuals who attempt suicide receive outpatient behavioral health care in the year prior to their suicidal behavior; however, many behavioral health clinicians receive only minimal training in suicide prevention, leaving them unprepared to systematically identify and treat individuals at highest risk. The Zero Suicide (ZS) model is a multi-component, system-wide approach combining individual care and systems-level elements to effectively identify and treat suicidal patients. Given that ZS is being promoted internationally, it is vital to determine which factors facilitate implementation of the ZS model in “real-world” clinical settings.
Method: The NYS Office of Mental Health and Columbia University partnered to conduct the largest implementation and evaluation of the ZS model conducted in outpatient behavioral health, representing a geographically- and ethnically- diverse network of 165 outpatient clinics, 280 satellite facilities, 3500+ clinical providers, and >100,000 clients. We provided clinical training and ongoing technical assistance to support implementation and data-driven evaluation of the ZS approach, with the goal of improving screening, safety planning, engagement, and follow-up of high-risk patients.

Results: We found that systematic screening of all new intakes was successfully implemented with >90% of all new patients screened for suicide risk. Additionally, safety planning was also successfully implemented, with >80% of patients identified as high-risk receiving safety plans. The number of persons experiencing suicide events while on the high-risk suicide care pathway was low (20% of patients placed on the high-risk suicide care pathway not returning for a second visit and 6 visits while on the pathway (recommended weekly visits for 12 weeks).

Conclusions: ZS is challenging but feasible to implement in outpatient behavioral health settings. System-wide leadership investment, workforce training, and implementation of data-driven quality improvement practices are needed for assessment and management of client suicide risk to improve. Engagement of suicidal clients remains a notable challenge and can interfere with effective care. Directions for future research and implications for improving care and reducing suicide deaths in outpatient behavioral health will be discussed.

4.3 SUICIDAL BEHAVIOR IN CHILDHOOD: RISK AND PREVENTION

Liat Itzhaky*[1], Barbara Stanley[2]

[1]Columbia University, [2]College of Physicians and Surgeons, Columbia University

Individual Abstract: Suicide is among the ten leading causes of death in 5-11 years old children. However, there are serious gaps in our understanding of child suicide risk and there are no suicide prevention interventions for this age group. The project includes mapping suicide risk in children and modification of the safety planning intervention to fit 6-12 years old children.
Study 1: Correlates of suicide risk in childhood

Method: A sample of 418 adults with a mood disorder diagnosis and at least one suicide attempt were divided into three groups according to the age of their first attempt (childhood n=43, adolescent n=149, adulthood n=226). The groups were compared on demographics, childhood adversities, parental psychopathology, as well as the characteristics of their first suicide attempt and lifetime psychopathology. Results: Participants who had their first suicide attempt in childhood were more likely to be Hispanic, female, report childhood abuse, and have a parent with alcohol use disorder compared to the two other groups. Furthermore, childhood attempters had a higher prevalence of non-suicidal self-injury (NSSI) during childhood, lifetime PTSD, and a greater number of subsequent suicide attempts than those in the other two groups. Conclusion: The findings point to the importance of the environment in childhood suicide attempts, as well as to the role of NSSI as a risk factor for a childhood suicide attempt.

Study 2: Systematic review of risk factors for child suicide risk

Methods: The review included empirical studies published between 1982 and 2022 that examine the risk/protective factors for suicidal ideation and behaviors in children (age < 12 years). Independent assessors evaluated the eligibility of studies and extracted relevant data. The Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies was used to evaluate study quality and rigor. Results: Risk factors for child suicidal ideation and behaviors include depression, aggression, and impulsivity, as well as environmental factors such as childhood abuse and neglect, family environment, and parenting style. Conclusion: Most studies were cross-sectional and there was significant diversity in the assessment methods used. Despite the small number of studies and their methodological limitations, this review points to several important risk factors for suicidal phenomena in children.

Study 3: Modification of the safety planning intervention to fit 6-12 years old children.

Preliminary findings on the feasibility and acceptability of the child-safety planning intervention will be presented.

4.4 NEUROBIOLOGICAL UNDERPINNINGS OF SUICIDAL SUBTYPES

Sarah Herzog*[1], Hanga Galfalvy[1], Tse-Hwei Choo[2], John Keilp[1], Noam Schneck[1], Maria Oquendo[3], John Mann[1], Barbara Stanley[1]

[1]Columbia University and New York State Psychiatric Institute, [2]Columbia University, [3]Perelman School of Medicine, University of Pennsylvania

Individual Abstract: Background: Suicide is a complex and clinically heterogenous phenomenon. Understanding heterogeneity in clinical presentations of suicidal populations is important to developing useful predictive markers and targeted interventions for suicide risk. Dr. Stanley and collaborators developed a framework describing two phenotypic subtypes of suicide: one characterized by hyperreactive responses to stress, greater impulsivity, emotional

lability, and sharp fluctuation in suicidal ideation (SI); and the other characterized by blunted responses to stress, more severe depression, higher suicidal intent, and proneness to serious and planned suicidal behavior. In a series of studies using multimodal data, we demonstrate support for these suicidal subtypes.
Method: Participants with major depressive disorder (MDD) with and without a history of suicide attempt participated in the following protocols: 1) The Trier Social Stress Test (TSST) in which participants were asked to make a speech and perform mental math before an evaluator. Salivary cortisol samples were collected before and after the stressor, and heart rate variability (HRV) was collected continuously; 2) a battery of neuropsychological tasks of cognitive functioning; and 3) a 7-day ecological momentary assessment period during which participants reported on their emotions, stressors, suicidal ideation and behavior, and use of coping, 6x daily.

Study 1: In n=95 MDDs, we examined the relationship between variability in SI, a hallmark of the stress-reactive subtype, and performance on attentional control measures: Stroop, Continuous Performance Task (CPT). SI variability was operationalized as the RMSSD of intensity and duration of SI over a week. Results: Poorer attentional control on the Stroop predicted greater SI variability, independent of severity of SI or depressive affect.

Study 2: We examined cortisol responses to stress in n=68 MDDs with a prior suicide attempt, comparing those with high vs. low suicidal intent—a characteristic of the hyporesponsive subtype. Results: The high-intent group exhibited blunted cortisol reactivity and output during the TSST and reported high negative affect before and after the stressor.

Study 3: We examined differences in HRV, a transdiagnostic biomarker of self-regulation and cognitive control, in MDDs with high- vs. low-intent prior attempts. Results: The high-intent group's HRV across the TSST appeared more like healthy controls than MDDs without an attempt history, or MDDs with low-intent suicide attempts. The high-intent group exhibited less variant HRV and higher HRV values across the task, while MDDs without prior attempts and the low-intent attempt group exhibited steep reductions in HRV in response to the task.

Study 4: In a combined sample of n=173 MDDs and individuals with borderline personality disorder (BPD), we used latent profile analysis (LPA) to examine SI subtypes based on intensity and duration of SI of a 7-day EMA period. We then examined how these clusters differ on EMA daily affective profiles; clinical measures of depression, emotion regulation, impulsivity, and aggression; and childhood trauma histories. Results: LPA yielded a 5-cluster solution: two high variability groups with high and moderate severity SI; two stable SI groups with moderate and low severity SI, and a non-ideating group. Findings on affective and clinical profiles of these subgroups will be presented.

Conclusion: Our findings support phenotypic heterogeneity in suicidal populations and have important implications for treatment/preventative interventions. Results highlight the need for continued research to characterize various suicidal subtypes and their neurobiological underpinnings.

5. AUTISM AND SUICIDE: LIVED EXPERIENCES, RISK FACTORS, THEORY, AND INTERVENTION

Chair: Anne Kirby, University of Utah

Overall Abstract Details: Autism is a neurodevelopmental condition characterized by differences in social functioning and restricted and/or repetitive thought and movement patterns. It affects individuals throughout the lifespan, with varying impacts on daily life, productivity, and relationships. Autistic* people are a group that was once presumed to be at low risk of suicide. However, evidence now demonstrates higher rates of suicidal thoughts, actions, attempts, and deaths among autistic people compared with non-autistic people. Despite the evidence of heightened suicide risk in the autistic community, there is limited understanding of contributing factors, the relevance of existing theories, and ways to tailor interventions to support suicide prevention specifically for autistic people.
In this symposium, we present research addressing these gaps from five distinct research teams from three countries. Kirby et al. will present perspectives of autistic adults and mental health providers using in-depth qualitative interviews about the risk and protective factors for suicidal thoughts and actions. Graham Holmes et al. will present on the association between autism diagnosis and autistic traits with suicidal ideation and attempt risk among a sample of transgender youth, examining an important intersection of individuals who are members of two high-risk groups (autistic and transgender). Moseley et al. will present on research examining the relevance of the interpersonal theory of suicide for the autistic community. Jager-Hyman et al. will present early results from a clinical trial of an adapted safety planning intervention for autistic adolescents. Finally, Hedley et al. will present qualitative findings on mental health access in this community, pointing to service needs and future directions for care.

Across these five presentations, the symposium will offer novel findings about suicide-related risk factors, theory, intervention, and the lived experiences of autistic people. These studies demonstrate important advances in this area of research, which help contribute to evidence that can support suicide prevention for the autistic community.

*Note: the presentations in this symposium use identity-first language (vs. person-first language) when discussing the autistic community, in alignment with common community member preferences.

5.1 IN-DEPTH INTERVIEWS ABOUT SUICIDE RISK AND PREVENTION IN THE AUTISTIC COMMUNITY

Anne Kirby*[1], Bobbi Duncan-Ishcomer[2], Andee Joyce[2], Rachel Kripke-Ludwig[2], Whitney Lee[2], Kayla Rodriguez[2], Zack Siddeek[2], Francesco Vales[2], Alissa Atisme[1], Amber Darlington[1], Kristina Feldman[1], Christina Nicolaidis[3], Brooks Keeshin[1], Hilary Coon[1]

[1]University of Utah, [2]Academic Autism Spectrum Partnership in Research and Education, [3]Portland State University

Individual Abstract: Suicide is a leading cause of death among people on the autism spectrum. Even greater numbers of autistic people experience serious suicidal thoughts, actions, and attempts. However, there is limited information about reasons for increased suicide risk, and a dearth of exploration into the perspectives of autistic people and other stakeholders to inform suicide prevention efforts.
To address this gap, we conducted in-depth, semi-structured qualitative interviews with a purposive sample of 16 autistic adults recruited from the community who have experienced suicidality. Autistic participants were 18-68 years of age (mean [standard deviation] = 39 [13.5] years), and were 37.5% women, 25% men, and 56% transgender, nonbinary, and/or gender-

queer [*note: since gender categories are non-exclusive, percentages do not =100%]. Furthermore, 69% of the autistic participants identified as LGBTQIA+, and 62.5% identified within one or more marginalized racial or ethnic group. We also interviewed 11 mental health providers who have provided services to autistic people with suicidality. The mental health providers were 90% women and 18% gender-queer. They reported 2-24 years of experience (mean [standard deviation] = 9 [6] years). Additional interviews are planned with family members of autistic people who have experienced suicidality. The project uses a community-based participatory research approach in partnership with eight autistic adults who collaborate on every step of the research process. Interviews were offered through a variety of remote formats including by phone, video call, text chat, and email to accommodate participants' communication needs and preferences.

Inductive qualitative thematic analysis is ongoing. Preliminary results reveal that autistic people face discrimination, stigma, and shame stemming from societal and social pressures to conform to neurotypical expectations. Individuals with multiple marginalized identities (e.g., autistic and transgender, autistic and person of color) can face societal pressures related to each identity as well as their intersectional identities. Suicidality can start in childhood or adolescence and persist through to older adulthood, with many participants reporting recurrent suicidal thinking, actions, and attempts. Everyday difficulties—coupled with overwhelming sensory and social experiences that do not accommodate autistic people's needs—can contribute to feelings of exclusion, hopelessness, and burnout. Furthermore, consistent with evidence from the non-autistic population, results suggest that traumatic life experiences can exacerbate suicidality for autistic people, including abuse, bullying, divorce, job loss, and other trauma. Unmet needs were reported to require material (e.g., concrete support for managing life challenges) and social (e.g., people who can listen, understand, and validate their experiences) support to protect their mental health and prevent suicidality. Moreover, addressing related issues such as co-occurring mental health diagnoses, trauma, unaccommodating environments, and burnout was critical for reducing the frequency and intensity of suicidal thoughts and actions in the autistic community.

The perspectives of a diverse sample of autistic adults and mental health providers reveal a wide range of risk factors contributing to suicidality, as well as opportunities for tailored supports. There is a significant need for more research on mental health and well-being for autistic people to support robust suicide prevention efforts. The results of this study will be used to inform the development of a community-based suicide prevention education and community empowerment program.

5.2 RISK FOR SUICIDAL BEHAVIOR AMONG AUTISTIC GENDER MINORITY YOUTH

Laura Graham Holmes*[1], Brian Thoma[2], Emily F. Rothman[3], Ligia D. Antezana[2], Shalini Sivathasan[2], Sophia Choukas-Bradley[4], Rachel H. Salk[2]

[1]Hunter College, CUNY, [2]University of Pittsburgh School of Medicine, [3]Boston University College of Health and Rehabilitation Sciences, [4]University of Pittsburgh

Individual Abstract: Autistic people have heightened risk for suicidality. Up to 66% of autistic people report suicidal ideation, and autistic people have a 5-fold greater rate of suicide

attempt versus non-autistic people. In addition, autistic adults tend to make attempts using more lethal means than non-autistic adults and have a higher risk of death by suicide than the general population.

More information is needed about suicide risk among autistic youth, especially the intersection between gender identity and autism traits as it relates to increased rates of suicidal behavior. Estimates suggest as many as 15% of autistic youth are gender minorities (GM; youth whose gender identity differs from their sex assigned at birth). Over half of GM youth report a suicide attempt and as many as 85% experience suicidality. In qualitative studies, autistic GM youth report feeling socially isolated, marginalized in both the autism and the GM communities. Further, they report that their loved ones do not believe they are GM because they are autistic, potentially increasing their likelihood of suicidal behavior. In a large, diverse sample of U.S. adolescents (N=2041), we investigated whether autism diagnosis and traits were associated with GM identities and associations between autism diagnosis, traits, and suicidality among GM youth.

The Gender Minority Youth Study is an online, cross-sectional, self-report survey of U.S. adolescents ages 14–18 (Mean age = 15.93). 2041 participants provided data related to autism traits and were included in analysis. GM adolescents were oversampled through recruitment on social media sites (n = 1163). Participants resided in all 50 states and were racially and ethnically diverse. Autism traits were measured by the Autism Spectrum Quotient (AQ-10). Participants were also asked if they had ever received an autism diagnosis from a doctor. We measured lifetime suicidal ideation, suicide attempt, and suicide attempt requiring medical care. GM participants were compared to non-GM participants on autistic traits and self-reported diagnosis using regression models adjusted for age, sex assigned at birth, subjective social status, race and ethnicity, and sexual orientation. Among GM participants only, we also assessed whether autism traits and self-reported diagnosis were associated with likelihood of for suicidality.

10% of GM participants and 3% of non-GM participants reported an autism diagnosis. In adjusted models, GM participants reported higher autism traits when compared to non-GM participants ($B = 0.84$, $SE = 0.11$, $p < 0.001$) and had higher odds of autism diagnosis ($OR = 2.39$, $p = 0.001$; N=124). Among GM participants, GM adolescents who reported they had received an autism diagnosis had higher odds of lifetime suicidal ideation ($OR = 2.27$, $p = 0.033$), suicide attempt ($OR = 2.46$, $p < 0.001$), and suicide attempt requiring medical care ($OR = 3.89$, $p < 0.001$) in adjusted models, as compared to GM adolescents with no autism diagnosis. However, autism traits were unrelated to suicidal ideation and behavior in adjusted models.

Autistic youth are a substantial proportion of GM youth, a marginalized and underserved population. We found that autistic GM adolescents have even higher rates of suicidality than non-autistic GM youth. Self-reported autism diagnosis, but not autism traits, was associated with suicide ideation, attempt, and attempt requiring medical care. The AQ-10 may not measure traits related to suicidality, or the way autistic GM youth are treated (e.g., peer rejection, social isolation) may be more consequential for suicidality than autistic traits. Further investigation is needed on mechanisms underlying increased likelihood of suicidality among autistic GM youth and how to prevent it.

5.3 AUTISTIC SUICIDALITY THROUGH THE LENS OF THEORY: DO HYPOTHESES FROM THE INTERPERSONAL THEORY OF SUICIDE APPLY?

Rachel Moseley*[1], Nicola Gregory[1], Paula Smith[2], Carrie Allison[2], Sarah Cassidy[3], Simon Baron-Cohen[2]

[1]Bournemouth University, [2]University of Cambridge, [3]University of Nottingham

Individual Abstract: Autistic people are at markedly higher risk of suicide, but this risk is still poorly understood. A number of individual characteristics which affect suicide risk have been identified, such as the presence of non-suicidal self-injury (NSSI) and co-occurring ADHD. However, these empirical observations have often been disconnected from theoretical frameworks that could explain how these features increase vulnerability to suicide.

We aimed to test hypotheses from the interpersonal theory of suicide in a British sample of autistic people. In addition to exploring the relevance of thwarted belongingness, perceived burdensomeness, and acquired capability for suicide over and above contributions of state psychopathology, we explored these constructs as the mechanisms through which certain features might incur additional suicide risk. Focusing firstly on acquired capability, we hypothesised that NSSI would be associated with suicidality via this construct. Similarly, as the hyperactive/impulsive features of ADHD are associated with increased risk of dangerous experiences, we predicted these features might be associated with acquired capability through the mediator of painful and provocative events (which, according to theory, are one means of acquiring suicide capability). In relation to thwarted belongingness and perceived burdensomeness, we hypothesised that ADHD features might also incur extra risk of suicidality via these mediators, since autistic people with co-occurring ADHD often face greater isolation and poorer outcomes.

In this UK-based study, autistic adults (n = 314) completed an online survey including measures of thwarted belongingness, perceived burdensomeness, and acquired capability. We used linear regression to disentangle contributions of these constructs from those of depression and anxiety in predicting past-year and lifetime suicidality. We used mediation analyses to examine pathways between NSSI and suicidality, and ADHD features and suicidality.

We found that perceived burdensomeness, but not thwarted belongingness, contributed unique variance to past-year suicide ideation when controlling for depression and anxiety. Perceived burdensomeness also explained unique variance in lifetime suicide attempts; along with the reduced fear of death aspect of acquired capability, both factors significantly differentiated those who had attempted suicide in the past year.

We also found that acquired capability did indeed mediate the relationship between NSSI and lifetime suicide attempts, but NSSI also directly predicted more numerous lifetime suicide attempts in of itself. Individuals with hyperactive and impulsive ADHD features were more likely to experience painful and/or traumatic life events, and through this more likely to acquire capability for suicide. While these two mediators explained a sequential indirect relationship between hyperactive/impulsive features and lifetime suicidality, hyperactive/impulsive features were also associated with suicidality via painful and provocative events alone, irrespective of acquired capability. General features of ADHD were also associated with suicide ideation and attempts via greater perceived burdensomeness.

In conclusion, while perceived burdensomeness and acquired capability explain some of the variance in autistic suicidality, the trajectory of suicide ideation to attempts in autistic people

appears to differ from that stated in the interpersonal theory of suicide. Using time-sensitive designs capable of identifying directional relationships, future research should consider wider theoretical perspectives on suicidality and how these might be moderated by the autistic profile.

5.4 THE IMPACT OF TWO APPROACHES TO THE SAFETY PLANNING INTERVENTION TAILORED FOR AUTISTIC YOUTH ON CLINICIAN ATTITUDES, PERSPECTIVES, AND KNOWLEDGE

Shari Jager-Hyman*[1], Julia Heinly[2], Daylin Delgado[2], Lisa Morgan[3], Samantha Crabbe[1], Brenna Maddox[2]

[1]University of Pennsylvania, [2]University of North Carolina, Chapel Hill, [3]Lisa Morgan Consulting

Individual Abstract: Suicide risk is heightened among autistic individuals, leading the autistic community to identify suicide prevention as a top priority. Recent national statistics indicate an increase in suicide-related thoughts, behaviors, and deaths among young people. Taken together, these findings point to the need for scalable, effective suicide-safe care for youth, particularly those on the autism spectrum. Important steps towards this goal include tailoring existing evidence-based treatments, such as the gold-standard Safety Planning Intervention (SPI), to better fit the needs and learning styles of autistic youth, as well as optimizing implementation of these tailored approaches to increase their impact and reach.

To date, the strongest evidence of SPI's effectiveness is drawn from studies in which safety planning was followed by two or more structured follow-up contacts. In routine clinical practice, however, SPI implementation varies and is often limited to a single encounter without follow-up. Little is known about the comparative impact of these two SPI approaches in general, and with autistic individuals, in particular. In partnership with autistic individuals, their family members, and clinician stakeholders, we adapted both approaches to SPI (with and without follow up) for autistic youth, and are conducting a multi-site, cluster-randomized trial comparing their relative impact on clinical and implementation outcomes. The current presentation will focus on clinician-level factors that commonly influence intervention implementation, including clinician attitudes, self-efficacy, knowledge, acceptability, and feasibility in a sample of clinicians randomized to training in either SPI-A or SPI-A+.

Our sample comprises approximately 150 clinicians from neurodevelopmental diagnostic clinics, primary care clinics, and medical specialty clinics in four geographically and demographically diverse U.S. healthcare systems. Each clinician was randomly assigned to attend a four-hour training in either SPI-A or SPI-A+ developed and delivered in partnership with autistic individuals, including those with lived experience of suicidal thoughts. Clinicians completed pre- and post-training self-report measures of attitudes, self-efficacy, and knowledge. We examined changes in these constructs from pre- to post training, as well as differences across conditions. After the training, clinicians also completed the Acceptability of Intervention Measure (AIM) and the Feasibility of Intervention Measure (FIM) focused on their assigned intervention. We compared AIM and FIM ratings across conditions.

Preliminary results based on a sample of 97 clinicians (86 female, 11 male) indicate significant changes in self-reported attitudes, $t(96) = 6.76$, $p < .001$, self-efficacy, $t(96) = 7.33$, $p < .001$, and knowledge, $t(96) = 7.71$, $p < .001$, from pre- to post-training, regardless of intervention

condition. Overall, acceptability (M = 4.21, SD = .62) and feasibility ratings (M = 4.15, SD = .59) were strong and did not differ significantly across conditions (acceptability: $t(96) = .15$, $p < .001$; feasibility: $t(96) = .70$, $p < .001$).

Collectively, results suggest that both training in both SPI-A and SPI-A+ was associated with changes in key clinician-level factors that impact implementation. In addition, despite the added time required for the follow-up component of SPI-A+, clinicians' attitudes and perceptions of feasibility and acceptability did not differ across conditions. These findings have promising implications for the scalability of these interventions. We will repeat these measures in later trial years to examine whether findings hold steady over time and across conditions.

5.5 THE EXPERIENCES OF AUTISTIC AUSTRALIANS SEEKING SUPPORT FOR MENTAL HEALTH AND SUICIDALITY

Darren Hedley*[1], Jodie Wilson[2], Susan M. Hayward[2], David B. Nicholas[3], Mark A. Stokes[4]

[1]Olga Tennison Autism Research Centre, School of Psychology and Public Health, La Trobe University, [2]La Trobe University, [3]University of Calgary, [4]Deakin University

Individual Abstract: Autistic adults experience high rates of co-occurring mental illness, including major depressive disorder, anxiety disorders, self-harm and suicidal behavior, with risk of death by suicide from three-to seven times that of the general population. Effective support for mental health is a research priority for the autistic population. We interviewed autistic adults living in Australia who had all experienced significant mental health challenges associated with suicide, about their experiences seeking support for their mental health. We aimed to better understand participants' experiences seeking and accessing support for mental health, their supports and coping strategies, quality of care, and accessibility to services. The study was approved by the university ethics committee (#HEC20235). Our research methodology was based on an integrated co-design approach. Participants were 33 (16 women, 14 men, 3 nonbinary) autistic adults aged 21–68 years (Mage=41.72, SD=11.49 years) with a history of mental ill-health or suicidality. We conducted phenomenologically informed virtual one-to-one semi-structured interviews (22–67 mins). We analyzed interview data using applied thematic analysis. Twenty-five participants reported a history of suicide plan or attempt. Thematic analysis revealed three main themes: Barriers to accessing services (financial barriers, finding appropriate services, gate-keeping preventing access); Difficulty in finding services that were understanding of autism (e.g., assumed incompetence in activities of daily life); and Difficulties finding a "good fit" with clinician/s and therapies (e.g., a perceived high level of clinician knowledge of autism but a low level of understanding of the impact of autism on communication and on the effectiveness of therapies; symptomology-based "one-size-fits-all" approach). Our findings demonstrate an urgent need for improvement in both access to mental health services and service provision for autistic adults. Specific recommendations based on the insights gained from exploring the lived experience of autistic people are provided.

Monday, October 16, 2023

CONCURRENT SYMPOSIUM SESSIONS

8:30 a.m. - 10:00 a.m.

6. EVALUATION OF A LARGE SCALE IMPLEMENTATION OF ZERO SUICIDE ACROSS HEALTH SYSTEMS IN THE UNITED STATES

Chair: Brian Ahmedani, Henry Ford Health System

Overall Abstract Details: Background: Suicide is a global public health concern with more than 700,000 people dying by suicide each year and rising suicide rates in many parts of the world. Over the past two decades, health systems have been identified as a priority environment for implementing suicide prevention practices. Many new evidence-based screening, assessment, brief intervention, and treatment approaches have been developed. These approaches have been packaged together to create the Zero Suicide Model, a suicide prevention clinical care pathway for use in health systems. The Zero Suicide Model has been implemented in more than 20 countries worldwide and hundreds of health systems across the United States. Henry Ford Health, the birthplace of the model, demonstrated a near 80% reduction in their suicide death rate within mental health care sustained for over 10 years. However, outside of the work at Henry Ford very little data are available on how health systems make decisions about implementation, which Zero Suicide model approaches health systems choose to implement, whether those approaches are implemented as intended, and whether those various care pathways impact suicide attempt outcomes.

The Symposium: This symposium highlights findings from a NIMH-funded project evaluating implementation of the Zero Suicide Model across 6 large health systems in the United States affiliated with the NIMH-funded Mental Health Research Network. Collectively, these systems serve more than 10 million patients per year. The project examines both process measures and suicide attempt outcomes associated with implementation through multiple studies using mixed methods. The symposium highlights findings from each of the major studies embedded within the project.

Presentations: The first presentation provides an in-depth description of health system decisions about the selection and implementation of various ZS Model approaches as well as a specific timeline for implementation. It then uses an interrupted time series design to provide data on process measures for screening, assessment, and follow-up care during baseline and after implementation. The second presentation uses data from provider chart notes and electronic health records to examine implementation and use of safety plans as a brief intervention within suicide prevention care pathways. The third presentation uses an interrupted time series design to examine regulations on opioid prescribing as a population-level means reduction approach for suicide prevention. The fourth presentation highlights data from in-depth stakeholder and patient interviews to examine patient perspectives on receipt of various suicide prevention approaches in various care settings. The final presentation provides data on suicide attempt outcomes associated with implementation of the ZS model within and across systems.

Conclusions: Overall, this symposium provides comprehensive information about how health systems have implemented the Zero Suicide Model and outcomes associated with implementation. These data provide support for health systems around the world as they continue to implement this approach in their local regions.

6.1 MEASURING IMPLEMENTATION OF PRACTICES SUPPORTING ZERO SUICIDE ACROSS SIX HEALTHCARE SYSTEMS

Julie Richards*[1], Christine Stewart[2], Jennifer Boggs[3]

[1]Kaiser Permanente Washington Health Research Institute, [2]Kaiser Permanente Washington, [3]Kaiser Permanente Colorado Institute for Health Research

Individual Abstract: Introduction: Suicide rates have continued to rise across the United States for the past two decades, thus galvanizing a need for increased prevention and intervention efforts. Healthcare systems in the U.S. have a key role to play in suicide prevention, because many individuals see a healthcare provider prior to death by suicide. The Zero Suicide [ZS] model defines four essential clinical functions of high-quality care for patients at risk of suicide: identification of high-risk patients; engagement and care management; effective treatment; and supportive care transitions. This presentation will describe how six U.S. healthcare systems implemented clinical practices supporting these four key functions 2010-2019.
Methods: Six large healthcare systems in California, Colorado, Michigan, Oregon, and Washington participated in the ZS implementation evaluation. Embedded health system researchers within each system collaborated with care delivery stakeholders to document the clinical practices systems had implemented to support the key functions of suicide care. A cross-system learning collaborative supported development of standard ZS metrics using electronic health record (EHR) data. Metrics included rates of identification of high-risk patients age 13 years and older via screening and assessment practices, engagement of high-risk patients in risk mitigation via safety planning and lethal means assessment, treatment after identification of risk via patient-reported suicidal ideation, and transition support following emergency care encounters for self-harm.

Results: Care delivery stakeholders reported a broad range of clinical practices supporting key functions of the ZS model. EHR documented use of common screening and assessment tools, specifically the nine-item Patient Health Questionnaire (PHQ-9) and Columbia Suicide Severity Rating Scale (C-SSRS), facilitated measurement of suicide-risk identification across systems. Similarly, use of standard safety planning templates in the EHR facilitated measurement of engagement in suicide risk mitigation. Conversely, it was not possible to consistently use EHR-data to differentiate what types of mental health treatments (e.g., therapy, medications) providers were using to support at-risk patients, and transition practices (e.g. caring messages, care coordination) were variable and inconsistently documented across systems.

Across healthcare systems in the final year of the evaluation period (2019), the visit-based screening rate was 73% in mental health specialty and 10% in primary care. Among patients reporting frequent suicidal ideation (PHQ-9 question 9 score>1), risk assessment rates were 59% and lethal means assessment rates were 80%. Rates of healthcare encounters following risk identification were 37% and 66% respectively in the 7- and 30-days following report of frequent suicidal ideation, and rates of healthcare encounters after emergency visits for self-harm was 60% and 71% respectively in the following 7- and 30-days.

Conclusions: Collaboration with care delivery partners and use of common EHR-based tools supporting suicide risk identification and engagement facilitated measurement of suicide risk screening, assessment, and risk mitigation practices over time across healthcare systems. ZS metric development supported large-scale evaluation of the effectiveness of clinical practices

designed to support suicide prevention, as well as continue to support care delivery improvements for patients at risk of suicide.

6.2 MEASUREMENT TOOLS TO IDENITFY SAFETY PLANNING PRACTICES RECORDED IN ELECTRONIC HEALTH RECORDS

Scott Stumbo*[1], Jennifer Boggs[2], Julie Richards[3], Brian Ahmedani[4]

[1]Kaiser Permanente Northwest, Center for Health Research, [2]Kaiser Permanente Colorado Institute for Health Research, [3]Kaiser Permanente Washington Health Research Institute, [4]Henry Ford Health System

Individual Abstract: Introduction: This presentation will describe development of measurement tools for suicide-related safety planning practices recorded in the electronic health records (EHR) using a variety of methods including chart review, natural language processing (NLP) of clinical notes, and extraction of structured EHR templates. The study was conducted in six health systems in the United States. The application of tools to measure uptake of safety plans before and after Zero Suicide implementation will be reported. We hypothesized that when more structured templates and processes were promoted as part of Zero Suicide implementation, safety planning practices would be more systematically documented.

Methods: Two safety planning practices were chosen based on a chart review illustrating they occurred with enough frequency and consistency in the pre-ZS period (2010-2016) to develop an NLP method: lethal means counseling (~50% of visits) and providing professional contacts (~75% of visits). Other safety planning practices (e.g., warning signs, coping strategies, distractions, social contacts) occurred too infrequently (75% positive predictive value for each practice. The NLP program was distributed to all six health systems to measure practices during the entire implementation period from 1/1/2010 to 9/30/2021. During the ZS implementation, a Stanley Brown Safety Planning (SBSP) template was released to all health system EHRs that was easily extractable with programming code. There was variation in leadership support, training, and implementation strategies for each health system accompanying release of the SBSP template. We report the rate for lethal means and professional contacts in clinical notes using NLP and for the SBSP template separately for all health systems among patients with a Columbia Suicide Severity Rating Scale (CSSRS) score >=4 at a mental health visit.

Results: Accuracy of NLP to identify lethal means assessment and professional contacts exceeded 80% for sensitivity, specificity, and positive predictive value. When applied across all six health systems, NLP showed consistent delivery of lethal means counseling and professional contacts in the clinical notes to patients (variation across systems and over time) before and after ZS implementation. Evidence of uptake of the SBSP template was obvious in four health systems that illustrated a sharp increase in the uptake from 0 to >50% within 2 years. Two health systems had no uptake of the SBSP template.

Conclusions: NLP approaches can help identify safety planning practices in clinical notes with a high degree of accuracy. NLP tools show that health care systems typically documented lethal means counseling and professional contacts in clinical notes for 50-75% of patients with suicide risk regardless of ZS implementation, but other safety planning practices were rare. Implementation of the SBSP template (alongside CSSRS) increased delivery of all safety planning practices in four of the six regions where leadership and training efforts supported implementation.

6.3 IMPACT OF THE CENTERS FOR DISEASE CONTROL GUIDELINE TO REDUCE OPIOID PRESCRIBING ON RATES OF OPIOID-RELATED SELF-HARM IN SIX HEALTH SYSTEMS

Robert Penfold*[1], Christine Stewart[1], Julie Richards[1], Gregory Simon[1], Jennifer Boggs[2], Bobbi Jo Yarborough[3], Karen Coleman[4], Brian Ahmedani[5]

[1]Kaiser Permanente Washington Health Research Institute, [2]Kaiser Permanente Colorado Institute for Health Research, [3]Kaiser Permanente Northwest Center for Health Research, [4]Kaiser Permanente Southern California, [5]Henry Ford Health System

Individual Abstract: Background:The Centers for Disease Control (CDC) published an opioid prescribing guideline in March 2016 designed to reduce rates of opioid prescribing in the United States. These strategies reduced rates of opioid prescribing and access to medications that could be used for intentional self-harm. However, these urgently implemented approaches sometimes led to rapid opioid tapering or immediate opioid discontinuation. Changes in prescribing opioids could increase suicide attempt risk when pain is poorly managed. The purpose of this study was to determine whether changes in opioid prescribing practices were associated with changes in population-level suicide attempt rates.

Methods:The study included data from 5 large, geographically and demographically diverse health systems serving more than 10 million patients per year. All participating systems are part of the Mental Health Research Network and use a common data model for capturing diagnosis codes and cause of death. We defined two patient populations: (1) those with non-cancer pain and an opioid prescription in each calendar quarter and (2) those with non-cancer pain and no opioid prescription in each quarter between January 2012 and December 2018. An interrupted time series design was employed and segmented regression with an autoregressive model structure was used to measures changes in quarterly suicide attempt rates in the 17 quarters prior and 11 quarters following Q2 2016 when the CDC published its opioid prescribing guideline. Opioid-related self-harm outcomes were defined separately within 90, 180 and 365 days following the first healthcare visit date in each calendar quarter and used a CDC definition which was robust to the changes in ICD coding in Q4 2015.

Results:Opioid-related self-harm rates across the 6 health systems decreased by 45.8% during the study period. No change in suicide attempt rates was associated with the CDC guideline for any of the 3 measurement periods pre- and post-2016 Q2 in either study population. However, among people with non-cancer pain and no opioid prescription, a short-term increase in suicide attempt rates was observed in the year prior to the CDC guideline publication.

Conclusion:Efforts to decrease opioid prescribing in the United States were not associated with short-term or long-term decreases in opioid-related self-harm. The results do not appear to be consistent with a "means restriction" hypothesis whereby opioid-related self-harm would decrease with the promulgation of the CDC guideline and associated reductions in access/utilization of opioids. Nor do the results suggest that rapid tapering was associated with increases in opioid-related self-harm.

6.4 SUICIDE-RELATED CARE AMONG PATIENTS WHO HAVE EXPERIENCED AN OPIOID-INVOLVED OVERDOSE

Bobbi Jo Yarborough*[1], Scott Stumbo[1], Mary Jean Coleman[2], Deborah Ling Grant[3], Jessica Hulsey Nickel[4], Brian Ahmedani[5], Cambria Bruschke[6], Clayton Carson[4], Rachel Cooper[7], Allison Firemark[1], Douglas Hulst[8], Stefan Massimino[1], Lisa Miller Matero[5], Jon Swanson[9], Marcia Lee Taylor[10], Joslyn Westphal[5], Karen Coleman[3]

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Individual Abstract: Background: Although suicide risks associated with opioid use are well-documented, how to tailor suicide prevention for individuals prescribed opioids or with opioid use disorder (OUD) or after being treated for an opioid-involved overdose is not as clear.

Methods: Semi-structured interviews were conducted with patients and clinicians from multiple health systems engaged in a larger Zero Suicide evaluation. Eligible patients were 18-70 years old and received care to treat an opioid-involved overdose in the prior 1-2 years. Clinicians cared for people with mental health, substance use, or chronic pain conditions. All interviews were 30-60 minutes, audio-recorded, transcribed and thematically analyzed. A community advisory board contributed to the development of all procedures, and interpretation and summary of the findings.

Results: Among sixty-one patients interviewed; most were female (57%), White (63%) and non-Hispanic (75%). Fifty-six percent were prescribed opioids, 46% had diagnosed OUD, and 41% experienced an intentional opioid-involved overdose. Findings included: 1) when prescribed an opioid or treated for OUD, suicide risks associated with opioid use were typically not discussed; 2) 35% of those with an intentional opioid-involved overdose and over 80% with an unintentional overdose reported little attention to suicidal ideation in the emergency department at the time of the overdose; and 3) suicide-related follow-up care was uncommon among those with unintentional overdoses despite suicidal ideation being reported by >20% of patients we interviewed. Twenty-one clinicians were interviewed. Findings included: 1) when prescribing opioids, physicians were unlikely to highlight suicide risks; 2) although all emergency departments intended to conduct suicide risk screening, clinicians in this setting did not have the resources for universal screening; and 3) follow-up with patients after overdoses and any suicide-related screening or counseling was not routinely conducted by prescribers or those who treat OUD.

Conclusion: There are several opportunities to tailor the suicide prevention care delivered to patients who are treated for opioid-involved overdoses within health systems.

6.5 IMPACT OF ZERO SUICIDE IMPLEMENTATION ON SUICIDE ATTEMPT OUTCOMES IN MENTAL HEALTH CARE SETTINGS

Brian Ahmedani*[1]

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Individual Abstract: Background: Suicide prevention is a major public health priority worldwide with more than 700,000 people dying by suicide annually. The United States (US) National Strategy on Suicide Prevention highlights healthcare as a promising environment where suicide prevention efforts may achieve meaningful reductions in suicide rates. Over 90% of individuals make healthcare visits before they attempt suicide, which offers opportunities for prevention. However, evidence is needed to support clinical care pathways for suicide prevention. Over the last two decades, evidence has been generated to support effective screening, brief intervention, and treatment approaches. Health systems in more than 20 countries and throughout the US have already begun implementing the Zero Suicide (ZS) Model – a clinical care pathway packaging these individual evidence-based approaches. Data from the first implementation of this model at Henry Ford Health demonstrated a near 80% reduction in suicide deaths. No other data have been publicly generated on suicide attempt outcomes associated with ZS Model implementation.
Methods: This NIH-funded study evaluated implementation of the ZS model across 6 Mental Health Research Network affiliated US health systems serving 10 million patients per year. Each system made decisions about their local care pathways, including the selection and implementation of the specific approaches to be used. The study leverages engagement between system stakeholders and embedded researchers to develop real-world metrics to measure the implementation approaches within and across sites. A hybrid stepped-wedge interrupted time series design was used to examine suicide attempt outcomes from 2010-2019. Two systems served as control sites – one implemented before the observation period; a second did not implement until the end of the period. The four intervention sites implemented at various time points. Suicide attempts were measured via ICD diagnosis codes for intentional self-harm documented electronic health records. Quarterly suicide attempt measures were created for individuals with a suicide attempt within 90 days following a mental health visit.

Results: A total of 25 quarterly observation points were assessed at each health system. Mental health care settings at intervention sites demonstrated a statistically significant ($p < 0.05$) reduction in population-level suicide attempts after implementation of the ZS model. Control sites maintained stable suicide attempt rates. The control site that implemented before the observation period demonstrated the lowest suicide attempt rate throughout the period. These rates were observed during a period of increasing suicide rates in the US.

Conclusions: The ZS model implemented within mental health care settings was associated with a reduction in suicide attempt rates despite increasing rates in the general public. Additional data are needed to examine the effect of the intervention implemented in other care settings. Nonetheless, these are the first multi-site data supporting implementation of the ZS model for suicide prevention in mental health care settings.

Discussant: Gregory Simon, Kaiser Permanente Washington Health Research Institute

7. EXAMINING NOVEL PATHWAYS OF PARENTAL INFLUENCES THAT PRECEDE AND FOLLOW YOUTH SUICIDAL THOUGHTS AND BEHAVIORS

Chair: Ana Ortin-Peralta, Ferkauf Graduate School of Psychology, Yeshiva University

Overall Abstract Details: During childhood and adolescents, parents exert the greatest influences on children’s suicidal behaviors. These influences can increase suicide risk and hamper help-seeking behaviors once the suicidal behavior has emerged. This symposium comprises five presentations exploring novel pathways underlying parental influences on children's suicide risk. Having a parent who has attempted suicide or died by suicide increases

offspring risk of attempting suicide and doing so at an early age (Kuramoto et al., 2013; Brent et al., 2015). The pathways underlying this transmission remain mostly unexplored. To gain a deeper understanding of this transmission, Dr. Ana Ortin-Peralta will examine the impact of the timing of a parental suicide attempt on well-known suicide risk factors in childhood and adolescence, including offspring internalizing, externalizing, and ADHD problems, in a Finnish birth cohort. She will also present on how offspring mental health problems in childhood mediate the association between parental suicide attempts and offspring mental health problems in adolescence. The addition of non-psychiatric pathways in the familial transmission of suicide risk is especially relevant for racial and ethnic minority groups (Joe et al., 2009; Enns et al., 2006). Using the data from the Boricua Youth Study, a longitudinal study of Puerto Rican youth living in South Bronx and Puerto Rico, Dr. Lillian Polanco-Roman will present a series of mediation models testing psychiatric and non-psychiatric pathways involved in this transmission. Specifically, how offspring internalizing and externalizing problems, and adverse childhood experiences in childhood mediate the association between parental suicide attempts or suicide and offspring suicidal ideation and suicide attempts in young adulthood. Once youth are thinking about suicide or have attempted suicide, disclosure is key to receiving care. Unfortunately, a high proportion of adolescents are reluctant to disclose, and parents are mostly unaware of their children's suicide ideation and attempts (Hallford et al., 2022). Little research has focused on the factors that hamper or facilitate the disclosure and the parental reactions to this event. Dr. Sarah Sullivan will present a model that links adolescent disclosure to the Interpersonal Theory of Suicide. The authors hypothesize that when adolescents perceive that their disclosure may lead to increased feelings of perceived burdensomeness and thwarted belongingness, they may be more reluctant to disclose. Using data from a clinical sample of adolescents with suicide ideation or attempts, Dr. Sullivan will compare perceived burdensomeness and thwarted belongingness between adolescents who disclosed and did not disclose and the effects of the disclosure on future suicidal behavior. Dr. Amy Brausch will report on the recipients of the disclosure of adolescents admitted to a crisis stabilization unit with suicidal ideation, suicide attempts, and non-suicidal self-injury. She will discuss different factors related to the disclosure to different recipients (e.g., parents, peers, etc.), including self-esteem, reasons for living, and parental support. Finally, Dr. Alex Bettis will present on parental reactions and responses after the discovery/disclosure and their sense of ability to manage the situation and provide support to their children. Our discussant, Dr. Arielle Sheftall, will synthesize findings, discuss future directions, and facilitate the Q and A. Together, these presentations shed light on unexplored areas that are key to advancing in the identification of children who are thinking about suicide and promoting help seeking behaviors.

7.1 TIMING OF A PARENTAL SUICIDE ATTEMPT AND OFFSPRING MENTAL HEALTH PROBLEMS IN CHILDHOOD AND ADOLESCENCE IN A FINNISH BIRTH COHORT STUDY

Ana Ortin-Peralta*[1], Martta Kerkelä[2], Juha Veijola[2], Mika Gissler[3], Andre Sourander[4], Cristiane S. Duarte[5]

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Individual Abstract: Background: The association between having a parent who has ever attempted suicide and suicide attempts (SAs) in the offspring has been well established.

However, the impact of parental SAs on offspring internalizing, externalizing, and attention/hyperactivity problems –well document precursors of SAs in youth- remains unexplored. This study examined the prospective association between having a parent who first attempted suicide at different times during their and their children's lives and offspring internalizing, externalizing, and attention/hyperactivity problems in childhood and adolescence. A second aim was to test how offspring mental health problems in childhood following a parental SA lead to the development of mental health problems in adolescence.
Methods: The sample was comprised of a subsample of 6,381 (48.4% female) cohort members from the Northern Finland Birth Cohort 1986 Study. Only members with complete data on the offspring mental health problems in childhood and adolescence were included (67.6% of total sample). Offspring mental health problems were assessed via teachers' report on the Rutter B2 scale during the childhood assessment (child's age of 8) and the children's report on the Youth Self-Report (YSR) scale (child's age of 15/16). Information about the first parental SA was extracted using ICD codes from hospital discharge records. We considered three periods for the parental SAs: lifetime (if a parent ever attempted suicide); before the childhood assessment (if a parent attempted suicide before the child was 8 years old), and between assessments (if a parent first attempted when the child was between the ages of 8–16). To run comparable analyses with the Rutter and YSR subscales, we analyzed the subscales as count data. We used negative binomial regressions adjusting for demographics and parental mental psychiatric diagnoses.

Results: In the multivariate models, Lifetime parental SAs (N = 95) were associated with offspring internalizing [B (95% CI) = 0.17 (0.03-0.32)], externalizing [B (95% CI) = 0.20 (0.08-0.33)], and attention/hyperactivity problems [B (95% CI) = 0.16 (0.05-0.27)] in adolescence. Parental SAs before the childhood assessment (N = 55) were associated with offspring behavioral problems in childhood [B (95% CI) = 0.64 (0.08-1.28)], but not with internalizing and attention/hyperactivity problems in childhood or offspring mental health problems in adolescence. Parental SAs that first occurred between assessments (N = 40) were associated with all offspring mental health problems in adolescence. In the mediation models, parental SAs before the childhood assessment (N = 55) had a significant indirect effect on offspring externalizing [B (95% CI) = .03 (0.01-0.05)] and attention/hyperactivity problems [B (95% CI) = .02 (0.01-0.04)] in adolescence via offspring behavioral problems in childhood.

Conclusions: This study highlights the importance of assessing and monitoring mental health problems in offspring whose parents have been hospitalized for attempting suicide. The time when the parent attempted suicide also should be investigated, as it seems to be relevant for the development of mental health problems in the offspring. Behavioral problems in the offspring emerge as a potential pathway in the transmission of suicide risk. Among children with behavioral problems, clinicians should inquire about parental history of suicide attempts, as children with familial vulnerability to suicide may develop externalizing and attention/hyperactivity problems in adolescence.

7.2 CHILDHOOD ADVERSITIES AND PSYCHIATRIC DISORDERS AS PATHWAYS FROM PARENTAL SUICIDAL BEHAVIORS AND OFFSPRING SUICIDE IDEATION AND ATTEMPTS IN YOUNG ADULTHOOD

Lillian Polanco-Roman*[1], Ana Ortin Peralta[2], Kiara Alvarez[3], Thomas Corbeil[4], Melanie Wall[4], Madelyn Gould[5], Margarita Alegria[3], Hector Bird[5], Glorisa Canino[6], Cristiane S. Duarte[5]

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Individual Abstract: Parental suicidal behavior (suicidal death or attempt) is a well-documented risk factor for offspring suicidal ideation (SI) and attempts (SA), but pathways underlying this relation remain understudied. Childhood internalizing disorders, particularly depression, are known to follow parental suicidal behavior (SB), particularly suicide deaths. Parental SB is also associated with youth offspring risk for externalizing problems (i.e., delinquency,violent offending). Additionally, externalizing problems in childhood prospectively predict SB later in life. Adverse childhood experiences (ACEs) is also associated with SI/SA risk later in life, and may be another pathway of particular relevance to those highly exposed to adversities including Latinx youth, as risk for SI/SA may vary by context. The present study aimed to clarify whether parental SB may differentially confer risk for offspring SI/SA in young adulthood through two pathways: one postulated by a traditional developmental psychopathology model (offspring psychiatric disorders) and another path of frequent exposure to ACEs.

Data were analyzed from the Boricua Youth Study, a two-site, longitudinal, population-based, community cohort of Puerto Rican children (5-15 years, Wave 1-3) followed into young adulthood (15 - 29 years, Wave 4, N=2,004). Participants completed diagnostic interviews in English or Spanish. About 6% of young adults had a parent who had attempted or died by suicide, 14% reported lifetime SI/SA, 6% reported lifetime SA, and 8% reported lifetime SI only with no SA history. Parallel mediation analyses were used to test the direct and indirect effects of parental lifetime SB during offspring childhood (Wave 1) on offspring lifetime SI/SA outcomes in young adulthood (Wave 4) through offspring internalizing and externalizing disorders, and ACEs (Waves 1-3) in childhood, accounting for demographics and offspring lifetime SI/SA in childhood.

Findings show a significant direct effect between parental SB on offspring internalizing disorders, $B = 0.30$, $SE = 0.07$, $p < .001$, externalizing disorders, $B = 0.22$, $SE = 0.08$, $p < .001$, and ACEs, $B = 0.43$, $SE = 0.05$, $p < .001$, in childhood, but not on offspring lifetime SI/SA, $B = -0.09$, $SE = 0.10$, $p = .38$, lifetime SA, $B = -0.03$, $SE = 0.11$, $p = .77$, or lifetime SI only with no SA history, $B = -0.13$, $SE = 0.13$, $p = .33$, in young adulthood. We found a significant direct effect of offspring ACEs, $B = 0.14$, $SE = 0.06$, $p = .01$, though not childhood internalizing, $B = -0.05$, $SE = 0.08$, $p = .68$, or externalizing, $B = 0.15$, $SE = 0.08$, $p = .07$, disorders on offspring lifetime SI/SA in young adulthood. Lastly, there was an indirect effect from parental SB to offspring lifetime SI/SA in young adulthood via ACEs, $B = 0.06$, $p = .02$, but not childhood externalizing, $B = 0.03$, $p = .13$, or internalizing, $B = -0.01$, $p = .58$, disorders.

Findings support an ACEs pathway in the familial aggregation of suicide-related risk among Puerto Rican youth. Specifically, parental SB may lead to offspring SI/SA later in life via increased adversities in childhood. Externalizing disorders in childhood may increase the risk of SA later in life. In childhood, targeting externalizing problems and adversities, particularly among youth with parental SB, may reduce the risk for SI/SA in young adulthood. Among youth with parental SB, ACEs may be a more reliable indicator of suicide-related risk later in life than childhood psychiatric disorders (internalizing and externalizing) in a context of high adversities.

7.3 EXPLAINING THE RELATION BETWEEN SUICIDE-RELATED DISCLOSURE AND SUICIDE IDEATION: THE MEDIATING ROLES OF PERCEIVED BURDENSOMENESS AND THWARTED BELONGINGNESS

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Individual Abstract: Background: Suicide is the second leading cause of death for people aged 15-30 (CDC, 2020). A systematic review and meta-analysis of 98 studies found that more than 50% of the 834,952 participants did not disclose their suicide ideation (SI) to others, including both family and treatment providers (Hallford et al, 2022), suggesting that suicidal thoughts are predominantly unidentified. There is a paucity of research on suicide-related disclosure in adolescents, and almost no research examining the impact of suicide disclosure on future trajectory of SI. Furthermore, models such as the Interpersonal Theory of Suicide do not consider the role of suicide-related disclosure, despite the impact it may have on the two interpersonal constructs—thwarted belongingness (TB) and perceived burdensomeness (PB). Taken together, if perceived reaction of the suicide disclosure is positively linked to adolescent TB and PB, and TB and PB are positively linked to SI, then the effects of the perceived reaction to suicide-related disclosure on adolescent SI may be mediated by its effects on TB and PB. Therefore, it is important to conceptualize and design a model linking perceived reaction of the suicide disclosure and SI and to specifically test for adolescent TB and PB as a mediator. The present study investigated this hypothesis.

Methods: Adolescents (N = 94; 72 female at birth), ages 12-19 (M = 15.1), recruited primarily from a public hospital in NYC following SI or a suicide attempt (SA) completed a detailed Adolescent Suicide Ideation Interview (ASII; Miranda et al., 2021) about their most recent SI or SA, which included items about SI disclosure prior to presenting at emergency room (ED), disclosure recipient, and recipient's reaction. The Interpersonal Needs Questionnaire (to measure PB and TB) 2-4 weeks later and the Suicide Ideation Questionnaire at both baseline and 3-month follow up were also completed. The sample was racially and ethnically diverse, with 47% of the sample identifying as biracial, 43% identifying as Black, and 79% identifying as Latino/Hispanic.

Results: Of the included 94 participants, 38 did not disclose, 41 had a negative disclosure experience, and 15 had a positive disclosure experience. The most common SI disclosure recipient was a mother or same-sex friend/sibling. The least common recipients were fathers and romantic partners. Most youth disclosed because they wanted help or to be understood. Most youth disclosed in person and to only one recipient. Correlations indicated no association between reaction to disclosure (positive vs. negative) and either PB or TB or SI. Results of a linear regression indicated that only TB predicted SI at 3-month follow up, adjusting for baseline SI, whereas suicide-related disclosure did not predict SI. Thus, results did not support our mediation hypothesis.

Conclusion: This study is the first to our knowledge to examine the perceived reaction of suicide-related disclosure on future trajectory of SI. Perceived reaction to the suicide-related disclosure was not related to PB and TB, and only TB was related to SI at 3 months after adjusting for baseline SI (as measured by the SIQ). Future studies may look to apply this model in a lesser-risk population and with a larger sample. It is possible that the impact of perceived reaction to the disclosure was mitigated by the stressful experience of immediately presenting to the ED. There were limitations to the study, such as the lack of assessment of past disclosure history. The study had several strengths such as the high-risk, racially and ethnically diverse sample. Overall, this study highlights that other factors related to suicide-related disclosure - other than the perceived reaction - may impact future SI trajectory.

7.4 CHARACTERISTICS OF DISCLOSURE OF SUICIDAL AND NONSUICIDAL BEHAVIORS IN A CLINICAL SAMPLE OF ADOLESCENTS

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Individual Abstract: Introduction: Rates of adolescent suicide ideation, attempts, and nonsuicidal self-injury (NSSI) remain high. It is important to identify which youth may be struggling; however, identifying those youth is dependent on their willingness to disclose self-harm thoughts and behaviors. Limited existing research shows that adolescents are more likely to disclose more severe behavior, such as suicide attempts, compared to less severe behavior (Encrenaze et al., 2012). About 50% of adolescents tend to disclose nonsuicidal self-injury (Simone and Hamza, 2020) and suicide ideation (Eskin, 2003); disclosure to friends is more likely than to parents. A common barrier for disclosing self-harm to clinicians is fear that the provider would inform parents (Fox et al., 2022). This perceived barrier is unfortunate, since parent support is a protective factor for self-harm overall (Victor et al., 2019), and parental involvement in self-harm focused treatment is generally facilitative for adolescents (Sullivan et al., 2023). The current study examined rates of disclosure of NSSI, suicide ideation, and suicide attempts, as well as to whom these were disclosed, in a sample of adolescent inpatients. Adolescents who had and had not disclosed were compared on parent and peer support. Rates of disclosure were expected to be similar to previous studies, and adolescents who disclosed were expected to report more parent support than those who did not.

Methods and materials: Data were collected from 100 adolescent inpatients at a crisis stabilization unit aged 12-17 (mean age = 14.61, SD=1.5; 80% Caucasian, 67.5% female). Parental/Guardian consent for the research study was obtained during admission to the unit. Researchers administered a battery of self-report measures in an interview style, including the Self-Harm Behavior Questionnaire (SHBQ), and the Reasons for Living Inventory for Adolescents (RFL-A).

Results: More than half (69%) reported NSSI and 78% reported disclosing it. About half disclosed to parents, and the other half disclosed to others (family members, friends, therapists). Those with NSSI disclosure had significantly higher scores on self-esteem and future optimism compared to those with no disclosure, but no differences were found for disclosure to parents vs. others. Within the sample, 50% reported a past suicide attempt; among those, 60% reported that parents knew, 36% reported others knew, and only 2 did not disclose at all. There were no differences between adolescents who disclosed to parents vs. others. For suicide ideation, 77% reported history, and 83% of them disclosed it (22% parents, 61% others, 17% no one). Those

with disclosure to parents had significantly higher scores on parent support than those who disclosed to others or no one.

Conclusion: Disclosure of NSSI in this sample (78%) was higher than the average across previous studies. Rates of disclosure to parents vs. others were equivalent, whereas previous studies typically find higher rates of disclosure to people other than parents. Disclosure to anyone was related to greater self-esteem and future optimism, which could be an indicator that disclosure is linked to seeking and receiving help, and perceiving disclosure as safe. For suicide attempts, 96% reported disclosing it to someone, supporting previous research that more severe behavior is more likely to be disclosed. However, disclosure to parents vs. others showed no differences on parent support. Rates of suicide ideation disclosure were also higher (83%) than previous studies, potentially due to the overall clinical severity of the sample. However, adolescents disclosed ideation less often to parents, but disclosure to parents was associated with higher perceived parent support.

7.5 CHARACTERIZING PARENTS' REACTIONS TO LEARNING ABOUT THEIR CHILD'S SUICIDE AND SELF-HARM RISK

Alex Bettis*[1], Taylor Burke[2], Kathryn Fox[3]

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Individual Abstract: Background: Youth suicide is a major public health concern, with youth reporting alarmingly high rates of suicidal thoughts and behaviors (STB) worldwide. Youth disclosure of STB is essential to identifying youth who may be at risk for suicidal behavior and to facilitate linkage to appropriate treatment. Yet, little research has examined youth STB-related disclosures, particularly in the parent-child context. Data from a study conducted with youth who had received mental health treatment at some point in their lifetime found approximately 73% had ever disclosed suicidal ideation to their parent, while approximately 82.8% had ever disclosed suicidal behavior to their parent (Fox et al., 2021). While disclosure was fairly common, many youth in this study reported negative experiences when disclosing STB, particularly when telling their parents. Youth also identified barriers to disclosing STB to their parents, including fears of being hospitalized, worrying or upsetting their parents, and how their parents would react to their disclosure (Bettis et al., under review). Limited research has explored parents' experiences after learning that their child may be experiencing STB. In one qualitative study, parents reported feelings of low self-efficacy in managing their child's risk in the aftermath of learning about their child's suicidal behavior (Juel et al., 2023). In the current study, we sought to characterize how parents perceive their child's risk for STB and their reactions to learning about their child's STB risk.

Methods: We enrolled N=139 legal guardians/parents (85.7% cis women; 85.7% white; 82.1% non-Hispanic; 77.9% biological parent) who use a subscription-based mobile application to monitor their child's online and phone activity. Parents who received an alert through the application that their child may be at risk for suicide or self-harm were then invited to participate in a survey study assessing their experiences after receiving an alert. Survey questions assessed parents emotional experiences and behavioral responses to learning their child may be at risk for suicide, as well as their beliefs about their child's level of risk for suicide and self-harm.

Results: Approximately one third (n=43) parents reported the alert was their first time learning their child may be at risk for STB; 96% (n=42) of these parents reported they did not see any signs of STB risk prior to the alert. Parents felt somewhat confident in their ability to manage their child's mental health after the alert (M=2.91) and very confident in their ability to talk to their child about STBs (M=3.33). Parents reported feeling somewhat scared (M=1.73), surprised (M=1.15), and overwhelmed (M=1.40) after the alert. Parents most frequently endorsed reaching out to mental health providers for support, talking to their co-parent, and limiting child's time alone or on devices/online after the alert.

Conclusions: Results inform the need for resources to support parents in both assessing and responding to their child's risk for suicide and self-harm. Future research exploring both parent and child experiences concurrently after a suicide-related disclosure is also needed.

Discussant: Arielle Sheftall, University of Rochester Medical Center

8. INNOVATIVE APPROACHES FOR SUICIDE PREVENTION IN HIGH-RISK AGING ADULTS

Chair: Dimitris Kiosses, Weill Cornell Medical College

Overall Abstract Details: Prevention of suicide deserves a multifaceted approach, including identification of specific risk factors as well as personalized interventions that target those risk factors and suicidal ideation and behaviors. The need for such identification and interventions is notable for aging adults, as suicide rates in the United States are highest for women in mid-life (ages 45-64) and for men in older adulthood (age 75 and over). This symposium provides enhancement to our understanding what risk factors, including personality components, psychopathology, life events, cognitive functioning, and behaviors, significantly contribute to aging adult suicidality. In addition, we describe innovative interventions designed specifically to prevent suicide in the aging adult population.

Dr. Katalin Szanto presents findings on differential risk factors for people who first attempt suicide in older adulthood versus earlier in life. Her study identifies two distinct pathways for suicidal behavior in late life. While older adults with early-onset attempts display life-long vulnerabilities that are similar to young suicide attempters (e.g., family history, of suicidal behavior, emotion dysregulation), late-onset attempters display age-specific vulnerabilities, e.g., cognitive function that could hinder adaptation to age-related stressors.

Dr. Anna Szücs shares data on the personality trait of conscientiousness and how its role in suicide risk in aging adults is nuanced. Examining suicidal ideation, intent, and behavior, this study identified interconnections among suicidality, conscientiousness and health factors of depression, cognitive functioning, and life-threatening physical conditions. The findings describe conscientiousness being protective with regard to suicide in the face of physical comorbidities but unfortunately may enhance focus within suicidal ideation and intent.

Dr. Jyotishman Pathak discusses findings from a study of a multi-system set of electronic health records that investigated suicidality in relation to substance use disorders, particularly opioid use disorder. Among the results, patients with opioid use disorder were more likely than those with other substance use disorders to have suicide-related emergency department admissions and inpatient hospitalizations, although older age was associated with fewer emergency department admissions. That aging adults with opioid use disorder and suicidality in this study were less likely to use mental health services is an important target for future intervention.

Dr. Kim Van Orden describes the results of an innovative intervention that levers a well-known community-based volunteer organization into a randomized controlled trial to address the risk factors of loneliness and social isolation in older adults. She highlights the challenges of overcoming high levels of loneliness and nonadherence in interventions to secondarily reduce risk for suicide in this population, with suggestions of how to enhance adherence.

Dr. Victoria Wilkins explains the feasibility, acceptability, and results of the use of a novel app-based personalized intervention for suicide prevention in older adults who have been hospitalized for suicidality. Targeting emotion dysregulation as a way to reduce risk of suicide, the WellPATH-PREVENT study tablet app incorporates cognitive reappraisal in a personalized and tailored way. Results of this 12-week intervention provide a promising signal in helping older adults with suicidal symptoms.

8.1 DISTINCT PATHWAYS TO LATE-LIFE SUICIDE: CHILDHOOD ABUSE, CLINICAL AND COGNITIVE CHARACTERISTICS

Katalin Szanto*[1]

[1]University of Pittsburgh

Individual Abstract: Background: A variety of clinical and neurocognitive risk factors for suicidal behavior have been identified in adults, but little is known about the relevance or importance of possible associations with age. Moreover, suicidal behavior is heterogeneous and likely include multiple pathways. Parsing out the heterogeneity among suicide attempters could help to identify subgroups with similar risk profiles. However, most studies only consider heterogeneity related to attempt characteristics (violent/non_x0002_violent, impulsive/planned, high/low medical lethality). We propose that those who first attempt suicide later in life have different risk factors than those who first attempt suicide in adolescence or young adulthood. Thus, in a series of studies we examined whether different risk profiles are linked with the timing of the older suicide attempter's first suicide attempt. Methods: Sample: 224 older adults aged 50+ (M±SD = 62.5±7.4) recruited into three depressed groups: 1) suicide attempters (N = 84), 2) suicide ideators (N = 44), and 3) non-suicidal depressed controls (N = 58), plus a non_x0002_psychiatric healthy comparison group (N = 38). Childhood trauma was assessed with the Childhood Trauma Questionnaire. Results: Gaussian mixture modeling identified two subgroups of attempters: Early-onset attempters and Late-onset attempters, with the best division into subgroups that identified a cutoff age of 30 years old. Compared to all other groups, Early-onset attempters had earlier onset of depression, were more likely to have current and life-time PTSD, had a higher level of overall childhood trauma, and a higher likelihood of having at least one trauma or multiple traumas. Regarding types of childhood abuse, Early-onset attempters experienced more emotional abuse and neglect as well as physical neglect than Late-onset attempters. Early-onset attempters reported a greater number of lifetime suicide attempts compared to their late-onset counterparts. The second part of the talk will summarize our studies in an even larger group of depressed older adults that found increased exposure to suicide in family and/or friends in Early-onset but not in Late-onset suicide attempters compared to ideators and non-suicidal depressed older adults. We also found that early-onset attempters had poor lifetime decision making patterns and borderline and antisocial traits.

When personality was assessed in terms of the five-factor model, Early-onset attempters showed more maladaptive traits (neuroticism and introversion), while late-onset attempters had higher levels of orderliness, a subcomponent of conscientiousness. However, in late-onset

attempters cognitive deficits, particularly those associated with aging, played an important role. Conclusions: Age at first suicide attempt carries useful information for the clinical, cognitive, and broader biological heterogeneity of suicidal behavior. Our findings are consistent with at least two distinct pathways for suicidal behavior in late life. Older adults with early-onset attempts display life-long vulnerabilities that are similar to young suicide attempters (e.g., family hx, of suicidal behavior, emotion dysregulation), while Late-onset attempters display age-specific vulnerabilities such as worse cognitive function that could hinder adaptation to age-related stressors. Experiencing trauma in childhood can result in the development of early-onset psychopathology, such as early-onset depression and borderline personality disorder with impact to suicidal behavior throughout the lifetime. In contrast, late-onset depression in suicidal older adults may be related to neurocognitive symptoms of dementia.

8.2 PERSONALITY AND SUICIDE IN THE SECOND HALF OF LIFE: HOW CAN CONSCIENTIOUSNESS BOTH ENHANCE AND MITIGATE RISK?

Anna Szücs*[1], Hanga Galfalvy[2], Maria G. Alessi[3], Laura B. Kenneally[4], Jose M. Valderas[5], Andrea B. Maier[6], Katalin Szanto[7]

[1]National University of Singapore, [2]Columbia University, [3]University of North Carolina at Charlotte, [4]Virginia Consortium Program in Clinical Psychology, [5]National University of Singapore, [6]National University of Singapore, Singapore / Vrije Universiteit Amsterdam, [7]University of Pittsburgh

Individual Abstract: Background:Risk factors for suicide in mid- and late life, such as declining health, often lack specificity for effective prevention. Many middle-aged and older adults who experience depression, cognitive or physical decline do not contemplate or attempt suicide, even though these stressors are commonly associated with increased suicide risk. Trait conscientiousness has often been identified as protective with respect to health outcomes and has been linked to decreased morbidity and mortality in longitudinal studies. Yet, it has also been associated with increased risk of death following a suicide attempt in middle- and old age. This study investigates the direct association of trait conscientiousness and suicidal ideation/behavior, as well as its moderating effect on the relationship between physical, cognitive, and mental health and suicide risk.

Methods:We analyzed cross-sectional data from a sample of 313 depressed adults aged ≥40 years (mean=62.1) enrolled in the Longitudinal Research Program in Late-Life Suicide at the University of Pittsburgh. The total sample comprised 128 attempters (i.e., participants who had a lifetime history of suicidal behavior) and 185 non-attempters. We evaluated the direct effect of conscientiousness on the incidence of suicidal ideation (none vs any current ideation) and behavior (none vs any attempt during lifetime) using binomial logistic regression, as well as the direct effect of conscientiousness on the severity of ideation in the subsample with any ideation (n=217) and on the severity of suicidal intent at the most medically serious attempt in the subsample of attempters (n=128) using linear regression. We then tested whether conscientiousness moderated associations between the above outcomes and risk factors related to three different aspects of health: depression severity, cognitive functioning, and presence of life-threatening physical comorbidities. All models covaried for age and gender.

Results:Conscientiousness had no direct association with the likelihood of ideating or having attempted suicide but was positively associated with severity in the case of both ideation (estimate=1.47, 95%CI=0.25,2.68) and intent (estimate=0.96, 95%CI=0.04,1.88). On the other hand, conscientiousness mitigated the risk effect of life-threatening physical comorbidities on the likelihood of having suicidal ideation (interaction OR=0.50; 95%CI=0.26,0.96). All above findings survived controlling for depression severity. There were no significant interactions between conscientiousness and depression severity or cognitive functioning.

Conclusions:Our findings suggest that trait conscientiousness retains a protective role with respect to suicide risk in the face of certain stressors common during ageing, such as severe physical comorbidities. However, in middle-aged and older individuals who are experiencing a suicidal crisis, conscientiousness could exacerbate meticulous contemplation or more determined attempts. Clinicians should assess suicide risk in all depressed patients/clients, even in those who come across as particularly dependable or conscientious.

8.3 MENTAL HEALTH SERVICES UTILIZATION AMONG SUICIDAL PATIENTS: COMPARING THE IMPACT OF CO-OCCURRING OPIOID OR OTHER SUBSTANCE USE DISORDERS

Jyotishman Pathak*[1], Veer Vekaria[1], Braja Patra[1], Sean Murphy[1], Jonathan Avery[1], Mark Olfson[2]

[1]Cornell University, [2]Columbia University

Individual Abstract: Background: Prior literature establishes bidirectional associations between suicide and substance use disorders (SUDs), particularly opioid use disorder (OUD). However, the context of mental health services utilization remains under-investigated. This analysis examined patterns of mental health services utilization in patients with SUDs and suicidality, identified associated risk factors, and evaluated the impact of patient engagement on subsequent mental health outcomes.

Methods: Electronic health records (EHRs) derived from 7 health systems across New York City between 2010-2019 were analyzed. Suicidality was identified as any ICD-9/10 diagnosis of suicide attempt, suicidal ideation, or self-harm injury. SUDs were identified as any opioid, cannabis, cocaine, hallucinogen, inhalant, sedative/hypnotic/anxiolytic, amphetamine, or other substance abuse or dependence. Quasi-Poisson regression adjusted for age, gender, and chronic diseases was used to model associations between OUD exposure and the frequency of encounters and estimate the relative risk (RR) of significant covariates.

Results: A total of 6977 adults with suicidality and any comorbid SUD were selected, including 2203 (31.6%) with a diagnosis of OUD and 4774 (68.4%) without a diagnosis of OUD. Most patients were male (54.8%) and aged between 25-64 years (79.3%). Many (61.3%) had over 3 chronic diseases, including depression (80.8%), hypertension (60.6%), anemia (43.0%), and hyperlipidemia (41.9%). Compared to patients with other SUDs, those with OUD had higher odds of self-harm injury [OR: 1.26 (95% CI: 1.13-1.41)], depressive disorders [1.47 (1.29-1.67)], anxiety disorders [1.65 (1.48-1.84)], psychotic disorders [1.23 (1.11-1.37)], personality disorders [1.30 (1.16-1.48)], and post-traumatic stress disorder [1.37 (1.20-1.57)]. Patients with OUD were more likely to utilize all-cause outpatient (RR: 1.16), emergency department (ED) (RR: 1.43), and inpatient (RR: 1.60) services ($p < 0.001$). Among OUD patients, males were less likely to have outpatient visits (RR: 0.79) and inpatient hospitalizations (RR: 0.88), and

older age was protective against ED admissions (RR range: 0.62-0.71). Additionally, individuals with OUD were more likely than those with other SUDs to have SUD-related encounters, as well as suicide-related ED admissions and inpatient hospitalizations (p<0.0001). Those who had more mental health outpatient visits were less likely to have suicide-related ED admissions (RR: 0.85), however this association was weaker among younger or male patients with comorbid OUD.

Conclusion: Among suicidal adults with comorbid SUDs, those with a diagnosis of OUD were more likely to utilize mental health services and have psychiatric comorbidity. Males and older adults were less likely to utilize services. These findings provide a first look at utilization among this vulnerable population based on real-world EHRs, and may inform future interventions simultaneously aimed at suicide and substance abuse prevention.

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3. Watts, B. V., Gottlieb, D. J., Riblet, N. B., Gui, J., and Shiner, B. (2022). Association of medication treatment for opioid use disorder with suicide mortality. American Journal of Psychiatry, 179(4), 298–304. https://doi.org/10.1176/appi.ajp.2021.21070700

8.4 VOLUNTEERING TO REDUCE LONELINESS & SUICIDE RISK IN LATER LIFE

Kim Van Orden*[1], Ben Chapman[1], Yeates Conwell[1]

[1]University of Rochester School of Medicine

Individual Abstract: Social isolation and loneliness are associated with suicide ideation, attempts, and deaths in later life and represent a potent intervention target to reduce suicide risk directly (via suicide ideation/behavior) and indirectly (improving health, functioning). However, few evidence-based strategies to reduce social isolation and loneliness in later life are available. Volunteering is a promising strategy, as a large literature of observational studies documents associations between volunteering and better health and well-being. However, relatively few studies have used randomized controlled trials (RCTs) to examine benefits of volunteering, and none examined loneliness. The primary objective of the Helping Older People Engage (HOPE) study is to examine the social-emotional benefits of a social volunteering program for lonely older adults. Lonely older adults were randomly assigned to 12 months of either an AmeriCorps Seniors volunteering program or active control (self-guided life review) and followed for one year. This presentation will include descriptive results from baseline assessments on frequency of suicide ideation and behavior histories (Aim 1), findings on compliance to study interventions (Aim 2), and preliminary results on primary outcomes (Aim 3). Methods: 291 older adults who reported clinically-significant loneliness in the past month (UCLA 3-item Loneliness Scale score of 6 or greater) were randomized to volunteering or active control and followed for one year. Loneliness was assessed via the UCLA Loneliness Scale and quality of life with the WHOQOL-Bref (co-primary outcomes). The Columbia

Suicide Severity Rating Scale (interviewer-rated) was used to assess the presence (and severity) of suicide ideation and behavior over 1 year. Enrollment was completed in May 2022 and follow-up assessments will continue through May 2023, with completion of primary outcomes soon thereafter. Results: The average age was 69 years, and most subjects were female (76%). Aim 1: Fifteen percent reported suicide ideation in the past month and 8% reported a lifetime suicide attempt. Aim 2: high rates of non-compliance to study interventions were seen (in line with low utilization in community agencies): only half of subjects engaged in assigned interventions for the full year, with 56% for volunteering and 45% for active control. However, most subjects completed study assessments at 1-year follow-up and attrition from study assessments was not associated with baseline levels of key variables, allowing us to examine predictors of non-compliance with interventions. We found that greater loneliness (6.37, std 3.07 vs. 5.60, std 2.74, $p < .05$) at baseline were both associated with reduced likelihood of engaging in study interventions. Aim 3: We will be analyzing primary outcomes data in May, 2023 and will present these findings. Conclusions: Older adults who report loneliness are less likely to actively seek out volunteering, but could benefit from the social engagement inherent in community volunteering. Results suggest compliance with the intervention could be challenging. Thus, if results support efficacy of volunteering for reducing loneliness and suicide risk (upstream intervention), dissemination and scaling up efforts could involve connecting primary care patients who are lonely with AmeriCorps Seniors through aging services agencies and providing coaching and support for continued engagement.

8.5 AN EMOTION REGULATION APP-BASED INTERVENTION FOR SUICIDE PREVENTION FOR AGING ADULTS HOSPITALIZED FOR SUICIDALITY

Victoria Wilkins*[1], Dimitris Kiosses[1], Sara Czaja[1], Samprit Banerjee[2], David Putrino[3]

[1]Weill Cornell Medicine, [2]Weill Cornell Medical College, [3]Icahn School of Medicine, Mount Sinai

Individual Abstract: Introduction: Evidence has shown that psychotherapies may be effective in reducing suicide risk. However, patients often have difficulty using the techniques when they go through an emotional crisis that can lead to increased suicidal ideation or suicidal behavior. Our team developed WellPATH, a tablet application, to help improve emotion regulation during emotional crises and reduce suicide risk in aging adults after a suicide-related hospitalization.

Aim: Our presentation focuses on WellPATH-PREVENT, a novel, mobile, principally stand-alone psychosocial intervention designed to improve cognitive reappraisal ability (target) and reduce suicide risk (outcome) in middle-aged and older adults (50-90 years old) who have been discharged after a suicide-related psychiatric hospitalization (i.e., for suicidal ideation or suicide attempt).

Methods: Patients were recently hospitalized for suicidality and used WellPATH-PREVENT as part of the weekly emotion regulation intervention in a study of aging adults (mean age=60 years old) who were hospitalized for suicidality. WellPATH-PREVENT focuses on the training, coaching, and use of the WellPATH app, a tablet-app that incorporates triggers, negative emotions, and personalized easy-to-use cognitive reappraisal techniques. Research assistants conducted assessments at study entry (admission/during hospitalization), discharge, 6- and 12-weeks post-discharge.

Results: We present data to support: a) feasibility of WellPATH-PREVENT; b) acceptability of WellPATH-PREVENT; c) effectiveness in reducing negative emotions, improving cognitive reappraisal, and in reducing suicidal ideation over 12 weeks.

Conclusion: WellPATH-PREVENT is an innovative mobile, stand-alone psychosocial intervention that may help reduce negative emotions and suicidal ideation as well as improve emotion regulation in aging adults at high suicide risk.

9. SUICIDE IN UNDER-SERVED POPULATIONS

Chair: Paul Yip, The University of Hong Kong

Overall Session Description: This session examines suicidality amongst underserved and marginalized populations, for example, indigenous people, some religious groups, sexual minorities, and those in low social and economic status groups. It highlights the difficulties and barriers to providing suitable support. In order to improve the accessibility and availability of support, the panelists offer some insights and practical wisdom for improvement.

9.1 NOVEL METHODS IN SOCIAL DETERMINANTS OF HEALTH AND YOUTH SUICIDE PREVENTION

Yunyu Xiao*[1]

[1]Weill Cornell Medical College

Individual Abstract: Suicide is a major public health issue that disproportionately affects marginalized populations. In this talk, I will explore the epidemiological trends of health disparities and suicide, present models of Social Determinants of Health (SDoH) from the social sciences, and discuss why integrating the SDoH framework into marketing and biomedical research is essential for improving mental health equity. I will also introduce novel methods for identifying, studying, and addressing SDoH, and present results from interdisciplinary teamwork using electronic health records and large population-based studies to unlock the potential of SDoH to enhance mental health equity.

9.2 SYSTEMS-BASED APPROACHES TO SUICIDE PREVENTION

Helen Christensen*[1], Tanja Hirvonen[2]

[1]University of New South Wales, Sydney, [2]Flinders University, South Australia

Individual Abstract: The concept of underserved populations can be thought of in three ways: (1) populations that don't get enough care or attention, because they are remote, non-mainstream, stigmatised, or not prioritised; (2) populations where care is available, but that mainstream care is not culturally safe and appropriate (or even harmful), and the workforce is under resourced; or (3) both. The latter is the case for most First Nations Communities across the world.

In this paper, against the backdrop of new systems-based approaches to suicide prevention, we examine how population-based approaches operate in mainstream Australia, and how they work in Aboriginal and Torres Strait Islander communities. Lifespan is a stepped wedge

randomised controlled trial in 4 sites in Australia, and a good example of a mainstream approach, that has yielded positive outcomes. There are more than 260 Aboriginal and Torres Strait Islander nations within the Australian nation, with many communities doing what they can to live well, manage health and wellbeing and also address suicide. Communities that have self-determination are able to address what is needed in their location for the betterment of the community.

We will highlight: The fundamental understandings of both mainstream and indigenous perspectives regarding the causes of suicide (individual factors, trauma, colonialism), differences in the approach taken (scientific methodologies vs indigenous knowledges), knowing the targets of prevention (promoting health/wellbeing vs reducing rates), views about the nature of appropriate workforces/power and governance. A shared perspective across the approaches is the fundamental importance of social determinants of health, and the need for a whole of society involvement.

9.3 SUICIDE PREVENTION IN MUSLIM COUNTRIES

Murad Khan*[1]

[1]Brain and Mind Institute, Aga Khan University

Individual Abstract: Suicide is a serious global public health problem, with approximately +700,000 people killing themselves worldwide every year. Suicide occurs in every country of the world, cutting across all national, ethnic, religious, sectarian, linguistic and cultural boundaries, though there are significant variations in rates, gender, age and methods employed, between countries and even different regions of the same country. Suicide rates are relatively low in Islamic countries compared to non-Islamic countries. Both the Koran and Hadith condemn suicide as an unforgivable sin.

These strong religious proscriptions, along with the prohibition on alcohol appear to have a rate-lowering effect against suicide in Islamic countries. This effect is independent even when socioeconomic development, education and other population characteristics are controlled. On the other hand, individual level studies from a number of Islamic countries such as Pakistan, Iran, Turkey and Bangladesh show that suicide rates have been gradually increasing in these countries. From available evidence it appears, that in face of adverse political, social and economic conditions, Islam may be losing some of its traditional deterrent effect and the notion that suicide is a negligible problem is being challenged in many Islamic countries.

There is need to address suicide prevention not only from mental health but also from the socio-cultural, religious and political perspectives in Islamic countries.

9.4 PREDICTORS OF SELF-HARM AND SUICIDE IN LGBT YOUTH

Sarah Foley[1], April Guasp[2], Josh Bradlow[2], Susie Bower-Brown[3], Vasanti Jadva[3], Susie Bower-Brown*[3]

[1]University of Edinburgh, [2]Stonewall, [3]University College London

Individual Abstract: Background: Lesbian, gay and bisexual (LGB) young people's increased risk of self-harm, suicidal attempts and suicide compared with heterosexual youth is well

established. The current study sought to examine whether these findings also apply to the trans (T) population and which factors act as additional risk or protective factors.
Method: In a national cross-sectional survey, 3713 LGBT adolescents, aged 11–19 years, reported on their own history of self-harm, suicidal ideation and suicide attempts, as well as their experiences of school and homophobic, biphobic and transphobic bullying. Logistic regressions tested the association between risk and protective factors on self-harm, suicidal ideation and suicide attempts.

Results: A high proportion of the sample reported self-harm (65.3%), suicidal ideation (73.8%) and suicide attempts (25.7%). Demographic risk factors included identifying as female, non-binary or trans and being from a low-income background. Bullying and online bullying were associated with an increased risk for each outcome, and positive school experience was associated with a reduced risk for each outcome.

Conclusions: Consistent with minority stress theory, the study found high rates of mental health problems within LGBT youth. Interventions focused on improving young people's experiences in schools appear useful targets to help improve mental health outcomes.

10. UNDERSTANDING AFFECT AND BEHAVIOR IN A SUICIDAL CRISIS: INSIGHTS FROM COGNITIVE COMPUTATIONAL NEUROSCIENCE AND IDIOGRAPHIC STATISTICAL MODELING

Chair: Aliona Tsypes, University of Pittsburgh Medical School

Co-Chair: Alexandre Dombrovski, University of Pittsburgh School of Medicine

Overall Abstract Details: Trait-like alterations in affective and decision processes predispose to suicidal ideation and attempts. Past studies, however, have largely overlooked the complexities of real-world dynamic environments, which impose demands on learning. Thus, we do not fully understand how previously identified vulnerabilities play out in the state of a suicidal crisis. This state is generally characterized by high uncertainty, intense affects and a need to decide how to act under the time pressure of a current crisis. Tools of computational psychiatry and idiographic statistical modeling can shed light on the dynamic processes that manifest in a suicidal crisis. Our interdisciplinary symposium will bring together researchers with diverse expertise in computational modeling, neuroimaging, ecological momentary assessment, and idiographic statistical modeling. First, Quentin Huys will provide a broad overview of the field of computational psychiatry and its applications to improved understanding of cognitive processes involved in suicidal thinking and attempts. Next, Aliona Tsypes will introduce a reinforcement learning model and experiment that dissect learning and exploration under conditions approximating cognitive demands of a suicidal crisis. She will present data from patients with borderline personality disorder and suicide attempts. Next, Angela Ianni will present further behavioral and fMRI data from this paradigm in a sample of older adults with depression. Turning from cognitive to affective processes, Eran Eldar will discuss computational accounts of emotion and their applications to psychopathology. Finally, Aleksa Kaurin will discuss the integration of a functional view on suicide risk into idiographic statistical models. All presenters will discuss how their work contributes to the understanding of dynamic cognitive and affective processes in a suicidal crisis.

10.1 COMPUTATIONAL THEORY IN SUICIDE RESEARCH

Quentin Huys*[1]

[1]University College London

Individual Abstract: Computational psychiatry is a rapidly growing field attempting to translate advances in computational neuroscience and machine learning into improved outcomes for patients suffering from mental illness. It encompasses both data-driven and theory-driven efforts. In this lecture, I will briefly outline high-level approaches used in this field. The starting point is to argue that the brain is a computational organ. As such, an understanding of the illnesses arising from it will require a computational framework. I will cover four theoretical approaches that have deep mathematical connections: dynamical systems, Bayesian inference, reinforcement learning and approximations. Finally, I will close with a discussion of how these may inform research into the cognitive processes engaged by and involved in suicidal ideation and acts.

10.2 EXPLORATION AND LEARNING AND SUICIDAL BEHAVIOR IN BORDERLINE PERSONALITY

Aliona Tsypes*[1], Michael N. Hallquist[2], Aleksandra Kaurin[3], Aidan G.C. Wright[4], Alexandre Y. Dombrovski[4]

[1]University of Pittsburgh Medical School, [2]University of North Carolina, [3]University of Wuppertal, [4]University of Pittsburgh

Individual Abstract: To decide how to act, decision-makers engage in a form of mental exploration of their internal states and potential choice options. Similarly, as a suicidal individual searches for solutions in a crisis, they decide which action to pursue (exploit) after evaluating (exploring) a range of potential decision options under current consideration. According to the formal perspective of reinforcement learning (RL), this process represents the exploration-exploitation dilemma (Sutton and Barto, 2018). In a crisis, the sense of uncertainty, time pressure, and the need to choose which of the actions under current consideration to pursue lead suicidal individuals to experience a myopic, passive, and rigid cognitive state commonly described in the literature and referred to as cognitive constriction, cognitive deconstruction, and tunnel vision, among other terms (Baumeister, 1990; Pollock and Williams, 2004; Shneidman, 1986). Frequent mentions of this cognitive state in empirical and theoretical literature, as well as in anecdotal accounts of suicide attempt survivors, signal its centrality in a suicidal crisis. At the same time, predominant reliance on verbal specifications of constructs (including the construct referred to as cognitive constriction) in much of clinical psychological research to date (Dombrovski and Hallquist, 2022; Millner et al., 2020) has hindered the understanding of this phenomenon.
In this study, we used the formalism of RL and computational modeling combined with an experimental paradigm that required individuals to make decisions in a complex learning environment (Dombrovski et al., 2020; Hallquist and Dombrovski, 2019; Moustafa et al., 2008) to examine how adults with varying histories of borderline personality disorder (BPD) and suicide attempts resolve the exploration-exploitation dilemma. To examine the real-life relevance of the uncovered behavioral patterns, we also linked task behavior to daily levels of suicidal ideation assessed via ecological momentary assessment.

Participants were 117 individuals diagnosed with borderline personality disorder (BPD) and 54 healthy controls (Mean age: 30.55; 79% female). Of the individuals with BPD, 85 had a history of suicide attempts (36 were high- and 49 were low-lethality attempters) and 32

reported no past suicide attempts. Participants completed six runs of the reinforcement-based timing paradigm during which they were required to explore and learn reward contingencies and thus ultimate response timing in a challenging unidimensional environment. We found that, compared to all other groups, high-lethality suicide attempters displayed impaired levels of short-term reinforcement-based behavioral adaptation (i.e., their behavior was not properly informed by recent feedback), especially after reward omissions. We also found that altered (reduced) exploration, but not exploitation, was predictive of higher levels of suicidal ideation in daily life.

These findings contribute to the understanding of suicidal behavior in a crisis. Under uncertainty, time pressure, and cognitive load of currently considered solutions, suicidal individuals may explore (through physical actions or mental simulations) several solutions aimed at resolving a given crisis. However, difficulties and biases in learning from one's actions and their outcomes may lead them to attempt suicide rather than select the more valuable in the long-run alternatives. The link between lower exploration (especially after a negative outcome) and higher suicidal thinking also suggests that suicide may be accepted as a solution in a crisis when few potential alternatives are being considered.

10.3 ABERRANT VALUE ENCODING IS ASSOCIATED WITH SUICIDE ATTEMPTS IN LATE-LIFE DEPRESSION

Angela Ianni*[1], Bea Langer[1], Michael N. Hallquist[2], Alexandre Y. Dombrovski[1]

[1]University of Pittsburgh, [2]University of North Carolina

Individual Abstract: Background: During a suicidal crisis, individuals explore multiple possible solutions, by trying them out or mentally simulating their outcomes. While prior work has implicated impaired decision-making in suicidal behavior (Dombrovski AY et al., 2019, Brown VM et al., 2020) and less consistent reward value encoding in high-lethality suicide attempters (Tsypes et al, 2022), it tells us little about how people implicitly appraise many options at once in a crisis, when a high information load threatens to degrade the quality of decision-making.
Methods: 132 cognitively intact individuals, aged 49-80 years, were recruited from four groups: healthy volunteers, suicide attempters, depressed individuals with suicidal ideation (SI) but no prior attempts, and depressed individuals without SI. Individuals completed an explore-exploit task during an fMRI scan, where action values varied along a continuous interval marked by visuospatial and time cues. Participants were instructed to explore the interval extensively to discover the most rewarding options. We employed a previously validated learning model (Hallquist MN and Dombrovski AY, 2019), to calculate trial-by-trial action values across discretized intervals of time. fMRI images were pre-processed and then a whole-brain GLM was performed using model-derived estimates of maximum value using a statistical threshold of pFWE <0.05, two-sided, controlling for age. In addition, extracted signal from four subcortical regions of interest (striatum, thalamus, hippocampus, and amygdala) was deconvolved using a leading hemodynamic deconvolution algorithm to estimate neural activity, which was stimulus locked to either clock-onset or response and averaged across trials (Dombrovski AY & Hallquist MN, 2020). Multilevel modeling implemented in R was used to test for significance between the model-derived behavioral parameters and neural data, with significance thresholding of $p<0.05$, FDR corrected.

Results: In model-free behavioral analyses, suicide attempters displayed aberrant behavioral response shifts after reward omission ($p<0.005$), with decreased lose-shift behavior in high-lethality attempters and increased lose-shift behavior in low-lethality attempters compared to the other groups. Whole-brain GLM analyses controlling for age revealed that suicide attempters have blunted BOLD response to model-predicted reward value in the bilateral putamen compared to depressed individuals with high SI (left putamen peak voxel $z=-5.19$, right putamen $z=-4.13$, $p_{FWE}<0.05$ for both regions) with qualitatively similar but non-significant differences from other comparison groups.

In the deconvolved data, we found that healthy controls had a positive reward value signal preceding stimulus onset in the hippocampus and thalamus, with the hippocampus also positively responding to updated value after response. In comparison, depressed individuals with high SI showed decreased hippocampal value response after stimulus onset, with suicide attempters exhibiting an even greater blunting of value response across all subcortical regions ($p<0.05$, FDR corrected). This suggests that suicidal thoughts may be related to abnormal hippocampal value response, while more widespread reward value encoding abnormalities underlie decision-making deficits related to suicidal behavior.

Conclusions: Suicidal behavior in late-life depression is associated with altered behavioral adjustment following losses and blunted subcortical value signals during exploration-exploitation of a continuous space. These deficits may underlie the failure to find constructive solutions in a suicidal crisis.

10.4 THE COMPUTATIONAL PSYCHOPATHOLOGY OF EMOTION

Alon Erdman[1], Eran Eldar*[1]

[1]Hebrew University of Jerusalem

Individual Abstract: Mood and anxiety disorders involve recurring, maladaptive patterns of distinct emotions and moods. In this talk, I will argue that understanding these maladaptive patterns first requires understanding how emotions and moods guide adaptive behavior. I will thus review recent progress in computational accounts of emotion that aims to explain the adaptive role of distinct emotions and mood. I will then highlight how this emerging approach could be used to explain maladaptive emotions in various psychopathologies. In particular, I will identify three computational factors that may be responsible for excessive emotions and moods of different types: self-intensifying affective biases, misestimations of predictability, and misestimations of controllability. Finally, I will discuss how the psychopathological roles of these factors can be tested, and how they may be used to improve psychotherapeutic and psychopharmacological treatment.

10.5 INTEGRATING A FUNCTIONAL VIEW ON SUICIDE RISK INTO IDIOGRAPHIC STATISTICAL MODELS

Aleksandra Kaurin*[1], Alexandre Y. Dombrovski[2], Michael N. Hallquist[3], Aidan G.C. Wright[2]

[1]University of Wuppertal, [2]University of Pittsburgh, [3]University of North Carolina

Individual Abstract: Acute risk of death by suicide manifests is sudden, short-lived increases in suicidal ideation. These surges are best understood as complex and mutually reinforcing relationships between dispositional vulnerability factors and individually suicidogenic short-term stressors. Together, these processes represent the core of clinical safety planning and our therapeutic tools accommodate a reasonable degree of idiosyncrasy when choosing adequate interventions. Unraveling these multifaceted semantic and temporal characteristics on a quantitative level, however, requires estimation frameworks that match theoretical and practical considerations relevant to psychotherapy. Using, data from a 21-day ambulatory assessment protocol, we developed personalized (i.e., idiographic) models of interacting risk factors closest to the time of an emerging suicidal crisis via Group Iterative Multiple Model Estimation (GIMME) in a sample of people diagnosed with borderline personality disorder stratified for a history of high lethality suicide attempts. They revealed high levels of heterogeneity in state-like risk factors related to suicidal ideation, with no features shared among the majority of all participants or even considerably homogenous clusters of participants (i.e., subgroups).We discuss relevant milestones toward successful clinical implementation of personalized models to potentially improve safety planning by capturing changes in proximal risk factors closest to a climaxing suicide risk.

CONCURRENT SYMPOSIUM SESSIONS

3:00 p.m. - 4:30 p.m.

11. BIOLOGY, GENETICS AND EPIGENETICS

Chair: Allison Ashley-Koch, Duke University Medical Center

Overall Session Description: Suicidal behaviors (SBs), including suicidal ideation, suicide attempt and death by suicide, have been shown to be significantly heritable. However, the genetic architecture of SBs is complex. There is evidence for shared heritability across SBs and with other psychiatric disorders, as well as evidence for independent genetic risk for each of the SBs. Patterns of polygenic and environmental risk are beginning to emerge. With increasing sample sizes for genetic studies, careful phenotypic analysis, and the application of multiple ‘omic technologies, the field is poised to make significant discoveries which will further understanding of the pathophysiology of SBs. This session will highlight recent successes in the ‘omics of SBs. The first talk will discuss gene discovery progress from the Psychiatric Genomics Consortium Suicide Working Group, one of the largest international collaborative efforts to identify genetic associations in SBs. The second talk will review the genetic discoveries in SBs to date and how the application of different genetic models and approaches aimed at understanding the underlying biology can move the field forward. The third talk focuses on dissecting the connection between aggression and SBs through the application of clinical and molecular approaches. The final talk of the session will describe the utility of using coordinated gene expression patterns to further understand the pathophysiology of SBs, particularly suicidal ideation. Advances in the ‘omics of SBs will fuel improved clinical care and the development of novel therapeutics for individuals suffering from these conditions.

11.1 INSIGHTS INTO THE GENETIC ETIOLOGY OF SUICIDALITY FROM THE PSYCHIATRIC GENOMICS CONSORTIUM SUICIDE WORKING GROUP

Niamh Mullins*[1], Psychiatric Genomics Consortium Suicide Working Group[2]

[1]Icahn School of Medicine at Mount Sinai, [2]Psychiatric Genomics Consortium

Individual Abstract: Genetic epidemiology studies have demonstrated that death by suicide (SD), suicide attempt (SA), and suicidal ideation (SI) are significantly heritable, with genetic etiologies that are partially distinct from that of psychiatric disorders. However, large-scale genetic association studies are crucial to elucidate their genetic and biological etiologies, potential drug targets, and the similarities and differences between them. The Psychiatric Genomics Consortium Suicide Working Group (PGC SUI) was established to interrogate the biological basis of the spectrum of suicide outcomes in individuals of diverse ancestries, leveraging clinical, population, and medical examiner resources worldwide. We conduct genome-wide association studies to characterize the genetic etiology of suicide outcomes, elucidate the shared and distinct genetic etiology between them, and versus psychiatric disorders. These studies provide insights into biologically relevant tissues, cell-types, pathways, and drug targets, and enable prioritization of likely causal genes and variants. This presentation will outline the objectives of PGC SUI, our latest genetic results, and novel insights into the biology of suicide outcomes.

11.2 IDENTIFYING GENES UNDERLYING SUICIDAL BEHAVIOR

Marcus Sokolowski*[1]

[1]Karolinska Institute NASP

Individual Abstract: The biology of suicidal behaviors (SBs) is partly influenced by additive genetic factors, with heritability estimates in the range of 30-55%. The study of specific genes in SBs have evolved from the detailed examinations of a few selected candidate genes of interest, to genomic scans attempting to characterize the epigenetic and genetic landscapes across all possible genes. An updated synopsis of the multitude of gene discoveries, as well as implied polygenic and other genetic models in SBs, will be presented. In addition, some approaches for making sense of the various genes indicated in the biology of SBs, will be suggested. The quests for specific genes underlying SBs attempts to help us better understand why certain subjects seem more vulnerable to the tragic outcome of lifetime SBs, which could reduce stigma and enhance interventions in the future.

11.3 AGGRESSION AND SUICIDE

Enrique Baca-Garcia*[1], Maria Luisa Barrigon[2], Alejandro Porras-Segovia[3], Concepcion Vaquero[4], Jorge Lopez Castroman[5]

[1]Fundacion Jimenez Diaz, [2]Hospital General Universitario Gregorio Marañon, Madrid, [3]Health Research Institute Fundación Jiménez Díaz, [4]UAM, [5]University of Montpellier

Individual Abstract: Aggressiveness has been postulated as one of the mediating factors in suicidal behavior. The definition and measurement of aggression is a controversial issue that has limited the results obtained in the biological research on suicidal behavior. The recent use of monitoring and virtual reality technology has opened up possibilities for the determination of phenotypes. We will discuss the relationships between genetic markers and classical measures of aggressiveness in suicidal behavior. We will then illustrate the possibilities of digital phenotyping in this field. Additionally, we will present the effect on aggressiveness of genetic variants encoding for the major enzymes in the kynurenine pathway (IDO 1-2, KMO,

KAT, and ACMSD), based on sample including suicide attempters, depressed subjects with no history of SB, and healthy controls. We hypothesize that genetic variants increasing the level of neurotoxic metabolites of the kynurenine pathway could be associated with higher levels of aggressiveness.

11.4 INFLAMMATION AND SUICIDAL BEHAVIOR

Fatemeh Haghighi*[1], Shengnan Sun[2], Qingkun Liu[2], Zhaoyu Wang[2], Yung-yu Huang[3], M. Elizabeth Sublette[3], Andrew Dwork[3], Gorazd Rosoklija[3], Yongchao Ge[1], Hanga Galfalvy[3], John Mann[3]

[1]Icahn School of Medicine at Mount Sinai, [2]James J Peters Veterans Affairs Medical Center and Icahn School of Medicine at Mount Sinai, [3]Columbia University and New York State Psychiatric Institute

Individual Abstract: Human genetic studies indicate that suicidal ideation and behavior are both heritable. Most studies have examined associations between aberrant gene expression and suicide behavior, but behavior risk is linked to severity of suicidal ideation. Through a gene network approach, this study investigates how gene co-expression patterns are associated with suicidal ideation and severity in civilians and veterans. Using RNA-seq data in peripheral blood from participants with elevated suicidal ideation and with no ideation, associations with presence and severity of suicidal ideation were found within 18 and 3 co-expressed modules respectively ($p < 0.05$), not explained by severity of depression. Suicidal ideation presence and severity-related gene modules with enrichment of genes involved in defense against microbial infection, inflammation, and adaptive immune response were identified, and tested using RNA-seq data from postmortem brain that revealed gene expression differences in suicide decedents vs. non-suicides in white matter, but not gray matter. Findings support a role of brain and peripheral blood inflammation in suicide risk, showing that suicidal ideation presence and severity is associated with an inflammatory signature detectable in blood and brain, indicating a biological continuity between ideation and suicidal behavior that may underlie a common heritability.

12. DEVELOPMENTAL EFFECTS ON CLINICAL AND NEUROCOGNITIVE RISK FACTORS FOR SUICIDAL BEHAVIOR: REFINING THE PROFILE OF RISK ACROSS THE LIFESPAN

Chair: John Keilp, Columbia University and New York State Psychiatric Institute

Overall Abstract Details: Predictive models of suicidal behavior risk derived from machine learning and other “big data” approaches have shown initial promise for identifying individuals most in need of intervention to prevent suicide attempt. However, these models may systematically miss individuals who do not fit an average risk profile. As these models are refined, more specific individual clinical, behavioral, and neurocognitive risk factors are likely to be incorporated to improve their precision. These more individual behavioral characteristics, however, are subject to developmental change that may alter their influence on risk for suicidal behavior, undermining the power of these methods across the full adult lifespan. The purpose of this symposium is to examine the influence of age on a variety of common risk factors for suicidal behavior. While some are resistant to age effects, others undergo significant developmental change that can and does affect their discriminating power. Data reported is from a variety of studies, with most from the 3-site, AFSP-funded Lifespan Study of clinical

and neurocognitive correlates of suicidal behavior, a study which included samples of healthy volunteers, depressed non-attempters, and depressed past suicide attempters ranging in age from 16 to 80. Dr. Szanto will begin the session by demonstrating how a number of candidate clinical risk factors across the lifespan (i.e. ruminative thinking, feelings of entrapment, and problem-solving style) as well as neurocognitive measures undergo pronounced developmental change that, in some cases, systematically alters their ability to discriminate suicide attempters. The next three talks in this symposium focus on strengths and weaknesses of the death/suicide Implicit Association Test (IAT), the Cambridge Gambling Task (CGT), and other neurocognitive measures in their association to suicidal behavior risk across the lifespan. Beyond clinical risk factors, such performance measures can enhance prediction in multivariate models, though age effects on a number of these tasks is pronounced. Dr. Ruch will discuss the IAT, and the effects that slowing of response speed has on the discriminating power of its central difference score metric, weakening its ability to distinguish suicidal behavior risk beyond early adulthood. Dr. Gorlyn will discuss the CGT and other decision-making tasks, which have proved sensitive to suicidal behavior risk, but suffer from psychometric limitations that reduces their sensitivity to risk across a wider age range. Dr. Keilp will then discuss findings from neurocognitive measures at different levels of functioning, from basic information processing to decision making to higher level cognitive biases and suggest that basic measures, whose developmental effects are well understood, may provide the best opportunity for lifespan prediction of suicidal behavior risk. Dr. Galfalvy will then conclude by presenting high-dimensional models of suicidal behavior developed on an older age group and extended to the broader lifespan sample, and discuss the transferability of models and prospects for improving them.

12.1 AGE-RELATED CHANGES IN SUICIDE RISK FACTORS AND IN SUICIDE ATTEMPT CHARACTERISTICS ACROSS THE ADULT LIFE-SPAN

Katalin Szanto*[1]

[1]University of Pittsburgh

Individual Abstract: Background: Clinical observations and neurocognitive studies noted limited problem-solving abilities, cognitive rigidity, cognitive control, attention, and memory deficits in suicide attempters. They also described impulsive-aggression, tendency to ruminate, borderline traits, and feelings of entrapment. To assess whether these risk factors for suicidal behavior present across the adult lifespan, we conducted the AFSP Lifespan Study. We also assessed whether attempt's characteristics (medical lethality and planning) differ in relation to the age of onset of suicidal behavior. Methods: In 110 depressed patients with a recent suicide attempt, 101 depressed patients with no history of suicide attempt, and 98 demographically similar non-psychiatric participants (age 16-80), attempter/non-attempter differences and differential effects by age were examined. Inclusion of a non-psychiatric (healthy) comparison group served to anchor for normal age-related changes. Participants were recruited from three sites: Pittsburgh, PA, Columbus, OH, and New York City, NY as part of a collaborative multi-center study. Logistic regression models predicted attempter status based on risk factors and their interaction by age. Results: As expected, memory and category fluency worsened with age. In contrast, aggression, depressive rumination and borderline traits all improved with age. We found that higher borderline traits, aggression, rumination, impulsive problem-solving style, as well as worse performance on memory and category (but not verbal) fluency each consistently predicted attempter status across the adult lifespan (all p35 years) than on actual age at the time of the attempt. Conclusions: Attempts' characteristics as well as suicide risk

factors change across the adult life-span, indicating distinct pathways to suicide. Certain suicide risk factors e.g., depressive rumination (that typically decline with normal aging) are more salient suicide attempt risk factors in old age. Generalizations about the relevance of risk factors for suicidal behavior derived from patient populations within a narrow age range can be misleading, as aging has widespread effects on numerous suicide risk factors. Clinicians should consider lack of typically occurring developmental changes (e.g., persistently high depressive rumination, aggression) as well as exaggerated cognitive decline in older adults at high risk for suicide.

12.2 STRENGTHS AND LIMITATIONS OF THE IMPLICIT ASSOCIATIONS TEST IN ASSESSING RISK FOR SUICIDAL BEHAVIOR ACROSS THE LIFESPAN

Donna Ruch*[1], John Keilp[2], Jaclyn Tissue[1], Hanga Galfalvy[3], Jeffrey Bridge[4], Katalin Szanto[5]

[1]Nationwide Children's Hospital, [2]Columbia University and New York State Psychiatric Institute, [3]Columbia University, [4]The Research Institute at Nationwide Children's Hospital, [5]University of Pittsburgh

Individual Abstract: Introduction: The death and suicide Implicit Associations Test (d/s-IAT) is hypothesized as an objective marker of suicide risk relative to patient self-report. The task has primarily been implemented in adolescent or younger adult groups. Little is known about age effects on the discriminating power of the d/s-IAT in older adults. The 3-site AFSP-funded Lifespan study examined whether implicit associations with death/suicide distinguished depressed suicide attempters, depressed non-attempters, and healthy controls across the adult lifespan. Exploratory analyses sought to determine the limits of its discriminating power if past attempters could not be distinguished in the full sample.

Methods: Participants were 82 past suicide attempters in a current depressive episode, 80 depressed patients with no suicide attempt history, and 86 healthy volunteers ranging in age from 16 to 80 years recruited at 3 sites. Outcome measures for the d/s-IAT included the standard D score, a composite response time measure averaged across all trial blocks, and error scores. Group differences were examined with study site, age, and demographic/clinical variables of relevance as covariates.

Results: Groups were comparable on most demographic factors, but differed in education level, percentage of white, mixed race, and Hispanic participants, variables which were included as covariates in all analyses. In the group comparisons, groups differed on the d/s-IAT D score ($p<.001$), with all depressed patients exhibiting higher scores, but no differences between non-attempters and attempters. Significant age effects were found on the IAT difference score in all groups ($r= -.434$ in healthy volunteers, $r= -.445$ in non-attempters, and $r= -.465$ in attempters; all $p<.001$) such that the association to death/suicide in all groups was stronger at younger ages. On the composite reaction time measure, however, suicide attempters exhibited significantly slower reaction times than both other groups. The aggregate reaction time measure, in turn, was strongly correlated with the D score in all groups ($r= -.587$ in healthy volunteers, $r= -.565$ in non-attempters, and $r= -.660$ in attempters) such that overall slowing reduced the magnitude of the D score. Groups did not differ in error scores, and error scores were not related to group differences (or lack of group differences) on other measures. Exploratory analysis revealed that extreme D scores – those where reaction times to death/me items were faster than to life/me items – were most common in suicide attempters, but only

under the age of 40 (X2=6.72, p=.035). These scores did not occur in any participants over the age of 40. Attempters were found to have higher overall D scores compared to both other groups in participants under the age of 30 (F[2,62]=4.29, p=.018), but only if the attempter group was restricted to whose suicide attempt occurred within the last six months, consistent with prior studies finding greater sensitivity of the D score to more recent suicidal behavior.

Conclusions: Age effects are prominent on the d/s-IAT and reduce its sensitivity to risk for suicidal behavior at middle and older ages. More importantly, the D score appears to be suppressed by overall slowing of reaction time, suggesting that alternative metrics for characterizing implicit suicidal preoccupation may be needed. As currently computed, the d/s-IAT D score appears to be most effective in younger populations where suicidal thinking and behavior are more contemporaneous.

12.3 DEMOGRAPHIC EFFECTS ON ASSOCIATIONS BETWEEN DECISION-MAKING AND SUICIDAL BEHAVIOR ON THE CAMBRIDGE GAMBLING TASK

Marianne Gorlyn*[1], Arielle Sheftall[2], Jaclyn Tissue[3], Jeffrey Bridge[3], Katalin Szanto[4], John Keilp[1]

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Individual Abstract: Introduction: Impaired decision-making performance, assessed via the Iowa Gambling Task (IGT) and Cambridge Gambling Task (CGT) has been linked to suicidal behavior. These tasks differ conceptually and psychometrically which confounds our ability to identify specific cognitive deficits associated with increased attempt risk. While the IGT considers decision-making a unidimensional construct, the CGT allows for differentiation of risk taking and disadvantageous choice selection. Extensive normative data has been collected on the IGT, but less is known about demographic effects on the CGT and how these influences might affect its ability to distinguish deficits in past suicide attempters. Though initial published results have been promising, CGT studies in suicide are few, with small sample sizes derived from narrow age cohorts. Here, we examined developmental and demographic effects on the CGT over a broad age range to determine their influence on associations between impaired decision-making and suicidal behavior.

Materials and Methods: As part of the 3-site, AFSP-funded Lifespan Neurocognition study, CGT performance was assessed in 94 healthy volunteers, 91 depressed patients with no past suicide attempts, and 97 depressed past suicide attempters. Participants ranged in age from 16 to 80, with comparable age distribution across groups. Groups were compared with covariates for age, sex, and education level, and regressions run to examine age interactions with group on CGT scores.

Results: Participants attended to task demands, altering betting patterns in response to changing odds and avoiding random responding. Demographic effects were found on all primary CGT outcome measures. Age and education were significant covariates in analyses of Deliberation Time, Quality of Decision Making, and Risk Adjustment. Female sex was associated with reduced Overall Proportion Bet and Risk Taking. Adjusted for these demographic factors, attempters took longer to make decisions (Deliberation Time; p=.016), bet less (p=.058), and showed lower levels of risk taking across the age spectrum (p=.052). A significant age by group

interaction was found for the Quality of Decision Making measure, such that attempter/non-attempter differences were significant at younger ages (below 50; $F[1,114]=6.91$, $p=.010$) but not older ages (above 50; $F[1,60]=.69$, $p=.408$, ns). Sensitivity analyses revealed that attempters' reduced proportion bet was primarily driven by low lethality attempters, while poorer Quality of Decision Making and longer Deliberation Time was driven by higher lethality attempters. CGT scores did not differ by violence of past attempt.

Conclusions: Developmental and demographic factors have a significant impact on CGT performance, such that differences in sample composition are likely to contribute to variability in findings across studies. After adjustment for demographic factors, suicide attempters paradoxically exhibited more conservative betting behavior, though the decision-making measure tended to differ in the expected direction. Quality of Decision Making, however, best differentiated younger suicide attempters and not older attempters. Further development of this measure to better adapt it to the assessment of diverse samples at risk for suicidal behavior is needed.

12.4 PROCESSING SPEED DYSFUNCTION IS RELATED TO SUICIDAL BEHAVIOR IN TASKS AT ALL FUNCTIONAL LEVELS IN DEPRESSION

John Keilp*[1], Sean Madden[2], Jacki Tissue[3], Hanga Galfalvy[4], Jeffrey Bridge[5], Ainsley Burke[1], Katalin Szanto[6]

[1]Columbia University and New York State Psychiatric Institute, [2]Columbia University and NYSPI, [3]The Abigail Wexner Research Institute at Nationwide Children's Hospital, [4]Columbia University, [5]The Research Institute at Nationwide Children's Hospital, [6]University of Pittsburgh

Individual Abstract: Introduction: Poor performance on neurocognitive measures has been associated with suicidal behavior. Measures used include basic information processing tasks, higher order executive and decision-making tasks, and measures of bias toward specific psychological content. It is unclear, however, which of these tasks provide the best discriminating power, which are most efficient in identifying those at risk, which are proxies for other risk factors, and which contribute independently to suicidal behavior risk assessment. This study was designed to address these questions by incorporating assessments at multiple levels of neurocognitive/behavioral functioning.

Materials and Methods: The AFSP Lifespan Study examined neurocognitive performance in healthy volunteers (HC; n=93), depressed non-attempters (NA; n=94), and depressed past suicide attempters (ATT; n=102) across an age range from 16-80. In addition to demographic and clinical assessments, performance tasks that had previously been associated with suicidal behavior were administered to evaluate three levels of functioning: basic information processing, executive functioning/decision-making, and psychological content bias. Tasks administered to assess basic information processing included a Choice RT task, Digit Coding, computerized color/word Stroop task, computerized A, Not B Reasoning task, Buschke Selective Reminding Test, and Language Fluency tasks. Tasks assessing executive functioning/decision-making included a Reversal Learning task, the Monetary Choice Questionnaire (delay discounting), and Cambridge Gambling Task. Tasks to assess content bias included the Implicit Association Test and computerized Emotional Stroop task.

Results: Across the lifespan, past suicide attempters exhibited significantly slower Choice RT (p <.001), slower Digit Coding (p<.001), and slower Stroop Color/Word response time (p<.001) than all other groups. They exhibited poorer Stroop interference (p<.005) and slower A, Not B Reasoning Speed (p<.019) than healthy volunteers, but not depressed non-attempters. On executive/decision-making tasks, Reversal Learning set maintenance error scores were highest in past suicide attempters (p<.001), and discount rate highest on the Monetary Choice Questionnaire (p=.001). CGT risk taking and decision-making measures did not differentiate past suicide attempters, although the CGT Deliberation Time did. On content bias tasks, IAT performance discriminated both depressed groups from healthy volunteers (p<.001), but not each other. Emotional Stroop death/suicide interference (p=.144) did not differentiate groups. On both content bias tasks, however, aggregate response times were slowest in past attempters (p<.001 for composite reaction times on both tasks). A single factor was extracted across these response time measures, and it correlated modestly with depression severity (r = .21, p=.004) and suicidal ideation (r = .30, p<.001), as well as with CGT Quality of Decision Making (r = -.31, p<.001), delay discounting (r = .18, p=.011), and the IAT difference score (r = .18, p =.012). Attempter/non-attempter differences on this response time factor were maintained if depression severity was covaried (p=.044).

Conclusions: Basic information tasks with a processing speed component were most effective at distinguishing past suicide attempters across a wide age range. Slowed processing speed was evident as well on decision-making and content bias tasks and a single processing speed factor distinguished past suicide attempters from other groups, suggesting a core deficit in at this basic level contributes to other performance decrements.

12.5 HIGH-DIMENSIONAL MODELS FOR SUICIDAL BEHAVIOR ACROSS AGE GROUPS IN THE AFSP LIFESPAN STUDY

Hanga Galfalvy*[1], Katalin Szanto[2]

[1]Columbia University, [2]University of Pittsburgh

Individual Abstract: Background:Since the risk of suicidal behavior is multifactorial, the best prediction models will include diverse factors together. In two cross-sectional studies, we identified combinations of cognitive, personality and clinical data that explain suicide attempter status and its characteristics, and quantified the contribution of the various factors.
Methods:Depressed middle-aged and older adults (N=458, mean age=66.7 years) completed assessments on demographics, clinical history, and social, psychological, and cognitive factors. A second dataset crossed the lifespan (N=209, mean age=42, range: 16-80). Multivariate Imputation by Chained Equations of missing data derived 100 versions of the data. Penalized logistic regression models were fit in each version to differentiate suicide attempters from depressed non-attempters, and penalized regression model was used to explain age at first attempt among attempters. Variables retained by at least 90% of the models are reported. In the lifespan data set stratified by age, models were fit by strata. In the dataset covering the whole lifespan, participants were stratified so one strata matched the older adult dataset. Overlapping measures from the best model in the first sample were used to fit and evaluate a model in the younger age group. Then the model selection was repeated in the younger adults, and tested in the older adult sample.

Results:In the older age group, suicide attempters were discriminated from non-attempters with 82% mean accuracy (positive predictive value PPV=79%, area under the curve AUC=0.90) using cognitive deficits, lifetime and current suicidal ideation, psychiatric hospitalizations, hopelessness, anxiety, impulsive carelessness, interpersonal reactivity and lack of social support. Models explained 48% of the variability in age at first attempt using suicidal ideation, anxiety and substance use diagnoses, gender, race, education level, deficits in memory, and interpersonal sensitivity and lack of social support. When the above models were re-tested in the younger age group, we found possible evidence that some risk factors were differentially associated with suicide attempt risk across the lifespan, resulting in changes in predictive performance for the model across age strata. As expected, some of the top measures from the larger study were not available in the smaller study. We will discuss some ways to bridge the partially-overlapping assessment measures problem between studies that limits transferability of the models.

Conclusions:Our findings highlight the need for flexible and multidimensional suicide risk assessment tools and guidelines covering multiple different domains across the lifespan.

13. SUICIDE PREVENTION ACROSS THE LIFESPAN

Chair: Diana Clarke, American Psychiatric Association

13.1 PREVALENCE AND CORRELATES OF SUICIDE AND SELF-INJURY IN CHILDREN

Richard Liu*[1], Rachel Walsh[2], Ana Sheehan[3], Shayna Cheek[4], Christina Sanzari[5]

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Individual Abstract: Background: Although suicide has been much studied in adolescents and adults, much less research has been conducted with preadolescent children, and therefore relatively little is known about suicide-related outcomes in this younger age group. Even the basic phenomenology of suicide in preadolescent children (e.g., general prevalence and common correlates) has not been well characterized. This stems in large part from the common view that preadolescents do not possess the cognitive capacity to comprehend the permanence of death and therefore are incapable of suicidal thoughts. Contradicting this belief, however, deaths by suicide in children of ages five through 12 have increased significantly in the United States, from being the tenth leading cause of death in 2008 to the fifth leading cause of death by 2020. This trend has given recent urgency to the need for research to improve our current understanding of suicide-related outcomes in preadolescent youth. The present study aimed to provide the first systematic review and meta-analysis of studies on preadolescent self-injurious thoughts and behaviors (SITBs), including prevalence and correlates of these phenomena. This study thereby aimed to characterize current knowledge of preadolescent SITBs and to identify primary areas in need of future research.

Methods: PsycINFO, MEDLINE, and Embase were systematically searched from inception through December 23, 2021 for all relevant studies. Two reviewers independently identified studies providing data on prevalence and/or correlates of preadolescent suicidal ideation, suicide attempts, suicide deaths, and non-suicidal self-injury (NSSI). Additionally, two reviewers independently extracted data from each eligible study. For studies that included

distinctly separate analyses for adolescent SITBs, relevant data for adolescent SITBs were also extracted whenever possible, to facilitate head-to-head comparisons between preadolescent and adolescent SITBs. The Joanna Briggs Institute Checklist for Prevalence Studies was used to assess study quality. Pooled prevalence and d were derived from random-effects meta-analyses.

Results: Fifty-eight eligible studies were included. Lifetime prevalence of preadolescent suicide in the general population was 0.79 per 1,000,000 children. Prevalence for lifetime suicidal ideation, suicide attempts, and NSSI among preadolescents were 15.1%, 2.6%, and 6.2%, respectively, in community samples. These data suggest that approximately 17.0% of preadolescents with suicidal ideation transition to attempting suicide. Across several analyses, males generally appear more likely to experience SITBs in preadolescence than adolescence. Analyses of correlate data were less common for SITBs, other than for suicidal ideation. Among specific disorders, ADHD (dsuicidal ideation = .54, 95% CI = .34 – .75) and depression (dsuicidal ideation = .90, 95% CI = .71 – 1.09; dsuicide attempts = .47, 95% CI = .26 – .68) emerged as the strongest correlates. Among interpersonal factors, child maltreatment (dsuicidal ideation = 2.62, 95% CI = 1.56 – 3.67) and parental support (dsuicidal ideation = -.34, 95% CI = -.46 – -.22) yielded the largest effects.

Conclusions: Although preadolescent suicide deaths are rare, other SITBs occur with concerning frequency. Males may be at greater risk for SITBs in preadolescence relative to adolescence. ADHD, child maltreatment, and parental support may be especially relevant to suicidal ideation, as well as depression for suicidal thoughts and behaviors, in this age group. There is a notable paucity of studies on SITBs other than suicidal ideation. Given the prevalence of SITBs, a strong need for research in this area remains.

13.2 DECLINE OF THE SUICIDE RATES AMONG CHINESE YOUNG ADULTS FROM 1990 TO 2017

Jie Zhang*[1], Juncheng Lyu[2]

[1]Shandong University and State University of New York Buffalo State, [2]Weifang Medical University

Individual Abstract: The overall suicide rates in China have decreased tremendously since the beginning of the new century. This is a study focusing on the declination of the suicide rates among Chinese aged 15-34 years. China CDC mortality data that are composed of 33 provinces were used for study. The suicide rates were compared from 1990 to 2017 for young adults between 15 and 34 years of age. The declination hypothesis are supported by the Strain Theory of Suicide.

13.3 PSYCHOSOCIAL WORK EXPOSURES AND RISK OF SUICIDE IN WORKING POPULATION

Isabelle Niedhammer*[1], Jean-François Chastang[1], Thomas Coutrot[2], Béatrice Geoffroy-Perez[3], Anthony LaMontagne[4], Allison Milner[5]

[1]INSERM, [2]DARES, Ministère du Travail, Paris, [3]Santé publique France, Saint Maurice, [4]Deakin University, Geelong, [5]University of Melbourne, Melbourne

Individual Abstract: Background: Literature reviews showed that psychosocial work exposures may be associated with suicide ideation. The literature is however seldom on the associations between these exposures and suicide. The objectives of the study were to examine the prospective associations between the psychosocial work exposures of the job strain model and suicide in a national representative sample of French employees.

Methods: The study relied on a national representative prospective cohort that combined various databases. The first database came from the COSMOP programme (Santé publique France) that linked job history data (DADS-INSEE panel, 1/24th random sample of the national French working population of employees) to mortality data and causes of death (INSERM-CEPIDC, national French death registry). The second database was the SUMER survey set up by the DARES of the French ministry of labour and assessing occupational exposures among the national working population, whose data were imputed to the first database through a job-exposure matrix (JEM). The study sample included 1,496,332 employees, 798,547 men and 697,785 women, for which data were thus available for job history, psychosocial work exposures through the JEM, and mortality outcomes from 1976 to 2002. Psychosocial work exposures included the exposures from the validated job strain model questionnaire: psychological demands, decision latitude, and social support at work, and their combinations, job strain (high demands and low latitude) and iso-strain (job strain and low support). Three time-varying measures of exposure were explored: current exposure, cumulative exposure, and recency-weighted cumulative exposure. The codes for suicide were X60-X84 in ICD-10 and the corresponding ICD-9 and ICD-8 codes. Cox proportional hazards models were performed to study the associations between psychosocial work exposures and suicide. The fractions of suicide attributable to job strain and isostrain were calculated.

Results: Within the 1976-2002 period, 1,595 suicides occurred among men and 361 among women. Low decision latitude among men, and low social support, job strain and iso-strain for both genders were found to be risk factors for suicide. The model with the highest relative quality was the model with current exposure, although no significant difference was observed with cumulative or recency-weighted cumulative exposures. The fractions of suicide attributable to job strain were 5.29% (95% CI: 1.76–9.26) for men and 9.13% (95% CI: 0.83–18.10) for women. The fractions attributable to iso-strain were 3.56% (95% CI: 1.13–6.34) among men and 5.91% (95% CI 0.68–12.00) among women.

Discussion: The study showed that the psychosocial work exposures of the job strain model were associated with suicide in the national French working population of employees. The strengths of the study were the following: large national representative study sample, study of both men and women, long follow-up for both exposures and outcome, no major biases, assessment of psychosocial work exposures using a validated questionnaire and various time-varying measures, and mortality data obtained from the national registry. There were however some limitations: residual confounding bias, use of JEM leading to non-differential misclassification and bias towards the null hypothesis, missing information for some jobs treated using midcensoring, no evaluation of complete working life-course exposure measures, and potential underestimation of suicide among the causes of death. Given the estimated fractions of suicide attributable to psychosocial work exposures, there is a need for more prevention policies oriented towards the psychosocial work environment.

13.4 UNDERSTANDING DIVERGENT TRAJECTORIES OF LIFESPAN DEVELOPMENT: IMPLICATIONS FOR PREVENTION OF SUICIDE IN LATER LIFE

Yeates Conwell*[1], Kim Van Orden[1], Amy Fiske[2]

[1]University of Rochester School of Medicine, [2]West Virginia University

Individual Abstract: Older adults are the most rapidly growing segment of the world's population, projected to constitute 22% by 2050. Virtually all who reach older adulthood have encountered adversity. They have faced acute and chronic illnesses and myriad losses. Their physical functioning has decreased and their cognition has slowed. They have experienced sadness, disappointments, and dismay across the life course. Despite these challenges, however, they are survivors, and most have thrived. Multiple studies across cultures and continents have shown that older people in general endorse less psychological distress, exhibit better emotion regulation, experience fewer negative and more positive emotions, and are more satisfied with their lives than young adult and middle aged groups. The observation that older people have greater emotional well-being (EWB) despite the numerous adverse impacts of aging has been ascribed to normal changes in which not only physical and mental capacities change as we age, but perspectives and values change as well that enable older adults to adapt functionally, psychosocially, and even physiologically to later life circumstances.
For some older adults, however, that process of adaptation fails to protect them from becoming suicidal in the face of adversity. Although a rare event, suicide rates in many countries across the globe are higher among older people than at any other point in the life course, at great cost to the older person, their families and caregivers, and society. The contrast between the positive benefits of aging to EWB on one hand and the reality of suicide in later life on the other forces the question of why the normal lifespan developmental process failed, resulting in premature suicide deaths.

Lifespan theorists and empirical aging research have begun to explore the variability in EWB with aging into older adulthood. Little attention has been paid thus far, however, to the ways in which divergence from normal lifespan developmental patterns pertain to suicide in later life, and what may cause those divergences. Understanding mechanisms that underlie normative and maladaptive development of EWB with aging may inform design of interventions to identify individuals at risk of falling off the normal lifespan developmental trajectory, placing them at increased risk for death by suicide, and preventing them from taking that divergent course.

This presentation will review the dominant theoretical frameworks for why older adults experience high EWB, and the supporting evidence for them. We then review potential psychological, social, and neurobiological mechanisms for why some older adults take divergent trajectories that lead to failures of the adaptive mechanisms associated with normal aging, which may in turn lead to suicide. Finally, the presentation will consider implications that an understanding of the mechanisms underlying normal and divergent lifespan development of EWB may have for the design of targeted, selective interventions to prevent suicidal states in old age.

14. SUICIDAL THOUGHTS AND BEHAVIORS AMONG UNIVERSITY STUDENTS: THE WORLD MENTAL HEALTH-INTERNATIONAL COLLEGE SURVEY (WMH-ICS) INITIATIVE AND THE US AFSP INTERACTIVE SCREENING PROGRAM.

Chair: Jordi Alonso, Hospital del Mar Medical Research Institute (IMIM); CIBER Epidemiología y Salud Pública (CIBERESP)

Overall Abstract Details: This symposium will bring together experts from various fields and countries to explore the prevalence of mental health disorders and suicidal ideation and attempts in college students across several countries. The symposium will also discuss strategies for risk detection, monitoring, and intervention in college students.

Entering college is a major transition in the lives of students making the transition from late-adolescence to emerging adulthood. Concurrently, many students are adjusting to a new environment. This transition occurs during an extremely sensitive life cycle stage when emotional problems and mental disorders commonly occur. Roughly three quarters of all lifetime mental disorders have onsets prior to the age of 24, and early-onset cases are associated with poorer clinical and functional outcomes than later-onset cases. Especially the college years are associated with a significant increase in emotional problems, such as anxiety, depression, or suicidal thoughts and behaviors, but also externalizing behaviors such as non-suicidal self-injury, disordered eating patterns, or impulse-related problems such as binge drinking. Collectively, these disorders and behaviors are associated with low academic attainment. Many students engage in risky behaviors during college, such as drinking heavily and using illicit drugs that place them at a higher risk for suicide.

The COVID-19 pandemic exacerbated these trends by disrupting students' routines, lifestyles, and support networks. Also, many universities counseling services were delivered via tele-medicine, yet a significant portion of students with depression remained untreated. Only a minority of students (roughly one in five) with mental disorders and/or suicidal thoughts and behaviors obtain treatment.

It is therefore important to address how to best serve college students on their terms and explore feasibility and effectiveness of treatment interventions that go beyond the traditional one-to-one treatment approaches. Higher education have had to become creative to connect student populations with an increasing mental illness burden to care.

This symposium will include four presenters from the WHO World Mental Health International College Student (WMH-ICS) Initiative. The WMH-ICS consists of representative samples of students in higher education in colleges and universities throughout the world to estimate prevalence of mental disorders, adverse consequences (on the personal, social, and academic levels), patterns of help-seeking for these disorders and conditions, and barriers/willingness to treatment. Longitudinal data collection allows to monitor changes in incidence, prevalence, and treatment of these disorders throughout the college years. Also, intervention experiments are included in some of the participating universities.

This symposium will also include a presentation on the American Foundation for Suicide Prevention's Interactive Screening Program (ISP). The ISP is an anonymous survey that offers the potential to engage student groups who are marginalized, in severe distress, and not receiving care. The ISP also provides valuable information on different student subgroups' mental health symptoms, stressors, and perceived barriers to care. And the ISP's impact on mental health symptoms and service utilization among American students with mental health

symptoms and suicidal thoughts, plans, and behaviors will be evaluated using external national college datasets.

Overall, this symposium highlights the importance of proactive and novel approaches in risk detection, monitoring, and intervention for suicide prevention in college students.

Conflicts of Interest: None

14.1 THE WHO WORLD MENTAL HEALTH – INTERNATIONAL COLLEGE STUDENT (WMH-ICS) INITIATIVE: A GLOBAL INITIATIVE TO ESTIMATE AND REDUCE THE BURDEN OF MENTAL DISORDERS IN HIGHER EDUCATION.

Ronny Bruffaerts*[1], Randy Auerbach[2], Pim Cuijpers[3], Jordi Alonso[4], Ronald C. Kessler[5]

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Individual Abstract: The college years are a crucial time period when students make the transition from late-adolescence to emerging adulthood. This transition takes place during an extremely sensitive part of the life cycle when emotional problems and mental disorders commonly occur. Roughly 75% of all mental disorders in general populations have onsets prior to the age of 24. Especially the college years are associated with a significant increase in emotional problems (anxiety, depression, or suicidal thoughts and behaviors [STB]) and externalizing behaviors (non-suicidal self-injury, disordered eating patterns, or binge drinking). Despite available effective treatments, only 1/5 obtain treatment. It is therefore important to investigate the feasibility and effectiveness of treatment interventions beyond the traditional one-to-one treatment approaches.

The WHO World Mental Health International College Student (WMH-ICS) Initiative is designed to: (1) generate accurate epidemiological data on unmet for treatment of mental disorders and STB among college students worldwide; (2) implement and evaluate web-based interventions for preventing and treating these conditions; and (3) disseminate evidence-based interventions found to be effective. Our procedures have also great potential to be implemented in low and middle income countries, where many college students are the first in their families to attend college. Stress can be especially high among such students but mental health treatment resources are typically low.

Assessment of mental health needs in higher education worldwide

The WMH-ICS consists of representative samples of students in higher education in colleges and universities throughout the world to estimate prevalence of mental disorders, adverse consequences (on the personal, social, and academic levels), patterns of help-seeking for these disorders and conditions, and barriers/willingness to treatment. Longitudinal data collection monitors changes in incidence, prevalence, and treatment throughout the college years. To date, the initiative collected more than 120,000 baseline assessments and more than 30,000 follow-up assessments throughout more than 70 institutions in 16 countries in 6 continents of the world.

Innovation in intervention designs

Experimental methods are being used to implement and document effects of a wide range of internet-based interventions for prevention and treatment of emotional problems in the WMH-

ICS surveys. There are active collaborations with student mental health clinics in selected institutions to co-create and (re)design interventions aimed at the student level. The latter are making use of the fact that waiting lists typically exist in these clinics, enabling to implement interventions using a waiting list control design. Our evaluations are considering both treatment effects among the treated, and accessibility, feasibility and respondent-burden. Further, we use different ways of reaching out to students, such as internet platforms or mass email advertisements. This enables us to reach out to students who would otherwise not be willing to seek help. These approaches highlight the potential value of WMH-ICS in using innovative outreach and intervention delivery methods to target unmet treatment needs.

We plan subsequent iterations to evaluate the relative effects of different interventions based on specific clinical profiles. Leveraging our very large cross-national database, our ultimate goal is to optimize matching the right students with the right interventions in stepped-care approaches, and, in doing so, alleviate short and long-term burdens of mental disorders and STB in higher education.

14.2 PREVALENCE AND CORRELATES OF SUICIDAL THOUGHTS AND BEHAVIORS AMONG COLLEGE STUDENTS – RESULTS FROM THE WMH-ICS INITIATIVE.

Philippe Mortier*[1]

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Individual Abstract: The college period is part of emerging adulthood, a developmental period situated between adolescence and adulthood, characterized by relative freedom from parental control, continued identity exploration and experimentation, a delay in obtaining financial independence, and postponing steady relationships or parenthood. This developmental aspect of the college period may carry additional risk for a wide range of adverse mental health outcomes, including suicidal thoughts and behaviours (STB). The WHO World Mental Health International College Student (WMH-ICS) Initiative is a coordinated series of ongoing epidemiological needs assessment surveys designed to obtain accurate longitudinal cross-national information about the prevalence and correlates of mental, substance, and behavioural disorders among college students worldwide in order to assess unmet need for treatment, target students in need of outreach, and evaluate preventive and clinical interventions. In this talk, I will discuss main findings from the WMH-ICS Initiative regarding college student STB, including occurrence, important determinants, and implications for suicide prevention interventions. Data consists of web-based self-report survey data from n=21,369 college students from 24 colleges/universities (8 private/16 public) located in 9 countries (Australia, Belgium, Germany, Hong-Kong, Mexico, Northern Ireland, South Africa, Spain, United States). Suicidal thoughts and behaviours were assessed using adapted items from the Columbia Suicide Severity Rating Scale. Lifetime prevalence of suicidal ideation was estimated at 32.7%, lifetime suicide plans at 17.5%, and lifetime suicide attempts at 4.3%. I will discuss these prevalence estimates in detail, including transition rates, and age of onset estimates, and will compare them with comparable prevalence rates found among same-age peers not in college. Next, I will present a series of multivariate analysis focusing on the associations between childhood adversities (CAs) and college student STB, using different operationalization of CA (type, number, severity, and frequency). Associations of CAs with

lifetime ideation and the transition from ideation to plan were best explained by the exact number of CA types (OR range 1.32–52.30 for exactly two to seven CAs), while associations of CAs with a transition to attempts were best explained by the frequency of specific CA types (scaled 0–4). These analyses will be discussed in detail, including graphical depiction of results. Finally, I will discuss how it is possible to develop multivariate prediction models for college student STB that reach sufficient prediction accuracy to guide the implementation of suicide prevention interventions. Prospective data used to develop the models comes from the Leuven College Surveys (i.e., the Belgian part of the WMH-ICS data) and will include separate models for first-onset STB and persistent STB during college, with up to 45 candidate risk factors considered in model development. Sensitivity/specificity trade-off analysis has shown that targeting the top 10% of students with highest predicted risk for first-onset of STB (according to the model) could lead to expected reductions up to 44.5% in first-onset suicidal ideation at the cost of 75.1% false positives. I will discuss implications for future STB prevention intervention strategies as well as proposed next steps in college student STB research. FUNDING: Instituto de Salud Carlos III/ FSE (Miguel Servet CP21/00078); Project "PI20/00006", funded by Instituto de Salud Carlos III (ISCIII) and co-funded by the European Union; Departament de Recerca i Universitats/Generalitat de Catalunya (AGAUR 2021 SGR 00624).

14.3 EFFECT OF AN INTERNET TRANSDIAGNOSTIC INTERVENTION WITHIN THE WMH-ICS ON DEPRESSION, ANXIETY AND IDENTIFICATION OF SUICIDALIDITY

Corina Benjet*[1], Ronald C. Kessler[2], Nur Hani Zainal[2], Yesica Albor[1], Libia Alvis-Barranco[3], Nayib Carrasco Tapias[4], Carlos C. Contreras-Ibáñez[5], Lorena Cudris-Torres[6], Francisco de la Peña[1], Noé González[1], José Benjamín Guerrero López[7], Raúl A. Gutierrez-Garcia[8], Eunice Vargas-Contreras[9], Maria Elena Medina-Mora[10], Pamela Patiño[1], Pim Cuijpers[11], Sarah M. Gildea[2], Alan E. Kazdin[12], Chris J. Kennedy[13], Alex Luedtke[14], Nancy A. Sampson[2], Maria V. Petukhova[2]

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Individual Abstract: Internet interventions that require fewer specialized human resources may be a scalable and cost-effective strategy for reducing the large unmet need for mental health treatment among university students, especially in resource-limited settings. We conducted a parallel, three-arm randomized controlled trial (RCT) in which we compared an internet transdiagnostic intervention with a guided and unguided version to treatment as usual for undergraduate university students with depression and/or anxiety in eight universities throughout Colombia and Mexico. In addition to the RCT, we developed novel algorithms based on machine learning to test which students benefit most from different treatment modalities. While suicidality was not a direct target of the intervention, students with suicidality were identified and specific strategies were implemented. We describe the

intervention called Yo Puedo Sentirme Bien, a culturally adapted version of the Space from Anxiety and Depression program, the strategies we implemented for students with suicidal risk and the effects on reducing depressive and anxious symptomatology as measured by the PHQ-9 and GAD-7. While the guided version had superior effects to the unguided version, the heterogeneity of treatment effects suggests that different student profiles benefit differentially from different treatment modalities. Such findings can provide university administrators and mental health planners with strategies to match students with the treatments that are most likely to benefit them at the lowest cost for the universities in terms of human resources, thus extending the reach and potential effectiveness of interventions they offer.

14.4 COMPAS-S: CHECKING ON MENTAL HEALTH PROVIDING ALTERNATIVE TO SUICIDE FOR STUDENTS

Penelope A. Hasking*[1], Kealagh Robinson[1], Peter McEvoy[1], Glenn Melvin[2], Ronny Bruffaerts[3], Mark Boyes[1], Randy P. Auerbach[4], Delia Hendrie[1], Matthew K. Nock[5], David Preece[1], Ronald C. Kessler[6]

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Individual Abstract: Suicidal thoughts and behaviour are prevalent among college students. Yet students report reluctance to seek support.
Data come from several waves of a prospective cohort study (2016–2022) of incoming college students (n = 5454) at an Australian university, as part of the World Mental Health Surveys International College Student Initiative (WMH-ICS). Using 2016-2017 data, we developed a multivariable risk algorithm to identify students at greatest risk of onset of suicidal behaviour over the next year (Development Cohort). We then validated the algorithm in the 2018–2019 cohorts (Control Cohort). From 2020–2022, we integrated the predictive risk algorithm into the WMH-ICS survey, providing telehealth support, safety-planning, and personalised referrals to students identified as being at high risk of suicidal behaviour (Intervention Cohort). We compared treatment access and suicidal behaviour outcomes for students receiving the telehealth support intervention against the retrospective control cohort.

Using our algorithm, 77% of students reporting a subsequent suicide plan or attempt in the validation cohort were captured in the top 15% of predicted probabilities, with 53% of these students reporting a suicide plan or attempt one year later. High-risk students in the Intervention Cohort showed a 41.7% reduction in probability of suicidal behaviour at 12-month follow-up compared to high-risk students in the Control Cohort.

A predictive risk algorithm embedded into universal screening, coupled with telehealth intervention, demonstrated promise as a suicide prevention program for college students.

14.5 IMPLEMENTATION OF THE AMERICAN FOUNDATION FOR SUICIDE PREVENTION'S INTERACTIVE SCREENING PROGRAM AT COLLEGES IN THE UNITED STATES

James Aluri[1], Susanna Lewis[2], Susan Han[2], Krystal Wang[3], Carlos Aguirre[4], Mark Dredze[5], Holly Wilcox[6], Susan Han*[2]

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Individual Abstract: Background: Rates of depression, anxiety, and suicidal thoughts, feelings, and behaviors have been increasing among college students in the United States.1 Simultaneously, institutions of higher education have been viewed as having ethical and legal responsibilities for the wellbeing of their students.2 One approach to address this concerning trend has been for universities to screen students for mental health concerns using online platforms and engage them with opportunities to connect to professional care.3 The Interactive Screening Program (ISP), developed by the American Foundation for Suicide Prevention, is a program that allows campus staff to screen and anonymously engage students to connect them to care.4,5 The ISP has been used by nearly 60 institutions of higher education in the US over the past two decades to screen close to 50,000 postsecondary students. Our goal is to describe the population of students who are most likely to engage with differing levels of the ISP (engagement with the dialogue feature, seek a referral).
Methods: Using cross-sectional data between 2017 and 2022 from institutions who participate in the analysis, we will use the following independent variables to characterize the population: race/ethnicity, gender, international student status, military veteran, first-generation student, PHQ-9 scores, disordered eating behaviors, problematic substance use, suicidal ideation, suicidal attempts, reported stressors (e.g., social, academic, etc.) and current medication or therapy treatment. These variables will be coded as categorical variables and all but the stressors variable are derived directly from the survey. We will use a combination of qualitative analysis and natural language processing (NLP) methods, such as topic models, to derive the variable for connection to care as a categorical variable. Our dependent variables will be engagement with the dialogue feature (yes/no) and seeking a referral (yes/no). The variable for dialogue engagement is derived directly from the ISP data, while the variable for seeking a referral will require a similar analysis to generating the stressors variable. We will manually annotate whether referral was sought for a portion of the data and use logistic regression to train univariate models for each of the independent variables and build a multivariate model that adequately describes the data using standard checks for model fit.

Results: We will report the adjusted and unadjusted Odds Ratios for engagement with the dialogue feature and seeking a referral based on our logistic regression models described above.

Implications: Our findings will help inform approaches to screening on college campuses by describing the types of students who are most likely to engage with and seek care through the ISP.

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Discussant: Holly Wilcox, Johns Hopkins Schools of Public Health, Medicine and Education

15. ADAPTING SUICIDE RISK SCREENING FOR GLOBAL PEDIATRIC MEDICAL SETTINGS: DO QUESTIONS ABOUT SUICIDE TRANSLATE?

Chair: Lisa Horowitz, National Institute of Mental Health, IRP, NIH

Co-Chair: Nathan Lowry, Teachers College, Columbia University

Overall Abstract Details: As the fourth leading cause of death worldwide for youth aged 15-19 years, suicide remains a global public health problem. To address these rising rates, medical settings have been identified as critical partners for early detection of suicide risk. According to death registry studies within the United States, almost 80% of pediatric suicide decedents had visited a healthcare provider in the year before their death, with almost 40% visiting during the month prior.

The World Health Organization has reported rising youth suicide and suicidal behavior around the world and particularly in low middle income countries (LMIC). LMIC comprise 80% of suicides worldwide. Suicide risk screening in U.S. medical settings has been identified as an important part of suicide prevention; however, many screening tools have only been validated in English. Even in the U.S., where there is a considerable population of Spanish-speaking patients, tools may have been translated but not tested empirically in Spanish. Non-English speaking patients/providers need to rely on translated versions of tools that might not be culturally sensitive or responsive.

Evidence-based suicide risk screening tools have been developed in English to detect suicide risk briefly and accurately and serve as the first step in connecting patients to further mental health care. Specifically, the Ask Suicide-Screening Questions (ASQ) tool demonstrated excellent sensitivity (0.97) and specificity (0.88) during its original validation among youth aged 10 and above in the emergency department, and has been subsequently validated in pediatric inpatient and outpatient settings and with adults. The ASQ is in the public domain and has been translated into 17 languages, but only the English version has been validated.

To address this limitation, the American Academy of Pediatrics (AAP) collaborated with pediatric clinician researchers in Nepal and Ethiopia, to validate translated versions of the ASQ utilizing a clinician-administered brief suicide safety assessment as a gold standard. These studies involved collaboration with the Ethiopian Pediatrics Society and Nepal Pediatric Society to validate the ASQ in Amharic and Nepali, respectively. In addition, an independent team of researchers at the University of Buenos Aires in Argentina sought to validate the ASQ in Spanish. Developers of the ASQ from NIMH and Nationwide Children's Hospital consulted on all three studies.

This symposium will take a global approach to suicide prevention in the medical setting by bringing together pediatric providers/researchers from Ethiopia, Nepal, Argentina, the AAP, and the NIMH. The presenters aim to describe translation, validation and culturally responsive implementation of a suicide risk screening tool into pediatric medical settings. Methodological and psychometric properties of the ASQ in three validation studies will be presented. Presenters will discuss strategies for overcoming barriers to effective suicide risk screening initiatives in under-resourced settings. These datasets will inform how suicide risk screening can be flexibly adapted and implemented in a culturally responsive manner.

15.1 HOW TO CUSTOMIZE YOUTH SUICIDE RISK SCREENING CLINICAL PATHWAYS ACROSS INTERNATIONAL MEDICAL SETTINGS

Lisa Horowitz*[1], Nathan Lowry[2], Patrick Ryan[1], August Wei[1], Terrell Carter[3], Arun Sharma[4], Krishna Bista[4], Daman Poudel[4], Muluwork Denberu[5], Bogale Worku[5], Federico Daray[6], Demian Rodante[6], Eliana Papávero[6], Janna Patterson[3], Sherri Smith[3], Jeffrey Bridge[7], Maryland Pao[1]

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Individual Abstract: In 2014, the World Health Organization released its first global report on suicide. The organization identified early risk detection, assessment, and management as key interventions to reduce suicides globally. Death registry studies conducted in the United States indicate approximately 82% of adult and youth suicide decedents visited a healthcare provider months, often weeks, prior to their death. Given the high contact with patients prior to death by suicide, medical settings are uniquely positioned to identify those at risk and provide mental health services. For youth, early detection may be especially critical, as early suicidal ideation often precedes later psychiatric disorders. Clinicians on the frontlines require evidence-based clinical pathways to feasibly implement screening without overburdening their busy practices. Clinicians around the world face challenges in implementation when tools are validated only in English and may not be culturally appropriate.
In March 2022, the American Academy of Pediatrics (AAP) revised the Bright Futures periodicity schedule to include screening youth for suicide risk. The AAP and the American Foundation for Suicide Prevention, along with experts from the National Institute of Mental Health, created the Blueprint for Youth Suicide Prevention, a roadmap for pediatricians to embed suicide prevention strategies in their practices (aap.org/suicideprevention). Studies are underway testing these strategies in U.S. medical settings. Ongoing testing of adaptations for non-English speakers in other countries present learning opportunities for improving best practices for suicide prevention in global medical settings.

Recently developed suicide risk screening clinical pathways and culturally responsive adaptations will be discussed. The 3-tiered pathway includes a brief screen, followed by a brief suicide safety assessment (BSSA) for all patients who screen positive. The BSSA informs the third tier, which operationalizes next steps for the patient. Dr. Horowitz will highlight the Ask Suicide-Screening Questions (ASQ) and its associated resources to illustrate implementation of the clinical pathway. This presentation will describe the process of adapting suicide risk

screening materials for implementation in several countries in non-English languages. Examples from Nepal, Ethiopia, Argentina, and other sites will be highlighted.

Observations of implementations highlighted the necessity for the clinical pathway to be flexible and adaptable. Focus groups, pilot trials, consulting local professional experts, and using an iterative process before implementing modified pathways were needed. For example, in some other languages, direct translations of the tools were not practical or culturally appropriate and required modifications. However, it is important that revisions be tested empirically to prevent over- or underdetecting suicide risk. Lessons learned from adapting and observing implementation of suicide risk screening programs and overcoming barriers will be presented.

15.2 PARTNERING WITH GLOBAL PEDIATRIC SOCIETIES TO VALIDATE A SUICIDE RISK SCREENING TOOL

Terrell Carter*[1], Janna Patterson[1], Sherri Smith[1], August Wei[2], Patrick Ryan[2], Nathan Lowry[2], Lisa Horowitz[2]

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Individual Abstract: Substantial efforts have been made to address rising suicide rates in the United States, including implementation of suicide risk screening in medical settings. In 2022, the American Academy of Pediatrics (AAP) updated the Bright Futures periodicity schedule for US-based pediatric care to recommend screening all patients ages 12 and above for suicide risk. To help implement effective suicide risk screening in medical settings, AAP, in conjunction with the American Foundation for Suicide Prevention and experts from the National Institute of Mental Health, created a Blueprint for Youth Suicide Prevention in March 2022. The Blueprint includes best practice guidelines and resources for identifying and managing pediatric patients with elevated suicide risk.

Suicide is the fourth leading cause of death in 15-29 year-olds globally, and 77% of these deaths occur in low- and middle-income countries (LMICs). Yet according to a Lancet Commission on Adolescent Health and Wellbeing, the evidence base for suicide prevention among adolescents and young adults is lacking in LMICs. Healthcare providers need tools to support screening to identify patients at-risk. One commonly used screening tool is the Ask Suicide-Screening Questions (ASQ), which has demonstrated excellent psychometric properties in the US among English-speaking populations in medical settings. The ASQ has been translated in 17 languages to aid in global suicide prevention efforts, with validations of translated tools underway. Global collaborations are necessary to ensure translations of the ASQ are culturally sensitive, especially for LMICs that have limited access to validated tools.

In alignment with the AAP's mission to impact global adolescent mental health, the AAP partnered with pediatric societies in Ethiopia and Nepal to translate, validate, and implement the ASQ in Amharic and Nepali, respectively.

This presentation will discuss the role pediatric societies can play in suicide research, logistics of coordinating global research on the implementation of the ASQ, the importance of identifying cultural differences in discussing suicide, and how the global initiatives to expand suicide risk screening address the mission of the AAP.

15.3 SCREENING ETHIOPIAN YOUTH FOR SUICIDE RISK IN MEDICAL SETTINGS: VALIDATION OF THE AMHARIC VERSION OF THE ASQ

Muluwork Denberu*[1], Bogale Worku[2], Terrell Carter[3], Nathan Lowry[4], Jian-Ping He[4], August Wei[4], Patrick Ryan[4], Jeffrey Bridge[5], Lisa Horowitz[4], Yonas Baheretibebs[1], Kassahun Habtamu[6]

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Individual Abstract: Background: Suicidal ideation, plans, and attempts are becoming increasingly common among youth in Ethiopia, where over 40% of the population is under the age of 15. The World Health Organization estimates that the suicide rate for Ethiopian youth ages 15 to 19 is 2.88 per 100,000. Research estimates that the prevalence rate for suicide attempts among youth in Ethiopia ranges from 7.4% to 16.2%. In response to rising suicide rates, suicide risk screening has been identified as an effective early intervention strategy to detect those at risk and bridge them to further mental healthcare. However, there are currently no evidence-based suicide risk screening tools validated in Amharic, the official language of Ethiopia. To address this need, the Ethiopian Pediatrics Society partnered with the American Academy of Pediatrics to develop suicide prevention tools and strategies, available in Amharic, for pediatric practices.

Objectives: This presentation will discuss findings from a validation study of the Amharic version of the Ask Suicide-Screening Questions (ASQ) tool in pediatric patients in medical settings in the capital city of Ethiopia, Addis Ababa. Additionally, lessons learned from ongoing implementation efforts will be discussed.

Methods: Pediatric patients ages 10 to 18 years old presenting to the emergency department, outpatient clinic, or medical inpatient unit of a teaching hospital in Addis Ababa, were recruited through convenience sampling for participation in a cross-sectional instrument validation study. A clinician-administered brief suicide safety assessment (BSSA) served as the gold standard to validate the Amharic version of the ASQ. Patient opinions about screening were assessed to determine the feasibility and acceptability of administering the ASQ in this venue.

Results: A total of 159 pediatric patients were screened; 42 youth (26%) screened positive on the ASQ and 10 (6%) were deemed "at risk" for suicide by a clinician. Compared to the gold standard BSSA, the ASQ had strong psychometric properties, with a sensitivity of 1.00 (95% confidence interval [CI]: 1.00-1.00), a specificity of 0.79 (95% CI: 0.72-0.85), a positive predictive value of 0.24 (95% CI: 0.11-0.37), a negative predictive value of 1.00 (95% CI: 1.00-1.00), and an area under curve of 0.89 (95% CI: 0.86-0.93). The majority of positive ASQ screens were classified as "non-acute" risk (88%), indicating no presence of current suicidal thoughts, and 29% (12/42) of patients who screened positive endorsed a previous suicide attempt. Half (52.2%; 83/159) of the participants thought that healthcare providers should ask kids about suicide and self-injury.

Conclusions: The Amharic version of the ASQ demonstrates strong psychometric properties and appears to be a valid suicide risk screening tool among pediatric patients in Ethiopia. Suicide risk screening was adapted and acceptable to Amharic-speaking patients and their parents. Future studies should further examine cultural factors affecting attitudes towards screening.

15.4 SCREENING FOR SUICIDE RISK IN PEDIATRIC INPATIENTS IN NEPAL: VALIDATING THE NEPALI VERSION OF THE ASQ

Arun Sharma[1], Daman Poudel[2], Ram Chapagain[1], Manisha Chapagain[1], Terrell Carter[3], Jian-Ping He[4], Nathan Lowry[5], Patrick Ryan[4], August Wei[4], Jeffrey Bridge[6], Lisa Horowitz[4], Krishna Bista*[7]

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Individual Abstract: Background: Low- and middle-income countries contribute to large proportion of global suicide crisis. Specifically, Nepal has one of the highest suicide rates in the world. A national survey conducted in 2019 identified a suicidality prevalence of 7.2%, with current suicidal thoughts and lifetime suicide attempt prevalence as high as 6.5% and 1.1%, respectively. Young people under 25 years old face substantial risk and constitute 49% of Nepal's population. As a prevention strategy, healthcare providers in under-resourced, non-mental health settings can use suicide risk screening tools to detect patients at risk and administer appropriate interventions. However, screening is not routinely performed at hospital visits in Nepal, in part due to lack of a translated and validated tools in the local dialect. There are currently no evidence-based suicide risk screening tools in the Nepali language. To address this barrier, the Nepal Pediatric Society (NPS) partnered with the American Academy of Pediatrics, and in consultation with NIMH researchers, a validate the Nepali version of the Ask Suicide-Screening Questions (ASQ).
Objective: NPS clinicians/researchers will describe the findings from a validation study of the Nepali version of the ASQ tool in pediatric patients in medical settings. Observations from ongoing implementation efforts will be shared.

Methods: This study was conducted at Tribhuvan University Teaching Hospital and Kanti Children's Hospital, large referral urban hospitals located in Kathmandu, Nepal. Patients aged 10 to 24 years admitted between January and July 2022 were approached and recruited through convenience sampling. Patients were excluded if they had significant cognitive impairment, were not fluent in Nepali, or did not complete all study materials. Trained nurses administered the ASQ and patients completed a demographic survey. A separate team of psychologists, blind to ASQ results, conducted a gold standard brief suicide safety assessment (BSSA) on the same day. A psychiatric assessment was completed if anyone was deemed at risk by either ASQ or BSSA prior to hospital discharge.

Results: 309/430 (54.0% male, mean age = 15.7 [4.2] years) of eligible participants were enrolled and completed all study measures. Excluded participants had similar characteristics. 15.9% (49/309) of patients screened positive on the ASQ and 8.4% (26/309) were identified as at elevated suicide risk through the BSSA. Compared to the gold standard BSSA, the ASQ had good sensitivity (77%; 95% CI: 56-91), specificity (90%; 95% CI: 86-93), and negative predictive value (98%; 95% CI: 95-99). Positive predictive value was 0.41 (95% CI: 0.27-0.56).d 30.6% (15/49) of positive patients reported a prior suicide attempt, which is consistent with other ASQ research studies. 93.8% (46/49) of positive screens were non-acute and did not

endorse current suicidal ideation. The majority of parents and participants supported screening in medical settings.

Conclusion: The Nepali version of the ASQ demonstrates good psychometric properties and appears to be an acceptable brief screening tool for Nepali-speaking pediatric patients in hospital settings. Implementing a quick suicide risk screening tool in all young people at hospital visits can identify a large population at risk with minimal time disruption and resources. Future studies should extend screening to outpatient settings.

15.5 VALIDATION OF THE SPANISH VERSION OF THE ASQ FOR SUICIDE RISK SCREENING IN PEDIATRIC PATIENTS IN ARGENTINA

Demián Rodante*[1], Eliana Papávero[2], Adriana Ingratta[3], Antonio Gorrini[4], Eugenia Ralli[5], Eliana Rodante[6], Mariana Arismendi[4], Nathan Lowry[7], Patrick Ryan[8], Jeffrey Bridge[9], Lisa Horowitz[8], Federico Daray[1]

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Individual Abstract: Background: The suicide rate in Argentina has remained relatively stable during the last 15 years; however, young people have shown a gradual and sustained increase. It is estimated that the suicide rate for Argentine youth between the ages of 15 and 19 is 12.7 per 100,000 youth, almost double the country's overall rate. In addition, more than 20% of youth between the ages of 13 and 17 thought about killing themselves in the last year, and 15% of them attempted suicide at least once in that period. The high frequency of suicide risk in adolescents necessitates the development and validation of specific tools for universal screening. To date, there are no validated suicide risk screening tools in Spanish. Given the shortages of mental health professionals worldwide, non-psychiatric clinicians need tools in native languages to identify and manage youth at risk for suicide.

Objectives: This presentation will describe the validation of the Spanish version of the Ask Suicide-Screening Questions (ASQ) in pediatric patients in Argentina.

Methods: Using a cross-sectional multicenter design, a convenience sample of pediatric patients aged 10 to 19 years old were recruited from outpatient/inpatient medical settings and private psychiatric clinics. The Spanish version of the Suicidal Ideation Questionnaire (SIQ) was used as a standard criterion to validate the ASQ. Sensitivity, specificity, positive predictive value, and negative predictive value were calculated.

Results: A total of 301 pediatric patients were enrolled and screened for suicide risk. Twenty-eight percent of the entire sample (83/301) of youth screened positive on the ASQ, and 21% (62/301) screened positive on the SIQ/SIQ-JR and were considered "at risk" for suicide. The Spanish version of the ASQ yielded a sensitivity of 96.8% (95% CI: 88.8% to 99.6%), specificity of 90.4% (95% CI: 85.9% to 93.8), positive predictive value of 72.3% (95 CI: 61.4% to 81.6%), and negative predictive value of 99.1% (95% CI: 96.7% to 99.9%). The LR (+) was 10.1 (95% CI: 6.1 to 14.0), and the LR (-) was 0.03 (95% CI: -0.01 to 0.09). K was 0.77 (95% CI: 0.69 to 0.86), and the AUC was 0.94 (95% CI: 0.91 to 0.97). Of the entire sample, 90%

(270/301) believed that nurses should screen children and adolescents for suicide risk in the hospital.

Conclusions: The Spanish language ASQ demonstrated strong psychometric properties and appeared to be valid for identifying Spanish-speaking youth at risk for suicide. A validated suicide risk screening tool in Spanish can potentially impact suicide prevention efforts for Spanish speakers worldwide. Future studies should examine how the Spanish version of the ASQ performs across regional dialects of Spanish.

Discussant: Jeffrey Bridge, The Research Institute at Nationwide Children's Hospital

Tuesday, October 17, 2023

CONCURRENT SYMPOSIUM SESSIONS

8:30 a.m. - 10:00 a.m.

16. NEW APPROACHES TO PSYCHOTHERAPY INTERVENTION FOR SUICIDE RISK

Chair: Sakina Rizvi, University of Toronto

Overall Abstract Details: In the last 10 years, suicide rates have not significantly decreased, and suicide remains a leading cause of death globally. The COVID-19 pandemic also resulted in increased rates of suicide in some regions and subpopulations. This has led to concerns that the long-term effects of the pandemic may increase suicide rates globally over the next several years. Further exacerbating this issue, across some countries wait-lists for suicide risk services can exceed 1 year. Evidence demonstrates that psychotherapeutic interventions can be effective in reducing suicide risk. Consequently, it is paramount to develop new suicide-specific psychotherapeutic interventions and refine existing ones to address the needs of different clinical settings and at-risk populations. This international panel will highlight cutting-edge advances in suicide intervention psychotherapies. Dr. Anja Gysin-Maillart (University of Bern, Switzerland) will discuss the new inclusions to the Attempted Suicide Short Intervention Program (ASSIP), a brief psychotherapy program shown to reduce suicidal behaviour over 2 years. She will also review recent data on the therapy process mechanisms that contribute to the effectiveness of ASSIP. Dr. David Jobes (Catholic University of America, USA) will provide important updates on randomized controlled trials (RCTs) for the Collaborative Assessment and Management of Suicidality (CAMS) intervention, a suicide-focused evidence-based clinical framework used across populations and a range of clinical settings. Five ongoing RCTs will also be discussed. Dr. David Rudd (University of Memphis, USA) will address adapting Brief Cognitive-Behavioral Therapy for Suicide Prevention to a digital therapeutic. He will also review the use of this new approach in randomized controlled trials in primary care and inpatient settings. Dr. Sakina Rizvi (University or Toronto, Canada) will examine the use of a novel single session intervention for suicide risk, Brief Skills for Safer Living (Brief-SfSL). Results from a national study of virtually delivered Brief-SfSL will be considered, along with feasibility and acceptability data. Dr. Gerd Wagner (Jena University Hospital, Germany) will highlight results of a trial evaluating Relapse Prevention Intervention after Suicidal Event (RISE), a newly developed short-term therapy that targets suicidal behaviour and designed for inpatient settings. The innovative work presented in this symposium underscores the key

therapeutic processes necessary for suicide intervention, as well as the importance of considering new ways to address intervention across clinical settings. Researchers based at 5 different institutions across North America and Europe strengthens the international relevance of the symposium.

16.1 TREATING SUICIDAL BEHAVIOR WITH ASSIP

Anja Gysin-Maillart*[1]

[1]Translational Research Centre, University Hospital of Psychiatry, University of Bern, Switzerland

Individual Abstract: Treatment of suicidal patients is a priority in suicide prevention. Although the number of available interventions for suicidal behavior has recently increased, their effectiveness has remained rather low (Hedges g = -0.17). One possible approach to improve this situation is to reach a better understanding of the mechanism of action underlying the therapy process. This might also help us to recognize patients for whom individual therapy is more likely to be successful and in which setting it must be conducted.
The Attempted Suicide Short Intervention Program (ASSIP) has shown to reduce the risk of repeat suicide attempts by approximately 80% over a 24-month period (Wald $\chi 21 = 13.1$, 95% CI 12.4-13.7, $p < 0.001$). The interval between the attempted suicide and the initiation of therapy has no apparent effect on the outcome of the therapy. Within three to four sessions, ASSIP aims to build a shared understanding of individual mechanisms leading to suicidal behavior in a biographical context, to identify specific vulnerabilities, and trigger events. Individual warning signs are uncovered and a personal crisis plan is developed. A primary goal of ASSIP is to establish a trustful therapeutic relationship that is maintained by sending follow-up letters over the course of two years.

In the first ASSIP session a narrative interview is conducted, in which an early therapeutic alliance is built. This interview is videotaped while the patient tells the story of their suicide attempt in their own words (IQR = 4.9-5.6, W = 257.5, $p < 0.001$). In the subsequent video playback, the patient is given the opportunity for a controlled "re-immersion" into the suicidal mode, by collaboratively watching and analyzing selected video sequences. Finally, the jointly developed contents are summarized in an individual case conceptualization of their suicidal behavior. This is done with the goal of allowing a transfer of the relevant topics to long-term therapy. Recent findings indicate that both working through dysfunctional coping strategies (ASSIP: 11% less dysfunctional coping; W = 1316, p = 0.011, r = 0.21) and building problem-oriented coping strategies (ASSIP: 6% more problem-oriented coping; W = 2217, p = 0.029, r = 0.17) are essential for overcoming suicidal crises. In addition, individual differences are found in the longitudinal development of reasons for living (RFL) and reasons for dying (RFD). In contrast to RFL, RFD decreases significantly over the 24-month period, with a greater decrease in the ASSIP group (t1: 2.32 to t5: 0.51) than in the control group (t1: 1.90 to t5: 1.04) (b=-0.02; p=.004). Regular letters are sent to the patient over the course of two years of follow up to: 1) anchor a long-term therapeutic alliance, 2) remind the patient of their personal strategies, and 3) offer easy access to the health-care system. During the whole process, the patient is treated as the expert of their suicidal story and preventive measures for them to use are collaborated on together.

In this presentation, the different elements of ASSIP and its clinical process factors will be outlined. Moreover, new research approaches, such as capturing video synchrony within video playback or Ecological Momentary Assessment (EMA) analyses within the therapy process will be discussed.

16.2 AN OVERVIEW TO CAMS CLINICAL TRIAL RESEARCH

David Jobes*[1]

[1]The Catholic University of America

Individual Abstract: The Collaborative Assessment and Management of Suicidality (CAMS) is an evidence-based suicide-focused therapeutic framework. CAMS employs a multi-purpose assessment, stabilization, treatment planning, to clinical outcome tool called the Suicide Status Form (SSF). Critical to CAMS is the targeted treatment of patient-identified "drivers" (what makes a patient consider suicide). The effective use of CAMS leads to behavioral stabilization and the effective management of suicidal thoughts and feelings. As a clinical intervention, CAMS has been developed over 30 years and is supported by extensive peer-reviewed publications that include 10 open clinical trials, 7 randomized controlled trials, and 2 meta-analyses. This presentation will provide a brief overview to the CAMS approach and use of the SSF and will also review its development with a particular emphasis on clinical trial research across various patient populations and different clinical settings around the world. Current clinical trial research is focused on adapting CAMS for use with adolescents who are suicidal (CAMS-4Teens) and with children ages 4-11 (CAMS-4Kids) and how to engage parents to support CAMS-guided care. Additional research is now being pursued to use CAMS with more diverse populations including a feasibility study with black teens and LGBTQ+ adolescents who are suicidal. This presentation will thus provide an overview of five ongoing randomized controlled trials and exploratory feasibility studies along with other next steps for clinical use of CAMS. In the spirit of this symposium, the development and use of CAMS underscores the effectiveness and value of suicide-focused psychotherapeutic interventions for patients who are suicidal.

16.3 MITIGATING SUICIDE RISK DURING THE COVID-19 PANDEMIC VIA TELEHEALTH USING AN INTENSIVE SINGLE SESSION OF "BRIEF SKILLS FOR SAFER LIVING"

Sakina Rizvi[1], Aleksandra Lalovic*[2]

[1]University of Toronto, [2]St. Michael's Hospital - Unity Health Toronto

Individual Abstract: Globally, increased suicide risk and lack of access to mental health care has created a dire need for scalable suicide risk interventions across all communities. A few preliminary studies have demonstrated that single session interventions can effectively reduce risk, which represents a cost-effective approach that is associated with high treatment engagement. To address the need for evidence-based single-session interventions, we developed "Brief Skills for Safer Living" (Brief-SfSL). Brief-SfSL is an intensive 90-minute single-session individual psychotherapy that directly targets suicide risk by helping individuals understand their suicidal thoughts while incorporating psychoeducation and skills building to manage thoughts and stay safe during crises. It was adapted from our original SfSL 20-week

group therapy for recurrent suicide attempt that demonstrated positive effects on suicide risk. Brief-SfSL includes the key components from the SfSL group that address limitations of other suicide interventions, while combining common elements from other single-session interventions including safety planning, skills training, understanding of the suicidal crisis and follow-up. We recently completed a Canada-wide 3-month clinical trial to assess the effectiveness and feasibility/acceptability of virtually-delivered Brief-SfSL among 77 adults presenting with suicidal ideation from the community. A total of 60.5% of the study participants had a history of one or more suicide attempts. Results of the study demonstrated a positive impact on suicide risk, feasibility delivering the intervention virtually, and acceptability of the therapy from participants. Specifically, by 3-months participants reported reduced suicidal ideation ($t=-5.36$, $p <0.001$) and an increased ability to keep oneself safe from acting on suicidal thoughts ($t=-3.66$, $p<0.001$). With respect to acceptability, 93% of participants found Brief-SfSL helpful. Delivery in an online format was found to be satisfactory for 86% of participants and 97% reported it was easy to access the therapy online. This presentation will discuss the results of this cross-Canada study, as well as engage the audience to consider the clinician experience delivering a single session suicide risk intervention.

16.4 TRANSLATION OF EFFECTIVE TREATMENTS TO DIGITAL APPLICATION: PROS AND CONS

M. David Rudd*[1]

[1]University of Memphis

Individual Abstract: The session will review the evidence supporting Brief Cognitive-Behavioral Therapy for Suicide Prevention (BCBT-SP) as an effective intervention for those experiencing suicidal thoughts and behaviors. It will also review the recent translation of BCBT-SP to a digital therapeutic, including the recently launched randomized controlled trial in a primary care setting and an ongoing trial in an inpatient setting. The session will review not only the many potential positive aspects of digital translation, but also a broad array of challenges.

16.5 RISE - RELAPSE PREVENTION AFTER SUICIDAL EVENT: A PSYCHOTHERAPEUTIC SHORT-TERM PROGRAM FOR THE TREATMENT OF PATIENTS AFTER SUICIDE ATTEMPT.

Gerd Wagner*[1], Marlehn Lübbert[2], Lydia Bahlmann[1]

[1]Jena University Hospital, [2]University of Rostock

Individual Abstract: Introduction: Recent study results suggest that treatment of mental disorders alone is not sufficient to reduce the risk of future suicidal behavior in patients with a history of suicide attempt(s). It is therefore necessary to give special therapeutic attention to past suicide attempts. For this reason, we have developed a short-term, structured and manualized intervention for the treatment of suicidal behavior in the acute inpatient setting. The newly developed therapeutic program, RISE, builds on the most effective components of existing psychotherapeutic and psychosocial interventions for suicidal behavior, based on our recent meta-analysis (Sobanski et al. 2021). METHODS: We examined the feasibility and acceptability of the RISE program and the effects on suicidal ideation, psychological pain, self-efficacy, and depressive symptoms. The final sample consisted of 20 patients hospitalized for

a recent suicide attempt, including 60 percent of patients with multiple suicide attempts. Data collection included a structured interview and several questionnaires to examine the feasibility and acceptability of the RISE program and changes in clinical symptoms. A follow-up was performed after six months. RESULTS: The RISE program showed good overall acceptability and feasibility. It also significantly reduced suicidal ideation, psychological pain, depressive symptoms, and hopelessness. In addition, patients' self-efficacy increased significantly after therapy. DISCUSSION: In conclusion, RISE is a promising short-term intervention for the treatment of patients at high risk for future suicidal behavior in an inpatient setting.

17. 360 DEGREES OF ALTERNATIVE APPROACHES TO SUICIDE RISK DETECTION IN ADOLESCENTS: FROM ADAPTIVE SCREENING THROUGH IMPLICIT, BEHAVIORAL, AND PASSIVE MOBILE SENSING

Chair: Alan Apter, Schneiders Childrens Medical Center of Israel

Overall Abstract Details: Suicide research faces significant challenges in identifying adolescents at risk for suicide and suicidal behaviors. Overcoming limitations of self-reporting and balancing comprehensive testing with minimizing assessment burden are among the major obstacles, particularly in demanding clinical settings such as emergency departments and post-discharge. However, recent studies have introduced novel approaches to improve suicide risk prediction. These include implicit and objective behavioral measures and technological advancements that offer new avenues for real-time risk assessments based on various indices. This symposium aims to provide a comprehensive overview of promising suicide risk detection approaches in adolescents and young adults, from brief self-report universal screening to computerized adaptive testing, implicit and performance measures, and technology-based mobile sensing and machine learning.

The first speaker will compare the performance of two screening tools, the 4-item ASQ and the CASSY computerized adaptive screen, in predicting suicide attempts in the multicenter cohort study of adolescents seen in one of 14 emergency departments in the US (ED-STARS). The second speaker will present the predictive utility of the Death-Suicide Implicit Association Test (D/S-IAT) on short-term suicide risk trajectories among adolescents following their discharge from the emergency department in Israel due to suicide behaviors. The third speaker will describe objective measures using suicide-specific behavioral tasks and a decision-making task as potential predictors for suicidal behavior in the year post-hospital discharge among young adults and their correlation with specific biomarkers. The fourth speaker will present the feasibility, acceptability, and potential clinical utility of real-time active and passive mobile monitoring among high-risk adolescents in an outpatient clinic in Israel. The final presentation will describe how language patterns passively collected from naturalistic smartphone use both covary with and predict exacerbation of mood and suicide-related symptoms in adolescent samples.

The concluding discussion will compare the opportunities and challenges of each method and its potential integration into clinical care. Overall, the symposium will highlight the importance of developing and implementing alternative approaches to suicide risk detection in adolescents. The different approaches discussed in the symposium, including screening tools, behavioral tasks, ecological momentary assessment, machine learning algorithms, and natural language processing, can help identify high-risk individuals and inform suicide prevention strategies.

17.1 PREDICTIVE VALIDITY OF THE ASK SUICIDE-SCREENING QUESTIONS (ASQ) AND THE COMPUTERIZED ADAPTIVE SCREEN FOR SUICIDAL YOUTH (CASSY): A PROSPECTIVE EMERGENCY DEPARTMENT-BASED STUDY OF ADOLESCENTS

David Brent*[1], Lisa Horowitz[2], Jackie Grupp-Phelan[3], Jeffrey Bridge[4], Kent Page[5], T. Charles Casper[5], Cheryl King[6]

[1]UPMC/ Western Psychiatric Institute and Clinic, [2]NIMH Intramural Program, [3]UCSF, [4]Nationwide Children's Hospital, Department of Pediatrics and Ohio State University School of Medicine, [5]University of Utah, [6]University of Michigan School of Medicine

Individual Abstract: Rationale and background: Youth who die by suicide are nearly 7 times more likely to have been seen in an emergency department (ED) within 30 days of their death and for many suicide decedents, an ED visit is their last clinical contact. Screening for suicidal risk in youthful ED patients has been shown to be feasible, acceptable, and to identify many youths at suicidal risk who do not present for psychiatric chief complaints.
Research question: How do the ASQ and CASSY compare with respect to prediction of suicide attempts (SAs) and suicide-related events (SREs, i.e., visit to an ED or hospital for a suicide-related chief complaint)? The ASQ is a 4-item questionnaire that assesses suicidal ideation and lifetime SAs; a positive or non-response to any question is considered a positive screen. The CASSY is a computerized adaptive screen that presented 3 of the ASQ items to all respondents, and an average of 8 additional items. Its continuous outcome is the probability of an SA within the next 3 months.

Method: The Emergency Department Study for Teens at Risk for Suicide (ED-STARS) is a prospective, random-series, multicenter cohort study of adolescents seen in one of 14 EDs, with youth oversampled for psychiatric chief complaints. The EDS consisted of 14 pediatric EDs based in academic medical centers from the Pediatric Emergency Care Applied Research Network (PECARN) and one Indian Health Service ED. Of 6315 adolescents available, 4050 were enrolled, 3965 completed baseline assessments, and 2740 completed both screening instruments and a 3 month follow-up to determine the occurrence of an SA or SRE.

Results: The 2740 youth in this cohort were between 12-17 years of age (M=15.0, standard deviation [SD]=1.7 years), 62.2% were female, 17.1% were Black, 24.7% were Hispanic, and 59.1% were White. Regarding the prediction of SAs, the ASQ and the CASSY were similar with respect to sensitivity (0.95 (95% confidence interval [CI], 0.92-0.98) vs. 0.95 (0.91-0.98); specificity (0.59 [0.57-0.61] vs. 0.64 [0.63-0.66]); positive predictive value (PPV) (0.13 [0.11-0.15] vs. 0.14 [0.12-0.17]) and negative predictive value (NPV) (both, 0.995 [0.991-0.998). The Areas Under the Research Operating Curve (AUROCs) were similar between the ASQ and CASSY for those ED patients presenting with physical health complaints (0.88 [0.81-.0.95] vs. 0.94 [0.91-0.96]). Among those with psychiatric chief complaints, the AUROC for the CASSY was higher than for the ASQ (0.72 [0.68-0.77] vs. 0.57 [0.55-0.59]). Similar results were found regarding the prediction of SREs. For both instruments, predictive validity was similar among Black, Hispanic, and White participants.

Conclusions: These results show that the ASQ and CASSY are similar in sensitivity, specificity, PPV and NPV making them both appropriate for universal screening. For those with psychiatric chief complaints, the CASSY performed better than the ASQ in predicting

future SAs. The main advantages of the ASQ are that it is free, already widely used, and is available with a recommended suicide risk clinical pathway. The main advantages of the CASSY are that sensitivity and specificity (the screen threshold) can be tailored to the needs of a specific setting, that it provides information regarding the probability of an SA within the next 3 months, and it performs more strongly among youth with behavioral health complaints. The main disadvantage of the ASQ is that it provides a dichotomous, rather than dimensional assessment of suicidal risk. The main disadvantages of the CASSY are that it requires computer interface, and a license [and hence is not free]. Future studies should examine the effects of integration of these measures into clinical care pathways on subsequent suicidal outcomes.

17.2 IMPLICIT IDENTIFICATION WITH DEATH DETECTS AND PREDICTS SHORT TERM SUICIDE RISK AMONG ADOLESCENTS DISCHARGED FROM THE EMERGENCY ROOM

Nermin Toukhy*[1], Shira Barzilay[2], Sami Hamdan[3], Dana Grisaru-Hergas[4], Liat Haruvi - Catalan[4], Mira Levis Frenk[4], Alan Apter[4], Noa Benaroya[4], Silvana Fennig[4], Yari Gvion[1]

[1]Bar-Ilan University, [2]University of Haifa, [3]School of Behavioral Sciences, Tel Aviv-Yaffo Academic College, Tel-Aviv, [4]Schneider Children's Medical Center

Individual Abstract: Background: Implicit identification with death, measured by the Death-Suicide Implicit Association Test (D/S-IAT), has been found to predict long-term suicide risk among adolescents. However, previous studies did not examine the predictive utility of D/S-IAT on short-term suicide risk trajectories among adolescents, especially during the critical period following discharge from the emergency room (ER) due to suicide behaviors.
Objective: The current study examined the ability of the D/S-IAT to discriminate and predict suicide risk trajectories during the month following initial suicide risk assessment, among adolescents recently discharged from the ER.

Methods: One hundred and fifteen adolescents aged 9-18 years (77.4% female) were assessed at clinic intake. All participants completed D/S-IAT and self-report measures for suicide risk, depression and anxiety during intake and one-month follow up.

Results: The D/S-IAT distinguished and predicted participants with continued heightened suicide risk at follow up, above and beyond depression, anxiety, and suicide risk level at intake.

Conclusions: Along with conventional measures, D/S-IAT may be utilized to predict short-term suicide risk during post-ER discharge.

17.3 OBJECTIVE MARKERS OF RISK FOR SUICIDAL BEHAVIOR IN YOUNG ADULTS

Nadine Melhem*[1], Eli Goodfriend[2], Dara Sakolsky[3], David Brent[4], Anna Marsland[5], Antoine Douaihy[1]

[1]University of Pittsburgh School of Medicine, [2]University of Pittsburgh Medical Center, [3]University of Pittsburgh Medical Center, Western Psychiatric Institute and Clinic, [4]University of Pittsburgh Medical Center, Western Psychiatric Hospital, [5]University of Pittsburgh

Individual Abstract: The prediction of suicidal behavior is challenging given our reliance on self-reports. In this study, we examined objective measures using suicide-specific behavioral tasks and a decision-making task to examine them as potential predictors for suicidal behavior in the year post-hospital discharge in young adults, a high-risk period for suicidal behavior. We also examine the relationship of these measures to hair cortisol concentrations and inflammatory markers, which have been previously associated with suicidal behavior. Our sample consists of 249 youth with mean age of 24.4 years (SD=3.72, 18-30 years), 41.4% males, and 75.5% White who had completed the Suicide-Implicit Association Task (Suicide-IAT), Suicide Stroop, and a modified CUPS task where a white noise was introduced as a stress condition to measure decision-making under neutral and stressful conditions. We used broad and narrow definitions for prospective suicidal behavior events. The broad definition (SB) included 41 events including actual, interrupted, and aborted attempts and preparatory behaviors assessed using the Columbia Suicide Severity Rating Scale (C-SSRS) and the narrow definition (SA) included 18 actual attempts. Suicide-IAT scores at baseline significantly predicted SA [Hazard Ratio or HR= 4.98, 95% CI, 1.34-18.46, P=0.016] but not SB [HR= 1.81, 95% CI, 0.78-4.19, P=0.164]. When controlling for clinical characteristics predicting SA, we found the results to be similar but did not reach statistical significance [HR= 4.06, 95% CI, 0.81-22.3, P=0.089]. The Suicide Stroop task did not predict SA or SB. For the CUPS task, we found higher scores choosing the safe option under the stress condition [HR= 1.04, 95% CI, 1.01-1.08, p=0.021] predicted SA even after controlling for covariates. We then examined the relationships of HCC and inflammation with performance on these tasks and found lower HCC to be significantly associated with riskier decision-making under stress [OR=1.67, 95% CI 1.07-2.61, p=0.025] and neutral [OR=1.54, 95% CI 1.05-2.26, p=0.03] conditions when either a safe or risky decision were advantageous. Higher C-Reactive Protein was also associated with riskier decisions when the safe option was advantageous under neutral [OR=0.53, 95% CI 0.38-0.75, p=0.001] and stress conditions [OR=0.45, 95% CI 0.31-0.65, p <0.001]. Similar results were observed with Interleukin-6 or IL-6 where higher IL-6 was associated with riskier decisions when the safe option was advantageous under neutral [OR=0.51, 95% CI 0.35-0.74, p=0.001] and stress conditions [OR=0.57, 95% CI 0.38-0.86, p=0.009]. These results highlight the importance of objective measures and their potential clinical translational level to help identify those at risk for suicidal behavior and inform novel prevention and intervention approaches.

17.4 FEASIBILITY AND ACCEPTABILITY OF SUICIDE RISK MANAGEMENT USING ACTIVE AND PASSIVE MOBILE MONITORING AMONG HIGH-RISK ADOLESCENTS IN A REAL-WORLD OUTPATIENT SETTING

Shira Barzilay*[1], Alan Apter[2], Lior Carmi[3], Shai Fine[3]

[1]University of Haifa, [2]Schneider Children's Medical Center of Israel, [3]Data Science Institute, Reichman University

Individual Abstract: Introduction and aims: Adolescent presentations to emergency departments with suicidal behaviors have dramatically increased in many countries. As a result, usual care typically includes infrequent suicide risk management and follow-up for high-risk adolescents. Recent real-time longitudinal assessment studies have shown promise in identifying proximal predictors of suicide risk and utilizing passive mobile sensing. However, the generalizability of the findings to real-world settings may be limited. The current study evaluated the feasibility of a multi-dimensional intensive longitudinal digital assessment of

imminent risk for suicidal behavior and its acceptability for patients in a real-world outpatient setting.
Methods: The study included 60 11-18-year-old high-risk adolescents admitted to an outpatient clinic following their discharge from an emergency department due to suicidal behaviors. Over six months, patients completed weekly assessments for suicidal thoughts, behaviors, and related risk factors. Mobile sensing information for device and data usage was collected to capture activity, sleep, and online social and communication behavior patterns. Clinical interviews and self-report measures were completed at baseline, one-, three- and six-month follow-ups.

Results: The response of eligible patients to install the app was high (72%), and the retention rate was 81% through six months. The average response to weekly surveys was 90% within-participant over the study period. Among participants, 16% reported suicidal plans with intent or suicidal behavior within all reports. A clinical risk assessment and referral followed these reports. Preliminary machine learning analyses identified changes in smartphone usage patterns concurrent with an escalation in suicide risk patterns. Parents and youth reported a positive experience of the digital monitoring and that it was minimally burdensome.

Conclusions: In a real-life outpatient clinic setting, weekly smartphone-based assessment and ongoing monitoring of smartphone usage patterns are feasible and acceptable among high-risk adolescents. Mobile monitoring may indicate escalations in suicide risk and augment clinical follow-up and suicide risk management throughout a high-risk period post-emergency department discharge.

17.5 USING NATURALISTIC ONLINE LANGUAGE TO MONITOR SUICIDE RISK FACTORS IN YOUTH: THE ROLE OF LINGUISTIC MARKERS OF PSYCHOLOGICAL DISTANCING

Nicholas Allen*[1], Ranqing Lan[2], Hanga Galfalvy[2], Alma Bitran[2], Ryann Crowley[1], Karla Joyce[3], Lauren Kahn[1], Elizabeth McNeilly[1], Giovanna Porta[3], David Brent[3], Randy Auerbach[2]

[1]University of Oregon, [2]Columbia University, [3]UPMC/ Western Psychiatric Institute and Clinic

Individual Abstract: Recent developments in digital technology and computational sciences provide a historically unique opportunity to change the way mental health care is delivered. In particular, the recent advent of ubiquitous consumer use of smartphones provides opportunities for breakthrough innovations by allowing practitioners to 1) conduct continuous, objective assessment of behaviors associated with risk for, and maintenance of suicide risk factors, 2) better manage these risk factors by implementing effective behavior change principles by using frequent, “just-in-time” mobile delivered interventions to support positive behavior change between traditional face-to-face consultations, and 3) creating more points of contact between patients and the care system without significantly increasing practitioner burden. In this presentation, I will outline how language patterns that are passively collected on digital devices can be used to predict times that are propitious for just-in-time interventions. Drawing data from a number of recent studies collecting intensive longitudinal data on adolescent samples I will show how language patterns that are passively collected from naturalistic smartphone use both covary with, and predict exacerbation of, mood and suicide-related symptoms. Across multiple studies, we have observed that language patterns indicating self-focus and present

temporal focus are associated with increased symptoms of mood disorders as well as suicidal thoughts and behaviors. These language patterns have been previously associated with low levels of psychological distancing, perhaps reflecting difficulties with using emotional regulatory strategies such as psychological distancing. These findings suggest that language that is passively collected via a person's naturalistic smartphone use may be able to be used to inform the timing and nature of just-in-time interventions. Moreover, new computational techniques associated with reinforcement learning and micro-randomized trial design may be able to adapt interventions to be maximally effective for each individual. However, several implementation barriers will need to be resolved, including ethical issues raised by continuous evaluations of mental state with respect to both privacy and practitioner medico-legal liability.
Discussant: Randy Auerbach, Columbia University

18. ZERO SUICIDE: IMPLEMENTATION AND OUTCOMES ACROSS HEALTH CARE SETTINGS

Chair: Julie Goldstein Grumet, Education Development Center

Overall Abstract Details: For systems dedicated to improving patient safety, Zero Suicide presents an aspirational challenge and practical framework for system-wide transformation toward safer suicide care. Over 38% of individuals have made a healthcare visit (e.g., primary care, emergency department, specialty care, etc.) within the week before their suicide attempt and 83% have had a healthcare visit within the preceding year. While this varies across race and ethnicity, these are clearly missed opportunities to identify and care for people at risk for suicide who are engaging with health care. The Zero Suicide model represents a galvanizing but feasible approach for identifying and caring for people at risk for suicide.
Zero Suicide is a bundle of evidence-based practices that when applied consistently and with fidelity, leads to reduced suicide behaviors and deaths among patients. Organizations who adopt the Zero Suicide framework are: embedding evidence-based elements as a bundle of interventions focused on reducing suicide; collecting data to measure both outcomes as well as fidelity to use of these interventions; conducting continuous quality improvement to educate staff and improve performance weaknesses; normalizing suicide prevention and care practices for staff, people at risk, and their families as the expected standard of care.

Health care systems who have adopted the comprehensive Zero Suicide model have seen results, including the following:

- Reductions in suicide deaths
- Decreases in hospitalizations (or rehospitalizations)
- Increases in quality and continuity of care
- Improvement in post-discharge follow-up visit attendance
- Improvements in screening rates according to protocol
- Systemwide care pathway implementation
- Fewer inpatient psychiatric hospital readmissions
- Cost savings
- Improved patient satisfaction

This symposium will share Zero Suicide implementation and outcomes across the health care spectrum to include outpatient mental health, integrated primary care, and a Children's Hospital. Discussion will also incorporate emerging suicide care best practices in crisis

stabilization. Likely due to lack of training, limited support, weak or nonexistent protocols, and packed schedules, practitioners are missing opportunities to identify and respond to those at risk. This lack of training influences care practices and results of a large survey of over 100,000 healthcare providers on perceived comfort and skill delivering suicide care will be discussed. Resources and tools to adopt, launch, evaluate, and sustain Zero Suicide will be shared.

Further, while Zero Suicide is often thought of as a model for outpatient behavioral health services, its application is potentially broader across all health care services, including emergency and crisis services. This symposium will include a presentation on how major developments in crisis services in the United States incorporate the principals and methods of Zero Suicide, including how the introduction of 988 as the new national suicide hotline number incorporates the tenets of Zero Suicide.

18.1 ZERO SUICIDE OUTCOMES ACROSS HEALTH CARE SETTINGS

Becky Stoll*[1], Julie Goldstein Grumet[2], Virna Little[3], John Ackerman[4], Richard McKeon[5]

[1]Centerstone, [2]Education Development Center, [3]Concert Health, [4]Nationwide Children's Hospital, [5]SAMHSA

Individual Abstract: Zero Suicide is a leadership-driven approach to suicide prevention in which organizations implement: (a) routine suicide risk screening and assessment, (b) evidence-based treatments for suicidal thoughts and behavior, (c) crisis transition programs to support suicidal clients, and (d) comprehensive staff training and support. In this presentation, we describe data from implementing a Zero Suicide initiative between 2014 and 2022 at Centerstone, one of the United States largest nonprofit behavioral healthcare systems. Specifically, we describe strategies used to implement Zero Suicide in a large behavioral healthcare setting, fidelity data indicating facilitators and barriers to providers' adherence to the model, and outcome data specifically showing the protectiveness of our Clinical Pathway for Suicide Prevention.

18.2 SUICIDE SAFER CARE POPULATION MANAGEMENT AND OUTCOMES IN COLLABORATIVE CARE

Virna Little*[1]

[1]Concert Health

Individual Abstract: Concert Health is a behavioral health medical group that partners with primary care, womens health and pediatric providers and practices across 17 states, providing collaborative care. Concert Health has built a system to stratify the at risk suicide population and track outcomes, risk reduction through an organizational approach. Outcomes demonstrate patients report reduced risk during the course of care.

18.3 PREPAREDNESS OF THE HEALTH CARE WORKFORCE TO ADDRESS SUICIDE RISK

Julie Goldstein Grumet*[1], Adam Chu[2], Scott Formica[3]

[1]Education Development Center, [2]EDC, [3]SSRE

Individual Abstract: Suicidal individuals see health care providers in the months leading up to their death. These are missed opportunities. Likely due to lack of training, limited support, weak or nonexistent protocols, and packed schedules, practitioners are missing opportunities to identify and respond to those at risk. This lack of training influences care practices. In a recent survey of providers – 22% report that they are likely to use "no suicide" contracts, while asking about lethal means, a best practice for those with suicide risk, was reported by only 34% of the clinicians. Almost one third of clinicians did not perform a suicide risk assessment for those who screened positive for suicide. This highlights significant gaps in training that health care leaders need to be aware of and mitigate.

In order to assist health care systems determine the readiness of their work force, the Zero Suicide Workforce Survey was created. The 66-item Zero Suicide Workforce survey assesses staff self-perception of knowledge, skills, and comfort with patients who are at risk of suicide across the elements of the Zero Suicide framework. This survey is available for free and is designed to be taken regularly to identify changes in competencies and additional training needs. The survey uses dynamic branching to ensure that staff only answer questions related to their role.

Since its launch in 2016, 105,945 individuals across 512 health and behavioral health organizations have taken the Zero Suicide Workforce Survey. This presentation will discuss the results of this survey and highlight the critical need for accessible and innovative approaches to improving workforce training in suicide care.

Fewer than half of respondents report "strongly agree" across skill, comfort, training, and knowledge. Only 30% of providers strongly agree that they know their own clinical workflow for suicide identification and care. 50% of respondents were neutral, disagreed, or strongly disagreed they had ever received training on evidence-based treatments for suicide care.

Staff who identified as physical healthcare providers, as well as administrators, support staff, and facility operations had lower capacity in almost every measure in comparison to behavioral health clinicians, which is not surprising. However, the finding that physical healthcare providers such as primary care or general practitioners reported less capacity is particularly concerning given that 64% of individuals who died by suicide made a primary care visit in the year before death.

Findings of this survey reveal that staff capacity to effectively function in their roles in suicide prevention is influenced by systems-level factors such as comprehensive training plans, existence and familiarity with care protocols, and organizational culture. While training can support better practice, systematizing practices and embedding a strong culture towards patient safety makes these effects stick.

18.4 ZERO SUICIDE IMPLEMENTATION IN A PEDIATRIC SYSTEM OF CARE

John Ackerman*[1], Glenn Thomas[1], Meredith Chapman[1]

[1]Nationwide Children's Hospital

Individual Abstract: Suicide is the second leading cause of death among young persons aged 10-24 in the US and the number of youth presenting to pediatric hospitals for suicide related

concerns has increased substantially in recent years. While the Zero Suicide (ZS) model has been implemented across an array of health care settings worldwide, few pediatric programs have used it to target youth suicide specifically. We provide data that adaptation of the Zero Suicide framework to pediatric settings is feasible, acceptable, and achievable. In our experience, keys to successful implementation include leadership commitment, practical tools embedded in the electronic medical record (EMR), strategic workforce training, integration with existing Quality Improvement (QI) initiatives, and inclusion of voices of lived experience including youth and their caregivers.
We will describe the development and implementation of a bundle of suicide specific care practices developed for a pediatric population using a QI approach within the Behavioral Health department at a large pediatric hospital. These practices include suicide screening, assessment, safety planning, transition and follow-up after discharge. We will outline how implementation was supported by systematic workforce enhancement efforts, the creation of an innovative and flexible Suicide Prevention Toolkit within the EMR, and the creation of a Zero Suicide dashboard.

A robust hospital patient safety program served as the foundation for developing a bundle of best practices for pediatric patients. Prior to implementation, nearly 500 clinical staff completed the ZS Workforce Survey to identify areas of strength and opportunity to address gaps in care. This informed training efforts across the service line as well as the development of a standard practice protocol (e.g., screening at first visit and monthly thereafter for all patients aged 10+). An early challenge was the scarcity of validated screening and assessment tools. In addition, our EMR did not easily facilitate communication of important suicide-specific data (e.g., prior risk assessments and safety plans) across our continuum of care. The creation of a Suicide Prevention Toolkit in the EMR allowed us to house all suicide-related clinical data (including screening, assessment, safety plan and risk categorization) in one easily accessed location which expedited care, reduced redundancy of effort, and improved documentation efficiency. Consistent with a QI methodology, we also created a dashboard allowing all clinical leaders to review program compliance with screening, assessment and safety planning in real time. We will present data on our compliance (e.g., from 67% for new patients in 2019 to 95% in 2022), including compliance with our goal of ensuring that all youth screening acutely positive receive a same-day assessment and safety plan (from 85% in 2019 to 93% in 2022). We will also highlight modifications to the workflow and EMR to improve compliance in using ZS tools.

We will discuss issues pertinent to pediatric populations such as identifying and mitigating youth suicide risk, engaging caregivers, taking into account developmental challenges and unique relational risk as well as support in school settings. We will also highlight the acceptability of an approach to enhanced care transitions (i.e., automated validating text messages) to youth following admission for suicidal ideation or behavior and present data on compliance rate increases in enrolling youth for this initiative. Lastly, we will discuss ongoing challenges and next steps in our journey toward best outcomes in reducing pediatric suicide risk.

18.5 ZERO SUICIDE IN CRISIS AND EMERGENCY SETTINGS

Tia Dole*[1], Richard McKeon[2]

[1]Vibrant Emotional Health, [2]SAMHSA

Individual Abstract: While Zero Suicide is often thought of as a model for outpatient mental health services, its application is potentially broader extending across a whole range of health care settings and services. This includes the critical area of crisis and emergency services. This presentation will focus on how major developments in crisis services in the United States incorporate the principles and methods of Zero Suicide, including how the implementation of 988 as the new 3 digit national suicide prevention number incorporates the tenents of Zero Suicide including screening, risk assessment, quality improvement, and connected, coordinated care.

19. BIG DATA, REGISTRY AND HEALTH RECORD DATA IN SUICIDE RESEARCH

Chair: Annette Erlangsen, Danish Research Institute for Suicide Prevention

Overall Session Description: This symposium will explore the use of big data as well as electronic data bases and how these data sources may advance the field of suicide prevention. Novel methodological approaches, such as machine learning and integration of lived experiences, implies further potential gains in precision of estimates and predictions.
The studies presented in this session will:

- Compare conventional with machine learning-based, solutions to deal with incomplete data.
- Describe the development of a decision tool based on a personalized medicine approach, which will aid clinicians in the assessment and management of patients with self-harm at the ED.
- Explore different quantitative approaches, which may be applied to electronic hospital data and big data to estimate future suicide rates among individuals who present with deliberate self-harm.
- Present risks of self-harm among individuals diagnosed with/in treatment for mental disorders using medical record data.

19.1 BIG DATA, MACHINE LEARNING AND SUICIDAL BEHAVIOR

Hanga Galfalvy*[1], Paul Bloom[1]

[1]Columbia University

Individual Abstract: The last decade's rapid progress in suicide research, aided by advances in data science, statistics, and artificial intelligence, would be impossible without the availability of high quality, large datasets: electronic health records and/or medical claims datasets often covering millions of patients; high-dimensional biological data, and in-depth, high-frequency datasets collected using wearable technology, smartphones, or social media. It is well known that using data from different sources/modalities has a greater predictive potential compared to analyzing risk factors from separate domains independently (Shi et al, 2012). In order to fully take advantage of this progress in the search for accurate prediction models for suicidal behavior, the existing methodologies for the combination of such data had to mature and become widely available. Yet, suicide researchers still face serious obstacles for using information from different domains and databases. Some are regulatory and/or privacy-related, and these obstacles are likely more frequent and more serious in suicide research compared to other areas; but other obstacles are practical and shared with other fields because

specific types of data simply do not exist beyond a subset of the at-risk population, or databases covering the same type of information used incompatible assessment forms. Incomplete data in intensive longitudinal studies particularly limit efforts at identifying short-term predictors of suicide risk. In the past, suicide researchers had a choice of focusing on complete cases- those with all data collected and available-, limiting severely not just statistical power but also generalizability of findings, or using data imputation methods of varying complexity. However, new methodological tools have been developed lately for analyzing incomplete data that go beyond traditional imputation methods. In this talk, through two examples, I will present and compare some older and newer proposed solutions to the incomplete data problem. Briefly, a newer set of solutions, based on multi-domain learning methods, is built on the idea that data domain-specific prediction model selection can leverage the higher number of participants with data in a specific domain, while the smaller number of subjects with complete data can be used to combine the domain-specific models. In fact, training a single model even when the multi-domain training data is complete may not yield optimal solutions on testing datasets as it obscures domain distinctions. One drawback of this set of methods for incomplete multi-domain data is that features selected from domains with low sample sizes are often transient, however, the sample size required for stability is often not prohibitively large (Prince, 2019). Comparisons to other methods and implications for suicide research will be discussed.

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19.2 PERMANENS – DEVELOPMENT OF A CLINICAL DECISION SUPPORT SYSTEM SOFTWARE TO ENABLE THE PERSONALIZED EVALUATION AND MANAGEMENT OF SELF-HARM AT THE EMERGENCY DEPARTMENT

Philippe Mortier*[1], Jordi Alonso[2], Franco Amigo[3], Montserrat Ferrer[2], Oskar Flygare[4], Angela Leis[5], Miguel A. Mayer[5], Víctor Pérez Sola[6], Juan Manuel Ramírez-Anguita[5], Ferran Sanz[7], Gemma Vilagut[3], Ella Arensman[8], Johan Bjureberg[4], Lars Mehlum[9], Manuel Pastor[10], Ping Qin[9]

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Individual Abstract: Background: People with self-harm are at elevated risk for not receiving mental health treatment and for death by suicide and other causes. To address this, emergency departments (ED) are key healthcare settings, as they often represent the first medical contact after self-harm, and can offer specialized risk assessment and referral to psychiatric intervention. Unassisted clinician assessments as well as the use of standardized assessment scales are insufficient to accurately identify patients at highest risk for repeated self-harm and suicide. This highlights the need for introducing a personalized medicine approach in self-harm management, including machine learning-based techniques and evidence-based algorithms. Objectives: The PERMANENS project aims to develop a Clinical Decision Support System (CDSS) software prototype that assists clinicians in the assessment and management of patients with self-harm at the ED. Trained on evidence accumulated in clinical settings and based on the patient's particular clinical history and socioeconomic background, the CDSS will provide the clinician with personalized risk profiles for relevant adverse outcomes, including self-harm, method escalation, death by suicide and other causes, and not following up with proposed treatment. The CDSS will provide an overview of the most important risk factors, and propose an evidence-based treatment plan, tailored to the patient's specific risk profile. Methodology: User-advisory groups will be held using a co-design framework to obtain the essential user-input throughout the project. Focus groups and web-based surveys will assess currently unmet needs in self-harm management for the CDSS to address. Population-representative registry data from three countries (Ireland, Norway and Sweden) and one region (Catalonia, Spain) will be used to develop the CDSS risk prediction models. The OMOP Common Data Model will ensure data interoperability across sites, and a federated analysis approach will eliminate the need for remote access to individual-level data. Data preparation for predictive modelling will include the development of case validation algorithms, the delineation of adverse healthcare trajectories post-discharge, and the creation of a series of clinically relevant predictor variables. Machine learning-based algorithms will be used to develop clinically interpretable prediction models, including state-of-the-art techniques to deal with class imbalance, feature selection, and prediction bias. Assignment by the CDSS of the most indicated intervention according to the patient's personal risk profile will be expert-based, and guided by a review of randomized controlled trials and published clinical guidelines. The CDSS output and personalized treatment plan will be offered in the format of a digitally transferrable healthcare record in order to improve continuity of care. Small-scale usability testing of the CDSS prototype will be conducted by clinician-patient dyads outside of routine clinical healthcare. A CDSS training manual will be developed. Expected impact: The proposed CDSS will enable structured professional judgement, standardization of care, increased patient satisfaction, and higher treatment compliance among patients with self-harm. Future routine implementation of CDSS for self-harm management at the ED has a high potential for effectively reducing suicide mortality in the population. FUNDING: AC22/00045 (Instituto de Salud Carlos III, under the frame of ERA PerMed); PI22/00107 (Instituto de Salud Carlos III; co-funded by the European Union); Fundación la Marató de TV3 202220-30-31; AGAUR 2021 SGR 00624; ISCIII-FSE CP21/00078.

19.3 FOLLOW-UP OF PATIENTS WITH DSH IN CALIFORNIA HEALTH CARE REGISTRIES

Sidra Goldman-Mellor*[1]

Individual Abstract: Suicide is the 10th leading cause of death in the United States, and a leading cause in many other countries. Emergency department (ED) patients, especially those

presenting with deliberate self-harm (DSH), face extremely elevated risk of suicide and all-cause mortality, yet EDs can also be a key setting for providing interventions. Therefore, understanding and tracking suicide risk among ED patients may be crucial to achieving suicide prevention goals. This presentation will highlight recent findings from my work using linked, population-based ED patient registry and mortality data from California. Findings to be discussed include prospective estimates of suicide rates among DSH and other mental/behavioral health ED patients, an examination of the temporal relationship between suicidality-related Google searches and ED visits, and an analysis of how hospitalization after deliberate self-harm affects patients' suicide risk. These collaborative projects have employed a variety of quantitative approaches (ranging from basic incidence calculations to forest-based causal inference methods to time series analysis), highlighting the flexibility and power of these large-scale datasets for multifaceted suicide research. The implications of this body of work for suicide research and prevention efforts will be discussed.

19.4 SUICIDE AND SELF-HARM IN HIGH-RISK POPULATIONS: EVIDENCE FROM LONGITUDINAL MEDICAL RECORDS IN HONG KONG

Hao Luo*[1], Yi Chai[1], Paul Yip[1]

[1]The University of Hong Kong

Individual Abstract: The risk of suicide and self-harm varies among different populations. Although a plethora of publications has extensively explored the risk of self-harm and suicide in different vulnerable populations, current evidence is limited due to substantial heterogeneities in study populations, designs, timeframes, and social and cultural contexts. The Hong Kong Clinical Data Analysis and Reporting System (CDARS) contains electronic medical records of all patients who visited or were admitted to Hong Kong public hospitals, providing a unique opportunity to generate large-scale epidemiological evidence on suicide and self-harm in the Chinese population. Using two-decade longitudinal data from the CDARS, we conducted a series of investigations on the risk and risk factors of self-harm and suicide among various high-risk populations in Hong Kong, including people with various psychiatric disorders and previous self-harm behaviors. We initially examined how the risk of self-harm varied among seven specific psychiatric disorders (N = 86,353) and found that people who had a diagnosis of substance misuse or dependence had nearly ten times greater risk of showing new self-harm behavior. Subsequently, we conducted a detailed investigation of people with drug use disorders (N = 8,270), categorizing them by specific drug types. We observed the highest risk of self-harm or suicide in individuals with ketamine use disorder (adjust hazard ratio [aHR], 16.35; 95% CI, 11.03-24.29) and opioid use disorder (aHR, 15.97; 95% CI, 10.73-23.23). As a history of self-harm is strongly associated with future self-harm attempts, we carried out a separate investigation on Hong Kong patients with a history of self-harm (N = 99,116), examining the annual prevalence, cumulative risk, the annual risk of non-fatal self-harm repetition, and associated risk factors. Our research revealed that the one-year risk of self-harm repetition was much higher among Hong Kong patients than those reported in other Asian societies. Additionally, four or more previous self-harm episodes was the strongest risk factor for repetition of self-harm, followed by psychiatric admission, combined self-poisoning and self-injury method and social welfare for payment. These findings collectively underscore the need for tailored suicide prevention strategies and enhanced aftercare plans that account for patients' unique risk profiles. In this presentation, we will share our findings from the CDARS in Hong Kong and discuss the strengths and limitations of using electronic medical records in suicide research.

20. NEURAL CIRCUITRY, MOOD REGULATION AND DECISION-MAKING

Chair: Katalin Szanto, University of Pittsburgh

Overall Session Description: The symposium, Neural Circuitry, Mood Regulation and Decision-Making discusses how neuro-behavioral alterations in decision-making and emotion regulation contribute to suicidal behavior.
The first presentation entitled "Option Competition in Frontoparietal Networks and Suicidal Behavior" focuses on how cognitive overload may propel the suicidal crisis. Alex Dombrovski (Univ. of Pittsburgh) will discuss how successful decision makers resolves the dilemma between exploitation of known good options and exploration of potentially better alternatives. He argues that optimal decisions rely note merely on working memory capacity, but on resource-rational strategies trading accuracy for higher speed and lower cognitive effort. He will present findings from behavioral experiments and fMRI in high suicide risk depressed older adults and those with borderline personality disorder during exploration/exploitation. The second and the third studies came from the same group, from Columbia University, signaling that investigations on neurocognition, mood-regulation, and suicidal behavior are only carried out in a few groups in the world. Noam Schneck's talk entitled "Automatic processes of Emotion Regulation and Suicidal Ideation". In four groups (healthy controls, individuals with major depressive disorder, borderline personality, and with comorbid major depression and borderline personality disorder), the investigators tested a model which proposes that negative affect engages emotion regulation automatically, resulting in a negative feedback loop. They found that aspects of this loop were affected in clinical groups and linked to suicidal ideation.

The third presentation entitled: "A Neural Decoding Approach to Assessing Emotion Regulation and Reactivity in Depressed Individuals with a History of Suicidal Behavior "is first-authored by Sarah Herzog. It used a machine learning-based neural decoding approach to quantify emotion regulation and negative affective reactivity in depressed individuals with and without a prior suicide attempt and in healthy controls. They combined this approach with behavioral and physiological measures of emotion regulation to provide a profile of emotion regulation and reactivity associated with suicide risk.

20.1 OPTION COMPETITION IN FRONTOPARIETAL NETWORKS AND SUICIDAL BEHAVIOR.

Alexandre Dombrovski*[1], Michael N. Hallquist[2], Kai Hwang[3], Bea Luna[4], Aliona Tsypes[4], Angela Ianni[4]

[1]University of Pittsburgh School of Medicine, [2]University of North Carolina, [3]University of Iowa, [4]University of Pittsburgh

Individual Abstract: Primates exploring and exploiting a continuous sensorimotor space rely on maps in the dorsal stream that guide locomotion, and grasp. Fronto-parietal dorsal stream regions have expanded in human evolution, highlighting their role in more abstract decisions. We have shown that such exploration/exploitation depends on dynamic maps of competing option values in the human dorsal stream. Using a reinforcement learning (RL) model capable of rapid learning and efficient exploration and exploitation, we show that preferred options are

selectively maintained on the map while spatiotemporally distant alternatives are compressed out. Consistent with biophysical models of cortical option competition, dorsal stream BOLD signal increases and posterior cortical beta1/alpha oscillations become desynchronized as the number of potentially valuable options grows, matching predictions of information-compressing RL rather than traditional RL that caches long-term values.
People experiencing a suicidal crisis often experience time pressure and report feeling overwhelmed by situational demands. In our clinical experience people who attempted suicide often say that they were unaware of its tragic consequences for their families and of seemingly obvious alternative solutions. This suggests that individuals vulnerable to suicide fail to adequately explore possible solutions, both simulated and actually available. Such failures make it more likely that suicide will be chosen as a seemingly straightforward way out of the crisis. Cognitive overload is one aspect of the suicidal crisis that traditional decision paradigms do not fully capture. Most prior studies of decision-making in suicidal behavior employed simple paradigms requiring one to choose between a few options. These experiments tell us little about how people implicitly appraise many options at once in a crisis, when a high information load threatens to degrade the quality of decision-making. To cope with a high information load successful decision-makers rely not merely on their working memory capacity, but on the so-called resource-rational strategies which trade off accuracy for higher speed and lower cognitive effort. In the absence of such strategies, the quality of decision-making deteriorates catastrophically once capacity is exceeded. Exploration paradigms offer an experimental window into decision-making under cognitive overload. Efficient search for better options or exploration depends on the balance between capacity and cognitive demands. We have shown that people adaptively lower their exploration rate when faced with too many options or required to hold too much information online. Information compression is one resource-rational strategy for dealing with multiple uncertain options, which impose a high information load. Using our previously validated reinforcement learning (RL) model, we have shown that people who successfully transition from exploring multiple options to exploiting the most advantageous ones selectively remember the values of the best options and forget the rest, compressing the information held in memory.

Building on these basic findings, I present a series of analyses of behavior and neural signals in people with suicidal behavior during exploration/exploitation in two cohorts of individuals with borderline personality and late-life depression. I also discuss neural and behavioral correlates of various dimensions of psychopathology.

20.2 A NEURAL DECODING APPROACH TO ASSESSING EMOTION REGULATION AND REACTIVITY IN DEPRESSED INDIVIDUALS WITH A HISTORY OF SUICIDAL BEHAVIOR

Sarah Herzog*[1], Christina Michel[1], Mike Schmidt[1], Kevin Ochsner[2], John Mann[1], Noam Schneck[1]

[1]Columbia University and New York State Psychiatric Institute, [2]Columbia University in the City of New York

Individual Abstract: Background: Impaired regulation of negative emotions is associated with depression and suicidal ideation and behavior. Studies often assess emotion regulation or

reactivity with a single proxy measure, be it neural, behavioral, or self-report. Self-report measures are limited by insight and memory biases; and while biobehavioral markers provide a more objective indicator of emotion, they are often used interchangeably to reflect both emotional reactivity and regulation. This lack of specificity may constrain the utility of such data from ultimately informing suicide prevention. Here, we used a machine learning-based neural decoding approach to quantify emotion regulation (ER) and negative affective reactivity in depressed subjects (MDD) with and without a prior suicide attempt (MDD+SA and MDD-SA, respectively), and healthy volunteers (HV). We combine this with behavioral and physiological measures of ER to provide a profile of emotion regulation and reactivity associated with suicide risk.

Methods: In n=37 HV and n=45 MDDs (including 25 MDD+SAs), we applied an ER neural decoder and Picture-Induced Negative Emotion Signature (PINES) to fMRI data collected as participants recalled negative autobiographical memories. Participants were prompted to either regulate while recalling memories (i.e., regulation trials), or simply experience their feelings (i.e., immerse trials). We also examined how attentional control and physiological regulation are associated with neural emotional reactivity and ER. A subset of n=23 HVs and n=24 MDDs (n=11 MDD+SAs) completed the Continuous Performance Task (CPT), a behavioral measure of attentional control. N=23 MDDs (n=12 MDD+SAs) completed the Trier Social Stress Test (TSST) with concurrent collection of heart rate variability (HRV) to assess autonomic regulation of stress responses.

Results: Mixed linear models indicated similar ER output across trials in HVs and MDD+SAs ($b=.005$, $p=.764$), but lower ER output in MDD-SAs compared with HVs and MDD+SAs ($b=-.053$, $p=.007$; $b=-.058$, $p=.001$, respectively). MDD-SAs had greater PINES negative affect relative to MDD+SAs ($b=.186$, $p=.006$) and HVs ($b=.158$, $p=.011$) on regulation trials. Self-reported negative affect scores were similar for MDD groups across trials ($b=.003$, $p=.992$), while HVs reported lower negative affect relative to both MDD groups ($b=-.601$, $p=.002$). In n=47 HVs and MDDs who completed the CPT, there was a 3-way interaction between attentional control, group, and trial type predicting neural regulation, such that attentional control was related to greater ER output on regulation trials in MDD+SAs only. Attentional control was also associated with lower PINES on immerse trials in MDD-SAs, but higher immerse PINES in MDD+SA. In n=23 MDDs who completed the TSST, interaction models indicated that increases in HRV were related to greater ER output in MDD-SAs only ($b=.003$, $p=.034$) and lower PINES output on regulation trials in all MDDs ($b=.026$, $p<.001$).

Conclusion: The neural decoding approach may provide novel avenues to understanding emotion regulation and reactivity in individuals at-risk for suicide. Our findings suggest that depressed subjects with a suicide attempt history have a distinct profile of emotional responding that differentiates them from depressed subjects without an attempt history. Neural regulation and reactivity in the MDD+SA group appeared more like healthy volunteers, while their elevated self-reported negative affect resembled those of depressed subjects without prior suicidal behavior. Continued work is necessary to determine whether this emotional profile contributes to risk of suicidal behavior.

20.3 NETWORK DYNAMICS: HIPPOCAMPAL INFLUENCE ON NEGATIVE AFFECT AND EMOTION REGULATION IN DEPRESSED INDIVIDUALS WITH A HISTORY OF SUICIDAL BEHAVIOR

Christina Michel*[1], Mike Schmidt[1], Sarah Herzog[1], John Mann[1], Lila Davachi[2], Noam Schneck[3]

[1]Columbia University and New York State Psychiatric Institute, [2]Columbia University, [3]College of Physicians and Surgeons, Columbia University

Individual Abstract: Individuals with major depressive disorder (MDD) show impairments in emotion reactivity and regulation when recalling negative memories, and aberrant hippocampal engagement may play a role. Prior work has relied on self-report measures of negative affect and emotion regulation, which do not allow for dynamic neural analyses. Using machine learning techniques for neural decoding, we can quantify negative affect continuously and examine its relationship to hippocampal activity. The current study examines how hippocampal engagement during an fMRI negative autobiographical memory task relates to negative affect and regulation in depressed suicide attempters (MDD SA), depressed non-attempters (MDD NA), and healthy volunteers (HV).
Methods: Unmedicated MDD SA (N=24), MDD NA (N=21), and HVs (N=38) underwent an fMRI task in which upsetting personal memories were presented and were then asked to either recall the memory (i.e., bring the memory to mind), distance (i.e., downregulate their emotional response) or immerse (i.e., allow emotions to unfold). We used the well-validated Picture-Induced Negative Affect Neural Signature (PINES) to quantify negative emotion at each repetition time (TR). We then examined whether hippocampal engagement predicted subsequent PINES values during memory recall, distance, and immerse trials. We also examined group differences in hippocampal activity when transitioning from memory recall to emotional reappraisal and differences in temporal dynamics between groups.

Results: Mixed linear models showed that hippocampal engagement predicted subsequent PINES output for all groups ($b=.08$, $p<.001$). There was an interaction of group x trial type x hippocampus such that during reappraisal, hippocampal engagement predicted PINES only for MDDs, and this was driven by MDD NAs. Hippocampal activity was positively related to self-reported negative affect and memory vividness. MDDs had higher self-reported negative affect following immerse and distance trials than HVs. When transitioning from recalling the upsetting memory to distancing from the memory, MDDs showed a greater reduction in hippocampal engagement compared with HVs. During recall and immerse trials, MDDs differed from HVs in the temporal dynamics of hippocampal engagement.

Conclusions: Hippocampal engagement drives negative emotion when processing negative autobiographical memories. MDDs may be attempting to downregulate their emotional response by disengaging with the upsetting negative memory rather than holding the memory in mind and regulating their negative emotional response adaptively. Dysfunction in hippocampal processes may contribute to negative affect and emotion dysregulation in MDDs when processing negative memories.

CONCURRENT SYMPOSIUM SESSIONS

4:00 p.m. - 5:30 p.m.

21. SUICIDE PREVENTION APPROACHES DESIGNED WITH AND FOR YOUTH ACROSS MULTIPLE SERVICE SETTINGS

Chair: Holly Wilcox, Johns Hopkins Schools of Public Health, Medicine and Education

Overall Abstract Details: In youth co-design models, youth are not only the recipients of services, but are partners in all elements of that service, including implementation, evaluation, and the scaling of services. Engaging youth in the design of suicide prevention and intervention programs can ensure that youth priorities and needs are met. This symposium will focus on youth co-design efforts implemented across multiple service settings and countries.

Professor Morris-Perez (United States) will present findings from a cluster-randomized trial of a school-based mental health awareness/suicide prevention program, Directing Change, that amplifies youth voice in suicide prevention. In Directing Change, an advisor (i.e., teacher, counselor) leads students in creating brief films in mental health/suicide prevention and disseminating them to the school community. Directing Change is a scalable program expected to reduce stigma and change norms, connecting youth to trusted adults more quickly than they would otherwise. The results of the cluster-randomized trial will be presented.

Professor Jo Robinson (Australia) will focus on the updated #chatsafe guidelines to facilitate safe online communication about suicide with young people, as well as complementary resources for families and educators. A series of roundtable consultations with young people (n = 7), social media companies (n = 7), policymakers (n = 14) and other procedures were conducted. The co-design process and key levers for change from the perspectives of young people, social media industry, and policymakers will be discussed.

Assistant Professor Kiara Alvarez (United States) will discuss the use of the Photovoice method for youth-driven participatory needs assessment and its implications for program design. Photovoice is a method for community-engaged research based on taking photographs, generating narratives, and promoting dialogue with community members and decision-makers through presentation of findings. Results from this study demonstrate that the Photovoice method can be used for a range of purposes, including identification of intervention targets; delineation of the social context for interventions, including implementation barriers and facilitators; establishing and communicating youth priorities; and engaging community members and policymakers in the design process.

Pediatric primary care is at the forefront of identifying and supporting young people with suicidal experiences. Associate Professor Maria Michail (United Kingdom) will present on the research and development behind #MyGPguide, an evidence-based resource preparing young people for their General Practitioner visit in terms of: i) what to consider before they visit their doctor, including preparing questions; ii) what their rights are with respect to confidentiality, what questions their doctor might ask them; safety planning and referral to mental health services. #MyGPguide was built after four online co-production workshops with young people with lived experience.

Predictive analytic approaches in healthcare settings that leverage machine learning based models on routinely collected data have shown promising results for identification. However, there are few examples of how best to implement these models to inform care, particularly for youth and young adults. To address this gap, Associate Professor Emily Haroz (United States) aimed to explore youth, family and provider perspectives on the implementation of machine learning methods to identify suicide risk in healthcare settings. This presentation will provide guidance, informed by providers, patients and caregivers, about how best to implement these tools to ensure ethical and equitable impact.

21.2 DIRECTING CHANGE: A NOVEL APPROACH TO SCHOOL-BASED SUICIDE PREVENTION

Pamela Morris-Perez*[1], Rachel Abenavoli[1], Jana Sczersputowski[2], Devin Saragosa-Harris[2], Stan Collins[2]

[1]New York University, [2]Directing Change

Individual Abstract: Youth suicide antecedents, common pre-COVID, have been exacerbated in COVID's wake. Barriers to mental health care makes reliance on that system insufficient for reaching youth early in their "suicide risk trajectory." This paper presents early findings from a cluster-randomized trial of a school-based mental health awareness/suicide prevention program, Directing Change, that amplifies youth voice and may be a catalyst for changing norms for suicide prevention.

In Directing Change, an advisor (i.e., teacher, counselor) leads a class or club of students in creating brief films in mental health/suicide prevention and disseminating them to the school community. By following film submission guidelines, students learn about suicide prevention and mental health, discuss and apply that knowledge, and communicate youth-directed, positive, action-oriented messages to peers. As students discuss and disseminate films in schools, Directing Change is expected to reduce stigma and change norms, connecting youth to trusted adults more quickly than they would otherwise. The program's highly innovative approach is aligned with developmental theories centering youth identity and facilitating autonomy, and ecological theories about systems change.

A matched-comparison study demonstrated impacts on student knowledge, behaviors, and norms (Ghirardelli et al., 2016). This study extends those findings by examining the impact of Directing Change in 40 CA high schools serving largely Latine students, block randomized to intervention and control conditions.

This study is ongoing and preliminary data, informed via discussions with an engaged Youth Advisory Board, will be presented. Qualitative interviews were conducted with ~20 advisors and "focal" student participants from prior cohorts, to inform the program's theory of change. We transcribed and coded the interviews using a directed approach, using our co-developed theory of change as an initial guidepost.

Our thematic review identified mechanisms of change: a) greater knowledge: about the signs of suicidal thinking and self-efficacy to intervene on behalf of a friend; b) shifting norms and opening up conversations: among classmates as they worked on films together, between advisors and students in the class, between students more broadly, and, sometimes, between students and families; c) students becoming leaders ("reluctant leaders") in ways they hadn't expected and students (and advisors) finding themselves "known" as sources of information and support to other students after films were disseminated; and d) sense of connectedness and belonging: by making films and watching films, students reported seeing that peers were struggling with similar challenges as they were, making them feel less alone.

Findings will also be presented from the initial year of our first cohort of 14 high schools in which half were assigned to implement Directing Change in 2022-2023 and the other half were assigned to implement the program the following year (in 3 "blocks"). Baseline (fall) surveys

were conducted with 544 focal students in these schools (an 80% response rate) and students will be re-surveyed in spring of 2023, immediately following submission to the state-wide film contest.

Implementation has been going well; all intervention-assigned schools have been coordinating with the Directing Change team for lesson delivery and film submission. Impact analyses will be conducted in an intent-to-treat (ITT) framework (2-tailed, $\alpha=.05$), accounting for school clustering and with fixed effects for randomization blocks. If found effective, this approach could well be taken up nationally and internationally, reducing suicide risk and risk disparities, at scale.

21.3 #CHATSAFE 2.0. DEVELOPING GUIDELINES FOR SAFE ONLINE COMMUNICATION ABOUT SUICIDE AND SELF-HARM: BY YOUNG PEOPLE FOR YOUNG PEOPLE

Jo Robinson*[1], Pinar Thorn[1], Louise La Sala[1], Samuel McKay[1], Michelle Lamblin[1], Charlie Cooper[1], Rikki Battersby-Coulter[1], Nicola Reavley[2], Jane Pirkis[2]

[1]Orygen, [2]University of Melbourne

Individual Abstract: Background

In 2018, we co-developed the #chatsafe guidelines to facilitate safe online communication about suicide with young people, as well as complementary resources for families and educators. However, these did not provide guidance on self-harm, and technology moves quickly. Therefore, updated guidelines that include self-harm and accurately reflect the ways in which young people currently use social media were required. Guidance was also required for the social media industry to help them create and maintain safe online environments and policymakers to help inform future suicide prevention policy.

Aims

1) To update and expand the #chatsafe guidelines for young people

2) To develop guidance for the social media industry and policymakers

Methods

A series of roundtables consultations with young people (n = 7), social media companies (n = 7), policymakers (n = 14) was conducted. A Delphi expert consensus study was also conducted, which included: a systematic literature search; questionnaire development; expert panel formation (young people = 74, and suicide prevention experts = 29); data collection and analysis; and guideline development.

Results

In total, six round table consultations were completed. Themes included: 1) Challenges regarding online communication about self-harm/suicide; 2) Where responsibility for online safety lies; 3) The current regulatory landscape; and 4) What more platforms and policymakers could do to improve online safety.

A total of 191 items, organised into eight themes, were included in the new #chatsafe guidelines: 1) General tips; 2) Creating self-harm/suicide content; 3) Consuming self-harm/suicide content; 4) Livestreams of self-harm/suicide acts; 4) Self-harm/suicide games and

pacts; 6) Self-harm/suicide communities; 7) Bereavement and communicating about someone who has died by suicide; and 8) Guidance for influencers.

Conclusions

The new #chatsafe guidelines and consultation findings will be presented. The co-design process and key levers for change from the perspectives of young people, social media industry, and policymakers will also be discussed.

21.4 YOUTH-DIRECTED NEEDS ASSESSMENT THROUGH PHOTOVOICE: APPLICATIONS IN MENTAL HEALTH AND SUICIDE PREVENTION

Kiara Alvarez*[1]

[1]Johns Hopkins Bloomberg School of Public Health

Individual Abstract: Engaging youth in the design of prevention and intervention programs ensures that their priorities and needs are centered in suicide prevention efforts. A key step in this process is the identification of group or community needs in order to identify program targets and contextual factors impacting program delivery. In this presentation, we discuss the use of the Photovoice method for youth-driven participatory needs assessment and its implications for program design. Photovoice is a method for community-engaged research based on taking photographs, generating narratives, and promoting dialogue with community members and decision-makers through presentation of findings. We will first review the methods of a Photovoice study in which adolescents documented their perspectives on the structural and social characteristics of their communities that impact well-being. In this study, 72 youth across four neighborhoods took ten photographs each in response to specific prompts; participated in a series of training sessions, group discussions, and qualitative interviews; and presented their findings in four community forums. We will then discuss adaptations of the Photovoice method for needs assessment embedded in a suicide prevention program co-design process. We will focus in particular on intervention co-design with culturally and linguistically diverse youth, presenting methods, Photovoice findings, and youth perspectives to illustrate the promise of these approaches. Results from these studies demonstrate that the Photovoice method can be used for a range of purposes, including identification of intervention targets; delineation of the social context for interventions, including implementation barriers and facilitators; establishing and communicating youth priorities; and engaging community members and policymakers in the design process.

21.5 #MYGPGUIDE: HELPING YOUNG PEOPLE SEEK HELP FROM THEIR GP ABOUT SELF-HARM AND SUICIDAL EXPERIENCES.

Maria Michail*[1], Rowmell Hunter[1], Lizzie Mitchell[1], James Morgan[1], Imaan Rathore[1], Kalen Reid[1], Charlie Tresadern[1], Beckye Williams[1], Niyah Campbell[1]

[1]University of Birmingham

Individual Abstract: Introdution: Primary care, and in particular general practice, is at the forefront of identifying and supporting young people with self-harm and suicidal experiences. However, many young people are concerned about talking to their GP about self-harm and suicidal experiences; others do not know what to expect from a GP consultation; and how much they should share with their doctor. These concerns might influence how, when and why a

young person decides to seek help from their GP when feeling suicidal. The aim of this project was twofold: 1) to understand the processes underlying young people's help-seeking prior, during and following a GP consultation; and 2) to use this knowledge to design a guide to support young people talk to their GP about self-harm and/or suicidal experiences.
Methods and material: A qualitative study using semi-structured interviews with 8 young people (6 females) aged 16 to 25 years with a history of attempted suicide; and, who were under the care of a youth mental health service in the UK. The study was carried out in line with the consolidated criteria for reporting qualitative research. Data were analysed using framework analysis. Four online co-production workshops with young people with lived experience to co-design the content and format of the guide; and, a dissemination and implementation plan.

Results: Three main themes were identified from the qualitative study: (1) Understanding when to seek help from a GP including difficulties young people experience in asking for help and articulating their distress; (2) Barriers to and facilitators of help-seeking before, during and after a consultation; and, (3) Help-seeking as a non-linear, dynamic process; influenced by many different and complex factors. The findings of this study fed into the co-production workshops which informed the design, content and format of #MyGPguide. #MyGPguide is an evidence-based resource preparing young people for their GP consultation, offering vital information and advice on: i) what to consider before they visit their doctor, including preparing questions and booking an appointment; ii) how to manage the consultation, what their rights are with respect to confidentiality, what questions their doctor might ask them; safety planning and referral to mental health services; iii) what to do after the consultation; and how their doctor can support them.

Conclusion: Consultations about self-harm and suicidal experiences can be challenging for both GPs and young people. #MyGPguide, offers evidence-based, accessible and practical tips to facilitate the best consultation and support young people at-risk of suicide. Future plans involve co-designing with young people with lived experience an evaluation plan of #MyGPguide.

21.6 CO-DESIGNING IMPLEMENTATION OF MACHINE LEARNING SUICIDE RISK AND CLASSIFICATION APPROACHES FOR ADOLESCENTS AND YOUNG ADULTS

Emily Haroz*[1], Pua Yang[1], Julie Richards[2], Taylor Ryan[3], Holly Wilcox[4]

[1]Johns Hopkins Bloomberg School of Public Health, [2]Kaiser Permanente Washington Health Research Institute, [3]University of Washington, [4]Johns Hopkins Schools of Public Health, Medicine and Education

Individual Abstract: Background: Suicide rates for adolescents and young adults are a serious public health concern and have been rising for certain populations worldwide. Identifying adolescents and young adults at higher risk of suicide ignites a care system that can help prevent suicide but is complex. Existing methods including clinician evaluation, screeners, risk assessments, and predictive analytics, all have limitations, including challenges with implementation. Recently, predictive analytics that leverages machine learning-based models on routinely collected data have shown promising results for identification. However, there are

few examples of how best to implement these models to inform care, particularly for youth and young adults. To address this gap, we aimed to explore youth, family, and provider perspectives on implementing machine learning methods to identify suicide risk in healthcare settings.
Methods: We conducted a mixed-methods convergent study design with patients, providers, and families from three academic medical centers that serve diverse populations in the United States. Study participants included youth ages 12-24, their primary caretakers, and pediatric healthcare providers. Data were collected via a cross-sectional quantitative survey that leveraged vignettes and qualitative individual semi-structured interviews. Data integration was done through a joint display. The results informed the development of an implementation roadmap and clinical decision support tool.

Results: A total of N=73 providers participated in surveys. This included psychologists, physicians, social workers, and nurse practitioners. For qualitative interviews, 9 providers participated. Providers indicated that the tool would be most helpful to inform primary care (37%), discharge plans (34%), and emergency room care (21%). Most providers (74%) wanted to review the information prior to meeting the patient and that it would be most beneficial for the risk model to focus on imminent risk rather than risk occurring over the next year. Nearly all providers (74%) indicated they would want this model to be used with manual screening. Qualitative results generally agreed with the quantitative findings but also described a desire to see the factors that were contributing to risk. Other implementation and ethical implications will be discussed during the presentations. Additionally, youth and caregivers will be added as data collection is ongoing.

Conclusion: Machine learning-based risk classification tools are emerging and potentially promising, but we have little understanding of how best to implement and use these tools. This presentation provides guidance, informed by providers, patients, and caregivers, about how best to implement these tools to ensure ethical and equitable impact.

Discussant: John Campo, Johns Hopkins University School of Medicine

22. SUICIDE GLOBALLY: INDIVIDUAL AND POPULATION LEVEL RISK FACTORS IN VARIOUS COUNTRIES

Chair: Vladimir Carli, National Centre for Suicide Research and Prevention, Karolinska Institutet

Co-Chair: Christina Hoven, Columbia University and New York State Psychiatric Institute

Overall Abstract Details: Suicide is a significant public health issue globally, but suicide rates vary greatly between countries - from around 70 instances per 100.000 in Lesotho (South Africa) and roughly 40 in Guyana (South America), to less than one occasion in countries in the Caribbean. Understanding what differs between these countries, and what factors contribute to suicide locally might support universal efforts to decrease instances of suicide and the global burden of the disease.
This symposium will contribute to the aim, by including presentations from countries with varying rates of suicide and considering diverse sets of individual- and population-level risk factors. Data will be presented on the low-income, but rapidly developing country of Guyana, which is especially interesting being the country with the second highest suicide rate globally. One presentation by Musa and Hoven will concern descriptive information on suicidal behaviour among three major religious groups and the four major racial/ethnic groups of the

regions. Data is used to better understand the interaction between key characteristics and individual risk factors on suicidal behaviour.

The other presentation on Guyana, by Solomon and Hoven, focuses on suicide bereaved persons (SBP) and shares the outcomes of in-depth assessment of 80 individuals using a psychological autopsy framework. The principal interest is how suicide impacts these individuals - such as well-being, suicide behaviors, grief, psychiatric symptoms, functional status, future outlook, etc. They also investigate what risk factors should be considered when trying to mitigate the long-term effects of suicide on SBPs.

Continuing with the importance of individual level risk factors, van Balkom et al. will share results based on a sample of outpatient adolescents of a Dutch child psychiatry service. They argue that while depressive disorders are recognized as in need of heightened awareness for suicide risk, other disorders, such as ASD and ADHD, would also necessitate attention. Improved screening and risk assessment of these adolescents might be one answer to the challenge of early identification.

Staying at developed countries with high-income, but moving from individual- to community level factors, Eliasson will present results on Swedish regional data and investigate the importance of components such as median income, economic indicators, drug abuse, and availability of a mental health care professional - using longitudinal multilevel modelling (MLM).

Lastly, Vigna will discuss how global data of 55 countries highlights the need to revisit theories – such as that of Durkheim - about traditional norms and values connected to gender roles. Considering female labor force participation rates and the Human Development Index, they find beneficial effects of role accumulation among women.

By collecting these presentations into one symposium from a diverse set of countries with varying cultural, social and economic backgrounds, we hope to convey the message that suicide is a multifactorial construct, and thus a complex set of individual- and population-level components have to be considered. Sharing the results of national efforts can foster our understanding of suicide in its complexity and provides the opportunity to generate knowledge and identify practices relevant for one another – fostering global response to a global public health concern.

22.1 THE GUYANA WELL-BEING COMMUNITY STUDY: A REPRESENTATIVE SAMPLE AT ELEVATED RISK FOR SUICIDE

George Musa*[1], Megan Ryan[1], William Adu-Krow[1], Christina Hoven[1]

[1]Columbia University and New York State Psychiatric Institute

Individual Abstract: The World Health Organization (WHO) reports that more than 700,000 people die by suicide every year, with rates per 100,000 varying from 0.4 (Antigua and Barbuda) to 72.4 (Lesotho), with Guyana at 40.3, the second highest suicide rate of any country; about three times the global average. Psychopathology, poverty, stress, age and gender are among the most often cited risk factors associated with suicide. However, because it is a rare event, suicide research often lacks adequate statistical power to effectively examine the associations and interactions of even the most common risk factors. Most countries that have very high suicide rates also lack adequate infrastructure to support good research and/or have

homogenous populations, thus limiting analysis of risk factor associations and interactions. Furthermore, because of its rarity, the cost of obtaining an adequate sample to effectively investigate suicide is generally prohibitive. To overcome these limitations and to move suicide risk research forward, we have developed a partnership with the Guyanese Ministry of Health, the Guyanese National Bureau of Statistics, the Pan American Health Organization (PAHO-WHO) and the collaboration of an internationally recognized group of suicidologists. With this team, we are investigating suicidal behavior and related risk and protective factors in a unique, multipronged approach. This presentation will focus on the first wave of a longitudinally assessed nationally representative community cohort (N=9,000) of ages 10 and older, for recent and lifetime suicidal behaviors, as well as characterizes their individual and community level risk and protective factors. We will present descriptive information on suicidal behavior in Guyana across the 10 geographic regions, among the three major religious groups (Hindu, Christian and Muslim) and among the four major races/ethnicities. This study is designed to help understand how the relationships of key characteristics interact with individual risk factors to influence suicidal behaviors. Through a collaborative design that utilizes training and data-driven input throughout, this study has the potential to make critically important contributions to the development of more targeted suicide prevention programs in any setting, particularly in multi-racial/ethnic and multi-religious settings around the world.

22.2 THE GUYANA SUICIDE BEREAVED PERSONS STUDY

Alicia Solomon*[1], Christina Hoven[2]

[1]Ministry of Health Guyana, [2]Columbia University and New York State Psychiatric Institute

Individual Abstract: Although some suicide bereaved persons (SBPs) manage to adapt and live constructive lives, others are trapped in grief that precludes connectedness and well-being. Despite significant recent progress, research on the determinants of these disparate outcomes has been hampered by research challenges, namely: a lack of prospective longitudinal studies beginning at the time of the suicide, clinically ascertained samples that introduce bias, small sample sizes, lack of adequate controls, lack of the same in-depth risk factors and contextualimpact assessments over time, in both index samples and control samples, and occur most frequently in high income countries. In fact, few comprehensive suicide studies have been conducted outside of North America and Europe and for the most part they have not been with ethnically and religiously diverse populations. We will present information on a cohort 80 SBPs (40 suicides) in Guyana, recruited very close to the time of suicide, with an in-depth assessment. This study is being carried out in Guyana, the country with the world's second highest suicide rate, in an ethnically and religiously diverse population to explore factors related to its high suicide rate, using a psychological autopsy framework. We will present information on well-being, suicide behaviors, grief, psychiatric symptoms, functional status, future outlook, etc., as well as risk factors (exposure, family history, etc.) to better understand SBPs in that context. This Guyana SBP Study is designed to fill knowledge gaps and facilitate understanding of previously unexplored aspects of SBP experiences and risks that will allow for the identification of specific pathways and barriers to well-being among SBPs, ultimately contributing information for the development of targeted preventive interventions.

22.3 SUICIDAL BEHAVIOR IN DUTCH OUTPATIENT ADOLESCENT MENTAL HEALTH SERVICE USERS

Ingrid van Balkom*[1], A. Graciela de Cuba[1], Keely Cheslack-Postava[2]

[1]Jonx,[2]Columbia University/New York State Psychiatric Institute

Individual Abstract: Suicidal behavior is a major health concern in adolescents with depressive disorders. Suicide is usually preceded by suicidal behavior and is the fourth leading cause of death in 15-to-29 year-olds globally (Glenn et al., 2020; WHO, 2021). In the Netherlands suicide is currently the leading cause of death in 15-to-25 year-olds (Centraal Bureau voor de Statistiek [CBS], 2021). Suicidality in outpatient adolescent mental healthservice users is common but identifying those adolescents at increased risk can be difficult (Kerkhof and Huisman, 2017), possibly due to reluctance in adolescents and clinicians to openly discuss suicidality.
Depressive disorders carry the highest risk of suicidality (Mayes et al., 2015) and this well-researched fact may lead to a heightened awareness amongst clinicians of suicide risk in adolescents with internalizing behavior. Although previous research has also studied suicidal behavior in adolescents with presenting complaints such as ADHD and ASD, clinicians may still underestimate risk and omit screening or assessment of suicidality in these adolescents.

In this talk results of a study on risk of suicidality in a sample of adolescent mental health service are discussed.

The study included N=266 adolescents age 11-18 with diagnoses of ASD, ADHD, or depression from Jonx, a specialized outpatient child psychiatry service in the Netherlands. Suicide risk was assessed using the 39-item Dutch-language self-report questionnaire on suicidal behavior and self-injury (Vragenlijst Over Zelfdoding en Zelfbeschadigend gedrag; VOZZ).

Overall, 51% of subjects were positive for suicide risk. Although male and female patients with depression were equally likely to be assessed positive for suicide risk (83% of females vs. 89% of males; p=0.66), females were significantly more likely to be positive for suicide risk among patients with ASD (59% of females vs. 34% of males positive for suicide risk; p=0.006) and with ADHD (55% of females vs. 20% of males positive for suicide risk; p=0.001).

22.4 BEYOND THE PROXIMAL: A STUDY EXPLORING REGIONAL LEVEL PREDICTORS OF SUICIDE RATES ACROSS SWEDEN

Emma Eliasson*[1], Vladimir Carli[1], Gergö Hadlaczky[2]

[1]National Centre for Suicide Research and Prevention, Karolinska Institute, [2]Stockholm Healthcare Services/National Centre for Suicide Research and Prevention, Karolinska Institute

Individual Abstract: In Sweden, four lives are lost to suicide each day. Hence, identifying relevant risk factors to inform effective prevention strategies is key. Such strategies can range from individual (‘micro’) -level prevention methods to broader national suicide prevention policies. Whilst a range of studies have explored individual-level risk factors, highlighting community, regional or national-level predictors can be valuable to identify broader social and contextual determinants. Studies are increasingly utilizing such approaches. For instance, in the US, Dev and Kim (2021) demonstrated that state-level social capital predicted county-level suicide rates over time. Similarly, Mobley and Taasoobshirazi (2022) found that US county-level suicide rates were predicted by a county’s financial stability, economic opportunities as well as quality of mental health care.

This study will therefore aim to go beyond proximal predictors of suicide, by looking through a wider national- and regional-level lens in Sweden. It will do so by utilizing routinely collected data and applying longitudinal multilevel modelling to investigate potential predictors. More specifically, the study will explore whether regional data on factors such as median income, state benefit recipients, proportion of people living with low economic standards, levels of drug abuse, educational level, as well as availability of mental health professionals are associated with rates of suicide over time. Adding such findings to existing knowledge regarding individual-level risk factors is essential – both when targeting wider policy, but also to ensure effective coordination and implementation of regional suicide prevention strategies.

22.5 THE IMPACT OF FEMALE LABOR FORCE PARTICIPATION AND HUMAN DEVELOPMENT INDEX ON SUICIDE RATES

Elisa Vigna*[1]

[1]Karolinska Institute

Individual Abstract: Suicide is a major public health problem across the world. Extensive research on the field shows that suicide is affected by several sociological, economic, and cultural risk factors. This work originates from Durkheim's theories, which appears nowadays to draw outdated assumptions about norms and values connected to gender roles. Over the last century, social changes have driven the reshaping of traditional gender roles, often in an uneven fashion, strongly depending on context. This study proposes updated findings on the impact that changes in traditional gender roles could have on suicide rates. It will do so by examining the correlation between female labour force participation and gender-specific suicide rates. Moreover, it will examine this association depending on different socio-economic contexts, by analysing data from 55 countries.
In order to address the aim of the study, data from 2010 to 2019 is collected from the WHO, ILOSTAT and UN agencies' websites. The variables used are age-adjusted suicide rates (per 100.000), percentage of the female population aged 15 or more participating to the labour force and the Human Development Index (HDI). The sample is selected based on the availability of the abovementioned variables for the period under exam and indication of high-quality death registration data. A linear mixed model is used to analyse the data. Results show a significant interaction between female participation and HDI on male suicide rates ($p<0.001$). The increase of female labour participation produces a decrease in male suicide rates for relatively lower HDI, while in very high HDI countries an increase in female labour participation is correlated with an increase in male suicide rates. Similar trends but no significant interaction is observed for female and both sexes suicide rates.

This study suggests that role accumulation among women is beneficial for male population as it reduces male suicide rates. This association appears to be context dependent. The beneficial effect of women entering the labour market could be supported by the development of institutional adjustment to social change, strongly shaped by social policies aiming at the reconciliation of work and family life. Whereas, in countries where this adjustment is already established, and human capabilities are very high (HDI> 0.92), other factors might be of interest in examining the trends of suicide rates among men and women.

23. PAIN AND SUICIDE: EPIDEMIOLOGY, NEUROBIOLOGY AND RISK MITIGATION

Chair: Martin Cheatle, Perelman School of Medicine University of Pennsylvania

Overall Abstract Details: Suicide is a global epidemic. Every 40 seconds someone in the world dies of suicide and certain groups are more vulnerable to death by suicide. One in particular patient population that is susceptible to suicide, are individuals suffering from chronic pain. There is a robust literature demonstrating a high prevalence of suicidal ideation and suicidal behavior in patients coping with chronic pain, with estimates greater than 50%. Individuals with chronic pain and co-morbid conditions such as substance use disorders, HIV, sleep disorders and major depression are especially in danger of experiencing suicidal ideation and having increased risk of engaging in suicidal behavior. This international panel will provide an overview of the epidemiology of pain and suicide; the neurobiology and markers of suicide risk in patients with pain, examining the intersection of pain processing and suicide; the role of psychological pain in suicide; and novel pharmacologic and non-pharmacologic interventions targeting improving pain, function and reducing the risk of suicide in this patient population.

23.1 A BRAIN IMAGING APPROACH TO UNDERSTANDING PHYSICAL PAIN PROCESSING AS A MARKER OF SUICIDE RISK

Sakina Rizvi*[1]

[1]University of Toronto

Individual Abstract: Identifying the factors underlying the transition from suicidal ideation to suicide attempt is an evolving area of research. Based on current suicide theory, capability for suicide (CS) arose as a construct to explain why suicidal ideation does not universally lead to suicide attempt. Both the interpersonal Theory of Suicide and the Three Step Theory for Suicide propose that attempt/death by suicide occurs only if an individual with ideation has the capability to attempt suicide. A core feature of CS is pain tolerance, which reflects the maximum duration of time that pain is tolerable. Several behavioural studies demonstrate that individuals with a history of suicide attempt report a higher pain threshold and/or tolerance to pain. Moreover, the shared neurocircuitry underlying suicide attempt risk and pain processing suggests that CS may represent an important biological marker for suicide risk. However, its underlying neural circuitry is not established. This presentation will review data from two studies among depressed individuals with and without suicide attempt history: 1) one recently completed trial investigating resting state fMRI and behavioural pain correlates of CS, and 2) an ongoing study to directly measure pain processing under fMRI conditions and its association with CS. In the resting state fMRI study, the insula was used as a region of interest as it is common to suicide risk as well as the pain matrix. Physical pain was measured using the cold pressor task outside of the scanner. The results of this study demonstrated a strong correlation between CS and pain tolerance, which were subsequently associated with resting state connectivity between the insula and frontal cortex. To build on this work we are currently exploring brain activity during a pressure pain task to obtain direct measures of whether the brain is processing pain differently among those with suicide risk. Preliminary results from this study will be presented. To identify new treatment targets or develop new tests, we need a clear mechanistic framework for how suicidal ideation transitions to attempt. The data presented suggests that pain processing at the behavioural and neural level is a prominent feature of CS. This is important to inform the development of easy-to-use objective behavioural pain

assessments for clinical use that are proxies for the brain impairment relevant to the transition from suicidal ideation to attempt. Such assessments may aid in classifying high-risk individuals in need of intervention above standard of care.

23.2 PHYSICAL PAIN-SUICIDALITY ASSOCIATION AMONG ALL AGES: UPDATED META-ANALYSES

Raffaella Calati*[1], Martina Rignanese[1], Eleonora Salmè[1], Fabio Madeddu[1], Michele De Prisco[2], Michele Fornaro[2]

[1]University of Milan-Bicocca, [3]Reproductive Science and Odontostomatology Federico II University of Naples

Individual Abstract: Objective: Providing a data update about physical pain – suicidality association among all ages.
Methods: After searching on PubMed, data were extracted from articles comparing the rates of current and lifetime suicidal thoughts and behaviors (death wish, suicidal ideation, suicidal planning, suicide attempt and suicide death: DW, SI, SP, SA, and SD) in individuals with any type of physical pain and in individuals who did not report this condition. Data were analyzed with Comprehensive Meta-Analysis Software (CMA) version 2.

Results: 65 studies were included. Although high between-study heterogeneity was detected in most analyses (which however underwent a reduction in sensitivity analyses), results suggested that individuals with physical pain are more likely to report any form of suicide-related outcome, compared to individuals not affected by pain.

Conclusions: Need for screening and assessing suicide risk in individuals with physical pain.

23.3 SUICIDE RISK IN PATIENTS WITH CHRONIC PAIN: AN PROSPECTIVE INVESTIGATION INTO THE ROLE OF MENTAL DEFEAT

Kristy Themelis*[1], Jenna L. Gillett[1], Paige Karadag[1], Martin D. Cheatle[2], Nicholas A. Giordano[3], Shyam Balasubramanian[4], Swaran P. Singh[5], Nicole KY. Tang[1]

[1]University of Warwick, Coventry, [22]Perelman School of Medicine University of Pennsylvania, [3]Nell Hodgson Woodruff School of Nursing, Emory University, [5]UHCW NHS Trust, Coventry, [5]UHCW NHS Trust, Coventry, Warwick Medical School, Coventry

Individual Abstract: Chronic pain patients are at higher risk of suicide than the general population (Campbell, Darke, Bruno, and Degenhardt, 2015; Cheatle, Wasser, Foster, Olugbodi, and Bryan, 2014; Edwards, Smith, Kudel, and Haythornthwaite, 2006; Tang and Crane, 2006). Mental defeat, defined as negative and disabling thoughts about the self in relation to pain, has been associated with a higher suicide risk at a cross-sectional level (Tang, Beckwith, and Ashworth, 2016), however, the prospective association is still unclear. A prospective cohort study was conducted to evaluate suicide risk and predictors of suicide risk in chronic pain patients. In this study, we tested the predictive value of mental defeat on suicidality at 6- and 12-month follow-ups and compared it with other known predictors. Patients with chronic pain (N=524) completed a set of online questionnaires that include measures of suicide risk (SBQ-R), mental defeat (PSPS) as well as sociodemographic, psychological, pain, activity, and health variables, at baseline, 6- and 12-month follow-up.

Respective response rates were 70.8% (N=371) and 64.5% (N=340) at 6 and 12 months. Weighted univariate and multivariate regression models were run with all aforementioned variables predicting SBQ-R at 6 and 12 months. The clinical suicide risk cutoff of the SBQ-R (>7) was met by 38.55% of participants at baseline, 36.66% at 6 months, and 36.47% at 12 months. Multivariate logistic regression models revealed that baseline depression (HADS-D) (OR 1.14, 95% CI 1.04, 1.25), mental defeat (OR 1.02, 95% CI 1.00, 1.04), perceived stress (PSS) (OR 1.05, 95% CI 1.00, 1.11), pain location-head (OR 1.99, 95% CI 1.10, 3.58), and active smoking status (OR 1.94, 95% CI 1.00, 3.75) significantly increased the odds of reporting clinical suicide risk at 6 months. Older age reduced the odds (OR 0.97, 95% CI 0.95, 1.00). At 12 months, only mental defeat (OR 1.03, 95% CI 1.01, 1.05) and depression (HADS-D) (OR 1.13, 95% CI 1.03, 1.24) remained significant in increasing the odds of reporting clinical suicide risk. Receiver operating characteristic (ROC) analysis on the significant multivariate predictors indicated a cutoff score of 37 for PSPS with a 68% sensitivity and 73% specificity (area under the curve (AUC): 0.75 (95% CI: 0.70 to 0.81)) and 7 for HADS-D with an 81% sensitivity and 48% specificity (AUC: 0.73 (95% CI: 0.68 to 0.79)) was acceptable for predicting clinical suicide risk at 12 months.
This prospective study provides insight into the risk factors for suicide among chronic pain patients. Psychosocial risk factors, such as mental defeat, add to generic demographics and pain-specific risk factors in predicting clinical suicide risk and may offer a novel avenue for assessment and preventative intervention.

23.4 WHAT IS PSYCHOLOGICAL PAIN AND WHY IS IMPORTANT IN SUICIDE?

Adrian Alacreu-Crespo*[1], Sebastien Guillaume[2], Philippe Courtet[2], Emilie Olié[2]

[1]Area of Personality, Assessment and Psychological Treatment, University of Zaragoza,
[2]Psychiatric Emergency, Lapeyronie Hospital, CHU Montpellier; University UM, Montpellier ; INSERM U1061

Individual Abstract: Several authors agreed that suicide behavior come from a need to escape from unbearable psychological pain. Since Shneidman definition of psychological pain several authors proposed different terms and definitions for this construct. The efforts to define psychological pain lead to the development of different methods to evaluate the construct. One of these methods the physical and psychological pain visual analogue scale (PPP-VAS) have proven its efficacy in detecting recent suicide attempt and future suicide event. However, there are still doubts about the potential, reliability and validity of the PPP-VAS instrument for evaluate psychological pain. In this communication we would try to provide an overview about the definitions of psychological pain and the past research of psychological pain in relation with suicide behavior. Moreover, we will show some data about a phenomenological study showing how patients with mood disorder and/or suicide attempt history define psychological pain and the relationship of this definitions with the PPP-VAS.

23.5 PAIN, SUBSTANCE USE DISORDERS AND SUICIDE

Martin Cheatle*[1]

[1]Perelman School of Medicine University of Pennsylvania

Individual Abstract: There has been a great deal of scholarly activity devoted to the burgeoning rates of prescription opioid misuse/abuse and opioid-related fatalities in both the US and the EU. However, this has overshadowed the silent epidemic of suicidal ideation and suicidal behavior, especially in vulnerable populations such as individuals suffering from chronic pain and those with substance use disorders. There is extensive literature demonstrating a high prevalence of suicidal ideation and suicidal behavior in patients with persistent pain, with estimates as high as 50% in this patient population. Individuals with substance use disorders are also at considerable risk for suicidal ideation and suicidal behavior with an estimated 40% of persons seeking treatment endorsing a history of a suicide attempt. These data suggest that patients with co-occurring pain and substance use disorders are particularly at high risk for attempting and ending their lives by suicide. This presentation will provide an overview of the epidemiology of the intersection of substance use disorders, pain and suicide and review known risk factors and mediators. In addition, novel pharmacologic and non-pharmacologic interventions targeting decreasing the rate of relapse, improving pain and function and reducing the risk of suicide in this susceptible patient population will be discussed.

24. MEDIA, SOCIAL MEDIA, AND SUICIDE

Chair: Ping Qin, National Centre for Suicide Research and Prevention, University of Oslo

Overall Session Description: Media, and increasingly social media enable us to communicate with other people and stay up to date with the world, and can influence our life in both positive and negative ways. In this thematic symposium, we will have 4 presentations about suicide and suicidal behaviour prevention associated with media and social media utilisation in contemporary society. The topics include our current knowledge about harmful and positive effects of specific media content on suicide- and help-seeking-related outcomes, cyberbullying and suicidal behaviour among the young, opportunities and obstacles of suicide helplines, as well as the role of chat hotline and digital websites for people at suicide crisis.

24.1 MEDIA AND SUICIDE: BUILDING THE EVIDENCE BASE

Thomas Niederkrotenthaler*[1], Benedikt Till[2], Stefanie Kirchner[2], Mark Sinyor[3]

[1]Medical University of Vienna, Center for Public Health, Institute for Social Medicine, Suicide Research Unit, [2]Medical University of Vienna, Center for Public Health, Department of Social and Preventive Medicine, Unit Suicide Research and Mental Health Promotion, [3]Sunnybrook, University of Toronto

Individual Abstract: This lecture will give an overview of what we currently know about the effects of specific media content on suicide- and help-seeking-related outcomes. It will highlight evidence from news media, entertainment media as well as messaging in social media. Both harmful (Werther effects) and protective media effects (Papageno effects) will be considered. A focus will be placed on the increasing number of studies analyzing specific content characteristics of media stories that appear relevant to media effects. Further, the presentation will review what we currently know about the effects of specific "gestalt" narratives of suicide and suicide prevention. Above and beyond specific individual content characteristics of media stories, the overarching narrative of a media story might be similarly relevant to media effects. Future research considerations as well as implications for prevention approaches using media guidelines as a tool for risk mitigation and for the development of prevention campaigns will be discussed.

24.2 CYBERBULLYING AND SUICIDAL BEHAVIOR AMONG YOUNG PEOPLE

Paul Yip*[1]

[1]The University of Hong Kong

Individual Abstract: Cyberbullying is defined as using the internet to send harassing or threathening messages, post humiliating comments or threaten someone. The damage done by cyberbullying are more severe than physical and verbal bullying because of wider audiences and the materials can be stored online and reused, resulting in the victims reliving denigrating experiences repeatedly. Our study aims to (1) explore any gender difference in suicide ideation among those being bullied; (2) examine any mediating/moderating effects of cyberbullying on suicide ideation. We shall make use of the Youth Sexuality Study of the Family Planning Association of Hong Kong to provide insights on (1) and (2).
Some network analysis will be done to explore their relationships.

24.3 NATIONAL SUICIDE HELPLINES: OPPORTUNITIES AND OBSTACLES

Annette Erlangsen*[1]

[1]Danish Research Institute for Suicide Prevention

Individual Abstract: Less than half of all people who die by suicide have received support in mental health settings in the time shortly before dying. Other ways of reaching out include telephone helplines for suicide prevention. Telephone helplines might one of the most widely implemented venues of support for people with suicide thoughts, as helplines exist in many countries around the world.
The World Health Organisation recommends helplines as a central component in national suicide prevention plan; however, relatively little evidence exists regarding the users of helplines. Various studies have shown that a substantial proportion of callers are evaluated to be at risk of suicide when calling. The support provided by telephone helplines is has been characterised as being of momentary duration. Frequent callers constitute a challenge as counsellors perceive that time spend speaking with frequent users might prevent other callers from getting through. Recent findings based on data on all phone calls directed to the Danish helpline for suicide prevention suggest that a small group of callers, 'super callers', consume a substantial share of the total counselling time at helplines.

This presentation strives to provide an overview of central aspects regarding suicide helplines with a particular focus to challenges and opportunities.

24.4 CHAT HOTLINE AND DIGITAL WEBSITES FOR YOUNG PEOPLE AT SUICIDE CRISIS

Gil Zalsman*[1], Yael Levi[2], J. John Mann[3]

[1]Geha Mental Health Center, Sackler School of Medicine, Tel Aviv University, [2]SAHAR online mental support, Israel, [3]Columbia University/NYS Psychiatric Institute

Individual Abstract: Background: Chat hotlines are more and more common in many countries and used mainly by adolescents and young adults who find this the preferred support channel since it serves for all their daily communication. During COVID-q19 pandemic the use of this method for getting support grew even more. We assessed the use of it before and after the pandemic in connection to suicide-related chats. We expected older people to use this method as it spread quickly among older generations.
Methods: Data from a national chat-based crisis hotline for the first half of 2019 (pre-COVID-19), were compared to data from the first half of 2020 (during COVID-19). Chat sessions were classified by content and demographics and the data compared between the two time periods.

Outcome: Total chats (n = 6756) were 48% higher during COVID-19 (p < .05). Suicide-related chat (SRC) number was also higher, although the proportion relative to all chats was slightly lower during COVID-19, compared to pre-COVID-19 (p < .05). SRCs increased during the COVID-19 lockdown. The number of severe SRCs resulting in urgent police intervention, increased during the lockdown (April-May 2020) compared with the same period in 2019 (p = .04). Issues of anxiety were higher in 2020 (19.4%) vs. 2019 (16.5%) (p < .00001) while issues of depression were lower (22.4% vs 33%, respectively) (p < .00001). The overall use of chats among adults aged >50 yrs increased during COVID-19 and likewise, the rate of SRCs in this age-group increased 30-fold in this period when compared to pre-COVID-19 (p < .00001). SRCs included more women than men (p < .0001) in both pre-COVID-19 and during the COVID-19 period, when the proportion of women increased from 62% in 2019 to 73% during COVID-19 (p < .0001).

Interpretation: The rise in total chats, SRCs and SRCs resulting in police action, commenced during lockdown and was ameliorated by end of the lockdown, indicating that distress created by the lockdown was more impactful than mourning deaths of loved ones, fear and uncertainty, because all these factors persisted beyond the end of the lockdown. Older populations were probably more distressed due to greater risk and less adaptability to isolation, social media and staying home. More calls by women may reflect women's better help-seeking capacity. The increase in SRCs indicates the potential for more suicides and the need for bolstering mental health services and reach-out to older people during pandemic lock-downs. Finally, the use of digital bots and virtual therapy via websites will be reviewed.

25. LONGITUDINAL TRAJECTORIES AND ASSOCIATED FACTORS OF SUICIDAL IDEATION AND SELF-HARM

Chair: Marie-Claude Geoffroy, McGill University

Overall Abstract Details: Emerging research suggests that there is great heterogeneity in the longitudinal course of suicidal ideation and self-harm in the general and clinical populations. To illustrate, many people experience no suicidal ideation for a very long time, while others experience transient or more persistent suicidal ideation or self-harming behaviors. These profiles have been associated with distinct risk and protective factors and outcomes. The speakers on this panel will describe their efforts to map the developmental trajectories of suicidal ideation, suicide attempt, and self-harm over time in both general and clinical populations, identify risk and protective factors, and evaluate long-term outcomes associated with these trajectories.
First, Massimiliano Orri, Ph.D., the discussant, will present an overview of the statistical approaches used to capture the heterogeneity in the development of suicidal ideation and self-

harm behavior over time, and discuss applications of such approaches for suicide research. Second, Marie-Claude Geoffroy, PhD., will describe the developmental trajectories of suicidal ideation during the transition from early adolescence to late adulthood to identify, their risk and protective factors, and the associations with emergency department visits for suicidal ideation and suicide attempts in the Quebec Longitudinal Study of Children Development Study. Similarly, the third presentation by Myung Ki, PhD., will inform on the trajectories of suicidal ideation and their predictors during adolescence in the Korean Children and Youth Panel Survey. The fourth presentation by Becky Mars, Ph.D., will show trajectories of self-harm from adolescence to adulthood, and their antecedents in Avon Longitudinal Study of Parents and Children. Finally, Dr Hennefield will document trajectories of suicidal ideation and suicide attempts across preschool and childhood in a clinical sample of depressed preschoolers and matched controls. Relying on longitudinal data from 4 countries, this symposium will provide a comprehensive description of the heterogenous course of suicidal ideation and self-harm behavior across key developmental periods.

25.1 TRAJECTORIES OF SUICIDAL IDEATION FROM AGE 13 TO 23 YEARS: ASSOCIATIONS WITH ANTECEDENTS AND EMERGENCY DEPARTMENT VISITS FOR SUICIDAL IDEATION AND SUICIDE ATTEMPTS.

Marie-Claude Geoffroy*[1], Massimiliano Orri[1], Alain Girard[2], Elise Chartrand[1], Johanne Renaud[1], Gustavo Turecki[1]

[1]McGill University, [2]Université de Montréal

Individual Abstract: Introduction: Emergency visits for suicide ideation and attempts are on the rise in young people, but the course of self-reported suicide ideation and attempts among youth from the community is not well documented. We aimed to identify group trajectories of suicide ideation/attempts from early adolescence to emerging adulthood, their risk and protective factors, and associations with emergency department visits for suicide ideation/attempts.

Methods: The Quebec Longitudinal Study (QLSCD) of Children Development is a prospective representative cohort of youth from the Canadian province of Quebec. We followed 1631 participants who reported past year serious suicidal ideation from ages 13 years (2011) to 23 years (2021). We modelled suicidal ideation using growth mixture models. We analysed risk and protective factors from self- parent and teacher report questionnaires in childhood and pre-adolescence using multinomial logistic regressions.

Results: We identified three trajectory groups. The largest group is characterized by low rates of suicidal ideation at all ages (91.2%, labelled as low risk). The second group is characterised by early-adolescent onset of suicidal ideation persisting into adulthood (6.0%, labelled as adolescent onset). The third group is characterized by early-adulthood onset persisting into adulthood (2.5%, labelled as adult onset). Pre-adolescence measures were associated with trajectories, as well as the emergency department visits.

Conclusion: we stress the need for preventive strategies in early adolescence and differential clinical/educational interventions as identified for each trajectory.

25.2 TRAJECTORIES OF SELF-HARM FROM ADOLESCENCE TO ADULTHOOD IN A UK BIRTH COHORT

Becky Mars*[1], Paul Moran[1], Rory O'Connor[2], Jon Heron[1]

[1]University of Bristol, [2]University of Glasgow

Individual Abstract: Methods: The sample includes 5037 participants from the Avon Longitudinal Study of Parents and Children; a birth cohort study in the UK. Past year frequency of self-harm was assessed at ages 16, 18, 21, and 24/25 years. Categories included 0; 1; 2-5; and 6+ times. Longitudinal latent class analysis using Mplus was used to identify underlying patterns in self-harm over time using the repeated measures data. A bias adjusted three-step model was used to explore associations with potential correlates (e.g. depression, suicidal thoughts, gender and socioeconomic status).
Results: A four class model was selected based on fit statistics and interpretability. These included an adult-onset class (1.3%), a low-risk class (85.2%), and two declining classes; one which started at a high frequency in adolescence and then decreased, but still continued into adulthood (4%), and one which started with a moderate frequency in adolescence, but then declined to low levels in adulthood (9.6%). Some differences were found between the classes in terms of the correlates investigated.

Conclusions: The findings suggest that there is heterogeneity in the course of self-harm over time.

25.3 PRESCHOOL-ONSET MAJOR DEPRESSIVE DISORDER AS A STRONG PREDICTOR OF SUICIDAL IDEATION AND BEHAVIORS INTO EARLY ADOLESCENCE

Laura Hennefield*[1]

[1]Washington University School of Medicine

Individual Abstract: Objective: Suicidal thoughts and behaviors (STBs) in children are an escalating public health concern. This study focused on one understudied candidate risk factor, Preschool-Onset Major Depressive Disorder (PO-MDD), as a predictor of both persistent and emerging STBs from early childhood into early adolescence. Prior work from our research group identified three unique trajectories of STBs across childhood and adolescence in a sample enriched for PO-MDD: a Low class (n = 273) characterized by low rates of STBs, an Early-Persistent class (n = 21) characterized by steadily increasing STBs, and a Late-Onset class (n = 21) characterized by low rates of STBs through age 10 followed by a dramatic increase from ages 11-14 years. The present work builds on these findings by examining patterns of STBs in a larger clinical sample of children with PO-MDD who are being followed from preschool-aged into adolescence.

Methods: Participants included in the results below were 137 8-to 12-year-old children who met criteria for PO-MDD when they were aged 3-6 years, and a community sample of 53 age, income, and gender-matched peers. STBs were reported by caregivers (during early childhood and early adolescence) and children (during early adolescence) using age-appropriate diagnostic interviews.

Results: By early adolescence, children who had PO-MDD were 7.38 times more likely than their peers to have endorsed STBs after the early childhood period when they were initially diagnosed with PO-MDD (67.9% versus 22.6%), including 7.52 times more likely to have made a suicide attempt (13.1% versus 1.9%); they were also 8.98 times more likely to have endorsed STBs over the prior month (26.3% versus 3.8%). Moreover, children who had PO-MDD with STBs were 3.46 times more likely than those who had PO-MDD without STBs to endorse STBs into early adolescence (83.1% versus 54.2%), indicating substantial continuity of preschool STBs alongside strikingly high rates of emerging STBs into early adolescence. These differences in STBs all represent statistically significant differences and hold in models that account for children's age at the time of the diagnostic interview, gender, and income. These findings also hold when controlling for externalizing comorbidities, implicating PO-MDD as a unique diagnostic risk factor.

Conclusions: These findings suggest that PO-MDD is a strong risk-factor for both the emergence and persistence of STBs across childhood and into early adolescence. It is likely that children with PO-MDD would benefit from frequent suicide screening, proactive safety planning, and early interventions that directly address this maladaptive response to distress; however more research is needed to determine best practices for screening and interventions in this high-risk sample. Data collection is current in progress for a second follow-up visit occurring approximately two years after the early adolescent visit (at ages 10 – 14). In this talk, the above findings will be expanded upon, including links between STBs and non-suicidal self-injurious behaviors in this sample, alongside other potential risk-factors. Initial findings from the second follow-up visit will also presented that explore the trajectories of STBs into adolescence in children with PO-MDD.

25.4 SUICIDE IDEATION TRAJECTORIES DURING ADOLESCENCE AND ASSOCIATED RISK AND PROTECTIVE FACTORS: A 6-YEAR FOLLOW-UP STUDY OF THE KOREAN CHILDREN AND YOUTH PANEL STUDY

Myung Ki[1], Marie-Claude Geoffroy[2], Loose Loose*[3]

[1]Korea University, [2]McGill University, [3]University of Montreal

Individual Abstract: Background: Suicide ideation experienced during adolescence are known to be heterogenous. We aimed to identify trajectories of suicidal ideation and their risk and protective factors in a large cohort of south Korean adolescents.

Methods: This is a six-year follow-up study of adolescents (n=1,994) between grade 7 and 12 from the Korean Children and Youth Panel Study. Suicidal ideation was self-reported from grades 8 to 12. Information on a range of risk and protective factors were self-reported at baseline year at grade 7 (or nearest year). Using multinomial logistic regression, we analyzed associations between the risk and protective factors and suicide ideation trajectories.

Results: Three different trajectories of suicidal ideation were identified. The most prevailing group (84%, n=1943) includes adolescents with no suicidal ideation. A second group labelled as transient ideation includes adolescents whose suicidal ideation emerged in mid-adolescence and then decline (9%, n=200). A third group comprises adolescents with persistent ideation (7%, n=171), labelled as persistent. Depressive symptoms were associated with both transient (OR= 1·536 [95% CI, 1·283-1·839]) and persisting (OR=2·180 [95% CI, 1·670-2·846]) suicidal ideation, whereas sleep problems (OR= 0·813 [95% CI, 0·694-0·952]) were solely

associated with transient ideation. Higher self-esteem was associated with reduced odds of persistent ideation (OR=0·690 [95% CI, 0·539-0·885]).

Conclusion: As expected, the course of suicidal ideation in south Korean adolescents was heterogonous, with adolescents experiencing either transient or persistent ideation, with shared and unique risk and protective factors.

25.5 PERSON-CENTERED APPROACHES TO UNDERSTAND INDIVIDUAL DIFFERENCES IN THE LONGITUDINAL COURSE OF SUICIDAL IDEATION AND SELF-HARM BEHAVIOR

Massimiliano Orri*[1]

[1]McGill University

Individual Abstract: In suicide research, populations are often studied as homogeneous groups of individuals in order to identify risk factors that, on average, increase the risk of suicidal thoughts and self-harm behavior. This approach (variable-centered) provides data that are of critical importance to inform public health decisions, but of limited interest to identify specific individuals at high risk. An alternative is to rely on approaches (person-centered) to identify subgroups of individuals qualitatively different from one another in terms of their risk of suicidal ideation or self-harm. This talk will discuss the interest of using such person-centered approaches in longitudinal suicide research. Specifically, it will focus on those approaches that aim to identify groups of individuals based on their evolution of suicidal ideation and self-harm risk over time. We will discuss the main models used in these investigations, as well as the public health and clinical utility of identify those trajectories and their associated risk factors.

CONCURRENT SYMPOSIUM SESSIONS

5:45 p.m. - 7:15 p.m.

26. PSYCHOTHERAPY AND BRIEF SUICIDE PREVENTION INTERVENTIONS

Chair: B Brodsky, College of Physicians and Surgeons, Columbia University/New York State Psychiatry

Overall Session Description: Over the past several decades, suicide-specific psychotherapeutic and brief interventions have been developed and researched to more directly target suicidal ideation and behavior, and to identify what works to enhance non-psychopharmacological treatment effectiveness in reducing suicidality. In this invited symposia, four leaders in the field of suicide prevention intervention development and effectiveness research will review the state of the art and science in evidence- based psychotherapy and brief interventions for suicide prevention. Dr. Lars Mehlum will provide an overview of Dialectical Behavior Therapy (DBT), highlighting the behavioral and skills training approach as well as the underlying mechanisms of change. He will also summarize the most updated evidence base for DBT in the reduction of suicidal and self-harm behaviors across a variety of clinical populations. Dr. Gregory K. Brown, a developer of Cognitive Therapy for Suicide Prevention (CT-SP) , will provide a description of how this brief psychotherapy approach focuses on the identification of proximal risk factors for acute suicidal

risk, and works to collaboratively identify specific coping skills. Dr. Brown will also review the clinical trials for CT-SP and Brief Cognitive Behavioral Therapy (BCBT), including a recent trial of the effectiveness of CT-SP for older men with suicidal ideation. Dr. Erkki Isometsa will describe the Attempted Suicide Short Intervention Program (ASSIP) and review the findings of its effectiveness when compared to individuals not in treatment. He will then present the findings of a RCT that more stringently tests the ASSIP model by comparing it with another brief suicide prevention intervention, Crisis Counseling (CC). Dr. Ivan Miller will present an overview of the Coping with Long-Term Active Suicide Program (CLASP) that he developed, and will review the empirical evidence to date regarding its effectiveness. All presenters will discuss the future directions for these interventions and research into their effectiveness in suicide prevention.

26.1 PROMISES OF DBT IN PREVENTING SUICIDE AND SELF-HARM

Lars Mehlum*[1]

[1]National Centre of Suicide Research and Prevention, Institute of Clinical Medicine, University of Oslo

Individual Abstract: Dialectical behavior therapy (DBT) was indeed developed for the treatment of suicidal and self-harming people; originally for adults with Borderline Personality Disorder (BPD) – a group of patients that is often regarded by many clinicians as extremely challenging to treat successfully. DBT has later been much expanded to reach wider groups of suicidal people and adapted to be delivered in many contexts outside of the original mental health setting. Today DBT is delivered to individuals and groups of people of nearly all age groups who are receiving treatment in both outpatient and inpatient psychiatric treatment, in programs for people with developmental disorders, for people in correctional programs, in child well-fare, in addiction treatment programs and many more. Still, DBT remains a treatment for people with disorders of emotion or behavior dysregulation and this is a major part of the explanation why the treatment is so relevant for use with people with suicidal or self-harming behavior. Although the boundaries between non-suicidal (NSSI) and suicidal self-harm are not very sharp, clinical experience suggests that NSSI behaviors tend to be more strongly linked to difficulties of regulating emotions and cognitions, while suicidal self-harm will have stronger associations with depressive states and hopelessness. DBT is a multimodal treatment offering clinicians many innovative strategies to effectively manage suicidal crises and to help their patients overcome problems that are closely linked to suicidal ideation and both suicidal and non-suicidal self-harming behavior. The treatment adopts a behavioral approach to suicide and self-harm and therapists will typically, in collaboration with their patients, conduct "ideation-to-action" - analyses to acquire a more detailed understanding of how suicide risk progresses from ideation to potentially lethal suicide attempts with the aim of identifying targets for therapeutic change to prevent future suicidal behavior to occur. More than 40 randomized trials have demonstrated the effectiveness of DBT in reducing suicidal behavior and NSSI, emergency room visits, psychiatric hospital days, and a range of symptoms and behaviors related to suicidality. Evidence is growing as to which strategies in DBT are the mechanisms of change with respect to self-harming behaviors. Currently, it seems likely that strategies such as adopting a behavioral approach to suicide and self-harm to identify antecedents and consequences either causing or maintaining the behaviors are central. Treating suicidal behaviors directly and specifically and making such treatment the top priority may also be important. Multiple and specific strategies to manage suicidal crises and to prevent suicidal crises from occurring may also promote good outcomes. In particular, teaching patients a range

of skills in emotion regulation, distress tolerance, and interpersonal problem solving combined with a focus on generalization of skills use to crises and other challenging situations in their daily lives may drive clinical outcomes. Keeping patients alive while they are making progress in treatment builds in DBT on a strong therapeutic relationship that balances the therapeutic strategies of validation and change. This presentation will highlight key findings of current DBT research and discuss future directions using this treatment method for suicide preventive intervention.

26.2 COGNITIVE BEHAVIORAL THERAPY FOR SUICIDE PREVENTION: RECENT ADVANCES

Gregory Brown*[1], Kelly Green[1], Shari Jager-Hyman[2], Gabriela Khazanov[3], Warren Bilker[4]

[1]Perelman School of Medicine University of Pennsylvania, [2]Perelman School of Medicine, University of Pennsylvania, [3]Corporal Michael J. Crescenz Department of Veterans Affairs Medical Center, [4]University of Pennsylvania Perelmann School of Medicine

Individual Abstract: Cognitive Behavioral Therapy for Suicide Prevention (CBT-SP) is a type of psychotherapy that is based primarily on the assumption that individuals who are suicidal or who attempt suicide lack specific cognitive or behavioral skills for coping effectively with suicidal crises. This intervention targets suicidal ideation and suicidal behavior, directly, rather than focusing on the treatment of other psychiatric disorders that may include suicidal behavior as a symptom. Although there are many motivations and ongoing chronic risk factors for suicide, the principal aim of CBT-SP is to identify proximal risk factors that occur during acute suicidal crises and then to collaboratively identify specific coping skills and resources that are most likely to mitigate future potential crises. CBT-SP has been recognized as one of the few evidence-based, psychotherapy interventions specifically for suicide prevention. This presentation will provide a brief overview of the clinical trials that have been conducted to date including studies of Cognitive Therapy for Suicide Prevention (CT-SP) and Brief Cognitive Behavior Therapy (BCBT) that have been found to be effective for preventing suicide attempts. Findings supporting a partial replication of CT-SP in the community by non-expert therapists will be described. Results from a recent randomized controlled trial of CT-SP adapted for older men with suicidal ideation will also be presented.

26.3 BRIEF SUICIDE PREVENTION INTERVENTIONS: WHAT WORKS?

Erkki Isometsä*[1]

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Individual Abstract: A great need exists for knowledge of effectiveness and limits of suitability of brief interventions in suicide prevention. People who have attempted suicide have high suicide mortality, and therefore are a central target group for indicated suicide prevention. Numerous intervention studies have already been conducted to investigate their effectiveness in reducing risk of suicide reattempts, and several meta-analyses have yielded relatively consistent findings. Overall, effectiveness of brief cognitive behavioral therapies and brief safety planning-type interventions has been best documented in meta-analyses. As safety planning is also an integral part of cognitive-behavioral therapies, the available evidence can be seen to consistently support its role. However, suicide attempters are a highly heterogeneous

group in terms of their mental disorders, life situation and other important characteristics, and their treatment needs may differ. Furthermore, most studies have compared outcomes of subjects who have or have not received an intervention. Therefore, whether effectiveness of brief suicide interventions specifically exceeds that of any other brief interventions remains largely unknown.
The Attempted Suicide Short Intervention Program (ASSIP) is a brief, three-visit psychotherapeutic intervention including a videotaped narrative interview and creation of a safety plan. It was found remarkably effective in reducing repeat suicide attempts in a pivotal Swiss study. We compared the effectiveness of ASSIP to crisis counselling (CC) in a randomized clinical trial to examine whether it is specifically superior to a nonspecific other intervention. We also investigated predictors for suicide reattempts within the clinical trial population to identify subgroups with poor outcome. Consenting adult patients receiving treatment for a suicide attempt in Helsinki City general hospital emergency rooms in 2016-2017 (n = 239) were Zelen-randomized to either the ASSIP or the CC. One and two years after baseline, information on outcome was collected via telephone and from medical and psychiatric records. Of patients who initiated ASSIP (n = 89) or CC (n = 72), 73 (82%) completed ASSIP and 58 (81%) CC. After analysis and publication of the trial findings, patients were pooled into a single cohort, and predictors for suicide reattempts were analyzed. The proportion of patients who attempted suicide during the two-year follow-up did not differ significantly between ASSIP and CC (29.2% vs. 35.2%). In predictor analyses, reattempts were predicted by younger age, previous suicide attempts and clinical diagnosis of a personality disorder, particularly borderline personality disorder

Our study put the ASSIP to a more stringent test than most other studies of suicide brief interventions, as it was compared to a nonspecific control intervention rather than to not receiving any. However, our findings demonstrate the need to refine understanding of mediating and moderating factors that could result in effectiveness of interventions exceeding that of common factors in brief therapies.

Within a pooled trial population of suicide attempters, we found risk of reattempt to be strongly predicted by subjects' young age, history of previous attempts, and clinical personality disorder. These findings are overall consistent with findings of risk of repetition of suicide attempt. Composition of treated populations in terms of such characteristics may strongly influence observed outcomes of brief interventions. Role of such factors for treatment effectiveness should be investigated to advance tailoring treatments to patients' needs.

26.4 THE COPING LONG TERM WITH ACTIVE SUICIDE PROGRAM (CLASP): A TELEHEALTH SUICIDE PREVENTION PROGRAM

Ivan Miller*[1], Brandon Gaudiano[1], Lauren Weinstock[2]

[1]Butler Hospital and Brown University, [2]Brown University and Butler Hospital

Individual Abstract: Suicidal behavior is a major public health problem around the world. Despite the significance of this issue, relatively few interventions to reduce suicidal behavior have been developed and empirically tested/validated.
We have developed a new intervention called Coping Long Term with Active Suicide Program (CLASP) that targets multiple risk factors for suicide using a unique combination of formats (in-person and telephone) and therapeutic strategies (values-goals clarification, problem

solving, significant other support). The CLASP intervention is an adjunctive intervention specifically designed to reduce subsequent suicidal behavior in high risk populations during times of acute risk or transition. CLASP has three major components: 1) three individual, in-person meetings, 2) one significant other/family meeting and 3) and 11 brief (15-30 min) phone contacts with the patient and his/her significant other. The strategies used in CLASP are adapted from two main therapeutic approaches: Acceptance and Commitment Therapy (ACT) and the McMaster Model of Family Functioning. (See Miller, Gaudiano and Weinstock, 2022 for a full description)

Recent research has demonstrated that CLASP produces significant reductions in suicidal behavior in high risk patients transitioning from emergency departments and psychiatric inpatient units (see Miller et al 2016, 2017). Currently studies are underway testing the effectiveness of CLASP in high risk Veterans Administration patients and adolescents and young adults from emergency departments.

This presentation will provide an overview of the CLASP intervention and available empirical research, so that clinicians and researchers can consider utilizing this intervention in their own settings.

Miller, I., Gaudiano, B. and Weinstock, L. (2016). The Coping Long Term with Active Suicide Program (CLASP): Description and Pilot Data. Suicide and Life Threatening Behavior, 46, 752-761

Miller, I., Camargo, C., Arias, S., Sullivan, A., Allen, M., Goldstein, A., Manton, A., Espinola, J., Jones, R., Hasegawa, K., and Boudreaux, E. (2017) Suicide Prevention in an Emergency Department Population: the ED-SAFE Study, JAMA-Psychiatry, 74 (6), 563-570

Miller, I., Gaudiano, B. and Weinstock, L. (2022). The Coping Long Term with Active Suicide Program (CLASP: A Clinicians Guide to a Multi-Modal Intervention for Suicide Prevention. Oxford University Press, New York, NY

27. THE EXPOSOME AND SUICIDE RISK: LEVERAGING BIG DATA ON ENVIRONMENTAL EXPOSURES TO UNDERSTAND AND PREDICT SUICIDAL BEHAVIOR ACROSS THE LIFESPAN

Chair: Ran Barzilay, University of Pennsylvania

Overall Abstract Details: Suicidal behavior is complex and is influenced by a combination of multi-level distal and proximal environmental risk factors (i.e., exposome) and genetic susceptibility. Recent advances in psychiatric genetics capitalized on large sample and Big Data in genetics to improve our ability to model genetic susceptibility to risk of suicide. Less has been done in effort to leverage Big Data on environment to unravel the potential of the exposome to help explain and predict suicidal behavior. The growing availability of large datasets from both research settings and electronic health records (EHR) that include information on environmental exposures in large samples assessed for suicidal behavior, creates unprecedented opportunities to incorporate exposome data into models that explain and predict suicidal behavior. Furthermore, the application of novel analytic tools like natural language processing (NLP) that can extract data on exposures on a large reproducible scale, and the development of new methods like exposome wide association studies (ExWAS) that can systematically screen associations of multiple exposures with an index outcome (in this case, suicidal behavior), pave the way to new directions for research that can be inform suicide prevention efforts through improving risk classification.

In this symposium, we will attempt to provide five examples of analyses that leverage large datasets to unravel the potential contribution of data on environmental exposures to models of suicidal behavior across the lifespan in research and in clinical settings. Dr. Barzilay will provide data on the potential of applying an ExWAS approach based on psychosocial adverse exposures data to create reproducible exposomic risk scores that can consistently explain substantial variance in youth suicide attempt in diverse population across different settings. Dr. Warrier will provide data from the UK Biobank that underscore the potential of exposome measures to explain self-harm behavior among UK adults. Dr. Melhem will present findings on the challenges and opportunities of applying previously developed predictive algorithms of suicidal behavior on a unique population of youth who were discharged from psychiatric hospitalization and will highlight the potential leveraging EHR to address challenges of reproducibility. Dr. Kimbrel will focus on suicide prediction among veterans, testing the contribution of recent life events data derived with NLP methods to predictive models that rely on multimodal data of social determinants of health, clinical and genetic data. Finally, Dr. Coon will highlight the potential of applying NLP methods on EHR of people who died by suicide, focusing on the role of exposures to substances as key for parsing heterogeneity among suicide deaths.

Collectively, this symposium shows that the incorporation of environmental exposures data into models of suicidal behavior is critical to understanding and predicting suicidal behavior across different populations and settings. Findings will be discussed in their translational context to inform suicide prevention strategies globally.

27.1 MODELING EXPOSOMIC RISK FOR SUICIDE ATTEMPTS IN TWO INDEPENDENT YOUTH COHORTS

Elina Visoki[1], Kate Tran[1], Ran Barzilay*[2]

[1]Children's Hospital of Philadelphia, [2]University of Pennsylvania

Individual Abstract: Background: Suicidal behavior is influenced by environmental risk factors yet quantifying and integrating them in suicide research presents a significant challenge. The exposome framework embraces environment's complexity and addresses the challenge of collinearity among exposures by applying computational methods on large scale environmental data. One exposomic method is the exposome-wide-association-study (ExWAS), which applies a data driven approach (i.e., agnostic to prior knowledge about association between exposures and an index outcome) to systematically study associations with an outcome, accounting for collinearity and for multiple testing. Risk exposures identified in ExWAS can be weighted to create aggregate exposomic risk scores, which can be generalized across studies and used to identify high risk individuals.
Methods: We conducted an ExWAS for youth suicide attempt using data on N=10,414 participants from the Adolescent Brain Cognitive Development (ABCD) Study (mean age =12 years, 47.8% female, 21.2% Black). Participants were followed over 3 annual assessment waves from age 10-12 and exposome data was collected from participants and caregivers on household, neighborhood, social media and school environment. To model exposomic risk, we (1) split the sample into discovery and validation subsamples, (2) ran an ExWAS in the discovery sample using 195 exposome factors with suicide attempt (endorsed by 3% of the sample) as the dependent variable, (3) identified significant risk exposures and (4) calculated

a suicide attempt exposomic risk score that aggregates the weighted sum of risk exposures. We then fit the exposomic risk score on a validation sample and tested the variance it explains in suicide attempt. Lastly, we generalized our approach using an independent cohort of youth obtained from the Children's Hospital of Philadelphia emergency department (CHOP-ED, N=19,879, mean age=15, 65.4% female, 56.2% Black, 10.2% endorsed suicide attempt).

Results: ExWAS identified 40 environmental exposures associated with suicide attempts in ABCD Study. Significant risk exposures included household (e.g., family conflict), neighborhood (e.g., crime), social media (e.g., cyberbullying) and school (e.g., not feeling safe) factors. The aggregate exposomic risk score was significantly associated with suicide attempt in the validation sample (odds ratio [OR]=1.9, 95%CI=1.7-2.2, P <.001; multi-level logistic regression model adjusting for age, sex, race, ethnicity, and accounting for the clustered nested data structure of ABCD Study). Furthermore, the exposomic risk score explained 13% of the variance in suicide attempt (Nagelkerke pseudo R2=0.13). Our approach generalized well in the independent CHOP-ED cohort, where we ran an ExWAS and calculated an aggregate exposomic risk score that was associated with suicide attempt (OR 95%CI= 2.2, 2.1-2.4, P<.001) and explained 12.5% of the variance in suicide attempt, similar to the findings in ABCD Study. Exposomic risk scores in both ABCD and CHOP-ED datasets performed similarly well across genders, race and ethnicity.

Conclusions: Exposomic risk scores of suicide attempt can be applied in youth samples and explain substantial portion of the variance in suicide attempt. This approach can be applied in diverse samples that include different characterization of the exposome and appear to be generalizable in both research and clinical settings. Our results underscore the critical role of psychosocial environmental stressors in youth suicidal behavior. Findings can help optimize individual level risk classification and inform policy aimed at reducing suicide attempt risk in diverse populations.

27.2 THE IMPACT OF GENETICS AND ENVIRONMENT ON SUICIDAL BEHAVIOUR AND IDEATION IN THE UK BIOBANK

Varun Warrier*[1]

[1]University of Cambridge

Individual Abstract: Suicidal behaviour and ideation (SBI) are complex and multifactorial. Both genetic and environmental factors are thought to underlie these behaviours. To assess the combined contribution of various environmental and genetic factors on SBI, we used data from over 140,000 adults from the UK Biobank. We calculated polygenic scores for several common mental health and neurodevelopmental conditions (e.g., autism, ADHD, schizophrenia, and PTSD) and investigated their association with SBI. In parallel, we investigated the association with several environmental and social factors including childhood maltreatment, intimate partner violence, socio-economic status, educational attainment and cognition on SBI. Finally, we investigated the combined impact of both polygenic scores and environmental factors on SBI. Preliminary analyses identified associations between multiple polygenic scores (e.g., autism and ADHD) and SBI. Polygenic scores for neurodevelopmental conditions had similar impact (variance explained) as polygenic scores for psychiatric conditions on SBI. A multivariate polygenic score, however, explained higher variance compared to any one individual polygenic score. SBI was associated with multiple environmental exposures,

including childhood maltreatment, intimate partner violence, social support, and socio-economic status. On average, environmental factors explained greater variance in SBI compared to polygenic scores. Initial analyses failed to identify any significant interactions between environmental variables and polygenic scores in predicating SBI, suggesting largely additive effects. Additional analyses will further interrogate the complex gene-environment mechanisms underlying SBI in the UKB, and will attempt to replicate the results in the All of Us cohort. In sum, these findings lend credence to the idea that SBI is aetiologically multifactorial, with sizeable environmental and genetic contributions.

27.3 PREDICTION OF SUICIDAL BEHAVIOR IN YOUTH THE YEAR POST-HOSPITAL DISCHARGE

Nadine Melhem*[1], Emily Hone[2], Eli Goodfriend[2], Antoine Douaihy[1], David Brent[3], Anna Marsland[4], Kehui Chen[4]

[1]University of Pittsburgh School of Medicine, [2]University of Pittsburgh Medical Center, [3]University of Pittsburgh Medical Center, Western Psychiatric Hospital, [4]University of Pittsburgh

Individual Abstract: The prediction of suicidal behavior is a challenge given its low base rate. We have developed a prediction risk score using a high-risk sample of 663 offspring of parents with mood disorders, mean (Standard Deviation or SD) age of 23.8 (8.5) years, from our Familial Pathways for Suicidal Behavior Study with yearly follow-ups for 12 years. We found the severity and variability in depression symptoms (odds ratio [OR]=4.72; 95% CI, 1.47-15.21; P = 0.01), younger age (OR=0.82; 95% CI, 0.74-0.90; P < 0.001), lifetime history of unipolar disorder (OR= 4.71; 95% CI, 1.63-13.58; P = 0.004), lifetime history of bipolar disorder (OR= 3.4; 95% CI, 0.96-12.04; P = 0.06), history of childhood abuse (OR= 2.98; 95% CI, 1.40-6.38; P = 0.01), and proband actual attempt (OR=2.24; 95% CI, 1.06-4.75; P = 0.04) to predict suicidal behavior. A score of 3 or higher on the risk score resulted in an area under the curve of 0.80 with high sensitivity (87.3%) and moderate specificity (63%). We applied this prediction risk score to an independent sample of 272 psychiatric patients, 18-30 years of age with mean age of 24.4 years, the majority of whom were psychiatric inpatients at their baseline assessment followed in the year post-hospital discharge, a high-risk period for suicidal behavior. We used broad and narrow definitions for prospective suicidal behavior events. The broad definition included 41 events and consisted of actual, interrupted, and aborted attempts and preparatory behaviors assessed using the Columbia Suicide Severity Rating Scale (C-SSRS). The narrow definition included 18 actual attempts. The severity of self-reported depression at baseline was the only variable that predicted suicidal behavior (OR= 1.59; 95% CI, 1.11- 2.34; P = 0.015) and actual suicide attempt (OR=1.71; 95% CI, 1.01-3.10; P = 0.057) in this sample at the univariate level although the result did not reach statistical significance for the narrow definition. When looking at these variables together, the model was not better than chance in predicting the broad and narrow definitions of suicidal behavior. These results highlight the need for different and more proximal prediction risk scores for psychiatric inpatients that takes into account their acute psychiatric state.

27.4 MACHINE LEARNING APPROACHES TO ENHANCE THE PREDICTION OF SUICIDE RISK AMONG VETERANS

Nathan Kimbrel*[1], Sayera Dhaubhadel[2], Carianne Martinez[3], Destinee Morrow[4], Kyle Sullivan[5], Mirko Pavicic[5], Kumkum Ganguly[2], Judith Cohn[2], Jessica Jones[3], Rafael Zamora-

Resendiz[4], Xue Qin[6], Jennifer Lindquist[7], Angelica Walker[5], Patrick Finley[3], Drew Levin[3], Silvia Crivelli[4], Daniel Jacobson[5], Elizabeth Hauser[6], Allison Ashley-Koch[6], Million Veteran Program (MVP)[8], MVP Suicide Exemplar Workgroup[8], Philip Harvey[9], David Oslin[10], Benjamin McMahon[2], Jean Beckham[1]

[1]Duke University Medical Center and Durham VA Medical Center, [2]Los Alamos National Laboratory, [3]Sandia National Laboratories, [4]Lawrence Berkeley National Laboratory, [5]Oak Ridge National Laboratory, [6]Duke Molecular Physiology Institute, [7]VA Health Services Research and Development Center of Innovation to Accelerate Discovery and Practice Transformation, [8]U.S. Department of Veterans Affairs, [9]University of Miami Miller School of Medicine, [10]VA VISN 4 Mental Illness Research, Education, and Clinical Center, Center of Excellence

Individual Abstract: Our ability to longitudinally predict suicidal behaviors remains greatly limited at present. I present here a summary of our team's ongoing work aimed at using machine learning approaches to improve prediction and understanding of suicide risk among Veterans. In study 1, an ensemble transfer learning model was developed to predict suicide risk from longitudinal EHR data using 210 variables observed in eight time intervals covering 7.5 years of EHR data. The final model was tuned to predict a combined binary outcome of death by suicide, suicide attempts, and overdoses using eight base models. Top longitudinal predictors included mental health diagnoses and treatments, depression survey results, accidents, substance use disorders, vital signs, traumatic brain injuries, and prior emergency department visits. In Study 2, using a balanced subset of ~500,000 Veterans from the prior cohort, deep neural networks were used to fuse together demographic information with diagnostic, prescription, and procedure codes. Within this cohort, a convolutional neural network (CNN) model was found to outperform logistic and linear regression models in predicting suicide attempts. Notably, more than 99% of veterans ranked in the top 0.1% risk tier by the CNN model attempted suicide during the following year. After adjusting for the balanced sampling technique, this translates to a positive predictive value of 0.54. Explainability methods utilizing Shapley Additive Explanation (SHAP) values further identified meaningful subgroups of high-risk patients as well as key determinants of suicide attempt risk at both the group and individual level. In Study 3, natural language processing (NLP) was used to identify key constructs believed to be associated with increased risk for suicide (e.g., social isolation, financial problems, access to lethal means) from clinical notes. We found that NLP methods had higher sensitivity for detecting these constructs relative to structured EHR variables. As expected, death by suicide cases had higher rates of these constructs compared to patients who died of non-suicide related causes with no previous history of diagnosed mental illness. In Study 4, we conducted a traditional genome-wide association study (GWAS) of suicide attempts among 400,000+ Veterans and identified several cross-ancestry risk loci that were replicated in a large international cohort. Pathway analyses suggested overrepresentation of many biological pathways with high clinical significance, including oxytocin signaling, glutamatergic synapse, cortisol synthesis and secretion, dopaminergic synapse, and circadian rhythm. In Study 5, we used GRIN (Gene set Refinement through Interacting Networks) to re-analyze the GWAS summary statistics from the Veteran and civilian participants included in Study 4 to identify additional risk genes and biological pathways based on information regarding known biological networks from diverse lines of evidence. The genes retained by GRIN replicated across independent cohorts and were more biologically interrelated despite a relaxed significance threshold. In Study 6, iterative Random Forest was used to predict suicide attempts using data from multiple environmental variables.

We found that geographic areas where males were more likely to live alone and to rent housing were associated with higher rates of suicide attempts. The presentation will conclude with a discussion of our team's current study which entails leveraging the findings from these and other relevant studies to conduct the largest genome-wide gene x environment (GEWIS) interaction study of suicidal thoughts and behaviors to date among more than 800,000 Veterans enrolled in the Million Veteran Program.

27.5 STUDIES OF GENETIC VULNERABILITIES TO THE EXPOSOME IN A LARGE POPULATION-ASCERTAINED COHORT OF INDIVIDUALS WHO DIED BY SUICIDE

Hilary Coon*[1], Andrey A. Shabalin[1], Emily DiBlasi[1], Eric T. Monson[1], Elliott Ferris[1], Seonggyun Han[1], Anne Kirby[2], Thomas J. Nicholas[2], Lisa Baird[1], Danli Chen[1], Zhe Yu[3], Alison Fraser[3], Michael Staley[4], Erik Christensen[4], W. Brandon Callor[4], Virginia Willour[5], Qingqin S. Li[6], David K. Crockett[7], Amanda V. Bakian[1], Brooks Keeshin[1], Anna R. Docherty[1]

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Individual Abstract: Introduction: Although progress has been made in developing models to predict suicidal ideation and attempts, our ability to reliably predict suicide death remains close to zero. Better understanding of risks leading to suicide death is therefore urgent, and is critically important in directing prevention efforts and development of future targeted interventions. Our work uses unique resources allowing the study of risks leading to death, and addresses the importance of interactions between biological and non-biological risks to explore how subgroups with different underlying genetic risks may have different vulnerabilities to the exposome.

Methods: Data from suicides and non-suicides are sent via secure transfer to the Utah Population Database (UPDB), where they are securely linked to demographic, clinical, environmental, and genealogical data. The Utah suicide death resource includes: demographic data from >20,000 suicides known from death certificates back to 1904; longitudinal clinical data from electronic health records (EHR) data linked to a subset of >10,000 of these suicide deaths; genome-wide genotyping on a subset of > 6,500; and whole genome sequencing (WGS) from 1,052. We are studying phenotypic evidence of pain, substance misuse, and trauma as powerful aspects of the exposome; common genetic risks associated with behavioral traits and psychiatric and medical diagnoses using polygenic risk scores (PRS), and functional rare genetic variants from the WGS. Exposure data are studied using the EHR aggregated into hierarchical categories. PRS are computed from external published discovery GWAS, adjusting for effects of ancestry. SVs and SNVs are characterized using alignment and variant calling incorporating GATK best practices and additional state-of-the-art software for discovery, quality control, and visualization. A final unique data element involves Utah genealogical records which date back to the 1700's, allowing the ascertainment of very extended, high-risk families where suicide deaths are distantly related and share little common environment. These families allow studies of familial risk of other co-occurring conditions.

Results: Comparing to Utah population control data matched for sex and birth year, fold increases among suicide deaths for diagnoses of substance use disorders, chronic pain, and posttraumatic stress disorder were 6.17, 3.46, and 7.38, respectively. Significant extended familial aggregation was present for substance use, pain, and trauma related phenotypes, with hundreds of extended high-risk families for each condition. We are developing statistical methods to study family risk driven by aggregation of close relatives only (environmental risks) vs. distant and close relatives (genetic risks). Genetic data showed elevated PRS in Utah suicide deaths for psychiatric conditions, but also for alcohol and other substance use diagnoses, chronic pain, post-traumatic stress disorder, and other conditions and traits that implicate the exposome, such as loneliness. WGS has implicated several genes potentially involved in stress response.

Discussion: Our studies in a large cohort of individuals who died by suicide add to current knowledge focused on psychiatric risk, expanding studies of both genetic and exposure risks to encompass vulnerability to substance use, pain, trauma exposure, and stress response. Analyses are underway to integrate information from our multiple phenotypic and genetic lines of evidence. We anticipate aggregation of that complex, interacting factors will facilitate the characterization of subtypes where underlying genetic vulnerabilities place individuals at particularly elevated risk to aspects of the exposome.

28. BRAIN NEUROTRANSMITTER IMAGING AND SUICIDAL BEHAVIOR

Chair: John Mann, Columbia University and New York State Psychiatric Institute

Overall Session Description: This symposium will present major new information on brain abnormalities underlying suicidal behavior. Dr Matheson will describe results of a new computational method that increases statistical power and confirms neurotransmitter abnormalities in depression and suicidal behavior. Dr. Handschuh will describe multiple neurotransmitter results giving a more complete picture. Dr. Sublette will show how brain inflammation is linked to suicidal behavior and ideation. Dr. Meyer will connect COVID brain effects to suicidal ideation.

28.1 NOVEL COMPUTATIONAL METHODS LINKING NEUROTRANSMITTERS WITH SUICIDAL BEHAVIOR

Granville Matheson*[1], J. John Mann[2], Todd Ogden[2]

[1]Columbia University / Karolinska Institutet, [2]Columbia University/NYS Psychiatric Institute

Individual Abstract: Positron Emission Tomography (PET) is an in vivo molecular imaging method essential for the study of the neurochemical pathophysiology of psychiatric disease. Because of its high cost, insufficient sample size is most commonly the primary obstacle faced in the fruitful application of this methodology. Within the field of suicide research in particular, this problem is especially burdensome, owing to the difficulties of recruitment. To this end, we have developed a novel computational method for the quantitative modelling and analysis of PET data called Simultaneous Multifactor Bayesian Analysis (SiMBA) which is particularly well-suited for this problem. This method models all of the PET data from all participants and all regions simultaneously in order to borrow strength across the data and improve quantitative accuracy and inferential efficiency. In both simulated and real data, we demonstrate how this

method can be advantageous for the analysis of small sample sizes, but also show how it can benefit from additional measurements collected in related patients or healthy volunteers being included alongside the specific sample of interest. Similarly, we demonstrate how this approach facilitates the analysis of data from multiple research groups at once to improve multi-centre collaboration studies. We will present recent work applying this method to the study of the molecular neurobiology of the serotonin system in major depressive disorder as well as its links with suicidal behavior.

28.2 NEUROTRANSMITTERS ASSOCIATED WITH SUICIDAL BEHAVIOR

Patricia Handschuh*[1]

[1]Medical University of Vienna

Individual Abstract: Suicide is a leading cause of death worldwide. Findings from psychological autopsy studies show that approximately 90% of individuals committing suicide suffer from at least one type of psychiatric disorder, with affective disorders being the most relevant group of psychiatric conditions. Therefore, patients with major depressive disorder (MDD) and severe symptoms such as suicidal ideation or previous suicide attempts represent a highly relevant population in suicide research. Alterations in several neurotransmitter systems have been associated with major depression and suicidal behavior. One of the most important neurotransmitters in this field is serotonin. Changes within the serotonergic system have been linked to depression and suicidality, and pharmacological interventions targeting serotonergic neurotransmission and serotonin metabolism are frequently used in the treatment of MDD. In vivo neuroimaging techniques such as positron emission tomography (PET) allow for the visualization of serotonergic functioning and serotonin metabolism, with the aim of elucidating traits that could be used to optimize MDD treatment.

Another promising approach in this field is magnetic resonance spectroscopy (MRS), which is used to quantify the concentration of a wide range of compounds such as gamma-aminobutyric acid (GABA) and glutamate, two neurotransmitters that are highly relevant not only for the rapid-acting antidepressant ketamine, but also for non-pharmacological treatment strategies such as electroconvulsive therapy.

This talk aims to provide a brief overview of recent PET findings related to serotonergic neurotransmission in MDD and suicidality, and how the availability and biodistribution of serotonergic targets in the brain might change in the course of severe depression. We will also discuss the role of MRS and the potential importance of GABA and glutamate for well-established and novel treatment strategies in the context of MDD and suicidal behavior.

28.3 BRAIN IMAGING OF NEUROINFLAMMATION IN MOOD DISORDERS AND SUICIDAL BEHAVIOR

M. Elizabeth Sublette*[1], Elizabeth Bartlett[2], Todd Ogden[2], Francesca Zanderigo[2], J. John Mann[2], Jeffrey Miller[2]

[1]Columbia University, [2]Columbia University and New York State Psychiatric Institute

Individual Abstract: The in vivo study of neuroinflammation is challenging. One potentially useful tool involves utilization of positron emission tomography (PET) radiotracers that bind

to the translocator protein (TSPO), a mitochondrial protein which reflects astroglial and microglial activation. Prior studies have reported higher TSPO binding in depression, and one study in patients with depression reported higher TSPO binding in those with suicidal ideation (SI) compared to those without. We used a third-generation TSPO tracer, [11C]ER176, to study how TSPO binding in depressed and healthy volunteers relates to suicide risk.
Dynamic scans using [11C]ER176-PET with arterial blood sampling were performed in currently depressed, medication-free participants with major depressive disorder episode (MDD; n=38) and healthy volunteers (HV; n=17). [11C]ER176 binding to TSPO was quantified as tracer total volume of distribution (VT) using a metabolite-corrected arterial input function in 11 a priori brain regions of interest (ROIs). Linear mixed models were performed in R with Beck Depression Inventory (BDI) scores or the Beck Scale for Suicidal Ideation as predictors and TSPO binding in individual ROIs and as a weighted average across all 11 regions as outcome. Covariates were age, sex, body-mass index, and rs6971 genotype, which determines whether individuals express the high-, low-, or mixed- binding affinity phenotype of TSPO.

TSPO binding did not significantly differ between MDD and HV groups (p=0.46), nor, within the MDD group, between individuals with suicide attempt history (n=12) and those without (n=26) (p=0.25). Among patients with depression who experienced SI, its severity positively correlated with TSPO binding (p=0.04) across the 11-region ROI, and this effect was seen most strongly in caudal anterior cingulate cortex , hippocampus, rostral middle frontal, and superior frontal brain regions, all with p <0.05. Subjective depression severity ratings (BDI) also positively correlated with TSPO binding (p=0.007); the statistical significance of the relationship was independent of the suicide item in the BDI.

The association of TSPO binding with severity of depression and SI is important as it provides in vivo evidence of links between neuroinflammation and suicide risk. This presentation will discuss both the potential significance and the limitations to interpretation of TSPO binding. Additionally, we will review broader approaches to the study of neuroinflammation, including assessment of mitochondrial functioning using functional near-infrared spectroscopy (fNIRS). Understanding glial activation and mitochondrial functioning can help to build a model of pathogenesis of depression and suicidal ideation.

28.4 BRAIN IMAGING GLIOSIS IN DEPRESSION AFTER COVID-19 AND ITS RELATIONSHIP TO SUICIDAL IDEATION

Jeffrey Meyer*[1]

[1]CAMH and University of Toronto

Individual Abstract: Background: Persistent depressive symptoms, often accompanied by cognitive symptoms, occur in 5 per cent following acute COVID-19 (here termed COVID-DC; DC for depressive-cognitive symptoms). COVID-DC lasts months to years and heighten likelihood of suicidal ideation and/or suicide.
Gliosis involving microglia and astroglia is believed to be a critical step in the development of neuropsychiatric symptoms in post acute sequelae of COVID, particularly depressive and cognitive symptoms, but measures of gliosis have not been studied in the brain of this condition.

Half of postmortem studies sampling acute COVID-19, in which overwhelming viral infection leads to death, report gliosis with microglial or astroglial activation in the brain regions sampled. However, such samples are not of COVID-DC as it is unclear whether gliosis is present months to years later in the context of lengthy depressive and cognitive symptoms. Also, the relationship of gliosis in COVID-DC to severity of depressive symptoms, cognitive symptoms and suicidal ideation is not known.

No gliosis marker is completely selective but microglial activation is associated with greater level of translocator protein and astroglial activation is associated with greater expression of monoamine oxidase B (MAO-B). Translocator protein total distribution volume (TSPO VT), a marker of TSPO density, and monoamine oxidase-B total distribution volume (MAO-B VT), is quantifiable with positron emission tomography (PET).

Methods: In study 1, twenty COVID-DC participants and 20 healthy controls underwent one [18F]FEPPA PET scan to measure TSPO VT in dorsal striatum, ventral striatum, prefrontal cortex (PFC), anterior cingulate cortex (ACC) and hippocampus.

In study 2, twenty COVID-DC participants and 20 healthy controls underwent one [11C]SL25.1188 PET scan to measure MAO-B VT in PFC, ACC and hippocampus.

Relationship of symptoms to gliosis markers in functionally implicated regions were assessed in each illness group, applying psychometric measures of MDE symptoms, neuropsychological testing and questionnaires of suicidal ideation (Beck Scale for Suicidal Ideation and Suicidality Item on the Beck Depression Inventory). Symptoms prominent in COVID-DC were prioritized in the statistical analyses.

Results: In study 1, TSPO VT was generally elevated in COVID-DC across the regions of interest ($p=0.04$), most prominently in ventral striatum ($p=0.02$) and dorsal putamen ($p=0.02$). Age and sex corrected t scores of motor speed on the Finger Tapping Test negatively correlated with dorsal putamen TSPO VT ($r=-0.53$, $p=0.02$) and the ten slowest COVID-DC cases had more notably higher dorsal putamen TSPO VT than healthy (27% difference, $p=0.002$). There was no association with suicidal ideation.

In study 2, data from 20 COVID-DC and 20 controls will be presented as the sample is gathered but not yet fully analyzed. To date, there is greater MAO-B VT in PFC, and hippocampus (N=10 versus 10, $p < 0.05$). Relationship of PFC MAO-B VT to suicidal ideation will be presented.

Discussion: Greater TSPO VT in COVID-DC is best explained by gliosis, most prominently in the ventral striatum and dorsal putamen. Lack of relationship between TSPO VT and suicidal ideation in COVID-DC might be explained by greater prominence of elevations in striatum whereas previous associations of TSPO VT with suicidal ideation in other illness like major depressive episodes is more notable in anterior cingulate cortex.

Greater MAO-B VT in COVID-DC, is consistent with astrogliosis. Reductions of astrogliosis in prefrontal cortex are often reported in suicide victims with major depressive episodes so failure to produce astrogliosis and suicidal ideation will be a direction of emphasis.

29. IDENTIFYING CULTURALLY RELEVANT RISK AND PROTECTIVE FACTORS FOR SUICIDE AMONG BLACK AMERICANS

Chair: Leslie Adams, Johns Hopkins Bloomberg School of Public Health

Overall Abstract Details: Despite a steady decrease in suicide rates in the United States, the rate among Black youth and young adults has increased in recent decades. Moreover, suicide is now positioned as the third leading cause of death in this population, signaling a public health emergency. These alarming suicide trends warrant more effective understandings of the cumulative phenomena that Black youth and young adults face throughout the lifecourse. Extant literature posits that, for Black Americans, mental health is worsened by racialized and identity-based “wounds" sustained as a result of systemic oppression. Consequentially, approaches that specifically address culturally relevant frameworks and enhance strategies towards radical healing are warranted to support suicide prevention efforts among Black Americans.

The current symposium presents fundamental areas of expansion for suicide prevention research focused on clarifying culturally relevant mechanisms of risk and areas of opportunity to leverage in reducing suicide outcomes among Black American youth and young adults. By understanding how suicide risk is mitigated or exacerbated by the unique cultural stressors in Black American’s everyday lives, researchers and clinicians may be able to better identify critical points of intervention for this increasingly vulnerable population. Moreover, extant research has largely positioned Black Americans as a homogenous group. This sampling decision across studies has the potential to omit the diverse African diasporic communities present in the United States and key gender considerations that may influence suicide outcomes.

Specific contributions of this symposium include: 1) examination of suicide and relevant risk and protective factors among Black individuals from different institutions and disciplines; 2) use of different methodological approaches and study designs to elicit further understanding on the current rises in suicide outcomes in this population; and 3) considerations of sampling decisions, retention efforts, and cultural implications of conducting suicide prevention research with Black American youth and young adults. Our symposium is further strengthened by its focus on within group heterogeneity of suicide risk factors and outcomes among Black Americans across critical developmental periods.

Critically, the present symposium comprises cutting edge research projects led by a group of early career scholars that can inform prevention, implementation, and intervention strategies aimed at Black Americans. First, Dr. Lateef will discuss the relative importance of Afrocentric and masculine norms on suicidal ideation among young adult Black males. Next, Dr. Bernard will present on evidence illustrating the interplay of racism-related vigilance and rumination on key suicide risk factors, such as social anxiety among Black youth. Ms. Brooks will offer additional insight on the influence of racial discrimination and COVID-19 related stress on suicide risk among Black young adults, with an emphasis on expanding cultural models of radical healing. Dr. Boyd will present on Black gay and bisexual males as individuals in the family context (e.g., family bonding) and how families contribute to or prevent suicidal behaviors. Finally, Dr. Adams will present emerging qualitative evidence on the significance of masculine socialization on mental health attitudes and subsequent suicide outcomes among Black men. We will conclude with a discussion on how these integrated findings may extend to future global health research and implications for the suicide research community.

29.1 MASCULINITY AND AFROCENTRIC WORLDVIEW: ASSESSING RISK AND PROTECTIVE FACTORS OF SELF-RELIANCE AND UBUNTU ON YOUNG BLACK MEN'S SUICIDE IDEATION.

Husain Lateef*[1]

[1]Washington University in St. Louis

Individual Abstract: In the United States, young Black men are disproportionality represented among those experiencing disabling and persistent episodes of emotional distress that, when left untreated, correlate to a higher incidence of premature mortality. Past literature suggests particularly for Black men, gender norms of western masculinity, specifically of self-reliance, may also be an underlying factor. Conversely, an Afrocentric worldview among Black Americans has been demonstrated to have an important buffering effect against forms of emotional distress. The Afrocentric construct Ubuntu, which comprises humanness, compassion, and interdependence, has been well discussed as an important cultural factor providing mental health buffering effects. Still, while prior research has established a positive relationship between Afrocentric values and psychological well-being, there remains a scarcity of research specific to the relationship between the Afrocentric worldview and Black American suicide protective factors. Thus, the present study addressed gaps in the literature by examining Ubuntu as a moderating influence on the relationship between self-reliance and suicide ideation among emerging adult black American men ages 18-24.

Researchers conducted a national cross-sectional online survey of self-identifying Black American young adult men aged 18 -24 (N= 428) from June to July 2022 using Qualtrics Panels, a leading enterprise survey technology platform. To measure suicide ideation, a single screening question on suicide risk from the Patient Health Questionnaire-9 (PHQ-9) was utilized. To measure Ubuntu, Matsuzawa's (2020) Ubuntu African Humanism scale was used. Analytically, logistic regression analysis was employed to identify potential correlates between Ubuntu and suicide ideation considering the control variables of the study (i.e., age, socioeconomic status), with results reported as odds ratio (OR) along with corresponding 95% confidence intervals (CI)—associations with p-values equal to or less than 0.05 were considered statistically significant.

Descriptively, there was a diverse range of reported household incomes, with a mean income category of $35,000-39,999. Regarding age, participants, on average, were 24 years of age. Of participants, 60% reported never having thoughts of the betterment of dying or hurting themselves, with 40% reporting such thoughts several days (16%), more than half of days (13%), or nearly every day (11%). The logistic regression full model containing all predictors was statistically significant X2 (6, N= 428) = 66.64, $P < .001$, indicating the model was able to distinguish between the respondents who reported never having ideations of suicide and those who have. Overall, the model explained between 14.6% (Cox and Snell R square) and 20% (Nagelkerke R squared) of the variance in suicide ideation and correctly classified 67% of all cases. Results demonstrated after controlling for the role of household income, and age, increasing values of self-reliance corresponded to increased odds (1.89) of suicide ideation among participants. On the other hand, increased values of Ubuntu corresponded to decreasing odds of suicide ideation (.63).

The findings of this study are consistent with previous research on the role of masculinity norms as risk factors associated with suicide ideation in Black American men. Additionally, these findings advance proof of mechanism scholarship of the role Afrocentric norms may have

as a protective factor in the Mental health of Black men. Overall, study findings have implications for future research, implications for suicide prevention practice, and institutional policies.

29.2 RUMINATION AS A MEDIATOR OF THE RELATIONSHIP BETWEEN RACISM-RELATED VIGILANCE AND SOCIAL ANXIETY AMONG BLACK YOUTH

Donte Bernard*[1], Sean Joe[2], Carla Danielson[3]

[1]University of Missouri--Columbia, [2]Washington University in Saint Louis, [3]Medical University of South Carolina

Individual Abstract: Background: Over the past two decades rates of suicide among Black youth have increased by nearly 90%, and now represents among the leading causes of death among youth in this demographic (Sheftall et al., 2022). In light of this emergent public health problem, increased attention has been given to highlight culturally relevant risk factors that may unduly position Black youth at increased risk for suicide vulnerability. Prior research has identified racism-related stress as a powerful determinant of suicidal thoughts and behaviors and speculate that its robust effects on suicidal vulnerability may be explained in part, due to its ability to increase rumination, perceptions of alienation, and social anxiety (Bernard et al., 2022; Walker et al., 2016). Despite this work, little attention has been given to understand how the tendency to attend to racist environmental cues (i.e., racism-related vigilance; RRV) may increase risk for these important mechanistic pathways that increase risk for suicide vulnerability. Indeed, RRV represents a fundamental, yet potentially harmful coping strategy in the face of racism that has been theorized to increase risk for internalizing concerns and suicide vulnerability among Black youth (Woody et al, 2022). Although evidence confirms that general forms of vigilance unrelated to race have been associated with social anxiety and subsequent suicide vulnerability (Ahmadpanah et al. 2017; Klump and Amir, 2009), research has yet to empirically examine if RRV may shape risk in a similar fashion. Thus, the present work examines if RRV is associated with social anxiety, and if this link is mediated by rumination.

Methods: Participants were a community sample of 101 Black youth (Mean age= 13.74; 50% female) living in the southeastern United States. Participants first provided information on sociodemographic variables (age, gender, SES) and history of prior experiences of racial discrimination (racism-related events scale), which were entered as covariates. Participants then completed measures of key study variables as measured by the racism-related vigilance scale, the rumination subscale of the children's Response Styles Questionnaire, and the social anxiety subscale of the Multidimensional Anxiety Scale-2nd edition. All measures were completed virtually via REDCap.

Results: Using an atemporal mediation models, the effect of RRV on social rejection was not found to be significant before accounting for rumination (path c, $b = 0.02$, $p = .791$) or afterwards (path c', $b = -0.06$, $p = .440$). However, RRV was positively associated with rumination, $b = 0.36$, $p = .029$ (path a), and rumination was positively associated with social anxiety, $b = 0.23$, $p < .001$ (path b). The indirect effect of RRV on social rejection was also significant, as the bootstrapped confidence interval did not include zero ($ab = 0.08$, 95% CI [0.01, 0.18]).

Conclusions and Implications: The findings of this study are among the first to demonstrate that RRV is directly and indirectly associated with significant psychosocial risk factors for suicide vulnerability among a sample of Black youth. Notably, these associations remained even after accounting for racial discrimination, signaling that how one copes and responds to discriminatory encounters may hold equal if not greater risk to mental health compared to the event itself.

29.3 THE COVID-19/RACIAL DISCRIMINATION SYNDEMIC AND SUICIDALITY AMONG BLACK YOUNG ADULTS: EXAMINING A MODEL OF RADICAL HEALING

Jasmin Brooks*[1], Helen Neville[2], David Francis[1], Anka Vujanovic[1], Rheeda Walker[1]

[1]University of Houston, [2]University of Illinois at Urbana-Champaign

Individual Abstract: Background: Scholars are likening the concurrent effect of the COVID-19 pandemic and racial discrimination to a syndemic--a set of linked health problems that interact to contribute to an increased burden of disease--for Black Americans. Following this syndemic, psychological and physical health consequences are projected to include suicide vulnerability. Despite these factors, scant literature has examined how the COVID-19 pandemic and racial discrimination may influence suicidality among Black Americans. Recently, French et al. (2020) proposed a framework of radical healing as a model by which people of color can overcome multiple oppressions; however, this framework has yet to be applied to studies of suicidality. Thus, the present study addressed gaps in the literature by utilizing a risk-resilience model to examine the unique and concurrent effects of racial discrimination and COVID-related stress on suicide risk for Black young adults, as well as the moderating influence of three central components of radical healing: critical consciousness, resilience, and cultural authenticity.

Methods: A national cross-sectional online survey of self-identifying Black young adults aged 18-29 ($N = 521$; 51.6% male; Mage = 24.6) was conducted using Qualtrics Panels. Recruitment occurred between January and July 2022. Participants completed measures evaluating symptoms of racial discrimination, COVID-related stress, suicidality, and psychological well-being. Analytically, after controlling for age, gender, socioeconomic status, and general stress, structural equation modeling (SEM) was utilized to analyze the unique and interactive effects of racial discrimination, COVID-related stress, and culturally relevant protective factors on suicide risk for Black young adults. All quantitative analyses were conducted using IBM SPSS Version 27.0 and MPlus Version 8.2.

Results: The measurement model demonstrated an acceptable model fit to the data: $\chi2(66) = 329.73$, $p < .001$; RMSEA = 0.088; CFI = 0.914, TLI = 0.843, SRMR = 0.054. Notably, a significant proportion of the sample (42.6%) demonstrated a pattern of responding above the clinical cutoff for suicidal behavior (SBQ-R $\geq$ 7). Overall, the model explained 64% of the variance in suicide risk (R2 = 0.640). Findings suggest that after controlling for the role of age, gender, annual income, and general stress, the interactive effects of COVID-related stress and racial discrimination exacerbate suicide risk for Black young adults ($\beta = .08$, $p = .04$, 95% CI [0.002, 0.15]). Furthermore, results demonstrated critical consciousness moderated the

association between racial discrimination and suicide risk (β = -.13, p = .01, 95% CI [-0.23, -0.03]). Lastly, racial identity moderated the association between COVID-related stress and suicide risk (β = .20, p = .001, 95% CI [0.09, 0.32]).

Conclusions: The findings of this study suggest that the synergistic effects of COVID-related stress and racial discrimination play a role in suicide vulnerability for Black young adults. Furthermore, findings suggest that critical consciousness, resilience, and racial identity may be important factors to consider when developing and implementing culturally mindful suicide prevention and intervention strategies. Overall, these findings have implications for future research, culturally informed models of suicide risk, and suicide prevention practices for Black Americans.

29.4 INVESTIGATING THE ROLE OF MASCULINE SOCIALIZATION IN SUICIDE OUTCOMES AMONG BLACK MEN: A QUALITATIVE ANALYSIS

Leslie Adams*[1], Thomasina Watts[1], Aubrey DeVinney[1], Roland Thorpe[1], Sean Joe[2]

[1]Johns Hopkins Bloomberg School of Public Health, [2]Washington University in Saint Louis

Individual Abstract: Background: In recent years, Black boys and men have experienced increasingly higher rates of suicidal thoughts and behaviors. Yet, few studies have clarified how masculine role norms may influence the pathway to suicide outcomes in this population. Indeed, Black males are less likely to obtain routine health screenings and seek medical help for mental health problems prior to a suicide death. Masculine socialization, or the process by which individuals understand societal expectations of traditional masculine behavior is introduced at an early age through observation and messaging from community, family, and peer influences. These gender-specific attitudes, knowledge, and behaviors, may be one potential early-life factor contributing to Black men's suicide-related help-seeking patterns Researchers have hypothesized that the discrepancy between behaviors sanctioned by masculine role norms and help-seeking for suicide-related mental health problems as the rationale for higher prevalence of suicide death among Black boys and men. These tensions may, ultimately, play a unique role in Black men's help-seeking decisions in the time leading up to suicidal behavior by restricting the range of symptoms related to emotionality that motivate one's engagement with a healthcare professional. In this study, we address this gap by qualitatively exploring the role of masculine socialization the lived experiences of Black men with a past history of suicidal thoughts and behaviors.

Methods: From November 2021-March 2023, we recruited 20 Black adult men with a history of suicidal thoughts and behaviors through varied approaches, including MyChart recruitment messaging and snowball sampling. We conducted semi-structured interviews with eligible participants with a focused moderators guide that assessed their experiences that catalyzed their subsequent behavior. Following interviews, members of the research team developed field notes that were also utilized for analysis. An initial codebook was developed deductively and subsequently expanded using inductive open coding approaches, to include emerging codes relevant to our research question. Qualitative consensus meetings occurred among the analytic team to clarify coding discrepancies and discuss emerging themes in the data. All qualitative analysis was conducted using Dedoose v. 8.

Results: Several themes emerged from this investigation that details the socialization process as well as the unintended consequences of this phenomenon: (1) Psychological distress emerged from discrepant expectations of Black masculinity, particularly as it relates to

exhibiting strength and restricting emotions (2) Alienation from others occurring both interpersonally and within the Black community as a result of holding non-traditional masculine norms (3) Messages from family, friends, and media surrounding mental health help-seeking served as a catalyst to delayed care and subsequent mental health crises.

Conclusions: These findings illuminate the role of masculine socialization in shaping attitudes towards help-seeking, particularly among Black men at risk for suicide. Ongoing work should also disentangle mechanisms related to perceived healthcare barriers in suicide prevention that persist for Black men, an underrepresented population in biomedical research. Clinical and behavioral interventions with an emphasis on socialized care-seeking attitudes may help dismantle negative perceptions towards help-seeking for suicide and improve timely healthcare utilization during mental health crises.

29.5 THE INFLUENCE OF FAMILIAL FACTORS ON SUICIDAL BEHAVIORS AMONG BLACK MEN WHO HAVE SEX WITH MEN (BMSM)

Donte Boyd*[1]

[1]Ohio State University

Individual Abstract: Background: Over the past few decades, researchers have highlighted adolescence as a critical time period to consider for suicidal outcomes for gay and/or bisexual males. During this critical developmental stage, factors such as family rejection, anti-LGB stigma, school victimization, bullying, and internalized homophobia have been associated with elevated risk for negative psychosocial and emotional sequalae, including higher risk for suicidal behaviors for gay and/or bisexual youth and young adults. However, there is a significant gap in the literature on protective factors for suicidal behaviors among Black gay and bisexual males on suicidal behaviors. The purpose of this paper is to fill this gap by examining how external assets (e.g., family support, open communication) help prevent suicidal outcomes among LGB Black adolescents and young adults.
Methods: Using a sample of BMSM (18 to 29) (N=400) collected via online, we utilized a path analysis to examine the direct and indirect effects on the influence of family factors on suicide attempts via depression and suicide planning. The survey was programmed with Qualtrics and M-Turk software, for two sampling and social media sites (i.e., Twitter, Facebook). Respondents were recruited from December 1, 2021, to January 31, 2022, for all sites.

Results: Among BMSM, family support was positively associated with depression (□ =0.31, p<.05) and depression was associated with suicide planning (□ =0.41, p<.001). Talking about concerns such as sex and drugs was directly and positively associated with suicide planning (□ =-0.03, p<.001). Our results indicated that family support indirectly and negatively associated with suicide attempts (□ =-0.03, p<.001).

Conclusion: Our results indicate the important role families play to suicide prevention and can be involved in many different ways. Families can serve as a protective mechanism in Black MSM lives by helping them develop life skills and supportive relationships. Parents can encourage their sons to seek professional help from culturally relevant services. They can also actively listen to their sons and actively watch their behaviors that may lead to suicide attempts.

30. UTILIZING OBJECTIVE MEASUREMENT IN THE ASSESSMENT OF SUICIDE

Chair: Katrina Rufino, University of Houston - Downtown

Overall Abstract Details: The assessment of suicide has historically involved the use of self-report measures, as ostensibly, how else are we to measure one's thoughts? More recently, the field has come to realize that there is no perfect measure in the assessment of suicidal thoughts. As such, the speakers in this panel propose to use objective measurement in the quest to measure suicide risk.

The first presentation, "The Association of Sleep across Inpatient Treatment and Suicide Ideation, Attempt, and Death" will use the ultimate outcome in suicide research - death by suicide - in a sample of psychiatric inpatients. This paper will examine if sleep problems, and the improvement of said sleep problems over the course of treatment are associated with determining who will die post-discharge. Other suicide related behaviors, such as attempts and non-suicidal self-injurious behavior will also be included.

The second presentation, "Sleep and Suicide in Inpatient: Innovation Opportunities to Improve Safety and Outcomes" will discuss the use of continuous safety monitoring via wearable technology. In this study, psychiatric inpatients wear an actigraph that objectively monitors their sleep patterns across treatment which can be mapped to their reported SI.

The third presentation, "Genetic, Epigenetic and Brain Function Interactions in Suicide Attempt" uses a conjoint study of genetics and brain imaging to uncover their interaction in suicide attempt, using human, ex-vivo human tissue, and mouse models.

The fourth presentation, "Suicide Risk Prediction in Major Depressive Disorder Using Connectome Based Modeling" will discuss the use of fMRI to profile the connectivity of the brain's networks.

The fifth and final presentation, "Identification of Neuroimaging Biomarkers Associated with Suicidal Behaviors" uses fMRI to compare the resting state functional connectivity (RSFC) of the orbitofrontal cortex of patients with high risk of suicidal behaviors to healthy controls. Moreover, the application of non-invasive brain stimulation (e.g. TMS) in patients with suicidal behaviors will be discussed.

Research in the field has come a long way over the years, and these papers each continue to advance science by using objective measurement as either an outcome or key indicator of risk.

30.1 THE ASSOCIATION OF SLEEP ACROSS INPATIENT TREATMENT AND SUICIDE IDEATION, ATTEMPT, AND DEATH

Katrina Rufino*[1], Michelle Patriquin[2]

[1]University of Houston - Downtown, [2]The Menninger Clinic

Individual Abstract: Recent research examining the association between self-reported sleep trajectories across psychiatric inpatient treatment and clinical outcomes found that patients whose sleep disturbance did not improve over the course of treatment had more suicidal ideation (SI), worse anxiety, more disability, and lower well-being (Hartwig et al., 2018). More recent research examining the association between SI trajectories across treatment and clinical outcomes revealed patients whose SI improved quickly demonstrated significant improvement on all clinical outcomes from admission to discharge but were also significantly more likely to die by suicide (Rufino et al., 2022). The present study utilized the sleep trajectory groups

calculated in Hartwig et al. (2018) to determine if there were significant differences in SI, Non-suicidal self injury (NSSI), suicide attempts, and deaths by sleep trajectory groups. The sample included 2,869 psychiatric inpatients, comprised of 1,517 males (52.9%) and 1,352 females (47.1%). The mean age of the sample was 35.13 (SD=14.95) and the mean length of stay was 43.08 days (SD=20.81). In the sleep trajectory groups, 1254 (43.7%) of the patients were classified as Responders, 998 (34.8%) were Non-Responders, 315 (11.0%) were Resolvers, and 302 (10.5%) reported no sleep problems. Results of an ANOVA revealed there was a significant difference in admission SI by sleep trajectory group [F(3,2816) = 50.59, p <.001, partial eta sq=.051], where non-responders reported significantly higher SI at admission (M=9.61, SD=7.64) than the other three groups Range M=4.28-7.83, Range SD=6.50-7.44). A second ANOVA revealed there was a significant difference in the total number of lifetime suicide attempts by sleep trajectory group [F(3,2667) = 12.09, p<.001, partial eta sq=.013], where non-responders reported significantly more previous suicide attempts (M=.92, SD=1.88) than the other three groups (Range M=.42-.59, Range SD=1.23-1.51). Additionally, a chi squared test revealed a significant association between sleep trajectory groups and NSSI [χ2(3)=71.52, p<.001] showing patients in the Non-Responder group were significantly more likely to engage in NSSI and the patients in the Resolver group and the no sleep problems group were significantly less likely to engage in NSSI. Finally, a chi square test revealed a significant association between cause of death post-discharge and the sleep trajectory group [χ2(21)=40.56, p=.006]. More specifically, patients in the no sleep problem group were significantly more likely to die from a medical cause not otherwise classified, and significantly less likely to die by suicide. Additionally, patients in the Resolver group were significantly more likely to die in an alcohol use related death. Individual comparisons as well as clinical implications will be discussed in the presentation.

30.2 SLEEP & SUICIDE IN INPATIENT: INNOVATION OPPORTUNITIES TO IMPROVE SAFETY AND OUTCOMES

Michelle Patriquin*[1], Jessa Westheimer[1], Peter Iacobelli[1], Christopher Shepard[1]

[1]The Menninger Clinic,

Individual Abstract: The initial 90-days post-discharge from an inpatient psychiatric hospital is the highest risk period for suicide (Chung et al., 2017). We have published a theory that hypothesizes that inpatient safety precautions might be contributing to this high-risk period and generate an effect, the Safety-Sleep-Suicide Spiral (Gazor et al., 2020). Given the critical role that sleep plays in the mitigation of suicide risk, reducing the nighttime sleep disturbances caused by safety precautions, using alternative methods could interrupt the compounding effect of the Safety-Sleep-Suicide Spiral.

In this presentation, one highly promising alternative inpatient psychiatry safety method will be discussed: continuous monitoring via wearable technology. Data will be presented from an ongoing study (N = 34 at present) examining objective and subjective sleep measures and their relationship with suicide risk (measured via the Suicide Behaviors Questionnaire-Revised, SBQ-R). Objective sleep is measured via actigraphy (ActiGraph wGT3X-BT) continuously for a patient's entire length of stay (4-6 weeks) in an inpatient psychiatric hospital.

Subjective sleep is measured through weekly self-report of nighttime sleep disturbance on the Pittsburgh Sleep Quality Index (PSQI), and daytime sleepiness on the Epworth Sleepiness Scale (ESS). Consistent with our prior findings demonstrating that treatment refractory inpatient sleep problems in those with co-occuring depression and anxiety have significantly

worse outcomes (Hartwig et al., 2019), our preliminary findings demonstrate that those with co-occuring depression and anxiety have significantly more objective (wearables-based) nighttime awakenings associated with nighttime safety checks across their length of stay relative to those without depression and anxiety ($F(1, 20) = 5.384$, $p = 0.031$). Further, the depression and anxiety group also has significantly higher suicide risk throughout their length of stay of inpatient hospitalization ($F(1, 21) = 6.711$, $p = 0.017$) relative to the group without co-occuring depression and anxiety.

We will discuss the promise of translating wearables data in order to improve inpatient outcomes monitoring and provide a less invasive real-time safety assessment that promotes intact sleep. Prior to this clinical translation, significant research is needed to improve the predictive power of wearable-based metrics as they relate to suicide risk and safety, as well as the development of clinically actionable visualization of these data. These challenges will also be discussed.

30.3 GENETIC, EPIGENETIC AND BRAIN FUNCTION INTERACTIONS IN SUICIDE ATTEMPT

Ramiro Salas*[1], Guillermo Poblete[2], Macarena Aloi[3]

[1]Baylor College of Medicine/The Menninger Clinic, [2]Universidad de Buenos Aires, [3]Baylor College of Medicine

Individual Abstract: Genetic (such as single nucleotide polymorphisms, SNPs) and epigenetic (such as microRNAs, miRNA) mechanisms have been associated with suicide risk for a long time. However, there is very little data about the relationship between genetic or epigenetic mechanisms and the brain function mechanisms associated. Thus, we have a very fragmentary understanding: SNPs and miRNAs statistically significantly associated with suicidality, and brain regions associated with suicidality. These two fields are generally isolated from each other, making it hard to obtain an integrative view of the biology of suicide.

We developed ProcessGenesList (PGL), an approach to link genetic and epigenetic data to brain regions that can be studied with MRI: Given a list of genes likely involved in a phenotype PGL uses the Allen Brain Atlas to find brain regions where those genes are significantly co-expressed. The general idea is that genes associated with a phenotype are likely be expressed in brain regions associated with the phenotype.

We applied PGL to two already-published GWAS on past attempt and found a small list of brain regions to be studied, including subiculum the corpus callosum. We then studied those two regions using resting state functional connectivity and volumetry in a sample of over 400 psychiatric inpatients with and without past attempt from the Menninger Clinic. We found that the resting functional connectivity between the subiculum and the habenula, and between the subiculum and the dorsolateral prefrontal cortex were higher in inpatients with past attempt, and that such effect interacted with a SNP in AKAP7, a gene expressed in the hippocampus and involved in learning and memory. In addition, we found an interaction between the volume of the corpus callosum and a SNP in NFIA, a gene important in callosal genesis and astroglia function in several brain regions including the amygdala. We also found that ex-vivo amygdala from suicide decedent brains expressed significantly more NFIA than control brains. In addition, we found that mice that overexpress NFIA in amygdalar astrocytes show more depression-like behaviors than control mice. Finally, we also performed PGL starting with a

list of genes associated with miRNA-124, that was shown to be undermethylated in borderline personality disorder (BPD). The genes most likely modulated by miRNA-124 were co-expressed the most in the globus pallidus. We study the globus pallidus in over 200 inpatients with and with BPD and found that its volume was smaller in BPD and correlated with suicide ideation treatment outcomes.

In conclusion, we developed a novel approach to study genetics/epigenetics together with brain function. Applying this approach we uncovered brain function/genetic interactions that are typically not find using other current methods. This data may allow us in the future to obtain individualized prevention therapies by targeting genes. In the future, NFIA expression may be pharmacologically modulated, dorsolateral prefrontal cortex activity may be targeted with transcranial magnetic stimulation, miRNA-124 may be modulated externally as miRNA-124 circulated in blood, etc. Other interactions between genetic/epigenetic markers and brain function features can surface using PGL on newer and more robust GWAS, additional miRNA results, and other alternative manners of finding suicide-related gene lists.

30.4 SUICIDE RISK PREDICTION IN MAJOR DEPRESSIVE DISORDER USING CONNECTOME BASED MODELING

Lynnette Averill*[1], Amanda Tamman[1], Samar Fouda[2], Christopher Averill[1], Samaneh Nemati[3], Anya Ragnhildstveit[4], Savannah Gosnell[1], Ramiro Salas[5], Chadi Abdallah[6]

[1]Baylor College of Medicine, [2]Duke University, [3]University of South Carolina, [4]Cambridge University, [5]Baylor College of Medicine/The Menninger Clinic, [6]Baylor College of Medicine/Michael E. DeBakey VA Medical Center

Individual Abstract: Globally, over 800,000 people die by suicide each year, equating to one person lost every 40 seconds. For every person who dies by suicide, it is estimated that more than 30 others make an attempt, and many more still struggle with suicidal ideations (SI) and seriously contemplate taking their own life. Improving and ultimately saving lives begins by reducing SI – an undisputed precursor to death. There are currently significant knowledge gaps that hinder our ability to provide effective suicide prevention and anti-suicide care, leaving great opportunity and immense need for empirical research to be conducted to help fill in these gaps. The major roadblocks in this area include our poor understanding of the biological mechanisms of suicidal behavior and the scarcity of suicide-specific pharmacotherapies. Neuroimaging studies have begun to unravel the brain regions and circuits implicated in the pathophysiology of suicide. Working network-based models remain speculative, considering the lack of full assessment of the role of the brain connectome in SI and attempts (SA). Profiling the connectivity of all the brain's networks, a.k.a., functional connectome fingerprinting, has been successfully applied to predict behavior and predict response to treatment, even in small cohorts. We applied connectome predictive modeling to a cohort of 261 inpatient participants who complete the C-SSRS and rs-fMRI. Participants' age ranged from 18-71, 52% female, 83% reported history of SI, and 35% reported history of SA. Depression severity was 'moderately severe' on average as assessed by PHQ-9. We identified a brain network that is significantly and consistently associated with the severity of SI, as measured by C-SSRS. The models significantly predicted C-SSRS using internal and external nodal strengths as features. The severity of suicidal behavior was associated with reduced external connectivity between networks. More specifically, suicide severity was predicted by external connectivity deficits in the central executive (CE), default mode (DM) and dorsal salience (DS) networks. In contrast,

there was increased internal connectivity within all 7 networks. We see an abundance within module internal connectivity and edges between modules within each network (i.e., within network internal connectivity). These observed network shifts from external to internal connectivity in patients with high SI indicates reduced integration across network and increased connectivity segregation in individuals with higher suicide risk. The external to internal connectivity shift was also evident in the nodal predictive models which highlight the critical role for connectivity in the insula with both reduction in external and increase in internal connectivity associated with more severe history of SI. It has been theorized that poor interconnectivity between salience networks and DM result in reduced ability for bottom-up signaling of salience for events, making it more difficult to disengage processes such as rumination. This alteration may also reflect an inability to integrate novel salient information that misalign with ruminative thoughts, a skill that may be critical in shifting someone out of SI. Our findings have practical implications for preventative treatment of suicidality and may inform risk-stratification models for identifying individuals with suicidality before the onset of suicide. Our findings also have implications for targeted and biologically based treatment of suicide including novel drug development. Results of this study may inform precision medicine for a phenomenon that we have been woefully unsuccessful in treating.

30.5 IDENTIFICATION OF NEUROIMAGING BIOMARKERS ASSOCIATED WITH SUICIDAL BEHAVIORS

Hyuntaek Oh*[1], Ramiro Salas[2]

[1]Baylor College of Medicine, [2]Baylor College of Medicine/The Menninger Clinic

Individual Abstract: Background: Suicide is the 10th leading cause of death for Americans of all ages and more people in the United States now dies from suicide than die from car accidents. Structural brain alterations in frontal areas, particularly the orbitofrontal cortex (OFC), may cause executive control dysfunctions of mood which are highly associated with suicide. Portions of the cortico-striatal system, a critical component of reward systems, are also associated with suicidal ideation. Despite the critical importance of the cortico-striatal system in suicide, a comprehensive understanding of the relationships (functional connectivity) is required to develop circuit-specific treatment approaches for suicidal patients. In this study, we compared the resting state functional connectivity (RSFC) of the OFC of patients with high risk of suicidal behaviors to healthy controls.

Methods: Psychiatric patients (N = 51) were recruited from The Menninger Clinic in Houston, Texas as a part of the McNair Initiative for Neuroscience Discovery – Menninger/Baylor (MIND-MB) research study. Suicidal behaviors (i.e., ideation and attempts) were determined using the Columbia suicide severity rating scale (CSSRS). Patients were matched with healthy controls (N = 51) using demographic characteristics (age and sex). Participants were scanned in a 3T Siemens Trio MR scanner in the Center for Advanced MR Imaging at Baylor College of Medicine. A 4.5 min structural MPRAGE sequence (TR = 2.66 ms, TR = 1200 ms, flip angle = 12o, 256 x 256 matrix, 1 mm isotropic voxels) was collected, followed by a 5 min resting state scan (TE = 40ms, TR = 2S, flip angle = 90o, 3.4x3.4x4 mm voxel). RSFC data were pre-processed using the CONN Functional Connectivity Toolbox. The preprocessing pipeline included realignment, slice-timing correction, structural normalization to the MINI template, functional normalization, ART-based outlier detection and smoothing with an 8mm full width at half maximum Gaussian smoothing kernel.

Results: Our findings revealed that suicidal patients exhibited higher RSFC between the right OFC and right putamen compared to healthy controls ($p < 0.001$). Moreover, we observed that suicidal patients had higher RSFC between the left OFC and right hippocampus than healthy controls ($p < 0.05$).

Conclusions: These findings may suggest that the OFC could be a target for non-invasive brain stimulation (e.g., TMS) or psychopharmacological intervention for suicidal patients. To gain further insight into reward-related brain connectivity in the suicidal group, future steps will include accessing the OFC, striatum, and hippocampus in a reward/disappointment processing paradigm. The future study will provide a better understanding of how reward/disappointment processing may alter in suicidal patients and how to TMS could be applied to suicidal patients.

Wednesday, October 18, 2023

CONCURRENT SYMPOSIUM SESSIONS

9:45 a.m. - 11:15 a.m.

31. THE IMMUNE SYSTEM AND SUICIDE BEHAVIOR: OPPORTUNITIES FOR PREVENTION AND TREATMENT

Chair: Robert Yolken, Johns Hopkins School of Medicine

Overall Abstract Details: This symposium, "The Immune System and Suicide Behavior: Opportunities for Prevention and Treatment" will include presentations from leading international researchers in this rapidly growing area of investigation. The 5 speakers and chair include women and men from the United States, Canada, and France. Two of the presentations are based on AFSP-funded studies whose results have not previously been presented. The presentations draw on a range of biological methods to interrogate the central and peripheral immune system including genomic, proteomic, transcriptional and functional assays performed on samples from the brain and peripheral blood of persons who have had a recent suicide attempt or died by suicide.

Dr. Aiste Lengvenyte from the University of Montpellier, France, will present on Peripheral Inflammatory and Plasticity Markers of Suicidal Thoughts and Behaviors: Cross-sectional and Longitudinal Findings with 39 Putative Markers. In this prospective study, 266 individuals with mood disorders with and without a history of suicide attempts were assessed for peripheral blood levels of 39 cell and protein markers involved in inflammation/immune response, oxidative and plasticity systems. The study documents that temporality is an important factor when studying the biological bases of suicidal thoughts and behaviors.

Dr. Faith Dickerson of Sheppard Pratt and the University of Maryland, USA, will present on Immune Markers in Persons Hospitalized with Depression who have Made a Recent Suicide Attempt. She has evaluated a cohort of persons hospitalized for depression who were evaluated during and following hospital discharge. Her studies identify several immune markers of inflammation and persistent infection which are significantly increased in the individuals with a recent suicide attempt documenting a potential role for immune activation in suicide behaviors.

Dr. Madhukar Trivedi from the University of Texas, USA, will present on Immune Characterization of Suicidal Behavior in Adolescents Using Mass Cytometry. In this study, peripheral blood mononuclear cells are obtained from adolescents who made a recent suicide attempt and from healthy controls. Results show 15 clusters of distinct cell types that differentiate between these populations with many cell types representing different arms of the immune system.

Dr. Naguib Mechawar from McGill University, Canada, will present on The Assessment of Neuroinflammation in the Ventromedial Prefrontal Cortex of Depressed Suicides with a History of Child Abuse. This talk will present data comparing well-characterized post-mortem ventromedial prefrontal cortex samples from persons who have died by suicide with a history of child abuse and a matched comparison group. Complementary data from protein arrays, microglial morphological analyses, and RNA sequencing of isolated microvessels are used to identify biological pathways which differ between the groups.

Dr. Amanda Bakian from the University of Utah, USA, will present on Risks Leading to Suicide Death Implicate Immune System Function with results from the Utah Suicide Genetic Risk Study which includes demographic, clinical, environmental, and DNA sequencing data from more than 8500 individuals who died by suicide. These studies indicate that immune function changes at the genetic and cellular level represent important aspects of risk leading to suicide death.

As a group, these presentations provide complementary data establishing that the immune system plays a crucial role in suicide behaviors. The presentations share a common goal of identifying markers of inflammation which might identify high risk individuals and inform novel preventative measures based on the immune system.

31.1 IMMUNE MARKERS IN PERSONS HOSPITALIZED WITH DEPRESSION WHO HAVE MADE A RECENT SUICIDE ATTEMPT

Faith Dickerson*[1], Andrea Origoni[1], Emily Katsafanas[1], Kelly Rowe[1], R Sarah Ziemann[1], Sabah Khan[1], Robert Yolken[2]

[1]Sheppard Pratt, [2]Johns Hopkins School of Medicine

Individual Abstract: Introduction:More than 45,000 people die by suicide each year in the US, the majority of whom have a mood disorder. Previous studies have found that immune markers are elevated in many persons with a mood disorder and also in persons with a recent suicide attempt, but the role of infection and inflammation in suicide behavior in individuals with a mood disorder has not been extensively examined.

Methods:We enrolled adults with Major Depressive Disorder (MDD) who were hospitalized for a depressive episode, including those who had a suicide attempt in the previous month and those who had no lifetime suicide attempt history. Participants were assessed on demographic and clinical variables. A blood sample was drawn from which markers of immune activation and exposure to infectious agents were measured. We assessed suicidality at monthly intervals after discharge and obtained a follow up blood sample at 6 months following discharge. Demographic variables were compared between groups by two-way analysis of variance or chi-square analyses. The levels of the immune markers were compared by mixed effects

models incorporating age, gender, race, tobacco smoking, Body Mass Index (BMI), and time of sampling (baseline or follow-up) as covariates.

Results:The participant cohort comprised 100 individuals hospitalized with MDD, 69 of whom had made a suicide attempt in the previous month and 31 with no suicide attempt history. Baseline data collection has been completed and the 6-month follow-ups are ongoing.

At baseline, the mean age of the sample was 31.9 (±11.7) years; 62% White;14.2 (±2.1) years education; gender identity including 32 males, 62 females, 2 trans-males, 2 trans-females, 2 nonbinary persons; reported sexual orientation of 66 heterosexual, 16 bisexual, 9 gay or lesbian, 9 other; BMI 30.5 (±8.7); 14% were current tobacco smokers; 44% had recent drug or alcohol misuse, and 10% a current cannabis use disorder. The mean Hamilton Depression Rating Scale (Ham-D) total score was 25.7 (±9.7); Adverse Childhood Experience Questionnaire (ACEQ) score 3.9 (±2.5); Barratt Impulsiveness Scale (BIS) score 68.5 (±11.0); Stressful Life Events Screening Questionnaire (SLESQ) 3.7 (±2.5); and Social Readjustment Rating Scale (SRRS) total 452 (±345).

Persons who had made a recent attempt were significantly younger (p<.009), less educated (p<.0001), and more likely to have a cannabis use disorder (p<.025). All the individuals in the study who had a cannabis use disorder were in the suicide attempt group. The recent attempters also had higher ACEQ (p<.006) and BIS (p<.014) total scores than the hospitalized depressed patients with no suicide attempt history. There were no significant differences between groups by race or drug/alcohol misuse other than cannabis.

Preliminary analyses indicate that a recent suicide attempt was associated with increased levels of several immune mediators such as interleukin-4 (p=.031), interleukin-6 (p=.007), interleukin-8 (p=.022), and kynuramine (p=.041), as well as IgG-class antibodies to Herpes Simplex Virus Type 1 (HSV-1) (p=.032). There was also a trend for increased levels of matrix metalloproteinase-9 (MMP-9) (p=.052).

Discussion:Our studies indicate that many individuals with MDD with a recent suicide attempt have increased levels of immune activation and exposure to infectious agents as compared to hospitalized individuals with MDD with no suicide attempt history. The further characterization of immune activation in suicide behaviors may lead to new methods for the identification of high-risk individuals and may inform methods for immune-based interventions.

31.2 RISKS LEADING TO SUICIDE DEATH IMPLICATE IMMUNE SYSTEM FUNCTION

Hilary Coon[1], Andrey A. Shabalin[1], Emily DiBlasi[1], Eric T. Monson[1], Elliott Ferris[1], Seonggyun Han[1], Anne Kirby[2], Thomas J. Nicholas[2], Lisa Baird[1], Danli Chen[1], Zhe Yu[3], Alison Fraser[3], Michael Staley[3], Erik Christensen[3], W. Brandon Callor[3], Virginia Willour[4], Qingqin S. Li[5], David K. Crockett[6], Amanda V. Bakian[1], Brooks Keeshin[1], Anna R. Docherty[1], Amanda Bakian*[2]

[1]University of Utah School of Medicine, [2]University of Utah, [3]University of Utah, Pedigree and Population Resource, Huntsman Cancer Center, [3]Utah State Office of the Medical Examiner, Utah Department of Health, [4]University of Iowa, [5]Janssen Research and Development, [6]Clinical Analytics, Intermountain Health

Individual Abstract: Introduction: Risk of suicide death remains difficult to predict. While prior suicidal behavior is currently the best predictor of future suicide death, only a small fraction of those who engage in suicidal behaviors will go on to die by suicide, and a majority of suicide deaths in population-ascertained cohorts exhibit no prior suicide behaviors. Broadening the scope of risk studies may help address this critical knowledge gap. Results from our large research resource suggest that immune function may be one fruitful area of study.

Methods: The Utah Suicide Genetic Risk Study (USGRS) includes demographic, clinical, environmental, and genetic data from individuals who died by suicide in the state of Utah. This study is possible through a long-standing collaboration with the Utah State Office of the Medical Examiner Data. Accumulated DNA from >8,500 Utah suicide deaths is now available, of which 6,500 have been genotyped, and 1,052 have been sequenced. Clinical risks are studied using state-wide electronic health records (EHR). Common genetic risks are studied through the computation of polygenic risk scores (PRS). We have studied rare genetic changes with potential functional effects through direct analysis of rare variants that are part of the Illumina PsychArray, and also through characterization of our whole genome sequence (WGS) data. We have also identified a subgroup of suicide deaths in our cohort with no prior evidence of suicidality based on both diagnostic data and natural language processing (NLP) of clinical notes. This subgroup is of particular interest for the study of novel risk factors, including immune dysfunction.

Results: USGRS studies have directly implicated several genes important for immune function. Enrichment of rigorously screened rare functional variants from the Illumina PsychArray were found in ADGRF5, a gene involved in pulmonary immune response, and PER1, a clock gene which has also been associated with neuroinflammation. SV characterization has revealed a deletion in IL4R, also involved in neuroinflammation, and in LILRA1, an immunoglobulin receptor involved in the regulation of immune responses. Additional gene-based analyses in our genome-wide association studies have implicated SETD8 and CFH, both of which are associated with the Gene Ontology (GO) pathway for inflammatory response, and PRS analyses have shown strong associations with common polygenic risk related to several pain-related phenotypes, implicating inflammation processes. Notably, clinical data in the USGRS indicates that clinical diagnoses associated with pain are the most common co-occurring condition (>60%), outstripping diagnoses associated with depression (~45%) or anxiety (~32%). Additional comparisons between the subsets of suicide deaths with vs. without prior suicidality, the subset with prior suicidality had significantly more evidence of psychiatric conditions; those with no prior suicidality had more evidence of several chronic health conditions, including obesity and asthma. Tests of PRS across these two groups showed that suicides with prior suicidality had higher PRS for several psychiatric diagnoses, but those without prior suicidality had higher PRS for non-psychiatric traits, including cigarettes per day and waist-hip ratio.

Discussion: Several lines of evidence from our large suicide death research resource suggest immune function changes may represent important aspects of risk leading to suicide death. Additional work to identify one or more subtypes of risk could lead to improved understanding of biological risk mechanisms, and eventual development of future personalized treatments and screening for those at high risk of suicide death.

31.3 IMMUNE CHARACTERIZATION OF SUICIDAL BEHAVIOR IN ADOLESCENTS USING MASS CYTOMETRY

Madhukar H. Trivedi[1], Cherise Chin Fatt[1], Manish Jha[1], Jane Foster[1], Manish Jha[2]

[1]The University of Texas Southwestern Medical Center, The Center for Depression Research and Clinical Care, [2]The University of Texas Southwestern Medical Center

Individual Abstract: Dysregulations within the immune system have gained attention for their role in pathophysiology of suicide. To address the need to identify potential markers of suicide behavior for adolescents we will present how mass cytometry was used to explore the cellular mechanisms that may underpin immune dysregulation in adolescents with recent suicidal behavior.

Peripheral blood mononuclear cell (PBMC) samples from 10 female adolescents with a recent suicide attempt and 4 healthy female adolescents were used. Adolescents with a previous suicide attempt were recruited from an intensive outpatient program (IOP) at a large metropolitan children's hospital, and healthy control adolescents were recruited from an ongoing study, entitled the Texas Resilience Against Depression study. A panel of 30 antibodies was analyzed using mass cytometry to 1) identify the cell types that significantly differed between the two groups, and 2) explore differences in the expression profile of markers on the surface of these cells. Mass cytometry data were investigated using (1) Opt-SNE for dimension reduced, (2) FlowSOM for clustering, and (3) EgdeR and SAM for statistical analyses.

Opt-SNE (a data driven clustering analysis) identified 15 clusters of distinct cell types. From these 15 clusters, cluster 5 (classical monocytes) had statistically lower abundance in suicidal adolescents as compared to healthy controls, whereas cluster 7 (gamma-delta T cells) had statistically higher abundance in suicidal adolescents compared to healthy control. Furthermore, across the 15 cell types, chemokine receptors, namely CXCR3 (cluster 5) and CXCR5 (clusters 4, 5, 7, and 9), had an elevated expression profile in those with a recent suicide attempt compared to healthy controls.

The results of these analyses demonstrate the utility of high dimensional cell phenotyping in psychiatric disorders and provides preliminary evidence for distinct immune dysfunctions in female adolescents with recent suicide attempts as compared to healthy controls.

Additional, we will present preliminary results comparing the immune characterization of (1) adolescents with suicidal behavior, (2) adolescents at risk for mood disorders, and (3) healthy adolescents. Together, these findings as well as future work using mass cytometry, may inform our path forward towards the identification of actionable, objective markers of suicidality.

31.4 A COMPREHENSIVE POST-MORTEM ASSESSMENT OF NEUROINFLAMMATION IN THE VENTROMEDIAL PREFRONTAL CORTEX OF DEPRESSED SUICIDES WITH A HISTORY OF CHILD ABUSE

Naguib Mechawar*[1], Marina Wakid[1], Reza Rahimian[1]

[1]McGill Group for Suicide Studies, Douglas Institute, McGill University

Individual Abstract: Increasing research suggests that neuroinflammation is implicated in depression and suicide. The evidence has come mainly from studies of peripheral cytokines and of rodent models of chronic stress, which have further indicated that chronic stress compromises the blood-brain barrier and promotes neuroinflammation in at least some brain regions. Few studies have thoroughly examined neuroinflammation in the brain of individuals having died by suicide, especially in people with a history of child abuse (CA). The latter, an important risk factor for psychopathologies and suicide, has been associated with further increases of circulating pro-inflammatory cytokines. This talk will highlight our recently generated data comparing well-characterized post-mortem ventromedial prefrontal cortex (vmPFC) samples (Douglas-Bell Canada Brain Bank) from middle-aged depressed suicides with a history of child abuse (DS-CA), and matched non-psychiatric sudden-death controls (CTRL). Complementary data from protein arrays, microglial morphological analyses, and RNA sequencing of isolated microvessels will be presented. In brief, protein array-based analyses of 80 cytokines, chemokines and growth factors in fresh vmPFC grey matter lysates from DS-CA (n=21; 14 M and 7 F) and CTRL (n=20; 14 M and 6 F) samples revealed that major canonical pro-inflammatory cytokines (TNF-alpha, IL-6, IL-1beta and INF-gamma) were similar between groups. Intriguingly, some growth factors (e.g., TGF-beta) and anti-inflammatory cytokines (e.g., IL4) were decreased in DS-CA vmPFC in a sexually dimorphic fashion. Moreover, the morphological analysis of grey matter Iba1-immunoreactive microglia in fixed vmPFC samples from DS-CA (n=16; 11 M and 5 F) and CTRL (n=15; 10 M and 5 F) suggested less microglial activation in cases. Finally, RNA sequencing of vmPFC microvessels isolated from DS-CA (n=26; 19 M and 7 F) and CTRL (n=23; 15 M and 8 F) samples showed a global suppression of immune response-related genes. In conclusion, we failed to observe a clear neuroinflammatory profile in the vmPFC of DS-CA, with results suggesting rather an anti-inflammatory profile. These observations, which may reflect long-term adaptive processes in the brain, will be compared to those of recent preclinical studies.

31.5 PERIPHERAL INFLAMMATORY AND PLASTICITY MARKERS OF SUICIDAL THOUGHTS AND BEHAVIOURS: CROSS-SECTIONAL AND LONGITUDINAL FINDINGS WITH 39 PUTATIVE MARKERS

Aiste Lengvenyte*[1], Emilie Olié[2], Fabrice Cognasse[3], Raoul Belzeaux[1], Philippe Courtet[2]

[1]CHU Montpellier, [2]CHU Montpellier, IGF, University of Montpellier, [3]Université Jean Monnet, Mines Saint-Étienne

Individual Abstract: Cross-sectional and now increasingly longitudinal studies increasingly show that peripheral blood levels of inflammatory, most notably C-reactive protein and interleukin-6, and some oxidative and plasticity markers are increased in individuals that have attempted suicide, currently suicidal ideation, or are at increased risk to have suicidal thoughts and behaviours. However, there is currently no biological markers that help make clinical decisions in patients deemed at risk of STB. In addition, it is not yet clear whether cross-sectional markers translate to prospective predictors in the same patients, and whether we have already found the best markers. To address these gaps, we recruited 266 treatment-seeking individuals with mood disorders with and without past history of suicide attempt without anti-inflammatory or immunomodulatory treatment or known acute inflammatory condition. We then measured peripheral blood levels of 39 cell and protein markers involved in inflammation/immune response, oxidative and plasticity systems, assessed their depressive symptomatology, suicidal ideation, and followed them for two years to observed the emergence of suicidal crises (Emergency Department visits for severe suicidal ideation or suicide attempt).

We also measured suicidal ideation and depressive symptoms in a subset of 149 patients that returned to the clinic for a 6-month follow-up visit. Putative markers were entered separately for each outcome in Elastic Net models with 10-fold cross-validation, followed by single-analyte covariate-adjusted regression analyses for pre-selected analytes. Past month suicide attempt was associated with increased plasma levels of thrombospondin-2 and C-reactive protein, robust to adjustment for covariates and multiple testing. Meanwhile, current suicidal ideation was associated with lower plasma serotonin levels, but this association lost its significance after adjustment for major pharmacological treatment groups. Baseline interferon alpha was associated with depression severity at 6-months follow-up (but not baseline) and self-reported suicidal ideation during the 6-months follow-up, after adjustment for baseline depression severity and suicidal ideation. The Cox proportional hazards regression showed that higher levels of thrombospondin-1 and of platelet-derived growth factor-AB predicted a future suicidal crisis, after adjustment for sex, age, and suicide attempt history. Interestingly, the cross-sectional and longitudinal markers did not overlap. This evidence implies that suicidal ideation and attempts might have different biological correlates, and that temporality is an important factor when studying the biological bases of suicidal thoughts and behaviours.

32. IMPROVING UNDERSTANDING OF AND RESPONSES TO SUICIDE AMONG SEXUAL AND GENDER MINORITY COMMUNITIES

Chair: Victoria Banyard, Rutgers the State University of New Jersey

Overall Abstract Details: Studies across the globe document that individuals who identify as a member of a sexual and/or gender minority community are at exponentially higher risk of suicide ideation and attempts. This symposium explores new research to understand the epidemiology and public health context of suicide in these communities and new interventions in the United States. Panelists will present the findings of four large scale research projects, and the symposium will include a discussion with Dr. O'Connor from the NIMH about implications of this work and directions for needed future research. Research presented includes the results of a content analysis of 5,652 media reports on suicide (a key aspect of the public health context of suicide) in Washington and Oregon and how such reports differ when the focus is on sexual and gender minority individuals. A second panelist will discuss findings of a large survey of 3,750 adolescents and young adults across the U.S. that examines exposure to suicide using data from over 1,500 unique contextual situations encountered by participants, including helping behavior (reported by 60% of participants in these situations) and impact on the bystanders themselves. Findings will be discussed in the context of the experiences of youth of different sexual and gender identities. Two panelists will discuss novel interventions in this area. One team of panelists will present findings from their open trial of an intervention (QueerCare) that combines the safety planning intervention with patient navigation. The open trial examined the feasibility, acceptability and preliminary impact of the QueerCare intervention among sexual and gender minority youth and young adults at risk for suicide. A final panelist will describe findings from research aimed at making mortality data collection systems more inclusive of sexual orientation and gender identity data. Missing from most nations' administrative systems, statistics about mortality among sexual and gender minorities create the necessary benchmarks to evaluate interventions at scale for public health approaches to suicide prevention.

32.1 LGBTQ+ YOUTH EXPOSED TO SELF-DIRECTED VIOLENCE: THE IMPORTANCE OF TAKING INTO ACCOUNT SOCIAL DETERMINANTS OF HEALTH

Kimberly Mitchell*[1], Victoria Banyard[2], Michele Ybarra[3], Lisa Jones[1]

[1]Crimes against Children Research Center, [2]Rutgers the State University of New Jersey, [3]Center for Innovative Public Health Research

Individual Abstract: Data globally and within the United States makes it clear that members of sexual and gender minority communities are at increased risk for suicide. Importantly, risk and protective factors may operate differently within groups that experience marginalization, including sexual and gender minority youth. The conditions in the places where these youth live, learn, work and play - commonly known as "social determinants of health" – can influence a wide range of mental health outcomes as well. This presentation will describe baseline findings from a new United States sample of 3,750 adolescents and young adults (ages 13-22) who were asked about their exposure to self-directed violence (SDV), that is, having someone they were close to who had made an attempt to die by suicide, was experiencing suicidal ideation, or non-suicidal self-injury, as well questions about their own SDV.
Data indicated higher risk of both personal SDV and exposure to SDV among youth who identify as a sexual or gender minority. For example, 43% of gender minority youth had tried to die by suicide in their lifetime compared to 21% of their cisgender peers (p

32.2 TESTING A PATIENT NAVIGATION INTERVENTION TO PREVENT SUICIDE IN LGBTQ YOUTH AND YOUNG ADULTS: FINDINGS FROM AN OPEN-PHASE TRIAL

Kristen Wells*[1], Arjan van der Star[2], Alyson Randall[3], Jerel Calzo[1], V. Robin Weersing[1], Aaron Blashill[4]

[1]San Diego State University, [2]San Diego State University; San Diego State University Research Foundation, [3]San Diego State University Research Foundation, [4]San Diego State University; San Diego State University/UC San Diego Joint Doctoral Program in Clinical Psychology

Individual Abstract: Background: Despite substantial disparities in suicide among young LGBTQ+ individuals, no known empirically supported suicide prevention programs exist for this highly vulnerable population. Patient navigation (PN), as an intervention to assist people in overcoming barriers to care, paired with the Safety Planning Intervention (SPI), may be a promising intervention to target mechanisms (e.g., thwarted belongingness and suicide-related coping skills) that theoretically underlie suicide. The purpose of this presentation is to describe the developed PN+SPI intervention (QueerCare) and present initial data on its feasibility, acceptability, and the engagement of target mechanisms to prevent suicide attempts.
Methods: Thirty-one LGBTQ+ individuals, ages 16-29 years, experiencing suicidal ideation and with a history of actual and/or interrupted attempt(s) were sampled from community populations. Participants were enrolled in a mixed-methods open-phased trial to examine feasibility, acceptability, and the engagement of target mechanisms of a 7-module QueerCare intervention over a six-month period of time. Participants completed clinical interviews and self-report surveys at baseline and 3- and 6-month follow-ups and key informant interviews at 3- and 6-month follow-up. Cohen's d was calculated to evaluate the effect sizes of the QueerCare intervention on target mechanisms at 3- and 6-month follow-ups, compared with baseline.

Results: The evaluation of the QueerCare intervention showed high feasibility and acceptability with several participants stating its usefulness and how it has saved their lives. Feedback on overall length of assessments led to the decoupling of the baseline assessment and the first intervention session. Among 25 per-protocol completers, dRM,pooled effect sizes of -0.15 and -0.01 for thwarted belongingness, 0.36 and 0.17 for internal suicide-related coping skills, and 0.34 and 0.20 for external suicide-related coping skills were observed at the 3- and 6-month follow-ups, respectively, compared with baseline.

Conclusion: This open-phase trial of a 7 module SPI+PN intervention demonstrated its potential for reducing mortality and morbidity due to suicide attempts among LGBTQ+ youth/emerging adults via theoretically-informed target mechanisms. This finding is significant given that LGBTQ+ youth/emerging adults are one of the most vulnerable groups for attempting suicide globally. Given the brevity of the PN+SPI intervention and its emphasis on safety planning and accessing community resources, the PN+SPI intervention has high potential for wide dissemination and public health impact, should it demonstrate efficacy in subsequent studies.

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32.3 DEVELOPMENT OF A PATIENT NAVIGATION INTERVENTION FOCUSED ON ADDRESSING BARRIERS TO MENTAL HEALTH CARE AND PEER COMMUNITY TO PREVENT SUICIDE IN LGBTQ YOUTH AND YOUNG ADULTS

Arjan van der Star*[1], Alyson Randall[1], Jacqueline Mitzner[1], Jerel Calzo[1], Robin Weersing[1], Kristen Wells[1], Aaron Blashill[1]

[1]San Diego State University

Individual Abstract: Background: Young sexual and gender minority (SGM) individuals are at substantially elevated risk for suicide compared to their peers. Yet, no known empirically supported suicide prevention program exists that addresses the unique needs of this highly vulnerable population. Integrating the Interpersonal Theory of Suicide and the Minority Stress Model provides strong a conceptual model for understanding suicide risk among SGM youth and young adults. Together, these models highlight belongingness and suicide-related coping skills as buffering variables that, if addressed and promoted, would theoretically allay suicide attempts. This presentation will describe the development of a Patient Navigation + Safety Planning Intervention (QueerCare) to address barriers to mental health care and peer community and target the two buffering mechanisms with the aim to prevent suicide attempts among SGM youth and young adults at risk for repeat attempts.

Methods: While using a structured approach with iterative cycles of development, feedback, and its incorporation, several drafts of logic models, intervention module outlines, and modules were created. Drafted materials and protocols were revised based on feedback from a Participatory Planning Group (PPG). Seven flexible models were initially created for QueerCare: 1) Introduction + SPI; 2) Minority Stress Psychoeducation; 3) Barriers to Mental Health Services; 4) Barriers to Community Resources; 5) Decision Making; 6) Crisis Intervention; and 7) Wrap Up. In a case series (n = 9) and an open-phased trial (n = 31), participant and interventionist feedback was gathered during key informant interviews and

interventionist supervision meetings and through feasibility notes taken by the investigative team.

Results: The PPG informed the choice of the study and interventionist names and additional intervention maintenance and psychopathology psychoeducation modules were added. Given the length of the initial appointment, the baseline assessment and first safety planning session were reduced in length and decoupled. Additional tools for the use of appropriate language around discussing suicide, discriminatory experiences, and identities were integrated in the modules and added to a study-wide glossary. Further adaptations included the addition of other safety management tools and mood improvement exercises and additional iterations of the study safety protocol and the crisis intervention module.

Conclusion: A 9-module QueerCare intervention was developed as a highly flexible modular intervention to meet individual needs, to address barriers to mental health care and peer community, and to target theoretically informed mechanisms underlying suicide attempts among SGM youth and young adults. Participants, PPG members, and interventionists informed further iterations of intervention modules and the development of additional materials. Given the community-informed and iterative development process, the QueerCare intervention was developed to be affirming, modular, personalizable, and efficacious in meeting the needs of SGM youth and young adults and prevent suicide attempts in this population.

32.4 MISSING MORTALITY DATA FOR SEXUAL AND GENDER MINORITY POPULATIONS IMPEDES SUICIDE PREVENTION

John Blosnich*[1]

[1]University of Southern California

Individual Abstract: Introduction: Lesbian, gay, bisexual, and transgender (LGBT) people are much more likely than heterosexual and cisgender people to report suicidal thoughts and behaviors. Information about suicide deaths for LGBT populations, however, remains largely undocumented because sexual orientation and gender identity (SOGI) are not included in administrative documentation of deaths. Consequently, vital statistics systems, which are key for identifying suicide disparities and evaluating prevention efforts at scale, cannot be used for LGBT research. Enhancing mortality information systems to include SOGI data is an emerging strategic direction to enhance suicide prevention research for LGBT populations.

Aims: (1) to summarize extant research about LGBT suicide mortality; (2) to explain lessons learned from a training for medicolegal death investigators (MDIs) to collect SOGI.

Methods: We developed and implemented a training for MDIs, which consisted of didactic lecture, example case discussion, and role play demonstrations for strategies to embed SOGI items into investigations. The training also included a protocol and checklist for investigators to gather and summarize SOGI information gathered during death investigations. We conducted the training in two sites in the United States, gathering qualitative and quantitative data from MDIs who participated in the training.

Results: Seventy-five MDIs were trained. Fifteen MDIs participated in semi-structured interviews 6 months after training to discuss facilitators and barriers to collecting SOGI in their investigations. Emergent themes on barriers included competing demands on death scene

investigations (e.g., prioritizing information that needs to be gathered alongside securing scene and corporeal evidence) and lack of understanding why SOGI information is important to their work. Emergent facilitating themes included structural factors (e.g., having forms and systems that prompt SOGI information) and administrative/leadership support and endorsement. There also appeared generational and seniority differences, where MDIs earlier in their career were more amenable to gathering data, whereas MDIs who had been in their career longer (10+ years) were more resistant to the addition of SOGI data collection.

Conclusion: Training MDIs to gather SOGI data is a feasible strategy for improving mortality data systems. Like any training effort, challenges persist and require further research to determine workable solutions.

32.5 SUICIDE-RELATED MEDIA REPORTING WITH A FOCUS ON SEXUAL AND GENDER MINORITY ASPECTS: A CONTENT ANALYSIS OF THE QUALITY OF REPORTING COMPARED TO OTHER SUICIDE-RELATED REPORTS

Stefanie Kirchner*[1], Benedikt Till[2], Thomas Niederkrotenthaler[2]

[1]Medical University of Vienna, Center for Public Health, Unit Suicide Research and Mental Health Promotion, [2]Medical University of Vienna

Individual Abstract: Background: Media recommendations on reporting about a suicide are available to prevent harmful effects, i.e., increases in suicides subsequently. Very little is currently known about the quality of media reports specifically focusing on suicide and prevention in people identifying with a sexual or gender minority identity (LGBTQ+).
Methods: We examined media items reporting about suicide-related aspects that specifically focus on suicides and prevention in LGBTQ+ settings based on a representative content analysis of 5,652 media items in two US States (Washington, Oregon) published within one year (04/2019-03/2020). Chi-square tests were used to test the differences in story characteristics between stories with and without a LGBTQ+ focus.

Results:

A total of 2.7% (n=151) of all media items focused on suicide and suicide prevention in LGBTQ+ people. Over both states, media items mainly had a general focus and addressed aspects such as research (Oregon: n=6, 7.4%, p<0.001 and Washington: n=14, 20.0%, p<0.001), policy/prevention (n=28, 34.6%, p<0.001 and n=16, 22.9%, p<0.001) or suicide statistics (n=50, 61.7%, p<0.001 and n=40, 57.1%, p<0.001) than media items without a LGBTQ+ focus. In terms of harmful characteristics, media items with a LGBTQ+ focus described suicide in the context of a suicide epidemic or wave (n=14, 17.3%, p=0.003 and n=10, 14.3%, p=0.024) and showed more suggestions of a suicide being monocausal (n=18, 22.2%, p=0.038 and n=24, 34.3%, p<0.001) or reporting about life experiences assumed to be contributing to suicidal ideation or suicidal behavior (n=36, 44.4%, p<0.001 and n=32, 45.7%, p=0.002). Protective characteristics of LGBTQ+ media items focused on the role of celebrities in suicide prevention (n=18, 22.2%, p<0.001 and n=9, 12.9%, p<0.001), featured the opinion of a mental health expert (n=17, 21.0%, p=0.034 and n=18, 25.7%, p=0.006) or reported about alternatives to suicidal behavior (n=27, 33.3%, p=0.005 and n=24, 34.3%, p<0.001) than media items with no focus on LGBTQ+.

Conclusion: Media items focusing on individual suicide and suicide prevention in LGBTQ+ people more frequently include assumptions about monocausality and life experiences assumed to be contributing to suicidal ideation or behavior, thereby closely associating suicide with an LGBTQ+ identity. This is problematic in the light of the general scarcity of media representation of LGBTQ+ people in media.

This work was supported by the project Vibrant Emotional Health grant "Suicide Prevention media campaign Oregon" to Thomas Niederkrotenthaler.

Discussant: Stephen O'Connor, National Institute of Mental Health

33. ADVANCES IN THE CHARACTERIZATION OF SUICIDAL PHENOTYPES: FIRST STEP TO PERSONALIZED TREATMENT?

Chair: Enrique Baca-Garcia, Fundacion Jimenez Diaz

Overall Abstract Details: The characterisation of suicide attempters and ideators has seen many advances in recent years, which could be used to personalize preventive interventions. In this symposium we will try to delineate these advances with new research results in five dimensions. These dimensions include: i) a behavioral phenotype based on digital information from smartphones, the scientific evidence presented issued from an ongoing multicentric study , ii) emotional dysregulation associated with bordeline personality traits, evidence from a systematic review and metaanalysis, iii) the impact of social adversity on the features of suicide attempters in a major Spanish city, iv) specific features of depressed suicidal individuals obtained from a large French cohort, v) impulsivity traits associated with the repetition and violence of suicidal behavior from a different French munticentric cohort of suicide attempters. Thus, all the presentations will be based on current research results which are either recently published or still unpublished.

33.1 ASSOCIATION BETWEEN BORDERLINE SYMPTOMS AND SUICIDE-RELATED OUTCOMES IN SUBJECTS WITH AND WITHOUT BORDERLINE PERSONALITY DISORDER: META-ANALYSES

Raffaella Calati*[1], Daniele Romano[1], Jorge Lopez-Castoman[2], Federica Turolla[1], Francesca Bianco[1], Elena Sofia Sassi[1], Jessica Delpero[1], Simone Frisina[1], Johannes Zimmermann[3], Fabio Madeddu[1], Philippe Courtet[4], Emanuele Preti[1]

[1]University of Milan-Bicocca, [2]Department of Adult Psychiatry, Nimes University Hospital, Nimes, France, [3]Department of Psychology, University of Kassel, Kassel, Germany, [4]Department of Emergency Psychiatry and Acute Care, Lapeyronie Hospital, CHU Montpellier,

Individual Abstract: Introduction: Although suicidal behavior has been extensively investigated in Borderline Personality Disorder (BPD), evidence about the specific contribution of each BPD symptom in defining suicidal risk is lacking. Therefore, we conducted a meta-analysis on the relationship between each BPD symptom (except Criterion 5) and specific suicide-related outcomes (Suicidal Ideation, SI, Non-Suicidal Self-Injury, NSSI, Deliberate Self-Harm, DSH, and Suicide Attempts, SA) in subjects without (group 1) and with (group 2) BPD diagnosis and in mixed (BPD and non-BPD) subjects (group 3).
Methods: We searched articles on PubMed/MEDLINE, SCOPUS, Web Of Science, Embase, PsycINFO, CINHAL, and Cochrane Library from 1974 to June 2021. Studies' authors were

contacted by e-mail. We obtained data from 24 studies that reported measurements of BPD symptoms and SI, NSSI, DSH, and SA.

Results: Regarding SI, associations with unstable self-image, affective instability, and chronic feelings of emptiness emerged in all 3 groups. Group 1 presented a specific association with unstable relationships; Group 2 presented additional specific associations with efforts to avoid abandonment and paranoid ideation and dissociative symptoms; while Group 3 presented additional specific association with unstable relationships and paranoid ideation and dissociative symptoms.

Regarding NSSI, significant associations emerged only for the group 2: unstable self-image, affective instability, chronic feelings of emptiness, paranoid ideation and dissociative symptoms. In reference to DSH, no significant associations were found in any group. Regarding SA, impulsivity was associated in all 3 groups; Group 1, presented further associations with affective instability and chronic feelings of emptiness; Group 2 presented additional associations with efforts to avoid abandonment, unstable relationships, ustable self-image; Group 3 resulted associated with all BPD symptoms except intense anger.

Conclusions: In suicide risk assessment, the presence of these symptoms should be taken into account, especially affective instability and chronic feelings of emptiness given their strong association with the considered outcomes. This is also necessary for subjects who do not meet the diagnosis of BPD. Further researches are desirable.

33.2 SOCIAL ADVERSITY AND SUICIDAL BEAHVIOR

Maria Luisa Barrigon*[1]

[1]Hospital General Universitario Gregorio Marañon

Individual Abstract: Introduction: Suicide is a major public health problem. Despite many efforts in the fight against suicide, its rate is not decreasing. Suicide accounts for about 800,000 deaths worldwide every year, and the number of suicide attempts is over twenty times higher. Importantly, in Spain, suicide rates among people under 25 have tripled in the last 30 years. Although suicide is a complex phenomenon with a multifactorial origin, some of the factors that have been linked to suicide deaths are social adversity and unemployment and this effect seems to be different according gender.

Objectives: To study the relationship between suicidal behavior and social adversity in patients attended at the Emergency Department of the Hospital Universitario Virgen del Rocio (HUVR) of Seville for a suicide attempt, taking into account the effect of gender.

Methods: We conducted a retrospective study of suicide attempts in patients under 25 years of age attended in the Emergency Department (ED) of HUVR and included in the secondary prevention program for suicidal behavior between January 2018 and November 2022.

Through the electronic medical records we collected information on sex, age, method of suicide attempt and lethality according to the Letality Rating Scale (LRS). We also identified the neighborhood of residence of each person and checked the statistical data of the city council of Seville for collect information on unemployment and identified the "neighborhoods in need of social transformation" (NNST). According to the definition of the Junta de Andalucia an "area

in need of social transformation" is an urban space in which many of its inhabitants are in conditions of social exclusion, structural situation of severe poverty and marginalization.

We obtained the standardized incidence of rate of suicide (SIRS) for each neighborhood in relation to the incidence of suicide for the city of Seville and classified the incidence of each neighborhood as greater than 1 if it was above the total incidence for the city or less than 1 if it was below. We represent each suicide attempt with a dot and plotted all suicide attempts on a Cartesian coordinate axis where the x-axis represented the unemployment rate, the y-axis the SIR and each person was classified as coming from a neighborhood in need of social transformation (1, blue) or not (0, red); furthermore, the thickness of the dot represents the lethality of the attempt. We made this separately for men and women.

Results: Between January 2018 and November 2022, 1809 suicide attempts were attended in ED of HUVR among patients under 25 years old, 1242 in women and 567 in men. Plots for men and women were created as previously explained (Figures 1 and 2).Thes pattern were different according gender. For men, we found a strong relationship between unemployment and LRS score in NNST and in women no clear pattern was found.

Conclusions: We found an overrepresentation of suicide attempts in men in neighborhoods in need of social transformation and directly related to unemployment, while the distribution of suicide attempts in women did not follow this pattern.

33.3 REFINING IMPULSIVITY MEASURES TO DIFFERENTIATE CLUSTERS OF SUICIDE ATTEMPTERS

Jorge Lopez Castroman*[1], Emmanuel Diaz[2]

[1]University of Montpellier, [2]Nimes University Hospital

Individual Abstract: Suicide attempters form a heterogeneous group and therapeutic approaches need to be adapted depending on the patient. Two common features that characterize suicide attempters are the violence and the repetition of the attempts. In the SUI-PREDICT study, we recruited a sample of more than 200 suicide attempters in several psychiatric hospitals in France to study their neuropsychological profiles, including different measures of impulsivity. In this presentation, we will describe impulsivity in self-reported scales (Barratt Impulsivity Scale) and neuropsychological tasks (Iowa Gambling Task, Continuous Performance Task) to compare violent vs nonviolent attempters and multiple vs single attempters. Finally, we will present results suggesting that decision-making deficits in conditions of ambiguity related with the impulsivity of suicide attempters are independent of depressive symptomatology.

33.4 SMARTPHONE-BASED SAFETY PLAN FOR SUICIDAL CRISIS: THE SMARTCRISIS PROJECT

Alejandro Porras-Segovia*[1], Enrique Baca-Garcia[2], Maria Luisa Barrigon[2], Jorge Lopez Castroman[3]

[1]Health Research Institute Fundación Jiménez Díaz, [2]Fundacion Jimenez Diaz, [3]University of Montpellier

Individual Abstract: In this presentation we describe our smartphone-based safety plan designed for coping with suicidal and/or self-harm crises in both adult and adolescent populations. We also present preliminary data on the acceptability and effectiveness of the safety plan, which has been installed by a hundred patients at high risk of suicide, who have been followed for six months. We present data on participation, retention, satisfaction and evolution of suicidal ideation throughout the follow-up. Our safety plan represents a useful addition to the traditional management of suicide prevention.

33.5 SUICIDAL DEPRESSION: A SPECIFIC DEPRESSION SUBTYPE?

Benedicte Nobile*[1], Emilie Olié[2], Jonathan Dubois[3], Sébastien Guillaume[2], Philip Gorwood[4], Philippe Courtet[2]

[1]Hôpital Lapeyronie, CHU, [2]CHU Montpellier, IGF, University of Montpellier, [3]Hôpital Lapeyronie, CHU Montpellier, [4]Inserm UMRS1266, Institute of Psychiatry and Neuroscience of Paris

Individual Abstract: Suicidal depressed patients (i.e. history of suicide attempt (SA) or current suicidal ideation (SI)) respond less well to antidepressant. Furthermore, new drugs for managing SI (e.g. ketamine) are emerging. This raises the question of whether suicidal depression (i.e. moderate to severe depression with current SI) is a specific depression phenotype. We performed three studies to characterize patients with suicidal depression in comparison to patients without suicidal depression (i.e. moderate to severe depression without current SI) (baseline clinical characteristics, SI and depression evolutions, suicide risk and genetic risk factors) [1]–[3].
The aim of the first study was to identify baseline clinical characteristics of suicidal depression and to assess SI and depression evolution in the short-term. LUEUR and GENESE are two large, prospective, naturalistic cohorts of French adult outpatients with depression treated and followed up for 6 weeks. Patients with moderate or severe depression were selected and classified as without SI (suicidal item of the Montgomery-Åsberg Depression Rating Scale (MADRS-SI) <2), with moderate SI (MADRS-SI [2; 3]) and with severe SI (MADRS-SI ⩾4). Baseline clinical features were more severe in depressed patients with moderate/severe SI. Depression remission after treatment was less frequent among patients with severe SI. The risk of SA at 6 weeks was 3-fold higher in patients with SI among those 10% had persistent SI.

The aim of the second study was to determine whether the A118G polymorphism in ORPM1 was associated with suicidal depression, since opioid system deregulation seems to be implicated in suicidal behavior. We performed an ancillary analysis on the GENESE cohort. Patients with moderate or severe depression were selected and classified as without SI (MADRS-SI < 2), or with SI (MADRS-SI ≥ 2). The AA/AG genotypes of the A118G polymorphism were significantly associated with suicidal depression (OR = 2.54, 95% CI = [1.35; 4.78]; p-value = 0.004, adjusted model).

The aim of the second study was to determine whether the A118G polymorphism in ORPM1 was associated with suicidal depression, since opioid system deregulation seems to be implicated in suicidal behavior. We performed an ancillary analysis on the GENESE cohort. Patients with moderate or severe depression were selected and classified as without SI (MADRS-SI < 2), or with SI (MADRS-SI ≥ 2). The AA/AG genotypes of the A118G

polymorphism were significantly associated with suicidal depression (OR = 2.54, 95% CI = [1.35; 4.78]; p-value = 0.004, adjusted model).

The aim of the third study was to characterize suicidal depression within depressed inpatients and evaluate suicidal risk at one-year follow-up. Among 898 French adult inpatients with unipolar depression, 63.6% had SI according to the suicidal item (score ≥ 2) of the depression scale they filled in. The occurrence of a SA or a suicide event (SE) (i.e., actual, aborted, or interrupted SA, or hospitalization for SI) was recorded during the 1-year follow-up. The risk of actual SA and SE during the follow-up was 2- and 1.8-fold higher, respectively, in patients with suicidal depression, independently of potential cofounders.

According to all these studies, suicidal depression seems to be a specific depression phenotype with more severe clinical characteristics, genetic risk factors, less frequent depression remission, SI persistence and higher SA risk (in the short and in the middle term), despite optimal care.

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[2] B. Nobile, E. Olié, J. Dubois, M. Benramdane, S. Guillaume, et P. Courtet, « Characterization of suicidal depression: a one-year prospective study », Eur. Psychiatry J. Assoc. Eur. Psychiatr., p. 1-40, avr. 2022, doi: 10.1192/j.eurpsy.2022.16.

[3] B. Nobile et al., « Association Between the A118G Polymorphism of the OPRM1 Gene and Suicidal Depression in a Large Cohort of Outpatients with Depression », Neuropsychiatr. Dis. Treat., vol. Volume 17, p. 3109-3118, oct. 2021, doi: 10.2147/NDT.S324868.

34. POPULATION AND SYSTEM BASED SUICIDE PREVENTION STRATEGIES

Chair: Gil Zalsman, Geha Mental Health Center, Sackler School of Medicine, Tel Aviv University

34.1 SCHOOL-BASED SUICIDE PREVENTION

Holly Wilcox*[1]

[1]Johns Hopkins Schools of Public Health, Medicine and Education

Individual Abstract: Because suicide is a leading cause of death among adolescents, early identification and intervention programs implemented in school-based settings are important. Schools provide an opportune setting for universal suicide prevention efforts targeting all adolescents as youth spend most of their day in the school environment, and schools allow for a structured context to deliver such content (Brann et al., 2021). Brann et al. (2021) performed an analysis combining data from multiple studies of school-based suicide prevention programs, noting an overall improvement in suicide knowledge and awareness, a decrease in suicidal thoughts and behaviors (STBs), and an increase in help-seeking skills after implementation of such programs, with the strongest effects in increasing suicide awareness and knowledge. Specifically looking at STBs, another study found school-based suicide prevention programs to decrease STBs three months after implementation, with slightly larger effects on reducing suicidal behaviors than reducing suicidal thoughts (Gijzen et al., 2022). School-based mental

health and suicide prevention programs vary widely in their scope, content, costs, target audience, duration, and method of delivery. Programs that are targeted towards students have been shown to have an impact. A recent systematic review on suicide prevention strategies from Mann et al. (2021) found that universal school-based suicide prevention programs directed at students are generally effective, whereas programs directed at training only adults working in schools showed weaker and inconsistent benefits.
Schools and school systems often do not know which programs are evidence-based and a good fit for their student population. There are many effective interventions for preventing suicide that have been tested in closely controlled settings and a smaller set of approaches that have been tested in community settings such as schools. However, very few people who need these preventive interventions receive them.

This presentation will focus on the existing policies and programs shown to impact suicide-related outcomes in school settings. Results from a project will be presented that has harmonized data from six school-based prevention trials involving over 10,000 participants linked to mortality data.

In addition, there has been a recent proliferation of classroom management software with student safety features (e.g., GoGuardian Beacon, Gaggle, Bark). Schools are starting to invest in alternative ways to identify students at risk for harm to self or others. Even though many school systems are using these forms of software to identify youth at risk for suicide, there is very little information about the impact of these programs on suicide-related outcomes. Preliminary studies on software to identify youth at risk for suicide will be discussed in the content of privacy and equity.

The interventions that represent the “best practices” for suicide prevention have largely not been disseminated and scaled up for broad use. Quality of implementation, fidelity to the preventive methods and sustainment of the practices over time are often not achieved when these “best practices” are implemented in schools. These barriers will be discussed in the context of how best to move forward with school suicide prevention approaches.

34.2 POPULATION AND SYSTEM BASED SUICIDE PREVENTION STRATEGIES

Merete Nordentoft*[1], Trine Madsen[2], Annette Erlangsen[3]

[1]DRISP, Danish Research Institute for Suicide Prevention, Mental Health Center Copenhagen, [2]DRISP, Danish Research Institute for Suicide Prevention, [3]Danish Research Institute for Suicide Prevention

Individual Abstract: As part of an ambitious 10-year plan for Psychiatry, the Danish national plan for suicide prevention will be revised in 2023. The work involved in this plan can be used in other countries.
The fundament for the plan will be epidemiological research mapping different risk groups.

Based on the size of different risk populations, the relative risk associated with the population at risk, population attributable risk can be calculated for different high risk groups. Based on such calculations, preventive efforts in the following risk groups should have the highest priority:

- People with mental illness, especially in the first years of illness

- People recently discharged from psychiatric inpatient facilities
- People who attempted suicide, especially the first year after attempted suicide
- People seeking help because of suicidal ideations in NGO's or acute psychiatric emergency facilities
- People with substance abuse
- People in prisons and people with a criminal record
- Elderly single men with somatic disorders
- LGBT

The evidence base for the effectiveness of different preventive measures is rather weak. However, based on the literature and our knowledge about risk groups, a range of different intervention will come into play:

- Continuous monitoring of risk groups and methods used for suicide
- Enhancement of regional suicide prevention centers, which are now established in all Danish Regions
- Professional easily accessible national helplines with possibilities for organizing acute and subacute interventions
- Educational activities for staff with different roles
- Strengthening of collaboration with NGO's
- Psychiatric Emergency Outreach, national coverage
- School based intervention
- Screening of risk groups
- Considerations regarding reduced access to dangerous means
- Other initiatives for risk groups?

34.3 IMPLEMENTATION AND EVALUATION OF NATIONAL SUICIDE PREVENTION STRATEGIES: PROGRESS AND CHALLENGES

Ella Arensman*[1]

[1]National Suicide Research Foundation, School of Public Health

Individual Abstract: Suicide and non-fatal suicidal behavior (suicide attempts/self-harm) are major global public health challenges, with an estimated annual number of 703,000 deaths worldwide and up to twenty times as many episodes of attempts and self-harm episodes (WHO, 2022). Currently, suicide is the second leading cause of death among young people aged 15-29 years at global level (WHO, 2022). Although, overall, suicide rates in low- and middle-income countries (LMIC) are lower than the rates in high income countries (HIC) of 11.2 per 100,000 compared with 12.7 per 100,000 population, the majority of suicide deaths worldwide occur in LMICs (WHO, 2022). However, it must be noted that there are ongoing challenges in relation to the accuracy of suicide figures obtained from many countries (WHO, 2022).

The ongoing global priority of suicide prevention is highlighted by the United Nations Sustainable Development Goals (SDGs) for 2030, which include a target of reducing by one third premature mortality from non-communicable diseases, with suicide mortality rate identified as an indicator for this target by 2030 (UN, 2015). SDG target 3.4 calls for a reduction in premature mortality from non-communicable diseases through prevention and treatment and

promotion of mental health and wellbeing (WHO, 2015). The suicide rate is an indicator (3.4.2) within target 3.4.

In 2022, WHO published the Live Life suicide prevention implementation guide. The aim of LIVE LIFE is for all countries to advance political will, national strategic action, and delivery of key effective interventions for preventing suicide. LIVE LIFE serves as a starting point upon which countries can build further evidence-based suicide prevention interventions.

Approximately 45 countries at all income levels have adopted a national suicide prevention strategy, with some countries already developing or implementing further revision(s) of their national strategy. However, among LMICs, only a few have adopted a national suicide prevention strategy, even though 79 % of suicides occur in these settings (WHO, 2018).

Currently, the number of countries with a completed evaluation of the effectiveness of a national suicide prevention strategy or action plan is limited. Evaluations of national suicide prevention strategies are available for Finland, Scotland, Northern Ireland, and Australia, with a recent interim strategy review completed for the Republic of Ireland and a 15-year review also conducted in Japan following the conception of a national policy for suicide prevention. National strategies representing complex interventions should consider multiple interacting activities, changes over time, the quality of the implementation, and synergistic effects. Evaluations also need to account for the measurement of multiple outcomes, which are not confined to rates of suicidal behaviour and are inclusive of broader outcomes such as attitudes and knowledge of suicide, for example. In addition to the measurement of primary and intermediate outcomes, evaluation of any national strategy will require including an assessment of process indicators.

Many countries face the challenge of delays in relation to published suicide figures by their national bureaus of statistics, with additional problems associated with late registration of suicide deaths after the official suicide figures have been published. The need for real-time suicide data is greater during public health emergencies, such as the COVID-19 pandemic, considering increasing requests from policy makers and other stakeholders in suicide prevention. The absence of real-time suicide data represents a barrier to providing a timely response to emerging suicide trends in certain demographic groups, to suicide contagion and clustering, and to the emergence of new highly lethal suicide methods. In order to facilitate the role of policymakers and key stakeholders in suicide prevention, more efforts need to be made to develop real-time suicide surveillance systems.

34.4 SUICIDE PREVENTION EFFORTS IN THE UK

Nav Kapur*[1]

[1]University of Manchester

Individual Abstract: Suicide rates vary markedly by country but so do suicide prevention strategies.
In the UK, as elsewhere, suicide rates have varied over time. In general, rates have fallen over the past two decades - the period of time that comprehensive suicide prevention strategies have been in place. Societal events such as recessions and pandemics have impacted in different ways on suicide rates but also on suicide prevention efforts. This presentation will aim to identify the health and non-health service measures that have had the most impact in the UK as well as speculate on how we effect major reductions in suicide in the future.

35. IMPLEMENTATION OF PREVENTION AND INTERVENTION STRATEGIES TO ADDRESS YOUTH SUICIDE

Chair: Jeffrey Bridge, The Research Institute at Nationwide Children's Hospital

Co-Chair: Jennifer Hughes, Nationwide Children's Hospital

Overall Abstract Details: Screening for suicidal ideation in medical settings may help providers uncover and address suicide risk that would otherwise be missed (Boudreaux et al., 2016). However, it is crucial to identify the rates at which suicide risk endorsement occurs because implementing effective risk assessment and care linkage may require significant institutional resources (King et al., 2017). Investigations of comprehensive suicide prevention approaches (e.g., Zero Suicide) are relatively uncommon, but could offer important insights to maximize and maintain their efficacy (Stanley et al., 2021).

This symposium includes five presentations highlighting implementation efforts for youth suicide prevention, with a focus on screening, risk assessment and formulation, management of acute suicide risk, and facilitating care transitions. Our symposium will include: 1) Dr. Meredith Chapman presenting on the development and implementation of a suicide risk and management pathway within a major United States children's hospital system, 2) Dr. Kimberly Roaten describing the implementation and sustainability strategies of a suicide risk screening initiative in a major United States adult hospital system that serves youth, 3) Dr. Joan Asarnow presenting results from a randomized controlled trial conducted within a large U.S, health system on implementation of a stepped care for suicide prevention intervention for youths that featured core clinical elements of the Zero Suicide framework, 4) Dr. Molly Adrian describing the adaptation of two brief suicide prevention interventions (Safety Planning Intervention, SPI, and Collaborative Assessment and Management of Suicide, CAMS) for use with youth, and 5) Dr. John Ackerman reporting on the development and implementation of an automated caring contexts texting approach for youth presenting with suicide risk.

Presentations will describe the development and implementation of youth suicide screening, assessment, and clinical management strategies. Data are included on the programs' feasibility and acceptability, as well as screen positive rates, implementation outcomes, and system outcomes. The presentation will conclude with a discussion of implementation challenges and how to determine crisis level of care recommendations within systems. Our discussant, Dr. Christine Moutier, will synthesize findings, discuss future clinical and research directions in this work, and facilitate audience participation in Q and A with the panelists.

35.1 CHARACTERIZATION AND RESULTS OF A SUICIDE PREVENTION PATHWAY IN YOUTH

Meredith Chapman*[1], Jennifer Hughes[1], Katherine Sarkisian[1]

[1]Nationwide Children's Hospital

Individual Abstract: Objectives: Suicide is the second leading cause of death in those aged 10 to 19 years; it is a critical public health problem. Suicide risk screening for detection of high-risk youth can be implemented in clinical settings. Characterizing positive screen rates and progression to risk assessment is a crucial first step toward building strong suicide prevention pathways within an organization.

Methods: Nationwide Children's Hospital (NCH) has developed a suicide risk toolkit and pathway which includes elements of screening, risk stratification, safety planning, and caring contacts. The Suicide Risk Screening Clinical Pathway was developed by the American Academy of Child and Adolescent Psychiatry (AACAP) Pathways for Clinical Care (PaCC) workgroup to assist hospitals, EDs, and inpatient medical/surgical units with implementing suicide risk screening for pediatric patients (Brahmbhatt et al., 2019). NCH adapted this pathway employing the Ask Suicide-Screening Questions (ASQ; Howowitz et al., 2012) and Columbia Suicide Severity Rating Scale (C-SSRS; Posner et al., 2008) for screening and risk stratification. The ASQ is a four-item questionnaire validated in pediatric patients in medical settings (Horowitz et al., 2012). If a child answers "no" to all ASQ questions 1-4, screening is complete, and no further intervention is needed. Question 5 (Q5 "Are you having thoughts of killing yourself right now?") is asked with any positive endorsement of questions 1-4 and prompts environmental safety measures. Any positive ASQ response leads to further assessment using C-SSRS, a semi-structured interview that tracks suicidal ideation and behavior severity over time. For repeat screens, NCH recently added a question ("Since last visit have you tried to kill yourself?") to better categorize real-time risk and inform decisions regarding interventions and disposition in the presence of historical suicidal behavior. The Safety Planning Intervention (SPI; Stanley and Brown, 2012, 2018) approach is utilized for management of suicide risk.

Results: Since July 2019, over 250,000 unique youth ages 8 and up have been screened as part of the pathway. Eighty percent of total screens occurred in a Behavioral Health (BH) Department. On average 22% of BH screens were positive (3% Q5 positive.) More than 50,000 screens were completed in non-behavioral health departments with 10% of screens on average positive (1% Q5 positive.) History of suicide attempt alone accounted for the positive result in 15% of BH and 6% of non-BH screens completed. Starting January 2022 previously screened youth in any area who only endorsed positive history of suicidal behavior were asked the additional question "Since last visit have you tried to kill yourself?" From 01/2022-12/2022, 3672 youth were assessed with this question; approximately 2% (n=87) endorsed a positive response and required further assessment utilizing the C-SSRS. The remaining 98% of youth exited the pathway if supported by evaluation of targeted risk and protective factors. To date in Primary Care this pathway adaptation has resulted in a nearly 25% increase in appropriate action taken following a suicide screen.

Conclusions: As adolescent suicide rates increase health care providers and institutions are uniquely positioned to uncover and address risk. Clinical pathways can require significant resources to implement and sustain. Characterization and monitoring of screening results can increase the likelihood of desired outcomes and improve the patient and provider experience.

35.2 ADDRESSING BARRIERS AND IMPROVING SUSTAINABILITY IN YOUTH SUICIDE SCREENING THROUGH ANALYSIS OF UNIVERSAL SCREENING PROGRAM DATA

Kimberly Roaten*[1], Jacqueline Naeem[2], Alex Treacher[2], Ashley Steele[2], Arun Nethi[2]

[1]University of Texas Southwestern Medical Center, [2]PCCI

Individual Abstract: Healthcare settings are important locations for intervening with youth at risk for suicide, and accurate identification is the essential first step in deploying evidence-based practices to prevent death. Although targeting known high-risk populations such as youth seeking treatment for psychiatric symptoms is an important and intuitive strategy for identifying risk, focusing only on these groups may lead to overlooked intervention opportunities. Additionally, medical illness is a commonly overlooked risk factor for suicide and previous research has demonstrated that many individuals who die by suicide have had contact with a healthcare system in the months prior to death.
The Joint Commission (TJC) 2023 National Patient Safety Goal 15.01.01 requires that participating hospitals reduce suicide risk, but only applies to patients in psychiatric hospitals, patients being evaluated or treated for behavioral health conditions as their primary reason for care, or patients who express suicidal ideation during care. This requirement does not address identification of risk among patients seeking healthcare for non-psychiatric reasons, leading to a potential gap in identification of risk and prevention of suicidal behavior. Many healthcare systems have difficulty meeting the minimum TJC criteria due to challenges with workflow in busy clinical settings and concerns about lack of behavioral health resources to respond to at-risk youth. More research is needed to address barriers to implementation and support sustainability.

In 2015 Parkland Health and Hospital System (Parkland Health) implemented a universal suicide screening program with a clinical pathway for youth. The 4-item Ask Suicide-Screening Questions (ASQ) tool is used for screening patients ages 10 to 17. Standardized screenings are completed during each provider encounter in the emergency department, inpatient units, and outpatient primary care clinics. Screening responses are recorded in the electronic health record and were extracted for analysis. To understand patterns related to suicide risk identification in different types of healthcare encounters, variables were created to sort chief complaints into 5 mutually exclusive categories: suicidal behavior/self-injury (SB), substance/alcohol use (SA), psychiatric (P), non-psychiatric (NP), and other (O).

The analyses included data from 134,299 encounters with suicide risk screening from May 2015 to May 2021. Most of the encounters were with females (61%), older youth (46% 16 or 17 years old), Hispanic youth (71%), and youth who identified English as their primary language (63%). 90.0% of SB encounters, 27.8% of P encounters, 13.8% of SA encounters, 2.3% of NP encounters, and 3.8% of O encounters were positive for suicide risk. The findings confirm that suicide risk is most often identified during encounters for psychiatric symptoms, including substance/alcohol use and suicidal behavior, but also reveals that suicide risk is present in encounters for non-psychiatric reasons (NP and O).

These data provide valuable information regarding the prevalence of risk during healthcare encounters for non-psychiatric care. First, these data confirm that the risk is present and can be detected. Second, these data reveal that if universal screening is implemented it is unlikely that a large increase in risk detection will occur, as higher risk was detected in encounter cohorts that already require screening (SB, P, and SA). Fortunately, concerns about challenges with workflow and sustainability related to universal screening can be ameliorated by using data to estimate risk identification combined with implementation of clinical pathways to standardize care and optimize efficiency.

35.3 ZERO SUICIDE IMPLEMENTATION: IDENTIFY, ENGAGE & TREAT

Joan Asarnow*[1], Greg Clarke[2], Team Step2Health[3]

[1]David Geffen School of Medicine at UCLA, [2]Kaiser Permanente Northwest Center for Health Research, [3]UCLA, Kaiser Permanente Northwest Center for Health Research

Individual Abstract: The Zero Suicide (ZS) framework, highlighted in the US National Strategy for Suicide Prevention, aspires to reduce and ultimately eliminate suicide deaths among patients receiving health/behavioral health system care. This presentation reports on our randomized trial evaluating a stepped care for suicide prevention intervention for youths within a health system conducting ZS quality improvement (ZSQI), describing results on three ZS core clinical elements: identify individuals with elevated suicide risk; engage high-risk individuals in suicide prevention care; treat with evidence based treatments.

Patients ages 12-24 years were enrolled in the trial between April 2017 and January 2021. Potential participants were identified using a two-phase case identification approach which began with screening using an electronic health record (EHR) case-finding algorithm, followed by outreach and direct screening of patients flagged for potentially elevated suicide/suicide attempt risk. Elevated suicide/suicide attempt risk was defined in the trial based on the presence of suicide attempts, active suicidal ideation with method or intent; or depression plus repeat non-suicidal self-injurious behavior (NSSI). Youths were randomized to: health system ZSQI; or a stepped care for suicide prevention (SCSP) intervention within the context of ZSQI. The SCSP intervention triaged youths to suicide-specific treatment services based on level of assessed risk with lower risk youths offered care managers who provided brief therapeutic contacts plus access to internet/ehealth cognitive-behavior therapy (CBT) for depression and dialectical behavior therapy (DBT) skills videos. Higher risk youths were also offered DBT skills groups, with individual DBT-informed psychotherapy added for the highest risk youths.

The EHR screening algorithm identified 6610 youth, with outreach yielding 414 youths who completed the second phase screening, and 301 youth meeting eligibility criteria and participating in the trial. Participating youth showed strong indicators of elevated suicide/suicide attempt risk: 97% past-year suicidal ideation, 83% past suicide attempts or behavior; 90% past non-suicidal self-injury (NSSI).

Most youths (95%) randomized to the SC-SP intervention participated in at least one intervention session. Participants tended to fall in the higher risk levels based on the recency and severity of suicide attempts, suicidal ideation, and NSSI: 83% fell in the high to moderate risk levels. Engagement was strongest for services involving clinician contact: 84% had ≥ 1 care manager contact. Internet/ehealth intervention use was lower: 32% accessed eCBT, most with care manager support; 9% accessed DBT skills videos. Among youths offered group or individual psychotherapy, 88% participated in DBT skills groups and 76% individual psychotherapy session.

Results support the value of EHR case-finding algorithms for identifying youths with potentially elevated risk who could benefit from suicide-prevention services. The modest success of outreach efforts and tendency for youth engaging with the program to show more severe risk levels, underscores the need for further consideration of outreach strategies and expected yield. The higher use of services involving clinician contact support the benefits of including a “human touch” when services emphasize ehealth/internet interventions. Importantly, results indicate strong engagement in services when youths with elevated risk are offered suicide prevention services with clinician contact.

35.4 ADAPTATIONS OF BRIEF INTERVENTIONS (SPI AND CAMS) TO MANAGE SUICIDAL RISK IN YOUTH

Molly Adrian*[1], Jeffrey Bridge[2], Jennifer Hughes[3], Elizabeth McCauley[4], Gregory Brown[5], Kelly Green[6], David Jobes[7]

[1]University of Washington, [2]The Research Institute at Nationwide Children's Hospital, [3]Nationwide Children's Hospital, [4]University of Washington School of Medicine, [5]Perelman School of Medicine University of Pennsylvania, [6]University of Pennsylvania Perelman School of Medicine, [7]The Catholic University of America

Individual Abstract: Objectives: There is a pressing need to have scientific evaluation of common elements that characterize quality improvement for suicide-specific healthcare including brief interventions which provide: 1) direct prioritization of suicidal thoughts and behaviors in therapy, 2) continuous risk assessment and patient monitoring on suicide risk indicators, and 3) safety and crisis prevention planning. Two brief interventions, with high scalability potential, have been piloted with adolescents and are well-established with adults—the Safety Planning Intervention with follow-up (SPI+) and the Collaborative Assessment and Management of Suicide (CAMS).

Methods: The overall objective of this three- arm randomized controlled trial (RCT) is to evaluate the clinical effectiveness of SPI+ and CAMS compared to usual care among adolescents aged 11-17 years admitted to acute care for STBs. SPI+ and CAMS encourage suicide-specific management elements and linkage to care. Because the treatments were developed in adult populations, developmental adaptations made with a team of clinical child psychologists and treatment developers were made for this trial.

Results: Primary adaptations included (1) parent components to align with treatment model targets, (2) flexible delivery mode for follow up visits, and (3) 4-8 sessions to complete randomized care sequence. SPI+ strategies focus on patient's narrative of a recent suicidal crisis and identifying coping strategies and resources that are most likely to reduce suicide risk. The brief structured intervention is conducted in six key steps as outlined in the introduction. Youth in this condition will be offered weekly follow-up, with a minimum of four sessions and a maximum of eight sessions. The initial SPI+ session is 90 minutes and subsequent follow-ups are scheduled for 30 minutes on a weekly basis. The goal is to create a safety plan that patients will use to reduce risk when suicidal crises emerge. Parents are also included during the safety planning session with a focus on sharing the safety plan and preparing parents, with input from the adolescent, for how they may support the adolescent in implementing the safety plan and are included in lethal means counseling. Following the creation of the safety plan, follow-up sessions are conducted in person or by telehealth. These sessions focus on brief risk assessment and mood check, review and revision of the safety plan, and facilitation of treatment engagement. Follow-up sessions end when the person indicates that they would no longer prefer to have sessions or they are connected to ongoing care. CAMS is based around a model of STBs which identifies and targets the drivers of suicide as the primary focus of assessment and intervention. CAMS initial sessions are 90 minutes and subsequent individual sessions will be provided weekly for 50 minutes. The treatment has an assessment framework driven by the Suicide Status Form that helps the clinician collaboratively identify, engage, conceptualize, and treat the drivers of STBs within a problem-solving framework in an outpatient setting. The CAMS Stabilization Support Plan is used to engage parents in a supportive role. A treatment responder is defined as three consecutive sessions of low STBs, management of any low STBs

if present, and low self-reported risk for future suicide, indicating a minimum of four sessions to meet resolution and may be offered up to eight sessions.

Conclusions: Adaptations to meet treatment needs of youth were required in both models to promote adherence to clinical recommendations, continuity of care, and reduce suicide risk over a 1-year period.

35.5 LESSONS LEARNED FROM IMPLEMENTING AUTOMATED CARING CONTACTS IN PEDIATRIC ACUTE CARE SETTINGS

John Ackerman*[1], Elena Camacho[1], Fatimah Masood[1], Glenn Thomas[1]

[1]Nationwide Children's Hospital

Individual Abstract: Abstract:

Objectives: Caring Contacts (CC), a low-cost intervention that can be provided in the weeks and months following a patient hospitalization for a suicidal crisis, has demonstrated efficacy in the prevention of suicide deaths and remains a promising suicide prevention intervention. Recent meta-analysis results showed a protective effect associated with suicide attempt 1-year after randomization, but protective effects were not observed for either emergency department (ED) visits or suicide deaths (Skopp et al., 2023). More recently, this approach has been adapted for youth with suicide risk as part of quality improvement efforts (Ryan et al., 2022).

Methods: Nationwide Children's Hospital (NCH) Behavior Health developed an automated Caring Contacts approach as part of a Zero Suicide framework quality improvement process, to address gaps in post-discharge linkage and standardized care transition processes. The automated Caring Contacts process includes a sequence of non-demand validating text messages paired with hopeful images and crisis resources. Messages were created with the goal of generating validating, supportive statements and images to promote hope and a sense of connection to others during a period that is frequently marked by suicide re-attempt and readmission. Focus group feedback was obtained from youth with lived experience and clinicians. Survey data was administered to obtain feedback about acceptability. This intervention was designed for all patients >13 with access to a cell phone, who had endorsed suicidal ideation or behavior before or during their care episode. The process of automating this intervention and implementing it across multiple acute services is described with attention to lessons learned that guided expansion to other children's hospitals and pediatric healthcare partners.

Results: From March 2019 to January 2023, 7,819 youth were approached in acute behavioral health services to receive automated Caring Contacts; 4,125 were enrolled, and 3,918 completed the sequence totaling approximately 60,000 text messages. Caring contacts text messages were viewed as acceptable by teens as evidenced by ongoing evaluation of compliance and quality improvement data. Among youth who completed a post-text survey (n=383) 69% indicated that caring contacts made them feel moderately or very supported and 66% indicated that caring contacts made them feel moderately or very hopeful. Further, 88% of youth endorsed wanting to continue receiving texts if it were offered and 92% indicated that other youth would benefit from this intervention. Staff compliance data indicated a need for a process of standardized enrollment and enhanced education. Methods were developed to utilize the electronic medical record to aid in this standardization. A manual and training curriculum

were developed to enhance implementation, and this resulted in refined processes and increased dissemination of this approach to NCH primary care sites and nine external healthcare settings including several large children's hospitals.

Conclusions: Automated Caring Contacts text messages for youth at risk for suicide is a low effort, cost-effective intervention with evidence of effectiveness among adults. It is an approach that has demonstrated potential to support care transitions and is acceptable to the vast majority of youth enrolled. Additional studies are needed to examine whether this approach has a protective effect on suicide attempt or hospital re-admission.

Discussant: Christine Moutier, American Foundation for Suicide Prevention

ORAL PAPER SESSIONS

Monday, October 16, 2023
1:15 p.m. - 2:45 p.m.

ORAL SESSION: IMPROVING TREATMENT FOR THE SUICIDAL PATIENT
Chair: Alexis May, Weslyan University

1. Understanding Barriers and Facilitators to Mental Health Treatment Engagement Among Primary Care Patients at Risk for Suicide

Courtney Wolk*[1], Molly Candon[2], Matteo Pieri[3], Gabriela Khazanov[4], David Oslin[5], Eleanor Anderson[3], Matthew Press[6], Shari Jager-Hyman[3]

[1]University of Pennsylvania, [2]Perelman School of Medicine, University of Pennsylvania; Leonard Davis Institute of Health Economics, University of Pennsylvania; Department of Health Care Management, The Wharton School, University of Pennsylvania, [3]\, Perelman School of Medicine, University of Pennsylvania, [4]Corporal Michael J. Crescenz Department of Veterans Affairs Medical Center, [5]VA VISN 4 MIRECC, [6]Primary Care Service Line, University of Pennsylvania Health System

Background: Primary care is an ideal setting to intervene to reduce suicide risk. People across the lifespan visit primary care more than any other medical specialty, and the majority of individuals who die by suicide interact with a primary care clinician in the year prior to death. Increasingly, primary care is being called on to identify individuals at risk for suicide by systematically screening using instruments such as the Patient Health Questionnaire-9 (PHQ-9) and to connect these patients to mental health providers. However, only half of referred patients attend an initial mental health visit. Factors that influence patients' willingness to engage in mental health services, nor the strategies that best support engagement through the Collaborative Care Model (CoCM), have not been rigorously studied.
Methods: (1) We used electronic health records to identify characteristics of patients at risk for suicide who did or did not attend a CoCM visit following referral. The sample comprises adults reporting ≥1 on the PHQ-9 suicide item referred for collaborative care from Penn Medicine primary care practices between 2018 and 2022 (N = 772). We first compared follow-up rates for patients with and without an elevated PHQ-9 suicide item. Next, we stratified follow-up rates by patient characteristics (e.g., race/ethnicity, financial security, clinical characteristics) associated with CoCM engagement and calculated 95% confidence intervals for comparison. (2) We conducted semi-structured qualitative interviews with 70 stakeholders including primary care and behavioral health clinicians, leaders, and patients to understand barriers and facilitators to engagement in mental health services following a referral from primary care. Quantitative and qualitative data, along with a review of the literature and expert consensus, were used to develop a menu of engagement strategies to be pilot tested in the summer of 2023.
Results: Overall, follow-up rates after a referral to CoCM were lower for patients who reported suicidal ideation (62.0%) than for patients who did not (67.3%). Among patients at risk for suicide, follow-up rates were similar across sexes and ages. While Asian American and Hispanic identifying patients were less likely to attend a CoCM visit than Black and White

identifying patients, the differences were not statistically significant. Follow-up rates were significantly (p
Discussion: Early findings suggest that individuals at risk for suicide are willing to engage in CoCM but have a harder time engaging in community-based mental health care. Additionally, we found that Asian American and Hispanic identifying patients and unemployed patients were less likely to follow-up after referral to CoCM. While preliminary, these analyses are informing the development of implementation strategies to increase treatment initiation for individuals at risk for suicide, which will be iteratively tested and have the potential to reduce mortality for this at-risk population. We anticipate that the strategies we will pilot will include brief interventions (e.g., motivational interviewing), strategies that leverage technology and automation, and streamlining the triage, assessment and referral processes.

2. Intentionality and Characteristics of Emergency Department Patients with a History of Suicide Attempt via Medication Overdose

Madeline Benz*[1], Sarah Arias[2], Ana Rabasco[1], Ivan Miller[3], Edwin Boudreaux[4], Carlos Camargo[5], Brandon Gaudiano[3]

[1]Alpert Medical School, Brown University, [2]Brown University, Butler Hospital, [3]Butler Hospital and Brown University, [4]University of Massachusetts Medical School, [5]Massachusetts General Hospital

Background: Because many suicide attempts (SA) are impulsive and unplanned, the method chosen is often based on accessibility and convenience. Medications and drugs are widely available through prescriptions, over-the-counter purchases, and illegal means, and access to prescribed psychotropic medications is associated with the decision to attempt suicide via overdose. Given the prevalence of medication overdose in the context of SA and death by suicide, it is essential to better understand the characteristics and factors associated with this method, as well as the ways medication availability may influence its use in this context.
Methods: Participants were 1,376 adults recruited from 8 different Emergency Departments across the United States who presented with recent suicidality assessed via multiple measures, including the Columbia Suicide Severity Rating Scale. Participants were asked to report on their most recent and most serious SA.
Results: Among patients who reported on their most serious suicide attempt (n = 987), 59.4% (n = 586) indicated using medication overdose as a method. When examining clinical and demographic differences between those who attempted via medication overdose vs another method for their most serious SA, patients who used medications were significantly more likely to be female, have a diagnosis of depression or bipolar disorder, and have a prescription for a psychotropic medication, as well as less likely to have an ADHD diagnosis or identify as American Indian/Alaskan Native. Regarding intentionality, 53 patients (5.4%) indicated that during their most serious SA, they may not actually have been trying to end their life per se. Of these patients expressing ambiguous intent, 57% (n = 30) had used medication as a method, and of those 30 patients, 27% (n = 8) reported being unconscious from an overdose. Those 30 patients who used medication as a method without clear intention of dying were more likely to be female ($\chi 2(2) = 6.82$, $p = .033$) and to identify having a primary care provider ($\chi 2(2) = 6.56$, $p = .038$) compared to those with intention of dying.
Discussion: The use of medication overdose as a method of SA is driven by both internal and external factors. The finding that those who used medications in their most serious SA were more likely to be prescribed psychiatric medication points to the need to further mitigate risk

in those with enhanced access to potential methods. It is imperative for public health initiatives to focus on means reduction strategies to prevent the use of prescribed medications as a readily available method for suicide.

3. Now What?: Examining Safety Plan Utilization Among Adolescents Discharged From Inpatient Care

Alexis May*[1], Nadia Al-Dajani[2], Elizabeth Ballard[3], Ewa Czyz[4]

[1]Wesleyan University, [2]Miami University, [3]National Institute of Mental Health, [4]University of Michigan

Background: Safety planning type interventions (SPTI's) are brief suicide-specific interventions that are increasingly deployed in healthcare settings. However, little is known about actual safety plan use after the intervention is provided and particularly during high-risk periods. Further, whether safety plan use is influenced by baseline characteristics is unknown. This study examined: 1) how many youth recently hospitalized for suicide risk kept and used their safety plan; 2) whether changes in suicide ideation and changes in safety plan use are related during the post-discharge period; and 3) whether key baseline youth characteristics (i.e. sex, multiple suicide attempt history, self-efficacy) predict safety plan use or the relationship between suicide ideation and safety plan use in the first month following hospitalization.
Methods: Seventy-eight adolescents hospitalized for suicide risk who participated in a pilot trial of safety planning responded to one survey/day for 4 weeks post-discharge, reporting on suicide ideation and safety plan use, and subsequently completed a 1-month follow-up assessment. We analyzed two types of models: (1) safety plan use across the 4-week period examined in terms of overall mean safety plan use (mean-level models) and; (2) stability of safety plan use defined as overall slope over this period (slope models).
Results: Over 90% of adolescents reported having access to their safety plan during the 4 weeks post-discharge. Overall, safety plan use and SI declined over time. On average, safety plan use dropped approximately 10 percentage points in the first week following discharge, then leveled out in weeks 2 and 3 before decreasing again in the fourth week. In contrast, while suicide ideation similarly decreased in the first week following discharge, it then stayed consistent across weeks 2-4. No baseline characteristics predicted safety plan use in the 4 weeks after discharge, or changes in safety plan use over time. However, the relationship between changes in safety plan use and changes in SI was moderated. For girls, SI and safety plan use rose and fell together; for boys, safety plan use declined regardless of changes in SI.
Discussion: High risk adolescents retain and use their physical safety plans at notable rates. However, the drops in safety plan use over the 4 weeks suggest there may be room for improvement in increasing the "stickiness" of the safety plan. Moderation results underscore the importance of looking at sex effects on SPTI utilization. Limitation of the work include the predominantly White and non-Hispanic sample and the inability of the data to describe a directional relationship between suicide ideation and safety plan use. The study is strengthened by its focus on a high-risk group during a particularly sensitive time and the repeated measures design, which reduces the impact of recall bias. These initial findings suggest important future directions in understanding the use of STPIs more generally and in youth specifically. More work is needed to pinpoint the mechanism by which STPIs confer benefit – for example is the intervention session itself most impactful, or is the quality of safety plans important, or is the frequency of safety plan use key? Replication and future work focused squarely on questions of safety plan use are warranted.

4. Relationship between Antibiotic Exposure and Subsequent Suicidality in a Primary Care Setting

Laura Prichett*[1], Robert Yolken[1], Emily Severance[1], Destini Carmichael[1], Yong Zeng[1], Andrea Young[1], Tina Kumra[1]

[1]Johns Hopkins University School of Medicine

Background: Antibiotics are among the most prescribed medicines in childhood, and while they can be important in fighting infectious diseases, they are also known to substantially alter gut microbiota and microbiome. In this study, we seek to understand potential connections between antibiotic use and neurological disorders, specifically as these disorders may manifest as suicidal thoughts and behaviors in a pediatric primary care setting.
Methods: We conducted a retrospective cohort study using electronic clinical record data for N=14,002 patients ages 8-20 years seen in the outpatient setting of a large urban primary health care practice from 1/1/13 to 12/31/2021. We employed adjusted Cox regression analyses to study the relationship between prescriptions for anti-infective agents and subsequent suicide-related diagnosis, controlling for age, sex, race, insurance, and Elixhauser score.
Results: Prescription of antibiotic medication was associated with a hazard rate ratio (HRR) of 1.48 (95%-CI = 1.19–1.83). Prescription of two or more antibiotic medications was associated with an HRR of 1.40 (95%-CI 1.08–1.82). Prescription of systemic anti-fungal medication was associated with a hazard rate ratio (HRR) of 1.65 (95%-CI = 1.01–2.71). There was no significant relationship between prescription of topical antibiotics, narrow-spectrum antibiotics or antiviral medication and subsequent suicide-related diagnosis. Stratified analysis revealed that the association between anti-infective prescription and subsequent suicide-related diagnosis was similar in males and females.
Discussion: Infections treated with broad-spectrum antibiotics were associated with increased risks of a suicide-related diagnosis among adolescents and young adults in this pediatric primary care setting. These findings support previous work indicating a potential connection between antibiotic use and neuropsychiatric disorders, specifically disorders manifesting as suicidal thoughts and behaviors which may be related to dysregulation of the microbiome and alterations in the gut-brain axis. Exploration of the relationship between antibiotic exposure and subsequent suicidality is warranted along with continued vigilance in antibiotic prescribing practices in children. The relationship between suicide-related diagnosis and treatment with systemic anti-fungal medication also warrants exploration into specific mechanisms by which fungal infections treated with systemic antifungal medications may impact the gut-brain axis

5. Investigating the Psychometric Properties of the Geriatric Suicide Ideation Scale (GSIS) among Middle-Aged and Older Men

Marnin Heisel*[1], Gordon Flett[2], MCMG Project Team[3]

[1]The University of Western Ontario, [2]York University, [3]Multiple Institutions

Background: Middle-aged and older men have high rates of suicide, necessitating focused risk detection. We developed the Geriatric Suicide Ideation Scale (GSIS; Heisel and Flett, 2006) given the need for an age-specific, multidimensional suicide risk assessment tool. This scale has shown strong psychometric properties in clinical, community, and residential samples; yet, research has lagged regarding its utility with middle-aged and older men. The purpose of the present study was to assess the psychometric properties of the GSIS administered to a sample

of middle-aged and older men who participated in a 12-session Meaning-Centered Group (MCMG) for those facing the transition to retirement (Heisel et al., 2020).
Methods: We recruited a sample of English-speaking, cognitively-intact, community-residing men, 55 years and older, into a study involving the development, refinement, testing, and initial dissemination of MCMG. Eligible participants (n=82; M=63.3 years of age, SD=4.6) met with research personnel in an academic health sciences center, and completed the GSIS and measures of psychological risk and resiliency factors at a pre-group assessment point. Psychometric analyses investigated participant response characteristics, internal consistency, and construct validity.
Results: Participants scored relatively low on measures of depression and suicide ideation; however, 10-15% endorsed mild to moderate levels of depression or reported a history of suicide behaviour. Findings demonstrated acceptable internal consistency for GSIS totals (α =.88) and subscale scores (α =.62-.81). Positive associations between the GSIS and negative psychological factors (e.g., depression, hopelessness, and history of suicidal behaviour) and negative associations with positive factors (life satisfaction, psychological well-being, and meaning in life) attested to its construct validity.
Discussion: Findings support use of the GSIS in research and practice with middle-aged and older men, and will be discussed in the context of upstream approaches to suicide prevention.

6. Virtual Reality in Suicide Prevention: Can Virtual Patients Be Believable Enough to Improve Clinicians' Communication skills?

Igor Galynker*[1], Benjamin Lok[2], Megan Rogers[3], Alexandre Gomes de Siqueira[2], Olivia Lawrence[1], Sarah Bloch-Elkouby[1], Heng Yao[2]
[1]Icahn School of Medicine at Mount Sinai, [2]University of Florida, [3]Texas State University,

Background: Working with suicidal patients may represent an important source of stress for clinicians and can elicit negative emotional responses, potentially affecting clinical outcomes. Virtual human interactions (VHI) are increasingly gaining a role in providing experiential learning and deliberate practice for training healthcare professionals and have the potential for Emotional Self Awareness (ESA) training, characterized by developing awareness and management of one's own emotions. In this context, we conducted a study using VHI for training clinicians in ESA when working with acutely suicidal patients.
Methods: We compared two groups of clinician participants interviewing randomly assigned suicidal Virtual Humans (VH) for the presenting with Suicide Crisis Syndrome. The intervention group (n = 31) involved VH interaction followed by ESA feedback, while the control group (n = 33) performed VH suicide risk assessment without feedback. We assessed clinicians' outcomes: 1) ESA assessed with Therapist Response Questionnaire-Suicide Form (TRQ-SF) and 2) verbal empathic communication assessed with Empathic Communication Coding System (ECCS).
Results: The three-way interaction of group, time, and baseline ECCS scores showed that post-training participants in the intervention group demonstrated improved ability for verbal empathic communication compared to the control group ($p = 0.058$). Post-hoc analyses showed that this improvement was driven entirely by clinicians with baseline low ECCS scores ($p = 0.006$) and by challenge-type empathetic opportunities during VH interactions ($p = .042$). Clinicians' emotions towards suicidal virtual humans were unchanged after the training.
Discussion: This work demonstrates the feasibility of using VHI to identify clinicians who present with highest opportunity to improve their communication skills and provide them with

VHI feedback for training beginner clinicians in ESA and verbal empathic communication with suicidal individuals. Further refinement in VH and VHI training methodology are needed to create effective training modules for a broad array of clinicians.

ORAL SESSION: IMPACT OF SUBSTANCE USE

Chair: Martin Myhre, National Center for Suicide Research and Prevention, Institute of Clinical Medicine, University of Oslo

7. Increasing Suicide Mortality Rates in Patients with Cannabis Use Disorder – A National Register Study

Martin Myhre*[1], Fredrik Walby[2], Jørgen G. Bramness[3], Lars Mehlum[4]

[1]National Center for Suicide Research and Prevention, Institute of Clinical Medicine, University of Oslo, [2]National Centre for Suicide Research and Prevention - University of Oslo, [3]Departement for Alcohol, Tobacco, and Drugs, Norwegian Institute of Public Health, [4]National Centre of Suicide Research and Prevention, Institute of Clinical Medicine, University of Oslo

Background: In recent years, cannabis potency has increased, which studies have found to be associated with higher incidence of cannabis-induced psychosis and increased treatment seeking. In this period with increasing cannabis potency, no studies have, to our best knowledge, examined the annual development of the suicide rates in patients with Cannabis use disorders. Our aim was thus to describe the annual development of suicide mortality rates in patients registered with cannabis use disorder in Norway.
Methods: From a register linkage between all individuals who died by suicide from the Norwegian Cause of Death Registry (X60-X84; Y10-Y35; Y870; Y872) and who had had contact with secondary services for mental health or substance use disorders the last year before their suicide between 1.1.2010 and 31.12.2021, we identified individuals registered with an incident cannabis use disorder (F12). We aggregated these individuals by year, gender, and age, and linked them with anonymized aggregated data from the Norwegian Patient Registry containing annual counts of the number of patients treated in secondary services for mental health or substance use registered with a cannabis use disorder. We estimated annual crude mortality rates and estimated annual incidence rate ratios for the crude suicide rates compared to 2010. To test the overall trend for the suicide mortality rates during this period, we regressed the suicide rate over the year of the suicide using Poisson regression and adjusted for gender and age.
Results: Between 2010 and 2021 348 patients diagnosed with cannabis use disorder in contact with specialized services for mental health or substance use disorders died by suicide. They were followed for 84 291 person-years yielding an overall suicide rate of 412.9 per 100 000 person-years. In the model regressing the suicide rate over year, we found a significant trend of increasing annual suicide rates in patients with cannabis use disorders (IRR = 1.08 (95 % CI 1.05-1.12), p = < 0.001). The trend was also significant after adjusting for gender and age (IRR = 1.08 (1.04-1.11), p = < 0.001). Increased annual suicide rates were observed between 2018 and 2021 compared to 2010, with significantly increased incidence rate ratios ($p < 0.05$). IRRs were 2.14 (1.14-3.99) in 2018, 2.18 (1.17-4.06) in 2019, 2.49 (1.34-4.65) in 2020 and 2.48 (1.34-4.63) in 2021.

Discussion: We found increased annual suicide rates between 2018 to 2021 compared to 2010 and an overall increasing trend from 2010 to 2021. These findings suggest that the risk of suicide in patients with cannabis use disorder could have increased during these twelve years. While we had individual-level information for people who died by suicide, we only had aggregated data for the population. Thus, the association observed here could be prone to the ecological fallacy. The association observed here should be further examined using stronger observational designs and in other countries. If increased cannabis potency is associated with these increasing trends, similar findings are likely to be observed in other countries as well as in Norway.

8. An Updated Empirical Review of Cohort Studies of the Association between Substance Use and Suicide

Alison Athey*[1], Jaimie Shaff[2], Geoffrey Kahn[3], Kathryn Blair[4], Taylor Ryan[5], Holly Sawyer[2], Aubrey DeVinney[2], Paul Nestadt[4], Holly Wilcox[2]

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Background: The suicide rate in the United States has increased 35% in the past 20 years. Alcohol and drug misuse is often conceptualized as a potentially modifiable risk factor for suicide. This study updates and augments the classic empirical review by Harris and Barraclough (1997) and Wilcox and colleagues (2004) of retrospective and prospective cohort investigations that have provided estimates of the suicide risk associated with specific alcohol and drug use disorders.
Methods: We based our search strategy on PRISMA guidelines, as well as Wilcox and colleagues' approach to maintain consistency as we updated estimates of the association between substance use and suicide. We conducted a systematic search in the PubMed, EMBASE, CINAHL, PsycINFO, and Cochrane databases to identify retro- and prospective cohort studies that evaluated suicide mortality in people who used substances. Study review was conducted in Covidence. We extracted observed and expected suicide deaths in each cohort study. Pooled effect estimates were calculated using the quality effects model proposed by Doi and colleagues. We used the Newcastle-Ottawa Scale for assessing the quality of nonrandomized studies in meta-analyses.
Results: Our search resulted in 9,807 unique hits. Of these, we included 28 cohort studies in our meta-analysis. Complete analyses are underway. Preliminary analyses suggest that substance use disorders are associated with greater risk for suicide (SMR 5.67, 95% CI = 2.66-12.06). Suicide risk remained higher in treatment-seeking people with substance use disorders compared to the general population. Any use of opioids is associated with greater risk for suicide (pooled SMR 5.66, 95% CI = 3.71-8.66). While use of tobacco and alcohol is not associated with increased risk for suicide (pooled SMR 1.38, 95% CI = 0.72-2.65), excessive use of alcohol (pooled SMR = 5.62, 95% CI = 1.31-24.08) and tobacco (pooled SMR = 1.88, 95% CI 1.78-1.99) are associated with greater risk for suicide.
Discussion: These findings replicate previous research that demonstrated substance use was associated with greater risk for suicide in cohort studies. While any substance misuse may increase risk for suicide mortality, alcohol and opioid misuse appear to be particularly potent suicide risk factors. More research is needed to address the association between marijuana use and suicide, in light of recent changes in laws regulating marijuana. Additionally, research is

needed to evaluate the role of treatment in mitigating suicide risk in people with alcohol and substance use disorders.

9. Feasibility, Acceptability, and Preliminary Effectiveness of an Integrated Alcohol and Suicide Intervention for Suicidal Teens (iASIST)

Kimberly O'Brien*[1], Christina Sellers[2], Anthony Spirito[3], Shirley Yen[3], Jordan Braciszewski[4]
[1]Unlimited Resilience, LLC, [2]Simmons University, [3]Alpert Medical School, Brown University, [4]Henry Ford Health System

Background: Adolescents who are psychiatrically hospitalized due to suicidal thoughts or behaviors (STB) are at high risk for suicide in the weeks post-discharge, making this an important time to intervene. Research has consistently identified a bidirectional relationship between alcohol use and STB. Yet these two issues are often treated separately, highlighting the need for interventions that address both alcohol use and suicide in an integrated fashion. Mobile health (mHealth) tools that supplement inpatient psychiatric care have the potential to maintain and enhance intervention effects following hospitalization, but few such tools exist, and none exist that focus on both concerns of alcohol use and STB. This study tests the feasibility, acceptability, and preliminary effectiveness of a brief integrated Alcohol and Suicide Intervention for Suicidal Teens (iASIST) with a post-discharge mHealth booster for adolescents in inpatient psychiatric treatment.
Methods: We conducted an RCT of iASIST relative to an attention-matched comparison condition focused on sleep, diet, and exercise. Participants (N=40) were adolescents recruited from an inpatient psychiatric unit of a general pediatric hospital in northeastern United States (62% female; Mage = 15.82, SD = 1.06) psychiatrically hospitalized following STB. iASIST involves three components: 1) an individual intervention with the adolescent that explores alcohol use as a risk factor for continued STB and creates a complementary change plan, 2) a subsequent family intervention in which the interventionist facilitates a discussion between the adolescent and parent about the change plan to strengthen the adolescent's self-efficacy and commitment to the change plan, and the parent's ability to support their child in their plan to reduce or stop drinking, and 3) a post-discharge mHealth booster to adolescents focused on strengthening their commitment to the change plan, and to parents focused on their commitment, confidence, and ability to support their adolescent in reducing or stopping drinking. We examined feasibility of iASIST delivery, acceptability of iASIST content, fidelity to delivering this model of care, and change and group differences on alcohol and other substance use outcomes, and STB outcomes, after a 3-month post-intervention follow-up period.
Results: iASIST acceptability was favorably reviewed by participants. More than 90% reported that the in-person intervention components were somewhat or very useful, while satisfaction with in-person content averaged 3.30 or greater (out of 4) for youth and 3.42 or greater for parents. Fidelity to the iASIST model was very favorable, with nearly all components delivered 100% of the time; least consistent were conversations about summarizing goals (77%) and addressing participant concerns (64%). Mixed models indicated that, for days of alcohol use, binge drinking, vaping cannabis, and vaping nicotine, both groups had significant decreases in substance use over the 3-month follow-up period, but post-intervention group differences were not found. In terms of cannabis use, however, iASIST participants significantly improved over time, though were similar to the control group at follow-up. Finally, intervention group participants showed a significant decrease in suicide plans from baseline (88%) to follow-up (38%).

Discussion: Study findings suggest a larger RCT is warranted to test the effectiveness of the iASIST intervention. iASIST shows promise in its ability to target the public health problems of alcohol use and STB in an integrated fashion with a high-risk adolescent population receiving acute psychiatric care.

10. An Ecological Analysis of Youth Suicide in the United States

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Background: Youth suicide is a major cause of premature death in the US; it is the second leading cause of death for youth aged 10-24. From 2007 to 2018, the rate of suicide increased nearly 60% for this age group. From 2018 to 2021, there was an additional 2.8% increase in relative rates among youth aged 10-24. While individual-level risk factors are widely studied, there is a paucity of evidence on broader social and environmental contextual influences contributing to youth's risk for suicide. This study examined youth suicide rates at the county-level and how county context factors were related to these rates.
Methods: We analyzed suicide deaths among individuals ages 10-24 in Colorado included in the National Vital Statistics Surveillance dataset, aggregating data from 2015 to 2019 and developing rates using 2017 Census population estimates. We then used multiple data sources to construct time-varying county-level contextual variables to measure the association of contextual factors with youth suicide rates during this time. We conducted negative binomial regression to create models and produced incidence rate rations to measure these associations.
Results: There were pronounced geographic differences in youth suicide rates by U.S. county, with highest rates in the Mountain, Pacific, and West North Central regions. U.S. counties that are mining dependent had, on average, 17% higher suicide rates over a 5-year-period compared to non-mining dependent counties. Counties that had a mental health provider shortage have, on average, 4.2% higher youth suicides rates over a 5-year-period compared to counties without a mental health provider shortage. For every 1% increase in the Veteran population in a county, there was a 3.5% increase in youth suicides, on average over a 5-year period. College education and employment in a county were associated with decreases in youth suicide rates over a 5-year period. These findings are compelling because many are indicative of adults in the population (employment status and employment in mining, college education, Veteran status) and these have been found to be associated with risk for adult suicide rates as well. This may signal that youth are also impacted by these community context variables in the same way that adults are.
Discussion: We found that certain population demographics and other measures of context (economic, social, health care access, and firearm access) are associated with the county-level youth suicide rates. Understanding geographic and community-level differences in youth suicide rates and the environmental and social context in which these occur can lead to population health strategies focused on community-wide supports for youth at risk for suicide.

11. Psychotropic and Opioid Prescription Patterns in a Population-Ascertained Sample of Suicide Deaths

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Background: The etiology of suicide death is complex with a combination of predisposing, mediating, and proximal factors playing a role. Some co-occurring mental and physical health conditions are recognized to serve as either mediating or proximal factors for suicide including major depressive disorder, bipolar disorder, substance use disorder, and chronic pain. Among individuals with a mental and/or physical health condition known to be associated with suicide, the receipt of at least one or more psychotropic or opioid drug prescription is common. The specific prescriptions, timing of prescriptions, and total number of prescriptions (polypharmacy) experienced by suicide decedents prior to death and their interaction with underlying mental and physical health conditions, however, are not well understood but may provide insight into suicide risk trajectories or opportunities for intervention. In this study, we access data captured in comprehensive electronic health records to investigate patterns of psychotropic and opioid prescriptions prior to death among a population-ascertained sample of suicide deaths in Utah, USA compared to a matched set of population-based controls.
Methods: A total of 11,090 Utah suicide deaths were identified from 1996-2020 by the Utah Suicide Genetic Risk Study through collaboration with the Utah Office of the Medical Examiner and linked to the Utah Population Database (UPDB). Each suicide death was matched to five population-based controls based on birth year and sex using at-risk sampling. Drug prescriptions for suicide deaths and controls were acquired from multiple sources linked to the UPDB, and psychotropic and opioid prescriptions were identified including anticonvulsant, antiemetic, antinarcoleptic, antipsychotic, antidepressant, stimulant, benzodiazepine, sedative, and anti-anxiety drugs. Measures examined included total number of psychotropic and opioid prescriptions from 1996 until death. Wilcoxon rank sum tests were used to compare the average number of psychotropic and opioid prescriptions between suicide deaths and controls. The frequency of specific prescriptions was estimated among suicide deaths and controls.
Results: Psychotropic and opioid prescription data were available for 6414 suicide deaths and 25,088 controls. Fifty-eight percent of suicide deaths (versus 45% of controls) were prescribed at least one psychotropic or opioid drug. On average, suicide decedents were prescribed a total of 5.1 (standard deviation (SD) = 6.0) unique psychotropic medications prior to death compared to 1.9 (SD = 3.0) psychotropic medications prescribed among controls (p
Discussion: Suicide decedents were prescribed a higher number of psychotropic and opioid prescriptions prior to death compared with controls. The receipt of a relatively large number of prescriptions suggests consistent interaction with the health care system for some decedents prior to death, which may indicate an opportunity for clinical intervention including suicide assessment. Next steps include consideration of prescription patterns in the context of mental and physical health diagnoses to elucidate risk versus protective patterns of psychotropic and opioid prescriptions.

12. Suicide in Lewy Body Dementia (LBD): Characterizing Attempts in over 50,000 US Veterans Aged 50 and Older with LBD

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Background: Lewy body dementia (LBD) is the second most common neurodegenerative disease. LBD is accompanied by a high neuropsychiatric burden, which makes it distinct from other neurodegenerative disorders. Many of these symptoms such as depression, sleep disturbance, impulsiveness/executive dysfunction, and psychosis are independently associated with suicide. Little, however, is known about suicide risk in patients living with LBD. To our knowledge, this is the first study to comprehensively characterize prevalence and incidence of suicide attempt and death, and associated demographic and psychiatry comorbidity factors, in a large national sample.
Methods: The current study utilized a cohort of all US veterans aged 50 and older who regularly used Veterans Affairs (VA) healthcare services between 2012 and 2020 (n = 5,059,526), including information about medical and psychiatric diagnoses, utilization, and demographic characteristics. All individuals who were diagnosed with LBD during the study period (either within two years of sampling baseline cohort or at any point in the follow up period) defined the LBD sample. Suicide attempt and death by suicide, as well as lethality and attempt factors, were determined by the National Mortality Data Repository and the VA's Suicide Behavior and Overdose Report/Suicide Prevention Applications Network (SBOR/SPAN). Psychiatric comorbidity and history of suicidal ideation were defined by presence of a diagnosis in the medical record (VA or Center for Medicaid and Medicare Services [CMS]) any time during the study period.
Demographic characteristics, suicide attempt and means factors, and psychiatric comorbidity were assessed for the LBD sample and compared those with LBD who did and did not attempt suicide using chi-squared and T tests.

Results: There were 57,438 individuals with clinically diagnosed LBD identified (prevalence of 1.14%). Among those with LBD, 178 attempted suicide (fatal and non-fatal) during the study period (0.31% of the LBD sample with any attempt). Of those 178 attempts, 39 were fatal (21.9% of attempts and 0.07% of the LBD sample). Those who attempted suicide were significantly younger (p
Psychiatric comorbidity was strikingly high among individuals with LBD during the study period, especially for those who experienced a suicide attempt (84.9% with no attempt had at least one comorbidity vs. 97.2% with an attempt). Specifically, there were significantly higher prevalence of any mood disorder (e.g., major depression, bipolar disorder), any anxiety disorder (e.g., generalized anxiety disorder, post-traumatic stress disorder), any substance abuse disorder, psychotic spectrum disorders, and sleep disturbances.

Nearly 35% of individuals with LBD who attempted suicide had prior suicidal ideation. Among those who died by suicide, lethal means included 56.4% firearms, 20.5% hanging, 10.3% drug overdose, 5.1% poisoning, 5.1% jumping, and 2.6% other.

Discussion: This is the first study to comprehensively characterize the occurrence of suicide attempts (fatal and non-fatal) in a national sample of older adults with LBD. Individuals with any suicide attempt had significantly higher neuropsychiatric comorbidity and were younger in age compared to those without attempt. This study begins to answer an urgent call for incidence and prevalence data regarding suicide in LBD, given the high neuropsychiatric burden of this illness and associated care needs. Our findings indicate a call for more data examining suicide risk in this vulnerable population.

ORAL SESSION: PHARMACOLOGICAL AND SOMATIC TREATMENTS

Chair: Fabrice Jollant, Pairs-Saclay University and Academic Hospital Bicêtre; Academic Hospital Nîmes; McGill University

13. Ketamine for the Treatment of Suicidal Ideas

Fabrice Jollant*[1]

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Background: Around 2% of the population experienced suicidal ideas over the past 12 months. Currently, there is limited scientific evidence regarding suicidal crisis management. Over the last years, ketamine appeared as a promising avenue. Here, I will present findings from 1) a large randomized double blind controlled trial (RCT) named KETIS, and 2) a review of literature.
Methods: KETIS was a multicentric RCT conducted in France. Participants were male and female adult inpatients with current suicidal ideas. Patients were stratified into 3 groups according to the main diagnosis: bipolar, depressive, and other disorders. All patients received two intravenous (IV) 40-minute infusions at a 24-hour interval of either ketamine (0.5mg/kg) or placebo (saline), in addition to their usual treatment. The main outcome was the rate of suicidal remission (SSI score < 3) at Day 3. Patients were followed over 6 weeks. Analyses were conducted on an intent-to-treat basis.
We then conducted a systematic review of literature.

Results: 156 participants were included. More patients reached full remission of suicidal ideas at Day 3 in the ketamine (63.0%) than placebo (31.6%) arm (OR=3.7 95%CI (1.9-7.3), p
Our review identified 12 RCTs with reduction/remission of suicidal ideas as the primary objective and 14 trials as secondary objective. The review supports the use of ketamine IV (but not esketamine intranasal) for the treatment of suicide ideas during the first 72 hours. Remaining issues to address will be discussed.

Discussion: Ketamine appears to be an interesting drug for the treatment of suicidal ideas within a global care strategy (psychological support, mental disorder treatment, education, family support, etc.) More studies are, however, necessary to identify a preventative effect on suicidal acts.
Reference:

Abbar M. et al. Ketamine for the acute treatment of severe suicidal ideation: double blind, randomised placebo controlled trial. British Medical Journal, 2022.

Jollant F et al. Ketamine and esketamine in suicidal thoughts and behaviors: a systematic review. Ther Adv Psychopharmacol 2023.

14. The Influence of Dexamethasone Administration on Testosterone Levels in Combat Veterans with or without a History of Suicide Attempt

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Background: Combat exposure has been linked to increased risk of suicidal ideation, suicide attempts, and death by suicide. The uniqueness of the combat experience as a contributor to suicidal behavior warrants specific studies of both psychological and biological factors that may be associated with suicidality in combat veterans. Combat exposure is associated with multiple psychological and environmental factors affecting testosterone function. Suicidality has been linked with altered testosterone levels. In this study, we examined morning baseline free and total testosterone levels and the effect of dexamethasone administration on testosterone levels in male combat veterans with or without a history of suicide attempt.
Methods: Demographic and clinical parameters of the study participants were assessed and recorded. Study participants were interviewed using Mini-International Neuropsychiatric Interview (MINI) to determine diagnoses, the Montgomery-Åsberg Depression Rating Scale (MADRS) to assess severity of depression, the Brown-Goodwin Aggression Scale (BGAS) to examine aggression, and the Scale for Suicidal Ideation (SSI) to examine suicidal ideation. Blood samples were collected between 8:00 and 8:30 am on the day prior to and following dexamethasone (0.5mg) ingestion. Free and total testosterone levels were measured using ELISA kits.
Results: Suicide attempters had higher SSI scores in comparison to non-attempters. Baseline free and total testosterone levels were lower in suicide attempters compared to non-attempters. In the whole sample, both baseline free and total testosterone levels negatively correlated with SSI scores. Free testosterone levels decreased after dexamethasone administration among non-attempters but not among attempters. Free testosterone post-dexamethasone levels positively correlated with BGAS scores among non-attempters but not among suicide attempters.
Discussion: Our findings indicate that there are substantial differences in the testosterone regulation between combat veterans with or without a history of suicide attempt. Studies of the relation between the testosterone function and suicidal behavior among combat veterans may lead to improvement in detection of suicidality and finding new pharmacological targets for prevention of suicide among veterans. Future studies will determine whether therapeutic targeting of testosterone dysregulation attenuates severity of suicidal ideation and, thereby, reduces suicide risk.

15. Advances in Neurostimulation Approaches for the Treatment of Suicidal Ideation in Treatment-Resistant Depression

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Background: Suicidal ideation (SI) is more prevalent in individuals with treatment-resistant depression (TRD) compared to those with depression who respond to treatment. Treatments for SI in TRD are limited, necessitating novel interventions for this disease state. Bilateral repetitive transcranial magnetic stimulation (rTMS), and magnetic seizure therapy (MST) are novel neurostimulation treatments that show promise for the treatment of SI in patients with TRD. Recent advances in rTMS delivery, in the form of accelerated intermittent theta burst stimulation (aiTBS), condenses 6-weeks of standard rTMS into 1-week. In fact, a unilateral form of aiTBS, the Stanford Accelerated Intelligent Neuromodulation Therapy (SAINT) System, was recently approved by the FDA for the treatment of TRD. Given the efficacy of bilateral rTMS for SI, and recent advances in accelerated treatment paradigms, investigation of bilateral accelerated TBS (aTBS) for the treatment of SI in TRD is warranted. We review the

evidence for two previously published trials on rTMS and MST for SI, as well as early pilot data from the bilateral accelerated TBS trial (https://clinicaltrials.gov/ct2/show/NCT05377177).

Methods: We first report on two published studies. One study is a secondary analysis of two pooled randomized controlled trials assessing bilateral versus unilateral versus sham rTMS for the treatment of TRD. In our analysis rTMS was compared to sham, with the primary outcome being the suicide item of the 17-item Hamilton Rating Scale for Depression (N=156). The second study is an open-label nonrandomized controlled trial comparing various frequencies of MST on TRD (N=67). In this study, remission from SI was defined as an endpoint score of 0 on the Beck Scale for Suicidal Ideation. We completed descriptive statistics and a linear mixed model regression to assess for overall efficacy of all treatment frequencies combined, as well as each individual frequency (25, 50 or 60, and 100 Hz). In the current active study, we are conducting a double-blind randomized controlled clinical trial to the test the hypothesis of superiority of bilateral aTBS to unilateral aiTBS on SI in TRD. Seventy-six participants will be recruited over 5 years through the UC San Diego Interventional Psychiatry Program.

Results: In the rTMS study we found a significant difference in remission from SI between bilateral and sham rTMS (OR=3.03, 95% CI, 1.19-7.71; P=0.02), but not between unilateral and sham rTMS (OR=1.59, 95% CI, 0.61-4.12; P=0.33). Bilateral rTMS led to a remission of SI in 40.4% of participants versus 26.8% in the unilateral group. There was only a modest correlation between change in SI and change in overall depression (Pearson r=0.38; P

Discussion: rTMS and MST are novel neurostimulation approaches that show promise for the treatment of SI in patients with TRD. Further refinement of protocol design and enhanced understanding of the neurophysiological mechanisms of treatment response will improve the efficacy and our understanding of these interventions. Ultimately, large multi-site trials that involve inpatients at high risk of suicide will be necessary in order to prove efficacy of these interventions for SI, and suicide prevention as a whole.

16. Psychotropic Medication Use among Adolescents Participating in Three Randomized Trials of DBT-A

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Background: This presentation will describe baseline use of psychotropic drugs as reportedby adolescents participating in three randomized trials of dialectical behavioral therapy for adolescents (DBT-A) conducted in the US, Norway and Spain. Although RCTs have replicated theefficacy of DBT-A, alongside CBT and MBT, in reducing suicidal ideation, suicidal attempts and

psychiatric symptom load in adolescents with suicidal and self-harming behavior, no empiricallysupported pharmacological treatment options are available for this vulnerable population.

Nonetheless, children, adolescents and young adults in many settings across the world frequentlyreceive a range of psychotropic medication to address depressive, anxiety and borderline

symptoms as well as suicidal and self-harming behaviors.

In this study, the leads of the three published DBT-A trials jointly examined baseline psychotropic medication use across these fairly comparable samples of adolescents as they entered into the respective trial.

Methods: We identified drugs used for psychiatric treatment (yes/no) and classified each drug into the following major categories based on an online pharmaceutical encyclopedia (www.drugs.com): antidepressants (including SSRI, SNRI, tricyclics and others), anxiolytics, anti-psychotics, mood stabilizers, CNS stimulants, alpha-adrenergic blockers, antihistamines and other (including anticholinergic, melatonin, or a beta blocker). In all trials, psychiatric screening was performed by trained clinician-researchers using the Schedule for Affective Disorders and Schizophrenia for School-Aged Children (KSADS). All trial participants reported recent and repetitive self-harm behavior, and samples were otherwise fairly comparable in terms of age (≈ 15 years), gender (≈ 90% female), ethnicity (predominantly Caucasian), socio-economic status and recruitment procedures (table 1). All participants and parents provided written informed consent before inclusion. The original studies are registered in ClinicalTrials.gov/; NCT00675129 (Oslo); NCT01528020 (US); NCT02406625 (Barcelona). Descriptive analyses were performed.
Results: While 67% of the US sample and 86% of the Barcelona sample received a psychotropic medication, only 12% of the Oslo sample did, with antidepressant topping the list. Among those adolescents who had major depression (MD), the rates of psychotropic medication closely followed the usage pattern in each sample. While 16% of MD participants in the Oslo sample used a psychotropic medication, the rates were 86% in the Barcelona sample and 65% in the US sample. In order of frequencies, other drugs used by the US sample were antipsychotic (22%), mood stabilizer (16%) and anticonvulsant (12%); by the Barcelona sample were antipsychotic (72%), anxiolytic or CNS stimulant (17% each);
whereas less than 3% of the Oslo sample used any of these.

Discussion: The present analysis highlights continued lenience towards pharmacotherapy as a remaining challenge in DBT-A implementation. We will provide a thorough interpretation of the findings and discuss clinical and research implications.

17. Lithium Use for the Prevention of Suicide in U.S. Veterans: A Target Trial Emulation

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Background: In the past years, a number of randomized controlled trials have been published showing that there is no effect of lithium in the prevention of suicidal events ("suicidality", a composite outcome of suicide, suicide attempts, hospitalizations to prevent suicide, etc). Two main explanations were raised: (1) low adherence to lithium can explain the null results and (2) that suicidality is a poor proxy for actual suicide.
Methods: Here, we will take each of those two explanations to evaluate whether they could explain the null findings in recent randomized trials. For (1), we re-analyzed a recent randomized trial conducted in the Veterans Health Administration (the CSP-590 trial). We used a state-of-the-art causal inference approach to estimate the per-protocol effect, that is, the effect

of receiving the treatment strategies as specified in the protocol. We censored individuals who deviated from their assigned treatment strategy and used inverse probability weighting to adjust for pre- and post-randomization prognostic factors that also predict adherence to the assigned strategies to estimate the effect under perfect adherence. For (2), we also used a modern causal inference approach: the target trial emulation. We emulated a target trial very similar to the CSP-590 trial using data from the Electronic Health Records of the Veterans Health Administration, with the goal of using the result of the CSP-590 randomized trial as a benchmark for the result of our observational analysis. If the results: of our observational analysis were similar to those from the CSP-590 trial, we could then extend the analysis to use suicide death instead of suicidality as our outcome (leveraging the much larger sample size), with increased confidence.

Results: For our per-protocol analysis, the estimated 12-month risk of suicidality was 18.8% for lithium, and 24.3% for placebo. The risk ratio was 0.78 (95% CI: 0.43, 1.37) and the risk difference -5.5 percentage points (95% CI: -17.5, 5.5). Results: were consistent across sensitivity analyses.

For our target trial emulation, we had data on 9,609,060 veterans. After applying all eligibility criteria from the CSP-590 trial, we had 28,821 eligible veterans. Of those, 1,502 initiated lithium. We will present the results: from our 1-year analysis using suicidality as our outcome (for benchmarking purposes) and then the extension to 5-years of follow-up and using suicide deaths as our outcome.

Discussion: For our per-protocol analysis, lithium effects (compared with placebo) ranging between a 17.5% reduction and a 5.5% increase in the risk of suicidality were highly compatible with the data. Thus, a protective effect of lithium on suicidality among patients with bipolar disorder or major depressive disorder cannot be ruled out. Trials should incorporate adequate per-protocol analyses into the decision-making processes for stopping trials for futility.

For our target trial emulation, we will discuss strengths and weaknesses of using observational data to learn about lithium effects on suicide.

18. ORAL WITHDRAWN

ORAL SESSION: CONTRIBUTORS TO SUICIDE RISK

Chair: Christine Cha, Teachers College, Columbia University

19. Perceived Discrimination and COVID-19 Worries on Suicidal Urges in College Students

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Background: Suicide rates are increasing more in underrepresented racial and ethnic groups in the U.S. than for the White majority. Since 2014, the suicide rates for Black and Asian or Pacific Islander individuals increased 30% and 16%, respectively, whereas there was a decrease in rates for White individuals (Ramchand, Gordon, and Pearson, 2021). Discrimination is associated with poor mental health outcomes in marginalized individuals and may be driving increased suicide rates for these populations (Pascoe and Richman, 2009;

Williams, Lawrence, Davis, and Vu, 2019). Persistent and pervasive stressors, such as discrimination, can increase allostatic load and stress levels and the risk for psychopathology (Tiegel, 2017; Zuckerman, 1999).

The pandemic highlighted adverse outcomes for people of color such as the increased racist acts against Asians (Cheng, Kim, Reynolds, Tsong, and Wong, 2021) and increased negative COVID-19 related outcomes (i.e. hospital admissions and deaths) for Black and Asian/Pacific Islander individuals (Sze et al., 2020). We know perceived discrimination can lead to thoughts of suicide (Hollingsworth et al., 2017; Walker, Salami, Carter, and Flowers, 2014), but no data yet indicates how the additional stressors of the pandemic might account for increased rates of SI in racial and ethnic minorities. The current study will address this gap in knowledge by determining if COVID-related worries interact with experiences of discrimination to increase risk for thoughts of suicide for people of color. We hypothesized that students with increased experiences of perceived discrimination and worries about COVID will have stronger urges to die by suicide. We also expected worries about COVID to moderate the association between perceived discrimination and suicidal urges with the expectation that having worries/anxiety about the pandemic will strengthen the relationship between experiences of discrimination and suicidal urges.

Methods: We used data from an 8-week ecological momentary assessment (EMA) study examining daily news exposure and mental health outcomes for college students during the COVID-19 pandemic. Participants with less than 3 days of EMA data were excluded from analyses. Suicidal urges (0=no urge to kill yourself to 10=strong urge to kill yourself) and COVID worries (0=not at all to 5=very much) were captured 6x/day and perceived discrimination (0=no discrimination to 1 = yes) was assessed once/day. Repeated variables of interest were aggregated to create daily average scores for each participant.

Results: The sample of 395 undergraduates identified as Asian (52.2%), White (31.4%), multiethnoracial students or "other" (10.1%), Black (5.6%), and Native American/American Indian (0.7%). COVID worries and discrimination did not significantly differ among ethnoracial groups. Discrimination (β=.04, p=.009) and COVID worries (β=1.19, p

Discussion: As expected, perceived discrimination and COVID worries increased an undergraduate's urge to die by suicide. Thus, assessment about discriminatory experiences and health concerns during suicide prevention efforts may be warranted. Somewhat surprisingly, results: indicate no significant differences in perceived discrimination and COVID worries by ethnoracial background. These unexpected findings may be limited to our sample. Analyses to clarify the results: and interpretations are ongoing.

20. The Role of Emotion Processing in Trajectories of Suicidal Ideation among Adolescents following Discharge from Psychiatric Hospitalization

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Background: Rates of suicidal ideation (SI) are concerningly high – and increasing – among adolescents (CDC, 2019). The months following psychiatric inpatient hospitalization are particularly risky for re-attempts (Prinstein et al., 2008); as such, it is vital that we can determine at discharge who is at greatest risk of experiencing persistent SI. A handful of studies have identified distinct trajectories of SI following hospitalization among adolescents. One risk factor that emerges as distinguishing between trajectories is emotion dysregulation. More

severe (vs. less) SI trajectories are associated with greater non-acceptance of emotions, use of suppression, and higher cortisol reactivity to a lab-based social stressor. A specific focus on adolescent samples post-hospitalization, and examination of emotion processing in a more comprehensive manner in both methodology (e.g., via behavioral measures in addition to self-report) and emotional processes (i.e., emotion recognition, emotional reactivity, and emotion regulation) are needed. The current study therefore examined trajectories of SI following inpatient hospitalization, and emotion processing variables as predictors of these trajectories.
Methods: Participants were 180 adolescents (Mage = 14.89, SD = 1.35; 71.7% female; 78.9% White) recruited from a pediatric psychiatric inpatient unit, assessed during hospitalization and 3, 6, 12, and 18-months post-discharge. At each time point, participants reported on SI; at baseline, they completed measures of emotion dysregulation, emotion reactivity, and a behavioral task measuring facial emotion recognition. In this task, participants viewed standardized photos of children and adults displaying happy, sad, angry, or fearful expressions, and indicated which emotion was expressed. We conducted latent growth curve modelling to subgroups of individuals based upon their trajectory of SI across the 18-month period. We then used ANOVAs to examine subgroup differences in emotion processing variables.
Results: A three-group model best fit the data (BIC = 6974.61, Entropy = 0.71). 10.42% of the sample fell into a Chronic SI group, which demonstrated consistently elevated rates of SI over the 18-month period. 23.44% of the sample fell into a Declining SI group, which initially demonstrated high rates of SI that declined over time. 66.15% of the sample fell into a Subthreshold SI group, which demonstrated relatively low rates of SI over time. ANOVA analyses with post-hoc comparisons revealed that the Chronic SI group had greater difficulty identifying children's sad facial expressions than the Declining SI group ($p = .008$). The Declining SI group reported greater overall emotion dysregulation ($p = .017$) and difficulties engaging in goal-directed behavior when distressed ($p = .032$) than the Subthreshold SI group.
Discussion: The current findings suggest that difficulties recognizing sad faces may be particularly relevant for predicting which adolescents with severe SI at discharge will improve over time versus demonstrate persistently severe SI. This has important implications for discharge and treatment planning to ultimately prevent future suicide attempts among youth.

21. An Examination of Episodic Future Thinking and Episodic Memory among Suicidal and Nonsuicidal Adolescents from the Community

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Background: Suicidal individuals experience ambivalent states where they simultaneously consider death and the continuation of their lives. But we have little understanding of how suicidal individuals, particularly youth, mentally construct their future lives. We also have little sense of how related cognitive processes such as episodic memory present in suicidal adolescents.
Methods: To address this knowledge gap, we administered a performance-based measure of episodic future thinking and episodic memory to community-based adolescents (N = 177, 15-19 years). We used the Experimental Recombination Paradigm (Addis et al., 2009), a procedure in which participants elaborate on imagined personal future experiences based on recombined details from actual past experiences. This procedure ensures that participants construct novel events when imagining future experiences, rather than 'recasting' past memories into the future.

Our study is the first to use this stringent measure of episodic future thinking among suicidal youth. We also examined demographic and clinical covariates (depression, anxiety) at baseline, and examined the concurrent and predictive validity of details generated within an imagined future event in relation to suicidal ideation (SI).

Results: Previously suicidal (vs. nonsuicidal) adolescents demonstrated significantly greater difficulty generating action-oriented details when imagining positive future events ($d = .43$, $p = .01$), whereas there was no group difference in generating action-oriented details when imagining negative future events ($d = .03$, $p = .87$). Adolescents' difficulty with positive future thinking predicted their subsequent engagement in SI, such that production of fewer future event-related details when imagining positive future events predicted greater likelihood of engaging in 6-month SI (OR = 0.95, 95% CI [0.91, 0.99], $p = .02$). Most effects pertaining to positive future thinking were no longer significant after controlling for depression ($ps>.05$). A more robust risk factor was adolescents' difficulty generating action-oriented details when imagining any future event--regardless of emotional valence--which continued to predict 6-month SI after controlling for baseline history of SI, narrative style, anxiety symptoms, and depression symptom status (OR = 0.88, 95% CI [0.79, 0.99], $p = .03$). Adolescents' ability to generate details for past and future events were typically correlated with one another, but no indices of episodic memory predicted subsequent SI presence (ORs = 0.84-1.01; 95% CIs [0.69, 1.22], ps = .09-.85).

Discussion: This investigation marks the first-ever attempt to examine both episodic future thinking and memory among suicidal adolescents. Administration of this novel cognitive assessment to suicidal and nonsuicidal adolescents yielded three main findings. First, adolescents' poor generation of action-oriented details within an imagined positive future event corresponded with history and future likelihood of SI. Second, adolescents' poor ability to imagine action-oriented details tied to any future event—regardless of valence—uniquely predicted greater likelihood of subsequent SI. Third, adolescents' ability to recall their past events—while related to their ability to imagine future events—did not correspond with their history and future likelihood of SI. Findings from this study offer an initial glimpse into how suicidal adolescents imagine their future and may inform the design of interventions intended to promote a stronger desire for life than death.

22. An Analysis of Iatrogenic Effects in the Evaluation of Suicidal Thought Using Ecological Momentary Assessment in China

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Background: In recent years, there has been a significant increase in research using ecological momentary assessment (EMA) to explore suicidal thoughts and behaviors (STBs). Meanwhile, concerns have been raised regarding the potential impacts of frequent and intense STBs assessments on the study participants. This study aims to examine whether intensive repeated assessments of suicidal thoughts increase short-term suicidal risk in Chinese context.

Methods: From November 2021 to November 2022, a total of 49 patients (age: M = 19.5 years, SD=4.1, range = 12-31 years, 73.5% female), who were with mood disorders and current suicidal ideation were recruited from three psychiatric clinics in China. Smartphone-based EMA was used to measure suicidal thoughts three to six times per day at randomly selected times for four weeks. We examined the change of suicidal thoughts in 28 days and within one day to evaluate potential adverse effects using Bayesian multilevel models.
Results: The 2691 effective surveys nested in 49 participants (mean following-up days: 23.98 days; average 2.29 times per person per day). The resultsof both two- and three-level Bayesian cumulative ratio models indicated that suicidal thoughts decreased with an increasing number of surveys in 28 days ($\beta = -0.03$, 95% highest density interval (HDI) [−0.05, −0.01]) and within one day ($\beta = -0.26$, 95%HDI [−0.50, −0.04]). And this association varied among different individuals in the two-level model (median σ=0.05, 95%HDI [0.03, 0.08]).
Discussion: There is no sufficient evidence to suggest that intensive repeated assessments of suicidal thoughts increase the risk of suicide in the short term, but future studies need to carefully consider the heterogeneity of the effects across individuals.

23. Affective Markers for Suicidality After Psychiatric Inpatient Discharge: Examining Dynamics of Affect, Emotion Dysregulation, Distress Tolerance, and Rumination

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Background: Emotion processes are well-established risk factors for suicidal thoughts and behaviors (STBs). Momentary shifts in mean-levels of emotion constructs have predicted subsequent STBs. Recent research suggests emotion construct dynamics that represent person-specific patterns of emotional experiences may also be salient correlates of STBs. Two primary emotion construct dynamics are inertia, representing how stable an affective process is over time, and variability, representing how much an affective process fluctuates over time. To date, most longitudinal research has focused on how emotional states (e.g., positive and negative affect) relate to STBs. Relatively few studies have examined momentary shifts and dynamics of other emotion processes that are associated with STBs, including emotion dysregulation, rumination, and distress tolerance. It is unclear if certain affective markers are more effective at predicting STBs. The present study addressed this gap in the literature by examining how momentary shifts, inertia, and variability of multiple emotion processes relate to suicidal ideation (SI) in a high-risk clinical sample.
Methods: Data came from 89 adult psychiatric inpatients who completed a mobile ecological momentary assessment protocol for up to 65 days after hospital discharge (Mage = 34.7 ± 14.6 years, 64.3% female, 65.2% heterosexual, 82.0% white). Dynamic structural equation modeling (DSEM) was used to model temporal associations between SI intensity and positive and negative affect, emotion dysregulation, distress tolerance, and rumination. DSEM is a state-of-the-art analysis technique that integrates multi-level, time-series, and multivariate modeling. Momentary associations between the emotion constructs and SI were modeled with cross-lagged and contemporaneous regressions. Inertia of the emotion constructs was represented by autoregressive effects, while variability was represented by within-person variance over time.
Results: At the within-person level, momentary increases in negative affect (B = .280 ± .017), emotion dysregulation (B = .237 ± .019), and rumination (B = .232 ± .019), and decreases in

positive affect (B = -.199 ± .021) and distress tolerance (B = .194 ± .021), significantly predicted higher SI intensity. At the between-person level, higher inertia for negative affect (B = .306 ± .136) and higher variability for positive affect (B = -.339 ± .138), emotion dysregulation (B = .446 ± .109), and distress tolerance (B = .370 ± .122) were significantly associated with higher SI intensity.
Discussion: This intensive longitudinal study demonstrates that both momentary intensity and dynamics of different emotion processes relate to suicidality. Results indicate short-term shifts in multiple emotion constructs can be proximal warning signs for suicidality. Further, individuals who experience more persistent negative affect (i.e., inertia), and larger fluctuations in positive affect and self-efficacy to regulate intense emotions (i.e., variability), may be at greater overall risk for STBs. Using intensive longitudinal methods: to monitor person-specific affective profiles may provide valuable information about which individuals are at greatest risk for suicide and when timely interventions are most needed.

24. Sleep and Suicide in Treatment for Marines: A Digital Phenotyping Study

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Background: Digital phenotyping offers a powerful approach for forecasting risk for suicidal ideation or attempts over time. This method is an especially useful strategy for understanding associations between sleep disorder symptoms and suicidal ideation and behavior. Sleep disorder symptoms predict suicidal ideation and behavior in cross-sectional research among active duty military personnel, but few studies have examined longitudinal associations between sleep disorder symptoms and suicidal thoughts and behaviors in service members. In this study, we used digital phenotyping to intensively assess Marines for 28 days using a combination of active and passive assessment strategies.
Methods: Marines (N = 40) with suicidal ideation or a suicide attempt in the past month were be recruited from Camp Lejeune, NC and provided with a Fitbit device and receive ecological momentary assessments (EMA) of suicidal urges several times throughout the day. Using dynamic multilevel models, we explored the impact of sleep disorder symptoms on next-day suicide urges, as well as mediators of these effects.
Results: In mixed-effects linear models, better sleep quality in the prior night significantly predicted lower maximum values of suicide ideation (standardized ß = -.06, p = .017) in the following day. Nightmare frequency, length of nocturnal wakefulness, total sleep time, and sleep efficacy in the prior night did not significantly predict the maximum value or range of next-day suicide urges. More nightmares in the prior night were associated with greater PTSD symptom severity (standardized ß = -.15, p = .004) and depression severity (standardized ß = .16, p = .028). Worse sleep quality in the prior night was associated with more severe PTSD symptoms (standardized ß = -.08, p = .017) and marginally higher depression symptoms (standardized ß = -.09, p = .054). Greater severity of PTSD symptoms and depression were strongly associated with both the maximum value (standardized ßPTSD = .25, standardized ßDep = .29, ps < .001) and the range of suicide ideation (standardized ßPTSD = .25, standardized ßDep = .35, ps < .001). PTSD significantly mediated the relationships between sleep quality and suicidal ideation (ACME = -.50, P = .02); there was a trend for depression

symptoms as a mediator (ACME = -.65, P = .06). During the sleep diary, where participants were asked to report the timing of their highest suicidal urges over the prior night (for any non-zero suicidal urges), participants reported that 2:00 (2 AM, SIR = 14.646), 0:00 (12 AM, SIR = 10.547), 3:00 (3 AM, 8.698), and 1:00 (1 AM, SIR = 7.937) were the time periods with the greatest elevation in endorsement of highest suicide urges, accounting for the likelihood that participants were awake at each hour.

Discussion: In this sample of Marines who were at high-risk for suicide, sleep quality on a given night significantly predicted next-day maximum suicidal ideation. Consistent with hypotheses, both poorer sleep quality and more frequent nightmares predicted greater severity of PTSD and depression symptoms. Also consistent with hypotheses, PTSD and depression symptom severity on a given day predicted same-day maximum suicidal ideation level and the range in suicidal ideation. PTSD was a significant mediator of the relationship between poor sleep quality and suicidal ideation. The middle of the night (between 0:00 and 3:00) was when Marines were most likely to report maximum suicidal ideation. This study has the potential to inform optimal strategies to assess suicide risk in treatment. These findings will inform the development and implementation of real-time interventions to reduce risk for suicide among military personnel.

ORAL SESSION: LEARNING FROM LIVED EXPERIENCE AND LOSS

Chair: Paul Nestadt, Johns Hopkins University School of Medicine

25. Psychological Autopsy of Youth Firearm Suicide: Challenges and Findings

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Background: As larger and more complete databases cataloguing suicide decedents have become increasingly accessible, research into the epidemiology of suicide has become overwhelmingly based on large scale analysis of the inexact and often superficial sets of characteristics contained in 'big data.' However, while these data systems are excellent at capturing demographics, methods and broadly categorized stressors, they contain very little usable clinical data, no flaggable behaviors proximal to death, and they do a poor job of teaching us about the often-nuanced pathway to suicide. Psychological autopsies (PA) may be limited to small samples but the in-depth interviews with those closest to the decedents allow for the identification of themes common to those at imminent risk, unique views into the weeks, days, and moments before suicidal action, and the discovery of missed points of intervention which may be developed into prevention programs and policies to save lives moving forward.

Methods: We contacted next-of-kin (NOK) and other key informants following n=8 youth suicides by firearm (ages 16-21). The team reviewed all medical and toxicology records, social media accounts where available, and conducted 2-3 hour interviews with 1-3 collateral informants (parents, siblings, friends, etc). Interviews followed a semi-structured interview guide developed by the study team, with many open-ended questions and an emphasis on organic follow-up by interviewers. All interviewers were doctoral level mental health clinicians.

Using an inductive analytical approach, a team of two researchers identified and reached consensus on interview themes and subthemes, performing iterative analysis of interviews to inform this process.

Results: Interviews revealed several unique social interaction themes including: the presence of interpersonal conflict in significant relationships (87.5%), social isolation from friends and family (75%), and engagement in conversations about suicide (75%). Regarding the use of firearms in these suicides, most families (75%) shared some degree of familial engagement with firearms. In many cases (62%), adolescents used family-owned firearms when completing suicide, and in one case a decedent used a firearm he had constructed with his father. In several cases wherein decedents received psychiatric care in the weeks preceding their deaths, interviewees shared that they did not consider their family-owned firearms to be sources of danger. Some noted that had a clinician expressed concern about the risk of firearm-related harm, it may have prompted action to reduce this risk. Most reported that they would have filed an Extreme Risk Protection Order request had the option existed prior to their child's passing.
Discussion: Psychological Autopsy studies provide a detailed understanding of the pathway to suicide. This study found that interpersonal conflict, social isolation, and conversations about suicide were common themes among the decedents, and that family-owned firearms were often used in these suicides. The study highlights the potential for missed opportunities for intervention in cases where families and clinicians did not perceive a risk associated with firearm ownership. Findings from this study can inform the development of prevention programs and policies to reduce suicide risk among youth.

26. The Relative Risk of Parent Mortality following a Child´s Death: A National Cohort Study

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Background: A child´s death permanently severs the parent-child relationship and has devastating consequences for bereaved parents. We investigated the mortality risk among bereaved parents following the death of a child, considering parent gender, child factors, and temporal influence of the child's death.
Methods: We conducted a nationwide cohort study using data from multiple Norwegian national registers. The study included 784,430 parents who experienced the death of a child between 1969 and 2018. Each parent in the cohort was matched with 10 from the population who were not exposed to a child´s death. Mortality rates and hazard ratios (HR) with 95% confidence intervals (CI) were calculated for broadband causes of parental death, stratified by parent gender and child factors.
Results: The all-cause mortality rate for parents in the cohort was 2427.7 per 100,000 person-years. Parents had significantly higher relative risk for all-cause mortality (HR, 1.12; 95% CI, 1.11 – 1.13), suicide (HR, 1.32, 95% CI, 1.21 – 1.44), and other external causes (HR, 1.10, 95% CI, 1.05 -1.14) compared to the general population. Mothers were at higher risk than fathers for death by suicide and natural causes. The highest risk for parental mortality was observed in the first year after the child's death, with a steady decline in risk over time. The relationship between child factors and parental mortality was influenced by the child's age, gender, and cause of death.

Discussion: Bereaved parents face a significantly increased mortality risk, particularly immediately following the child´s death. The findings underline the importance of providing adequate support and intervention for parents coping with the loss of a child, with special attention to mothers and those who lost a child due to suicide or mental and behavioral problems.

27. Guidelines for Involving Young People with Lived and Living Experience of Suicide in Suicide Research

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Background: Suicide is the fourth-leading cause of death in young people aged 15 to 29 worldwide and is the leading cause of death in Australian young people. Despite the prevalence of suicide and suicidal thoughts and behaviours in young people, evidence regarding interventions and treatments that work for suicide-related behaviour in young people is still emerging. Meaningful youth involvement in all stages of the research process ensures that research outcomes and interventions are relevant and responsive to young people's needs. However, to date young people with lived and living experience tend to be excluded from active involvement in youth suicide research, beyond being 'subjects', due to concerns about safety and support, significantly limiting the transferability and appropriateness of interventions for this population. The aim of this study was to develop best practice guidelines for how researchers can involve young people with a lived and living experience of suicide safely, meaningfully and effectively in suicide research activities.
Methods: The study employed a Delphi expert consensus method, consisting of the following two stages: 1. A systematic search of the peer and grey literature, and interviews with international experts (14 researchers, and 13 young people with lived and living experience of suicide), to identify possible guideline items; 2. Consensus ratings of draft items by two expert panels (28 researchers and 27 young people). Included action items in the guidelines were based on an 80% consensus agreement threshold. In addition, two young people with lived experience of suicide were recruited as co-researchers. These co-researchers were involved in a range of research activities throughout the study, including the development of interview schedules, participant recruitment, the development of guideline items, and the dissemination of findings.
Results: The participation rate of panel members completing the two rounds of questionnaires was 89.09% (88.89% for young people, 89.29% for researchers). The panels both rated 467 items in total (381 in Round 1 and 86 new items in Round 2 based on participant feedback in Round 1). A total of 239 (51.2%) individual items were included in the final guidelines. The final guidelines are organised into the following 4 four sections: 1. Preparation; 2. Supporting safety and well-being; 3. Evaluating involvement; and, 4. Tips for young people.
Discussion: These world-first guidelines address the unique challenges and opportunities for involving young people with lived and living experience of suicide in suicide research. The guidelines developed in the current study provide a much-needed framework for researchers to prepare, support, and evaluate involvement. Crucially, these guidelines also provide youth-friendly, practical advice to encourage young people to be proactive in facilitating a safe and positive experience. The hope is that these guidelines will provide researchers worldwide with greater confidence and willingness to involve young people with lived and living experience in research activities, as well as improved confidence and willingness of young people to

participate in suicide research activities. Ultimately it is hoped that these guidelines will lead to improved support and outcomes for all young people at risk of suicide.

28. Impact of a Police-Led Active Outreach Postvention Intervention for People Bereaved by Suicide

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Background: Postvention is a core component of suicide prevention strategies, internationally. However, the types of supports provided to people impacted by suicide vary widely. In many communities, people bereaved by a suspected suicide often lack information on where to seek practical and emotional support, leading to further distress and increased risk of adverse mental health and psychosocial outcomes, including risk of further suicide. This presentation reports findings from an active outreach intervention led by police in partnership with a postvention primary care navigator (PCN), known as the PCN model. The PCN model was implemented in response to a youth suicide cluster and involves the activation of postvention support within 48 hours of a suspected suicide. This intervention has been implemented with the aim of increasing engagement and service support in the immediate aftermath among individuals bereaved by suspected suicide in the Peel, Rockingham, Kwinana (PaRK) region in South Metropolitan, Perth.
Methods: A retrospective cross-sectional mixed methods approach was used to (1) identify the reach of the PCN model, (2) describe the type of support provided to people bereaved by a suspected suicide and (3) identify the perceived effectiveness of the PCN model from the perspective of WA police, postvention stakeholders and individuals bereaved by suicide. Semi structured interviews were conducted with 23 postvention stakeholders, WA Police, and individuals bereaved by suspected suicide in 2019 to 2021. Quantitative data was used to examine the characteristics of suicide in the region, the characteristics of people who received bereavement support, and the types of support that were provided. Interviews with police, postvention stakeholders, and people bereaved by a suspected suicide were conducted to identify the perceived effectiveness of the intervention.
Results: Between 1 January 2019 and 31 March 2021 there were 80 suspected suicides in the PaRK region. Active outreach was provided to 347 bereaved individuals via the PCN model. Just under half of those who were offered outreach accepted further support (N = 164) in the form of suicide bereavement information (98%), mental health or clinical support (49.6%), specialized postvention counseling (38.4%), financial assistance (16%) and assistance with meals (16%), followed by housing assistance (14%) and referral to community services (11%). Police, stakeholders, and people with lived experience of a suspected suicide perceived the PCN model to be effective at connecting them to the community, linking people to support, and preventing suicide. Interviews showed the intervention was perceived to be effective in promoting recovery among bereaved individuals, cost effective, and had perceived wellbeing benefits for first responders and stakeholders.
Discussion: The implementation of an active postvention outreach service during the immediate aftermath of a suicide has the potential to improve access to psychological, social and practical supports provided to individuals bereaved by suicide and reducing the burden of adverse mental health, psychosocial outcomes and suicide risk in this vulnerable population. The results provide evidence supporting the perceived effectiveness of an active outreach

approach to postvention that provides acute support to people bereaved by suicide. Findings highlight important practical areas of support such as providing referral pathways and information on grief and suicide loss in the immediate aftermath of a suicide loss.

29. Creating Digital Research Methods: and Clinical Tools for Self-Harm Thoughts and Behaviours with Adolescents with Lived Experience: Best Practice Guidelines

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Background: The digital world presents a range of risks, benefits, and affordances across the lifecycle of research on self-harmful thoughts and behaviours. Young people live a great deal of their lives online and connect with each other and researchers in this space, so it makes sense for us to meet them there. How can we do this safely given the sensitive nature of our research, for the benefit of all? In the presentation we share best practice findings from our Patient and Public Involvement and co-production work on digital research projects in the Self-Harm Research Group and from our UKRI funded Digital Youth Programme. Involvement work with end users of research and clinical tools, is vital to ensure that the end products of research are safe, meaningful, and effective

Methods: We have developed a range of methodsto co-create digital research with young people including in-person events at community-based research cafés (Café Connect), to online one-off focus groups, to including young people as co-investigators on grants (Digital Youth Programme), to working with groups of young people over the lifespan of a research project from Public Patient Involvement to dissemination over months and years (e.g. The Listen-Up project and Sprouting Minds Youth Person Advisory Panel).

Results: Across engagement activities it is essential to plan ahead by anticipating difficulties and distress (although rare) so implementing mitigations is vital. For group-based work ensure that at least two facilitators are present. Ask participants in advance how they would like to be supported and how distress may manifest for them. Create well-being and safety plans with all participants (including researchers) in advance of involvement in projects. Work together to decide ground rules in groups and agree on shared values for the activities you will do together. It is particularly important to discuss how conflict and disagreements will be managed, and to set expectations in relation to what might be achieved though the research. Ensuring that involvement in work is remunerated appropriately and in a timely manner is important so adequate funding and administrative resources are key in supporting high quality involvement work.

Consider the training needs that adolescents involved in your work may have to ensure that they may participate to their full potential (e.g. in relation to understanding research methods writing and presentation skills). In our work young people have been involved in presenting alongside researchers at grant bid interviews, multidisciplinary conferences (e.g. the MindTech Conference), have led dissemination events in community-based settings (Café Connect at Night) and discussed our research with politicians at a knowledge-exchange event at the Houses of Parliament in London.

Discussion: We argue that involving young people with lived experience is vital in self-harm research. This presentation will help participants consider what they need to put in place to ensure that the digital (and in person) research they are doing is safe, meaningful and effective and provides guidance on how to do this important PPI and co-production work safely. The intersection of our findings with Responsible Research Innovation and co-design practices,

which are crucial aspects of Human Computer Interaction research, is notable. Responsible Research Innovation is especially important in the digital sphere where research may be controversial (as has been the case in some self-harm and suicide related research) and where controversy may prohibit uptake of digital tools and innovation.

30. Among the People: Navigating Ethics of Lived Experience Positionality as Insider 'Participant'-Researcher

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Background: A recent one-time study led by Awaad et al. found that U.S. Muslims report a lifetime history of attempting suicide at double the odds of other faith groups. Muslims in the United States comprise around 1% of the total population and are scientifically considered a hard-to-reach group. Measuring suicide outcomes such as ideation, attempts, and death is challenging due to a lack of systematic and epidemiological data collection. Community-based participatory research (CBPR) is a scientific approach utilized to gather information related to suicidality in similar minoritized groups. Insider researchers who are native to the communities in which they conduct research are critical to addressing health inequities such as life expectancy due to suicide.
Methods: The National Institute of Mental Health notes that insider researchers "can improve the inclusion of study participants, strengthen methodology, and ultimately enhance the rigor and impact of studies."5 NIMH also encourages the development of scientific initiatives that feature insider perspectives in order to "press for theoretical leaps in science." It is worth considering the public health ethics and methods of centering lived experience through insider researchers positioned as participants who conduct research not on, and not just with, but among the people.
Results: Positionality Statement: Research centering lived experience in investigators is uncommon, unconventional, and sometimes perceived as unscientific. I identify as a survivor of multiple suicide attempts, casting my lived experience as a key tenet to the scientific study of suicide prevention. As a scientist conducting community-based participatory research, my positionality is as an insider participant-researcher. In contrast to solely being an insider researcher, as a participant, I acknowledge that I am participating with the community itself in receiving services, engaging in dialogue, and ultimately shaping advocacy for preventing suicide.
Discussion: Therefore, the dynamic of embodying lived experience while being an insider participant-researcher demands an ethical framework that challenges existing notions of objectivity and power dynamics in human subjects research. The purpose of my argument is to demonstrate relational, research, and social considerations of developing research led by lived experience through stories I convey as an insider participant-researcher. In conclusion, I offer directions for conducting transformative research.

Monday, October 16, 2023

4:45 p.m. - 6:15 p.m.

ORAL SESSION: ENGAGING GATEKEEPERS

Chair: Ewa Czyz, University of Michigan

31. How Does Gun Ownership Influence Suicide Risk processes? a Study in a Large Sample of Army Soldiers

Melanie Bozzay*[1], Samantha Daruwala[1], Benjamin Trachik[2], Craig Bryan[1]

[1]The Ohio State University, [2]Walter Reed Army Institute of Research

Background: Firearm access is a strong risk factor for suicide. Firearms are the most common means for suicide deaths for United States (US) service members (SMs) and their dependents, and the percentage of SMs who die by firearm suicide is higher than that of the general population. Furthermore, the Army tends to have the highest rates of suicide deaths each year. The purpose of the current study is to examine the potential moderating role of firearm ownership on the association between several factors that may influence ownership and suicide risk, and suicide-related outcomes (i.e., lifetime suicide risk, fearlessness about death) in a sample of Army Soldiers.
Methods: Data was collected anonymously as part of a larger cross-sectional study examining behavioral health and mental readiness in a sample of 360 Army soldiers. We examined how psychological flexibility, honor ideology, intolerance of uncertainty, and entrapment are associated with suicide-related outcomes (i.e., lifetime suicide risk, fearlessness about death) using multiple regression models. Multigroup path analyses were used to examine whether these relationships varied as a function of current personal gun ownership and intent to own a personal gun after separating from the military. Chi-square difference tests were used to identify significant moderating effects.
Results: Risk factors and demographic covariates explained only a small degree of the variance in history of lifetime suicide risk (R2=.22, p
Discussion: Overall, slightly different patterns of effects emerged across models examining associations between suicide risk history and fearlessness about death, a proxy for increased suicide risk. We linked greater entrapment with heightened lifetime suicide risk, which is consistent with suicide theory suggesting that escape from distressing situations is an important function of suicidality. Interestingly, entrapment was only related to fearlessness about death among gun owners, which may increase the likelihood of making a lethal suicide attempt in a heightened crisis among these individuals. Interventions targeting more adaptive strategies for coping with entrapment may be particularly useful for alleviation of suicide risk, particularly among firearm owners.

32. The Effects of Suicide Prevention Gatekeeper Training on Behavioral Intention and Intervention Behavior: A Systematic Review and Meta-Analysis

Sarah Spafford*[1], Marielena McWhirter[1], Emily Tanner-Smith[1], Geovanna Rodriguez[1], James Muruthi[2], John Seeley[1]

[1]University of Oregon, [2]Drexel University

Background: Suicide is a major public health concern worldwide and the tenth leading cause of death for all ages in the United States. As suicidal ideation and suicide behaviors have continued to grow in the U.S., this has encouraged national and statewide efforts to implement comprehensive suicide prevention plans. A critical component of a comprehensive plan is ensuring individuals experiencing suicidal ideation receive mental health treatment. Suicide

prevention gatekeeper trainings, which aim to improve knowledge regarding suicide risk as well as increase gatekeepers' intentions to ask about suicidality and make referrals to appropriate mental health treatment, are a frequently implemented program to increase mental health help-seeking behaviors, despite the lack of evidence around effective implementation.
Methods: To understand the current state of research regarding suicide prevention gatekeeper training, a systematic review and meta-analysis were conducted that synthesized evidence on the effects of suicide prevention gatekeeper training on behavioral intention to intervene and suicide intervention behaviors and whether these changes are maintained over time. A secondary aim of this meta-analysis was to examine implementation setting, training modality, and training level as moderators for the effectiveness of suicide prevention gatekeeper training on behavioral intention and suicide intervention behaviors.
Results: Results from 43 studies revealed that suicide prevention gatekeeper training had an overall positive effect on behavioral intention and intervention behaviors. Furthermore, subgroup analyses for training level and training modality were unable to be conducted due to the lack of studies examining advanced or online trainings. Results from the implementation setting subgroup analysis revealed no significant differences in behavioral intention or intervention behavior based on the implementation setting. However, these results. must be considered with caution as there were significant methodological concerns of the included studies and limited studies that conducted long-term follow-up.
Discussion: Although this meta-analysis reveals an overall positive effect for suicide prevention gatekeeper training on behavioral outcomes, the low methodological quality of the current available evidence limits the ability to draw conclusions from the synthesis. To inform policymakers and interventionists on best practices for suicide prevention gatekeeper training, additional rigorous research is needed.

33. Do Existing Machine Learning-Based Suicide Risk Prediction Models Hold Relevance for American Indian Populations?

Paul Rebman*[1], Roy Adams[2], Novalene Goklish[3], Luke Grosvenor[1], Mira Bajaj[4], Tina Minjarez[1], Emily Haroz[1]

[1]Johns Hopkins Bloomberg School of Public Health, [2]Johns Hopkins University School of Medicine, [3]Johns Hopkins Center for American Indian Health, [4]Johns Hopkins School of Medicine

Background: The burden of suicide in American Indian and Alaska Native (AI/AN) populations is disproportionately high, but tribes such as the White Mountain Apache Tribe have leveraged tribal sovereignty to take proactive steps to identify community members at elevated risk for suicide and provide community-based services. However, few suicide risk identification tools have been developed specifically for AI/AN populations. While health systems are increasingly using Artificial Intelligence to help identify those at risk for suicide, the utility of these models in the majority AI/AN contexts remains an open question. In this study, we aimed to test the fit of existing machine learning-based models for suicide risk in a new population that is almost entirely American Indian.
Methods: We conducted a retrospective secondary data analysis with data from the Indian Health Service unit that serves the White Mountain Apache Tribe. Data were included for all patient visits between 01/01/2017 and 10/02/2021 at the Whiteriver Indian Hospital. After extraction, data was cleaned and pre-processed in accordance with open-source code provided by collaborators at Kaiser Permanente (KP) and Vanderbilt University (VU). Using this data,

existing suicide risk models from KP and VU were evaluated on their prediction performance at identifying individuals who had an attempt and/or death within 30, 60, and 90 days of the index visit. Performance was operationalized by calculating Area under the Receiver Operating Characteristic curve (AUC) statistics. Attempts were identified based on ICD-10 codes using a modified phenotype developed by KP. Identification of deaths was done by matching data to records maintained by the Tribe. These models were then compared to the accuracy of a risk category based on manual screening or suicidal ideation within the previous 90 days of the index visit to understand the added value of a risk prediction model in clinical care.
Results: The data contained a total of 360,037 unique visits from 13,766 unique patients. Almost all (95.1%) patients were American Indian with a mean age of 39.2 (sd = 17.1) years. A total of 361 (2.6%) patients had at least one attempt and 36 (0.3%) patients died from suicide during the study period. Overall, 231 patients with an attempt and 18 patients who died by suicide had a visit in the 90 days prior to their attempt or death. The KP model had AUC values of 0.81 (95% CI: 0.79, 0.83) for 90 day post-visit suicide attempts and 0.86 (95% CI: 0.82, 0.89) for 90 day post-visit suicide deaths. The VU model had AUC values of 0.62 (95% CI: 0.60, 0.63) for suicide attempts and 0.63 (95% CI: 0.53, 0.70) for suicide deaths at 90 days post-visit. For both models, performance was similar for attempt and death at 30 and 60 days post-visit. The risk category based on a positive suicide screen and/or diagnosis of suicide ideation had an AUC of 0.60 (95% CI: 0.59 - 0.60) for suicide attempt and 0.49 (95% CI: 0.49, 0.49) for suicide death within 90 days.
Discussion: Existing risk identification models for suicide prevention hold promise when applied to new contexts, including for AI/AN populations, and performed better than relying on suicide screening and reports of ideation alone. The KP model had significantly higher accuracy than the VU model. These differences may be due to differences in coding practices between health systems, availability of comparable data, or differences in how the predictive features were constructed. More work is needed to optimize the performance of suicide risk identification algorithms before implementing these models in clinical care pathways.

34. An Evaluation of the Online Counseling on Access to Lethal Means (CALM) Training for Mental Health Practitioners

Alexzandra Perez*[1], Megan Spokas, PhD[1]

[1]La Salle University

Background: Suicide is a major public health issue in the US, with firearms accounting for over half of all suicide deaths. Means restriction has been found to reduce suicide deaths. Despite being cited as a best practice, means safety practices are underutilized in suicide prevention efforts. The Counseling on Access to Lethal Means (CALM) training has shown promise in increasing mental health providers' knowledge, confidence, comfort, and intent to counsel patients. Previous studies demonstrate CALM's efficacy in increasing these factors related to means restriction. The current study evaluated the efficacy of online CALM training in increasing knowledge, confidence, comfort, and counseling intentions among practitioners and trainees. We hypothesized that completing the training would result in higher levels of these factors, which would be sustained at one-month follow-up.
Methods: Participants were mental health professionals in Pennsylvania who had direct client interaction in the past year and no prior experience with CALM training. The sample included 70 participants (90% licensed professionals, 10% doctoral-level psychology trainees). Four participants were lost to follow-up. The study used a pre/post/four-week follow-up design. Participants completed surveys assessing levels of comfort, confidence, counseling intentions,

and knowledge regarding lethal means counseling using an adapted questionnaire from Sale et al. (2017). Participants completed the online CALM training before accessing the post-training survey. A follow-up survey was sent four weeks after completion of the post-training survey.
Results: At Time 1, participants generally reported high levels of Confidence, Comfort, and Intent to Counsel. A significant negative correlation was observed between Age and Intent to Counsel ($r = -.37$; $p < .01$), and a significant positive correlation was observed between Age and Knowledge Counsel ($r = .51$; p
Consistent with hypotheses, participants demonstrated significant increases in Confidence, Intent to Counsel, Comfort, and Knowledge from Time 1 to 2. Further, Intent to Counsel, Confidence, and Comfort significantly increased from Time 1 to 3, whereas Knowledge decreased significantly from Time 2 to 3.

There was also evidence of participation bias in that those who completed baseline surveys only (n=88) significantly differed from participants who completed both baseline and post-training surveys (n=70). Those who completed the full study had significantly higher Confidence, Intent to Counsel, Comfort, and Knowledge at baseline, and were significantly older, than those who only completed the baseline survey. A significant difference in race was also observed between the two groups, indicating more White participants completed the study.

Discussion: Results indicated that CALM training is effective in increasing mental health providers' perceived levels of comfort, confidence, knowledge, and intent to counsel suicidal individuals. Gains were sustained in most areas, but there was a significant decrease in knowledge scores from Time 2 to 3, raising concern about the sustained impact of training. However, concerns with the method of assessing knowledge will be discussed. Participation bias was observed, calling for more specific recruitment and tailored training for underrepresented groups and clinicians less confident and comfortable with the subject matter. The lack of a control group limits conclusions about training impact, yet despite limitations, CALM training shows promise in addressing an overlooked area of clinical practice.

35. Building on Family Strengths to Increase Firearm Safety at Home: Lessons Learned from a Pilot Study of an Innovative Approach to Lethal Means Reduction

Lisa Wexler*[1], Jason Goldstick[1], Ken Resnicow[1], Kelsey Porter[1], Megan Leys[2], Aneliese Apala-Flaherty[1], Roberta Moto[2], Patrick Carter[1]

[1]University of Michigan, [2]Maniilaq Association

Background: Suicide is a major and rising public health problem in the United States. In one of the most rural states, Alaska, suicide rates are consistently triple the national rate. There, 60% of the suicide fatalities are due to firearms. In rural Indigenous Alaska Native (AN) communities, virtually all homes have multiple guns for subsistence hunting, which increases suicide risk significantly. Our Family Safety Net (FSN) intervention focuses upstream: on adults living with youth (caregivers and others) who are likely able to reduce access to firearms and other environmental risks to safeguard younger family members. Reducing access to 'lethal means' to prevent suicide is one of the most effective strategies to date. Key challenges are widespread uptake, particularly within high-risk and hard-to-reach populations. The FSN uses a universal 'family-focused' screening to identify households that may particularly benefit from increasing their home safety (i.e. households where someone is experiencing mental health struggles). Our underlying premise is that all adults living with younger family members who are experiencing mental health challenges will be receptive to taking preventative actions

to make their homes safer. This shift from targeting individuals to engaging adult family members, is a potentially important innovation, particularly in collectivist AN populations, who prioritize family and community (rather than 'the self' individually). With a focus on safety and family, our family-focused approach closely aligns with the cultural, family orientation of AN people.

Methods: This presentation shares the results of a small study that used a community-based participatory approach to develop and test a new approach to screening and lethal means reduction in remote and rural, underserved Alaska Native communities. Our mixed methods formative research of adult (n=200) and youth (ages 12-17) (n=100) surveys and 3 focus groups characterized household firearm storage patterns and normative gun access for youth. This information was used to work with a community steering committee to develop the FSN intervention, which involves a (1) short family-focused screening to identify households where young members may be struggling, (2) implements a brief lethal means reduction intervention (either using motivational interviewing or a script), (3) provides resources for locking up firearms, ammunition and medication (trigger and cable locks, medication and ammo boxes), (4) tailored text messages to reinforce safety messages for 1 month. We piloted the FSN with 50 community members to assess the acceptability and feasibility of the FSN. To assess signals of efficacy in improving safe home firearm storage, we examine changes in targeted mechanisms (e.g. susceptibility, severity of risk, self-efficacy), on the current household gun storage (# and type of firearm; locked/unlocked, loaded/unloaded and location of ammo for each), and youth access to firearms. Additionally, participants also answer questions about their satisfaction with the FSN (acceptability, cultural responsiveness).

Results: Preliminary outcomes of this research will describe the formative research findings and consider the acceptability and feasibility findings and the preliminary outcomes of firearm and medication storage within people's homes.

Discussion: Implications of this research and this family-focused approach to screening and lethal means reduction can be an important innovation for other populations with high suicide risk.

36. Text-Based Support for Caregivers of Adolescents at Risk for suicide: Pilot Randomized Controlled Trial in Emergency Department Setting

Ewa Czyz*[1], Inbal Nahum-Shani[1], Cynthia Ewell Foster[1], Valerie Micol[1], Amanda Jiang[1], Nadia Al-Dajani[2], Alejandra Arango[3], Maureen Walton[1], Victor Hong[1], Sheikh Ahamed[4], Cheryl King[3]

[1]University of Michigan, [2], [2]Miami University, [3]University of Michigan School of Medicine, [4]Marquette University

Background: Youth suicide is an urgent public health concern. Emergency Departments (EDs) often serve as the first line of contact for adolescents with suicide risk-related concerns. Parents of these high-risk youth are at the forefront of suicide prevention and are tasked with implementing post-discharge suicide prevention recommendations (e.g., lethal means restriction, providing support, etc.). Yet, previous work indicates that these caregivers report high levels of stress and low confidence in their ability to engage in recommended suicide prevention activities. To address the critical need for continuity of care strategies for high-risk adolescents discharged from ED, we piloted a text-based intervention for caregivers.

Methods: The intervention included two texting components targeting interrelated domains: (1) adolescent-focused messages encouraging parental provision of suicide prevention

activities (e.g., restricting lethal means access, recognizing suicide warning signs, encouraging adolescent's use of coping, monitoring with sensitive queries about mood and suicidality, communication, providing emotional support) and (2) parent-focused messages intended to enhance parents' own well-being (e.g., tips and encouragement for self-care). Intervention content was developed with expert consensus and with iterative feedback from parents of youth seeking ED services due to a suicide-related concern. In this pilot randomized controlled trial, 120 caregivers (83.3% mothers; 10.8% fathers; 5.8% other caregivers) of adolescents (ages 13-17; 65.8% female; 75.0% white) seeking ED services were randomized to a control group or to a 6-week intervention comprised of adolescent-focused text messages (1 message/day) with or without added texts offering parent-focused supportive content (0-2 messages/day). The primary outcomes were feasibility and acceptability.

Results: Results: indicated that parents perceived the text-based intervention positively (M=4.18 [SD=0.83] on 1-5 scale), were overall satisfied (M=3.45 [SD=0.58] on 1-4 scale), and most indicated they would recommend it to other caregivers (94.6%). There were no differences in acceptability ratings between parents receiving adolescent-focused messages with or without additional parent-focused content. In exploratory analyses, we also examined if the texting intervention influenced parental self-efficacy (proximal outcome) and parental engagement in suicide prevention activities (distal outcome) across follow-up (2, 6, and 12 weeks) as well as youth suicidal behavior (actual, interrupted, or aborted attempts). Results indicated that, relative to control, parents receiving texts encouraging provision of adolescent-focused support did not report higher parental self-efficacy at follow-up, but nevertheless reported more engagement in suicide prevention activities (B=2.22, p=0.012). Receiving additional parent-focused support did not have added benefit on these outcomes. Finally, results showed preliminary impact of adolescent-focused texts, vs. control, on suicidal behavior in the expected direction but not reaching significance (Hazard ratio=0.34, CI=0.10, 1.12; p=.075).

Discussion: Text-based support for caregivers of suicidal youth following ED care was acceptable and may be a promising strategy to improve caregivers' engagement in suicide prevention activities during a high-risk period. Additional research is needed to further examine text-based continuity of care approaches for adolescents at risk for suicide and their caregivers.

ORAL SESSION: CHANGING THE MIND OF A PERSON AT RISK

Chair: Christianne Esposito-Smythers, George Mason University

37. Skills to Enhance Positivity (STEP) to Reduce Risk for Suicide: From Development to Implementation

Shirley Yen*[1], Jackson Doerr[2], Natalia Macrynikola[2], Kimberly O'Brien[3], Sophia Sodano[1], Nazaret Suazo[1], Katherine Tezanos[1], Jennifer Wolff[1], Anthony Spirito[1]

[1]Alpert Medical School, Brown University, [2]Beth Israel Deaconess Medical Center, [3]Boston Children's Hospital; Harvard Medical School

Background: Given increasing rates of suicidal behavior, novel approaches to targeting suicide-related behaviors are warranted. In a sample of adolescents recruited from an inpatient unit due to suicide risk, we found low positive affect to be a robust predictor of suicide events in the six months post-discharge, even after controlling for depression severity and anhedonia. Most interventions for suicide prevention target negative affect or risk reduction. We thus

developed Skills to Enhance Positivity (STEP), an acceptance based approach to increase attention to positive emotions and events that may be otherwise discounted due to the negativity bias.

Methods: STEP was developed through an iterative process, and involves 4 in-person sessions and 3 months of text messaging to extend the reach of treatment. The sessions focus on psychoeducation on the function of positive emotions, mindfulness, savoring, and gratitude practices, with practices individually selected and tailored. Three pilot trials have been conducted: 1) a single-arm open development trial for adolescents on an inpatient unit (n=20); 2) a pilot RCT of STEP vs. enhanced TAU for adolescents on an inpatient unit; 3) a pilot RCT of a group-based version of STEP (vs. Enhanced TAU) for a young adult outpatient community sample with depressive symptoms.

Results: Each of the pilot studies yielded good feasibility and acceptability metrics for both the in-person sessions and for the text messaging intervention. Our primary clinical outcome was suicide events, operationalized as either a suicide attempt or emergency intervention to intercede an attempt. Preliminary results indicated a reduction of suicide events in both of the adolescent trials. In the open trial, there was only 1 suicide attempt (5%) over six months, lower than expected based on naturalistic studies. In the pilot RCT, those randomized to STEP had 50% fewer suicide events (6 vs. 13) and 50% fewer participants (19% vs. 38%) reporting events over six months, the latter corresponding to a medium to large effect size h of .43. In the young adult sample which was less acute, there were no suicide events, and changes in suicidal ideation and implicit associations between death and self were in the expected direction.

Discussion: Preliminary data from these studies have been promising; we are now testing the intervention as a Hybrid I Effectiveness trial, recruiting from multiple sites. This larger study entails a pre-implementation phase where we conduct interviews with primary stakeholders to determine how best to integrate STEP into the unit workflow. This trial is currently ongoing, and we will discuss data from the pre-implementation phase, challenges that we have encountered, and adaptations that have been made to make training and delivery of the STEP. Adaptations to training procedures and the treatment protocol have led to a more scalable intervention and improved implementation efforts in the inpatient setting. Additional qualitative feedback will be used to enhance the sustainability of STEP over time.

38. Moderators of Adolescent Suicidal Ideation Severity in a Randomized Controlled Trial Comparing a Cognitive-Behavioral Intervention to Enhanced Treatment-As-Usual

Christianne Esposito-Smythers*[1], Jennifer Wolff[2], Roberto Lopez[1], Leah Adams[1], Sarah Fischer[1], Anthony Spirito[2]

[1]George Mason University, [2]Alpert Medical School, Brown University

Background: Many randomized controlled trials (RCTs) have been conducted to test interventions for adolescent suicidal ideation and behavior. However, few have examined moderators of intervention effectiveness. Thus, we know little about which interventions work for which youth. In the present study, we examined demographic and clinical moderators of suicidal ideation severity among depressed adolescents who were psychiatrically hospitalized for suicidal ideation or a suicide attempt, with a co-occurring risk factor (suicidal behavior prior to the index admission, non-suicidal self-injury, and/or a substance use disorder), who participated in a Phase 2 efficacy trial comparing an outpatient family-focused cognitive-behavioral treatment (F-CBT) to enhanced treatment-as-usual (E-TAU).

Methods: The sample consisted of 147 youth (Mage = 14.90, SD = 1.51; 85.52% White; 83.45% non-Hispanic/Latino/a/x; 76.19% female) and their families, recruited primarily from an inpatient psychiatric hospitalization program, who were randomized into F-CBT or E-TAU. Primary outcomes included trajectory of suicidal ideation (SI) severity (SIQ-JR) assessed at baseline, 6-, and 12-months. Potential moderators of treatment examined included adolescent demographic (e.g., race, ethnicity, income) and clinical characteristics, including history of suicide attempts (C-SSRS) and non-suicidal self-injury (SITBI), psychiatric diagnoses (K-SADS), internalizing and externalizing symptoms (CBCL, CDRS-R, SCARED), aggression (AQ, IPAS), substance use (TLFB), and childhood maltreatment (CTQ). Latent growth modeling was conducted in Mplus to examine the moderating role of these variables on outcomes within each treatment condition.
Results: Youth enrolled in F-CBT with specific demographic and clinical characteristics at baseline demonstrated greater improvement in SI severity over 12 months relative to youth in E-TAU. This includes youth who self-identified as Hispanic/Latino/a/x (b = -2.69, p = .044) and those with social anxiety disorder (b = -2.32, p = .033). It also includes youth with greater (versus less): internalizing problems (b = -0.09, p = .043); verbal (b = -0.28, p = .031), physical (b = -0.14, p = .018), and pre-meditated aggression (b = -2.02, p = .004); and alcohol use (b = -0.13, p = .039). No moderation effects were found for the other variables examined.
Discussion: These findings may help to inform research on which adolescents may benefit most from a cognitive-behavioral intervention that includes a significant parent/family component. This includes adolescents who self-identify as Hispanic/Latino/a/x as well as those with greater social anxiety, general internalizing symptoms, aggression, and alcohol use. Findings with regard to Hispanic/Latino/a/x ethnicity mirror those found in a study examining the efficacy of dialectical behavior therapy for adolescents, though the outcomes in that study were suicidal and non-suicidal self-injury. Overall, study findings add uniquely to the small number of studies that have examined moderators of interventions for youth with suicidal ideation or behavior.

39. Mindfulness for Reducing Everyday Suicidal Thoughts (Mind-REST): Findings from a Brief Mindfulness Intervention for Adults with Suicidal Ideation

Ana Rabasco*[1], Margaret Andover[2]

[1]Alpert Medical School, Brown University, [2]Fordham University

Background: Suicide is a significant and growing public health concern (Garnett et al., 2022). Therefore, it is essential to develop easily implementable interventions that effectively target suicidal thoughts and behaviors (STBs). Research has shown that mindfulness is negatively associated with STBs (Cheng et al., 2018) and that interventions focusing on improving mindfulness reduce STBs (Raj et al, 2019). However, mindfulness interventions tend to be time-consuming and resource-intensive, which may be prohibitive for people with severe symptoms or who have fewer resources. Although brief mindfulness interventions have been shown to be effective in reducing distress (Kubo et al., 2018), their impact on STBs has yet to be investigated. The present research is a pilot RCT examining: 1) the feasibility, acceptability, and preliminary efficacy of a brief, daily mindfulness intervention aiming to reduce STBs among adults with suicidal ideation (SI), 2) potential moderators (baseline STBs, mindfulness, and sexual orientation) of intervention efficacy, and 3) change in distress tolerance (DT) as a mediator of treatment condition and SI severity.
Methods: Adults (n = 82) experiencing SI in the past 2-weeks were recruited online. Participants completed a series of questionnaires assessing STBs (BSS; Beck and Steer, 1991),

mindfulness (FFMQ; Baer et al., 2006), and DT (DTS; Simons and Gaher, 2005). Participants were then randomized to the mindfulness intervention condition (n = 40) or the sham-mindfulness control condition (n = 42). For the next 14 days, participants in the mindfulness condition received a daily text-message with a brief, guided mindfulness audio exercise. Participants in the control condition received a daily text-message with a brief, sham mindfulness audio exercise. All participants also completed a daily survey each night of the intervention, a post-intervention survey, and a one-month follow-up survey, all assessing STBs, mindfulness, and DT.

Results: Results showed that the mindfulness intervention was both feasible and acceptable, as evidenced by the intervention retention rates (78% at follow-up) and compliance with the daily mindfulness exercises (89%) and surveys (87%). All participants experienced significant reductions in SI over the course of the study ($p < .01$); however, participants in the intervention group did not have significantly lower STBs compared with participants in the control group at any study time point (all p's > .09). Linear mixed models showed that baseline SI severity, mindfulness, and history of suicide attempts did not moderate the relationship between condition and change in SI severity (all p's > .67). Although sexual orientation did not moderate the relationship between treatment condition and SI severity across the study period ($p = .48$), additional analyses conducted within the intervention group showed that heterosexual participants experienced significant reductions in SI (all p's < .01), while LGB+ participants did not (all p's > .47). Finally, change in DT did not mediate the relationship between condition and SI severity at post-intervention or one-month follow-up.

Discussion: These results suggest that, although the intervention was feasible and acceptable to participants, brief mindfulness exercises may not be sufficient to decrease STBs in comparison to a control condition. Because the current study's intervention was not as effective in reducing SI among sexual minority participants compared to heterosexual participants, future mindfulness intervention research could explore how mindfulness may differentially impact LGB+ individuals, along with addressing risk factors specific to minority sexual orientation.

40. The Covariation of Change between Suicidal Behavior and Mechanisms of Change in a Randomized Controlled Trial of Dialectical Behavior Therapy for Adolescents at High Risk for Suicide

Jamie Bedics*[1], Joan Asarnow[2], Robert Gallop[3], Michele Berk[4], Marsha Linehan[5], Elizabeth McCauley[6]

[1]California Lutheran University, [2]David Geffen School of Medicine at UCLA, [3]West Chester University, [4]Stanford University School of Medicine, [5]University of WA, [6]University of Washington School of Medicine

Background: Dialectical behavior therapy (DBT; Linehan, 1993) is a cognitive-behavioral intervention that has shown promise in the treatment of suicidal and self-harming youth (McCauley et al., 2018; Mehlum et al., 2014; Santamarina-Perez et al., 2020). Recent work has sought to extend these positive finding by examining how mechanisms of change, including emotion regulation and skill use, can mediate the effectiveness of treatment on primary symptomatic outcomes (Asarnow et al., 2021). The goal of the present study was to extend this work by examining how changing rates of patient level symptoms (suicidal ideation and suicidal acts) and mechanisms (emotion regulation, and skill use) can covary during the course of a randomized controlled trial of DBT for suicidal and self-harming youth.

Methods: Participants were 173 adolescents between the ages of 12 and 18 with a history of suicidal behavior who were randomized to either six months of DBT or individual and group supportive therapy.
In this study, we used a multivariate multilevel modeling to explore the relationship between the simultaneous rates of various dyads of measurements. In our first analysis our focus was on change in adolescent ideation and adolescent emotion regulation. We paralleled the method used by Baldwin et al. (2014) for our analysis of simultaneous change. Because the data in our sample were longitudinal, the repeated observations within an individual were correlated. Additionally, because we had two simultaneous outcomes per time point (e.g., ideation and emotion regulation), the two measures were correlated. The random effects accommodated the individual change over time separately for the ideation scale and the emotion regulation scale as well as for the correlation within each dyad (i.e., ideation and emotion regulation pair at each time point) (Singer and Willet, 2003). Statistical assessment of the respective correlation coefficients was based on the produced variance-covariance matrix of the random effects, which yielded pairwise Wald Chi-square statistics for the significance of each term in the variance-covariance matrix. The Wald Chi-square statistics were considered significant below the set alpha level of $\alpha = 0.05$. We assessed the effect across all subjects and each intervention effect and differences between interventions through the entire 6-month intervention and 6-month follow-up period using linear change model. The models were fit using R 4.0.3.

Results: Using a multivariate HLM, we found significant reduction in ideation within both IGST and DBT. Similarly, we found significant reduction in emotion regulation within both IGST and DBT. Assessing whether adolescent's change in ideation and change in emotion regulation were changing simultaneously, the multivariate HLM yielded significant correlation within the IGST ($r = 0.79$ ($SE = 0.15$), $\chi2(1) = 27.30$, $p < .001$) and within DBT ($r=0.96$ ($SE= 0.12$), $\chi2(1) = 65.56$, $p < .001$) between an adolescent's change in ideation and the respective change in emotion regulation. Contrasts of the correlations between intervention arm were not statistically significantly different ($\chi2(1) = 3.51$, $p = .06$). These analyses were then replicated to examine the association between all possible paired combinations between suicidal ideation, suicidal behavior (combined non-suicidal self-injury + suicide attempts), emotion regulation, and DBT skill use.
Discussion: Overall results showed similar patterns of change in suicidal behavior and mechanisms of change regardless of treatment intervention. Treatment recommendations will be made with respect to the importance of assessing and targeting various symptomatic and mechanistic constructs during the treatment of suicidal and self-harming youth.

41. Understanding Lessons Learned from Implementing Complex Suicide Prevention Interventions: A Qualitative Study

Sadhvi Krishnamoorthy*[1], Victoria Ross[1], Sharna Mathieu[1], Gregory Armstrong[2], Kairi Kõlves[1]

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Background: Complex, multilevel, multicomponent interventions which combine multiple evidence-based strategies, have been posited as the need of the hour in suicide research.

However, implementing these interventions in real-life settings is fraught with multiple challenges and resource demands. The merits of implementing such interventions are, hence, a topic of debate and discussion:. Despite these challenges, experiences of implementing complex interventions are invaluable as they are replete with learnings about transcending the know-do gap. This study explores the experiences of stakeholders involved in the implementation of complex suicide prevention interventions.
Methods: Data was collected through in-depth interviews with the leaders, implementation practitioners and lived experience experts, involved in the implementation of complex suicide prevention interventions across the world. Participants were recruited purposively because of their past and/or current experiences of being involved in implementation. A thematic analysis was conducted to systematically identify, organize, and offer insights into patterns of meaning.
Results: An interpretive phenomenological approach helped in understanding participants' perspectives, experiences, and social constructions. Several themes emerged related to the design and conception, goals, implementation processes, evaluation of complex suicide prevention interventions. An important underlying theme was related to challenges, learnings, what works and what is needed. These lessons reflect the challenges of balancing between evidence generation and utilisation, navigating the uncertainties of real life with limited resources.
Discussion: The study yielded an in-depth understanding of best practices related to implementation of complex suicide prevention interventions on ground. These real-life experiences and learnings are critical in understanding and bridging the know-do gap. These learnings can also offer insights into why an intervention worked (or not) and be used to inform future implementation efforts in suicide prevention.

42. A Randomized Controlled Trial of Cognitive Therapy for Suicide Prevention Adapted for Suicidal Older Men

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Background: Older men are one of the highest risk groups for suicide in the U.S. (CDC) and are under-represented in suicide prevention treatment trials. In contrast to younger adults, older adults make fewer and more lethal suicide attempts (McIntosh et al., 1994; Conwell et al., 1998), suggesting that suicidal ideation is a critical treatment target in this population. While cognitive behavioral therapies for suicide prevention have been found to reduce the incidence of suicide attempts by 50-60% in at-risk patients, they largely have not demonstrated efficacy for suicidal ideation (e.g., Brown et al., 2005; Rudd et al., 2015). This suggests that a focus on targeting suicidal behavior may be insufficient for groups that have low rates of nonfatal suicide attempts, such as older adults and thus treatment adaptations may be warranted to establish efficacy for older adults and effectively address suicidal ideation as the primary treatment target. The aim of this study was to evaluate the efficacy of an adapted version of Cognitive Therapy for Suicide Prevention (CT-SP) compared to Enhanced Usual Care (EUC) for reducing suicidal ideation and hopelessness in suicidal older men.
Methods: Participants were 95 men who were age 50 and older (51.6% Black/African American, 41.1% White, 7.3% Other Races) and who endorsed suicidal intent or desire in the month prior to study enrollment. Following a baseline assessment, participants were

randomized to receive 12-16 sessions of either CT-SP or EUC. CT-SP is a case conceptualization-based, suicide-focused treatment and was adapted in this study to conceptualize the primary factors contributing to suicidal ideation for each patient, which guided the selection and implementation of cognitive and behavioral strategies to manage and address reasons for suicidal ideation and increase hope and reasons for living. EUC consisted of the usual care that patients would receive (i.e., typically medication management and/or psychotherapy) enhanced by weekly 20-30-minute supportive phone calls with a study case manager. Participants completed follow-up assessments at 1-, 3-, 6-, 9-, and 12-months post-baseline, which included the Columbia Suicide Severity Rating Scale (C-SSRS) and the Beck Hopelessness Scale (BHS).
Results: Compared to those receiving EUC, those receiving CT-SP had significantly greater reductions in both the severity (b=-0.06; p=.01; 95% CI: -0.10 to -0.01) and intensity (b=-0.24; p=.02; 95% CI: -0.43 to -0.04) of suicidal ideation as measured by the C-SSRS over the 12-month follow-up period. There were no significant differences between groups on hopelessness (b = 0.03; p = .69; 95% CI: -0.13 to 0.20).
Discussion: Results support the efficacy of this adapted version of CT-SP for targeting suicidal ideation in older men. Clinical and implementation implications, as well as future research directions to extend this work, will be discussed.

ORAL SESSION: DO TECH BASED INTERVENTIONS WORK?

Chair: Johan Bjureberg, Karolinska Institute

43. Cognitive Behavioral Therapy for Suicide Prevention (CBT-SP): Implementation of a Clinical Telehealth Training Program in the United States Veterans Health Administration

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Background: Cognitive Behavioral Therapy for Suicide Prevention (CBT-SP) is an evidence-based psychotherapy designed to reduce the likelihood of future suicidal behaviors and recommended by the Veteran Affairs/Department of Defense (VA/DoD) Clinical Practice Guidelines (CPG): Assessment and Management of Patients at Risk for Suicide (2019). CBT-SP is one of the four evidence-based practices (EBPs) within the Suicide Prevention 2.0 Clinical Telehealth Program (SP2.0) and uses an expert-led, live virtual training followed by weekly consultation with trained consultants.
The SP2.0 Clinical Telehealth Program has created the first and only enterprise-wide, virtual infrastructure and capacity for the implementation of EBPs for suicide prevention. Launching in April 2021, in 2 years SP2.0 has processed over 9,00 referrals for suicide prevention EBPs. As of March 2023, over 2,300 of SP2.0 referred Veterans consented to CBT-SP treatment. By August 2023, an expected 120 licensed psychotherapists will have been trained in CBT-SP. Currently all SP2.0 EBPs, including CBT-SP, are available to Veterans across all 18 Veteran Integrated Service Networks (VISNs) and all 139 VA Health Care Systems in the US.

Methods: The presentation will review the initial development and evolving dissemination of a nationally implemented, virtual CBT-SP training program, including didactic and experiential therapist training, and a 6-month weekly consultation program.
Results: The original CBT-SP training program offered a 3-week virtual workshop experience and a 16-week consultation phase. Based on qualitative feedback and training data, adaptations were implemented for suicide prevention therapist training needs. Modifications included shorter didactic and experiential components and increased consultation phase duration to provide real-world application of CBT-SP skills. Based on qualitative feedback from the first 2 training cohorts, a formal consultant training was created and implemented to improve the Consultant's ability to provide consistent, reinforcing verbal and written feedback.
The 12-hour CBT-SP Consultant training covers how to bolster trainee learning, engage in behavioral rehearsals, utilize objective rating measures, attain inter-rater reliability, and practice verbal/written training feedback. Monthly booster sessions and team meetings were implemented to support CBT-SP Consultants and improve inter-rater reliability and feedback consistency. Eight consultants have attended this training and led therapist cohorts through the 6-month consultation. Consultants rate trainee recordings for fidelity to the protocol using two objective measures. Individualized learning plans (coaching from CBT-SP Consultants) are implemented for trainees not meeting fidelity. Descriptive and qualitative data therapist outcome data will be presented. Overall therapist satisfaction scores at the end of consultation demonstrated very good to excellent consultant services.

Discussion: The nation-wide virtual CBT-SP training program and Consultant development within SP2.0 has demonstrated strong initial success. As the training program implementation evolves, stakeholder program evaluation data will facilitate additional adaptations and improvements. These dynamic processes will better serve therapists working with Veterans with a recent history of suicidal self-directed violence.

44. Accessing and Analyzing 988 Suicide and Crisis Lifeline Data: Opportunities for Suicide Prevention Research

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Background: The 988 Suicide and Crisis Lifeline (988 Lifeline) provides round the clock, free and confidential emotional support to people experiencing a suicidal crisis or emotional distress across the United States. The 988 Lifeline plays a critical role in a responsive and comprehensive continuum of crisis care and is highly utilized. Between July and December 2022, the 988 Lifeline received more than 2.1 million contacts (calls, texts and chats). The significant volume received by the 988 Lifeline presents a number of opportunities for researchers to analyze and understand how the Lifeline impacts users over the short and long-term and how public and environmental events may impact outreach to the 988 Lifeline. This presentation will be focused on briefly describing the types of data available to researchers interested in using 988 Lifeline data, including the process to access 988 Lifeline data. This presentation will also provide an example of research using 988 Lifeline data: the impact of a hip-hop song on 988 Lifeline volume.

Methods: 988 Lifeline data is currently available to researchers publicly, through formal request and/or collaboration. Publicly available data includes information on the volume of calls, texts, and chats routed to and answered by the 988 Lifeline. Time series data regarding 988 Lifeline contacts must be requested through Vibrant. The 988 Lifeline has also collaborated with researchers on evaluations utilizing data from call recordings, pre- and post-call, text, and chat surveys, interviews with callers and crisis staff, and data from call record logs. The study that will be featured during this presentation is an example of one request for time series data, which analyzed changes in daily call volumes to the 988 Lifeline and suicide rates during periods of high public attention to the song "1-800-273-8255" by Logic. The main outcome measures were daily Lifeline calls and suicide rates before and after the song's release.
Results: There are many research questions regarding 988 Lifeline services that can be undertaken by researchers. Over the past two decades, the 988 Lifeline has conducted over ten evaluations and has recently partnered on over five external research projects. Key insights have been garnered regarding the effectiveness of Lifeline programs and services and the impact of significant events, such as celebrity suicides, on help-seeking behaviors. The featured study found that during the 34-day high impact period that followed the song's release, MTV Video Music Awards 2017, and Grammy Awards 2018, there was an excess of 9,915 calls (an increase of 6.9%) to the 988 Suicide and Crisis Lifeline, and a reduction of 245 suicides (a decrease of 5.5%) below the expected number.
Discussion: The 988 Lifeline is a key part of an overall national suicide prevention strategy and part of a larger public health approach to suicide prevention. As exemplified with the recent research on Logic's song, the 988 Lifeline's high service utilization and abundance of analyzable data presents opportunities for researchers to further evaluate the impact of the Lifeline, as well examine other research questions initiated by investigators.

45. Characteristics of Youth Crisis App Users: Perceptions of Helpfulness and Barriers to Mental Health Care

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[1]University of Utah, [2]The Ohio State University

Background: In response to suicide being the leading cause of death for youth aged 10-24 in Utah, the Utah State Legislature created a commission that led to the development of the SafeUT crisis text app service. SafeUT is a crisis line that offers anonymous support via text-based chat or phone call. This service first became available in early 2016 and currently is available to over 98% of youth in Utah. This study provides descriptive information regarding the characteristics of SafeUT crisis text line users, their experiences with other mental health services, and barriers they encountered in trying to access care. Attaining a better understanding of these characteristics will facilitate better-tailored responses on the part of clinicians and crisis service volunteers and improve outcomes.
Methods: 1 in 5 SafeUT texters with greater than 10 volleys (back-and-forth chats between user and clinician) were provided with a link to participate in a research study. We included participants who reported being in grade school (12th grade and below) to capture the unique characteristics and challenges presented this group. Analyses included descriptive statistics, □2 tests, and paired t-tests.
Results: 210 grade school students ranging from 9-18 years of age completed at least part of the survey following their SafeUT encounter. Prior to ever engaging with SafeUT, 39%

reported engaging in formal mental health services in the past. 43% reported current mental health service usage. The most frequently endorsed barrier to accessing mental health services was "Do not want to talk to parent/guardian about it," with 43% of respondents identifying this as a barrier. Regarding self-injurious thoughts and behaviors (SITBs) in the two weeks prior to completing the survey, 72% reported experiencing thoughts of self-injury and 50% reported engaging in self-injury. 18% of all participants endorsed having attempted suicide in the past two weeks. Participants who identified as transgender or non-binary were more likely to have made suicide attempts (□2(1, N = 198) = 4.68, p = .03), as were participants who identified as being LGBQ (□2(1, N = 196) = 7.64, p = .006). Participants reported a significant reduction in presenting concerns following their contact with SafeUT (p's < .002), which included SITBs. Most (87%) of participants reported either feeling very or somewhat supported by the SafeUT clinician and 84% reported feeling very or somewhat satisfied with their encounter.
Discussion: The present study examined the characteristics of, and barriers experienced by, adolescents experiencing crisis and seeking text crisis services in Utah. Nearly half of the sample reported currently receiving formal mental health services. This calls to question whether clients are feeling sufficiently supported by their mental health professionals. Prior research indicates that youth are often uncomfortable sharing SITB experiences with mental health professionals for fear of potential consequences such as hospitalization or having their provider refuse to continue seeing them. The most common barrier reported by participants included not wanting to talk to their parent or guardian. This has important implications for future policymaking; identifying accessible and low-cost treatment options may offer an easy way to reach many at risk youth. Finally, 50% of youth endorsed engaging in self-injury in the two weeks prior to completing the survey. This suggests considerable education and outreach may be needed to precipitate earlier help seeking for SITBs. Fortunately, there were widespread reductions in the intensity of SITB-related concerns when comparing pre- versus post-SafeUT encounter ratings.

46. The Efficacy of Delivering Brief Cognitive Behavioral Therapy for Suicide Prevention via Telehealth to High-Risk Suicidal Individuals

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Background: Cognitive behavioral therapies are empirically supported for the rapid reduction of suicidal thoughts and behaviors (Tarrier et al., 2008). Specifically, Brief Cognitive Behavioral Therapy for suicide prevention (BCBT) has demonstrated empirical support for reducing suicide attempts as compared to treatment as usual (Brown et al., 2005; Rudd et al., 2015; Sinyor et al., 2020). However, no studies to date have assessed the effectiveness of BCBT when delivered via telehealth, highlighting an important knowledge gap considering increased use of telehealth after the outbreak of the novel coronavirus (COVID-19). In light of this knowledge gap, the primary objective of this study is to test the effectiveness of BCBT adapted for telehealth (BCBT-T) as compared to present-centered therapy adapted for telehealth (PCT-T), an active comparator, for the reduction of suicidal ideations and attempts among treatment seeking high-risk patients.
Methods: The study, which is currently open for enrollment, is actively recruiting participants who have reported recent suicidal ideation and/or suicidal behaviors. The study utilizes a two-arm randomized clinical trial design of BCBT-T as compared to PCT-T. To date, a total of 73 out of 80 participants have been enrolled in this pilot trial. We anticipate completing participant

enrollment with sufficient time to update and finalize analyses before the conference, if accepted. Participants were identified and referred by providers from our local outpatient mental health clinic. Following informed consent, participants were randomized to either BCBT-T or PCT-T and completed 12 weekly sessions via an online videoconferencing platform. Participants completed various self-report measures at baseline, during treatment, and at months 3, 6, 9, and 12 for post-treatment follow-up. Only baseline and 3-month follow-ups are included in these analyses.

Results: As recruitment is ongoing, all presented analyses are preliminary and will be updated prior to the conference if the submission is accepted. Participants who have completed treatment and 3-month follow-up assessments demonstrated significant reductions in suicidal ideations for both treatment conditions ($F(1, 38)=55.93$, p

Discussion: Preliminary findings support the effectiveness of both BCBT-T and PCT-T in reducing suicidal ideations among high-risk participants receiving care via telehealth. Additionally, there does appear to be an emerging, albeit insignificant, preference for those randomized to receive BCBT-T compared to PCT-T for reducing subsequent suicide attempts.

47. Cost-Effectiveness of Internet-Delivered Emotion Regulation Individual Therapy for Adolescents with Nonsuicidal Self-Injury Disorder

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[1]Karolinska Institute, [1]Karolinska Institutet

Background: Nonsuicidal self-injury (NSSI) is prevalent in adolescence and associated with adverse clinical outcomes. Effective interventions that are brief, transportable, and scalable are lacking. The purpose of the present study was to evaluate the cost-effectiveness of an Internet-delivered Emotion Regulation Individual Therapy for Adolescents (IERITA) with non-suicidal self-injury disorder.

Methods: In total, 166 adolescents (mean [SD] age = 15.0 [1.2] years; 154 [92.8%] female) who met criteria for nonsuicidal self-injury disorder were randomized to a 12-week IERITA delivered adjunctive to treatment as usual versus treatment as usual only. Cost-effective analyses using the Deliberate Self-Harm Inventory, and cost-utility analyses using quality-adjusted life year (QALY) estimates derived from the KIDSCREEN-10, were conducted by evaluating group differences in clinical outcomes and resource use from multiple perspectives at 1-month post-treatment.

Results: The addition of IERITA to treatment as usual was associated with additional costs of €2400 (95% CI 2071 to 2730) from a clinic's perspective, owing to the additional therapist time spent on treatment. From a societal perspective, the difference was €3172 (95% CI 1296 to 5047). At post-treatment, adolescents in IERITA reduced their DSHI-Y total score by 1.89 NSSI behaviors and gained an additional 0.04 QALYs compared to treatment as usual only. IERITA yielded an ICER of €1825 per point improvement on the DSHI-Y (measured once every week), €113 972 per QALY gained, and had a cost-effectiveness of 16.3% at a societal willingness-to-pay of €44 400 for one additional QALY.

Discussion: Offering IERITA to adolescents with NSSID reduces NSSI and generates small QALY gains at a higher cost than treatment as usual only. Depending on the societal willingness to pay for an additional QALY, IERITA might be a cost-effective addition to treatment as usual. Future studies evaluating long-term changes in QALYs and direct comparisons of IERITA versus a face-to-face treatment of NSSID are warranted. Resultswill be discussed from health-economical and ethical perspectives.

48. Adapting Crisis Line Facilitation to Increase Crisis Line Awareness among Us Army National Guard Soldiers

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Background: Suicide prevention is a global priority, and the United States has made substantial investments in expanding access to crisis support services, including the recent US nationwide rollout of 988. To date, the Military and Veterans Crisis Line (MVCL) has relied on public awareness campaigns to increase awareness of the resources, however these may miss key high-risk groups such as US Army National Guard soldiers. Our research team developed a brief intervention, called Crisis Line Facilitation (CLF), intended to increase comfort and confidence in using these services in times of need. Our prior work focused on delivery of CLF to Veterans hospitalized for a suicidal crisis to increase crisis service utilization. Recently, we have adapted CLF for group-based delivery to US Army National Guard soldiers within a specified unit during routine drill weekends.

Methods: This presentation will highlight two separate studies of CLF, a recently completed VA-funded randomized controlled trial and an ongoing Center for Disease Control (CDC)-funded translational study. Both studies implemented similar protocols, where participants are consented, screened, and then randomized to receive either a single session of CLF or enhance usual care. The VA study recruited 300 Veteran patients from inpatient psychiatric units and tested the impact of individually delivered CLF on crisis service use and suicidal behaviors. The CDC-funded study is ongoing but aims to recruit approximately 300 National Guard soldiers to test the impact of group-based CLF on crisis service utilization. For the CDC study, CLF was successfully modified be delivered in a group format so that soldiers within a particular unit could encourage suicide prevention through MVCL usage among their fellow soldiers, family members, or friends.

Results: For the VA study, randomization to individually delivered CLF versus enhanced usual care was associated with a significant decrease in suicidal behaviors over the 12-month follow-up ($\chi 2 = 18.48/p < 0.0001$), with no significant differences in service utilization. The CDC study is still underway, but the content of the intervention has been successfully modified for delivery in group format and the protocol has strong support from National Guard leadership. To date, we have recruited over 300 National Guard soldiers to participate across 6 units within the state of Michigan. Of those soldiers, only 56.7% reported knowing how to contact the MVCL, and 45.0% reported knowing what to expect if they were to contact the MVCL. Among this sample, 43.8% of soldiers reported personally knowing someone who has died by suicide. Despite this relatively high rate of personal experience with suicide, only 10.1% reported ever contacting the MVCL for themselves, a fellow soldier, or a family member or friend in the past. Available data from soldiers who participated in the CLF groups showed increases in both their confidence in being able to contact the MVCL, and their comfort with contacting the MVCL from before to after participation in the CLF group.

Discussion: Crisis services have an important role to play in national suicide prevention efforts and new and creative strategies are needed to help increase motivation and confidence in utilizing these services among individuals at varying levels of risk. Initial data support positive impact of CLF on suicidal behaviors. This line of work underscores the potential impact of strategic efforts to increase utilization of crisis services as well as the process of building on the CLF platform to reach high risk populations.

ORAL SESSION: UNDERSTANDING SUICIDE IN THE MILITARY

Chair: Lisa Brenner, University of Colorado, Anschutz Medical

49. An Implementation Science Pilot of Brief Cognitive Behavioral Therapy for Suicide Prevention in the U.s. Military Health System

Amanda Edwards-Stewart[1], Salvatore Libretto[2], Virginia DeRoma[2], Asiya Kazi[2], Liz McLaughin[2], Surya Narayanan-Pandit[2], Justin Baker[3], Craig Bryan[3], Fuad Issa*[4]

[1]Psychological Health Center of Exellence, [2]Psychological Health Center of Excellence, [3]The Ohio State University, [4]DoD / Defense Health Agency / Research and Engineering

Background: Establishing the effectiveness of a psychological health intervention without the intervention being implemented into practice is insufficient (Bauer and Kirchner, 2019). The gap between published research and the implementation of evidence-based findings into health care practice settings is well documented (Bauer and Kirchner, 2019; Davis and D'Lima, 2020). Research shows that it takes 17-20 years for clinical innovations to become adopted into practice (Mohajerzad et al., 2021; Morris et al., 2011). Implementation science has been developed to promote the systematic application of research findings into routine clinical care. The Practice-Based Implementation (PBI) Network is an initiative of the United States (U.S.), Department of Defense, Defense Health Agency's Psychological Health Center of Excellence. The PBI Network was established to rapidly translate research into clinical practice within the Military Health System (MHS). This Network supports the MHS by designing and implementing annual pilots leveraging implementation science to study factors promoting and impeding effective delivery of evidence-based psychological health treatments.
Methods: The PBI Network is currently piloting the use of Brief Cognitive Behavioral Therapy for Suicide Prevention (BCBT-SP) within the MHS. BCBT-SP is a 12-session evidence-based treatment for individuals at risk for suicide (Bryan and Rudd, 2018). BCBT-SP is a treatment which has shown promise reducing suicide in randomized controlled trials (Bryan et al., 2018; Rudd et al., 2015; Sinyor et al., 2020). The PBI Network began piloting the implementation BCBT-SP within military behavioral health care facilities. A total of 65 behavioral health care providers across seven Army and Air Force behavioral outpatient clinics attended the two-day BCBT-SP intensive training sessions. The aim of the BCBT-SP implementation pilot is to determine the effectiveness of formally training providers who can then implement BCBT-SP with patients at various levels of suicide risk.
Results: A summary of pilot findings will be included in this presentation, including the acceptability and feasibility of BCBT-SP in the MHS, providers' willingness to complete the training, fidelity to treatment delivery, use of consultation and facilitation resources, clinic process changes that supported implementation of BCBT-SP in the MHS, and the likelihood that site leaders and BH providers will maintain BCBT-SP delivery after the pilot has ended. This presentation will examine barriers and facilitators at the patient, provider, and systems levels to establish BCBT as a suicide prevention intervention in MHS behavioral health clinics. Lessons learned from the pilot will be explored with recommendations for addressing implementation challenges and fostering maintenance of the BCBT-SP delivery approach.
Discussion: These findings will provide an evidence base for the U.S. Department of Defense's MHS leadership to determine the feasibility of implementing BCBT-SP into the MHS.

50. Suicide Exposure in Army National Guard: Comparing Military and Civilian Exposures

Julie Cerel*[1], Alice Edwards[1], Myfanwy Maple[2], Timothy Olsen[3], Christopher Drapeau[4]
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Background: The National Guard compromises over 33% of the United S Army and has mobilized over 500,000 troops for federal missions since 2001, Deployed National Guard and reserve component military personnel comprise almost half of deployed combat troops. In recent years, they have additionally been activated for myriad domestic missions, including natural disaster responses and civil disturbances. Despite this level of service commitment, and unlike full time military, National Guard troops are not eligible for military health care during non-deployment times and non-active duty service. Yet suicide risk factors have been shown to be equally likely in National Guard troops who are never deployed compared with those who had been deployed. Exposure to suicide is a known suicide risk factor. Thus, it is vital to determine how suicide exposure is a stressor for Guard members who have similar or greater exposure than active duty members but less access to comprehensive mental health services.
Methods: Members of the state National Guard were invited to complete paper surveys at drill weekends, the periods of time in which Guard soldiers are on duty. Surveys included measures of suicide exposure, demographics and mental health. The final sample included 1,992 National Guard personnel. The sample was predominantly (88.4%) male.
Results: Over half (58.4%; n=1,163) of the sample reported lifetime suicide exposure, defined as knowing someone who died by suicide at some point in their life. Respondents with suicide exposure were significantly older than non-exposed, held a higher rank, and had a history of more deployments. Participants with suicide exposure were more than twice as likely to have a probable diagnosis of both anxiety and depression diagnoses and were over three times as likely to have a probable diagnosis of PTSD.
Of those with any suicide exposure, 40.2 % reported any exposure to another member of the National Guard and the rest reported only knowing people who died by suicide who were civilians. Those with National Guard suicide exposure were more likely to be older with higher rank and higher number of deployments than those with civilian only exposure. There were no differences between these two groups in anxiety or depressive symptoms but the Guard exposed group had more likely PTSD than the civilian-only exposure group.
Discussion: It is important to understand the personal and work-related correlates of exposure to suicide in a population with high rates of suicide like the National Guard. Compared to previous population-based studies, a higher percentage of members of the National Guard report lifetime exposure to suicide. This exposure is related to symptoms of depression and anxiety. Over forty percent report knowing someone in the National Guard who died by suicide. A better understanding of how to help those exposed to the suicides of fellow soldiers can improve unit functioning and referrals into appropriate services to reduce exposure related distress.

51. United States Military-Related Traumatic Brain Injury Increases Rates of New Onset Mental Health Conditions and Risk for Suicide

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Background: Although researchers have long been aware of the complicated relationships between traumatic brain injury (TBI), mental health conditions, and negative outcomes, such as suicide, clinical and data-related challenges have created significant research roadblocks. Analyses aimed at identifying such relationships would ideally be conducted with large longitudinal datasets which allow for identification of: 1) pre-existing mental health conditions; 2) an index TBI event; 3) post-TBI new onset mental health conditions; and, 4) death by suicide using the gold standard National Death Index data. Towards this end, members of this team have evaluated rates of new onset psychiatric conditions among those with and without a history of TBI during United States (US) military service, whether history of TBI was associated with increased risk for suicide, and whether new onset psychiatric conditions while in military services mediate the relationship between TBI and suicide.
Methods: Retrospective cohort study using the Substance Use and Psychological Injury Combat Study (SUPIC) database. Demographic, US military, and health data from the US Department of Defense within SUPIC were compiled and linked with National Death Index records to identify deaths by suicide. Mediation analyses consisted of Accelerated Failure Time (AFT) models in conjunction with the product of coefficients method. Observations were censored at date of death due to causes other than suicide or at the end of the study timeframe, 12/31/2018. AFT model distributions for survival time (Weibull, exponential, lognormal, logistic, log-logistic, and Gaussian) were compared using Akaike Information Criteria within the model that included history of TBI (y/n), age category (18-24, 25-29, 30-34, 35-39, 40+), sex at birth, race and ethnicity (American Indian/Alaska Native, Asian American or Pacific Islander, White non-Hispanic, Black non-Hispanic, Hispanic, other/unknown), and FY of return from index deployment (2008-2009, 2010-2011, 2012-2014). The log-logistic distribution had the lowest AIC and was used for all further AFT models. The need to control for mental health diagnoses that occurred prior to TBI was then examined.
Results: The study population included 860,892 soldiers, 12.6% with at least one documented TBI (military health record). The cohort was mostly male (89.0%) and between the ages of 18-29 (62.4%). Larger increases in mental health diagnoses were observed for all conditions from pre- to post-TBI (pre- to post-match date for those without a history of TBI), with markedly different increases observed for mood (67.7% vs. 37.5%) and substance use (100% vs. 14.5%). Time to suicide direct effect estimates for soldiers with a history of TBI were similar across mediators. For example, considering new onset adjustment disorders, time to suicide was 0.833 times (16.7%) faster (95% confidence intervals [CI]: 0.756, 0.912) than soldiers without a history of TBI. Indirect effects of TBI were significant across all mediators. The largest indirect effect was through new onset substance use disorder, with a time to suicide 0.372 times (63.8%) faster (95% CI: 0.322, 0.433) for soldiers with a military-related TBI.
Discussion: New onset mental health conditions were higher among US military personnel with, versus without, a history of TBI. Risk for suicide was both directly and indirectly related to history of military-related TBI. Increased efforts are needed to conceptualize the accumulation of risk associated with multiple military-related exposures (e.g., TBI,

emotionally distressing events) and identify evidence-based interventions which address mechanisms associated with frequently co-occurring conditions.

52. Comparing Self-Guided and Clinician-Administered Crisis Response Planning: A Pilot Randomized Controlled Trial in Us Military Veterans

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Background: Crisis Response Planning (CRP) is a portable, efficacious psychotherapeutic intervention developed and previously tested by our team. CRP consists of five steps designed to improve self-regulation to avert or reduce acute suicidal episodes during which suicidal behaviors are especially probable: 1) personal warning signs of imminent suicidal ideation; 2) self-management strategies to effectively cope with negative emotionality or suicidal urges; 3) reasons for living; 4) supportive others to contact; and 5) professional contacts, including emergency resources (e.g., calling 911 or presenting to the nearest emergency department. CRP has been adapted and tested as a brief (

Methods: In this study, 74 participants were randomized to receive either the traditional, clinician-administered CRP or CRP-S, completed a self-report rating scale of suicidal ideation, measured using a validated suicide visual analog scale (range: 0-100), at baseline and daily for one week post-intervention. Participants were compensated up to $175 for participation.

We conducted a series of generalized linear mixed models to test whether suicidal ideation significantly decreased following CRP or CRP-S administration and whether reductions in suicidal ideation significantly differed between groups.

Results: There was a significant reduction in suicidal ideation across groups ($F(7,487)=3.6$, $p<.001$). On average, suicidal ideation tended to significantly decrease in the initial days (day 0 to day 3) following the creation of a CRP (Bs = -.14 to -.05, SEs = .02 to .06, ps = .009 to .022); however, curves flattened out and there were no significant changes in suicidal ideation throughout the remainder of the follow-up period (day 4 to day 7: Bs = -.02, to .07, SEs = .02 to .06, ps = .189 to .615).

Reductions did not significantly differ between the CRP and CRP-S groups. Administration type (self vs. clinician) was unrelated to suicidal ideation across the study period, and the time by group interaction was non-significant, indicating that changes in suicidal ideation over time did not differ by administration type. Regardless of administration type, participants reported greater use of CRPs on days in which they had more severe suicidal ideation However, there were no significant two- or three-way interactions between time, administration type, and CRP use in predicting suicidal ideation, indicating that suicidal ideation did not differentially change as a function of any combination of administration type or CRP use.

Discussion: These results support the comparable effects of CRP-S to its clinician-administered counterpart in reducing suicidal ideation. CRP-S may be ideally suited for settings in which the traditional CRP is not feasible due to clinic or provider constraints and for patients who may lack access to efficacious suicide prevention interventions.

53. A 16-Year Follow-Up of Suicidal Behavior in Canadian Forces Soldiers Using a Nationally Representative Sample

Shay Lee Bolton*[1], Natalie Mota[1], Tracie Afifi[1], Murray Enns[1], James Thompson[2], Gordon Asmundson[3], Jitender Sareen[1]

[1]University of Manitoba, [2]University of Queens, [3]University of Regina

Background: Introduction
Suicide is well-recognized as a major public health problem worldwide. In more recent years, there has been much concern about rates in military personnel. In Canada specifically, rates of death by suicide in Canadian Forces (CF) active personnel have been noted as lower than rates in the general population, however rates in Canadian veterans have been found to be much higher, highlighting this critical transition period. One study reported that between 1976 and 2012, the rate of suicide death in veterans was 1.4 times higher for males and 1.8 times higher in females. Although death by suicide is a critical outcome of importance in prevention research, some argue that we need to better understand progression from suicidal thoughts to behavior to create opportunities for preventive interventions in this vulnerable group. We aimed to examine the trajectory of suicidal behavior among CF active duty soldiers over time.

Methods: This study utilizes data from a 16-year follow-up of 2941 CF Regular Force personnel: the 2002 Canadian Community Health Survey – Canadian Forces Supplement (CCHS-CFS) and the 2018 Canadian Armed Forces and Veterans Mental Health Survey (CAFVMHS), many of whom have transitioned from active duty to veteran status in that time frame. The CCHS-CFS asked respondents about suicidal ideation and suicide attempts in their lifetime. The CAFVMHS measured suicidal ideation, plans, and attempts between 2002 and 2018. Descriptive statistics will be presented exploring changes in rates across the follow-up. Further analyses will explore: 1) persistence of suicidal ideation, 2) transition of ideation to suicidal behavior (plans and/or attempts), 3) new onset of suicidal ideation/behaviors, and 4) remission of suicidal ideation/behavior.

Results: In 2018, the lifetime prevalence of suicidal ideation, plans, attempts were 30.2%, 12.3%, and 5.1%, respectively. Past year prevalence of suicidal behavior (ideation, plans, or attempts) was nearly double the rate in 2018 (8.9%) compared to 2002 (4.5%). Military personnel that endorsed a history of suicide attempts had an increased odds (3.15 1.21-8.23) odds of being deceased over the 16 follow-up period.

Discussion: The prevalence of suicide behavior among military and veterans increases over the course of their lives. Prevention and early intervention strategies are necessary to mitigate the risk of suicidal behavior especially as military personnel transition to civilian life.

54. Risk and Protective Factors against Suicidality in the Military Health and Well Being Project

Katherine Musacchio Schafer*[1], Thomas Joiner[1]

[1]Florida State University

Background: Globally, and in the US specifically, suicidality is a public health concern. Indeed, within the US, suicidality disproportionately affects Veterans. The increased prevalence rate of suicidality among Veterans may reveal risk and protective factors that are important to suicidality. This knowledge of risk/protective factors within US Veterans could

be used for fodder in novel treatment and prevention efforts. In 2020 the Military Health and Well-Being Project was conducted to study the link between risk/protective constructs with suicidality among Veterans. In the present project we present those findings.
Methods: We investigated the contribution of risk factors (i.e., self-stigma, daily stress, combat exposure, substance use, traumatic brain injury, and moral injury) as well as protective factors (i.e., social integration, social contribution, public service motivation, purpose and value, and help-seeking) towards suicidality. Individual relations were studied via correlation. Relative contributions of risk or protective factors were studied linear regressions. There were 1,495 participants (male, n = 1,004, 67.2%; female, n = 483, 32.3%; transgender = 8, .5%).
Results: Regarding protective constructs, when studied via correlation all variables were negatively and significantly correlated with suicidality (|r|'s > .075, p's < .01), such that greater social integration, social contribution, public service motivation, purpose and value, and help-seeking were associated with a lesser degree of suicidality. Social contribution was the strongest and most negative correlate of suicidality (r = -.393, p < .001), with the next strongest construct being social integration (r = -.161, p < .001).
Regarding risk constructs, again using correlation all relations with suicidality were statistically significant and in the positive direction (r's > .205, p's < .05). Such that self-stigma, daily stress, combat exposure, substance use, traumatic brain injury, and moral injury were associated with elevated experience of suicidality. Moral injury (r = .519, p < .001) was the strongest and most positive risk correlate of suicidality. The next strongest and most positive risk correlate was stress (r = .481, p < .001).

To investigate the relative contribution of protective constructs cross-sectionally towards suicidality, a linear regression was conducted. All protective constructs (i.e., social integration, social contribution, public service motivation, purpose and value, and help-seeking) were entered simultaneously. Results: indicated that social contribution provided the greatest protection from suicidality (t = -15.599, p < .001), followed by social integration (t = -4.881, p < .001).

The link between risk constructs with suicidality was investigated via another linear regression. All risk factors were included simultaneously, and none of the risk factors were significant contributors towards suicidality (|t|'s < 2.00, p's > .079).

Discussion: When we investigated protective constructs individually as well as simultaneously, social contribution was the strongest protective construct against suicidality. Social integration additionally accounted for significant reduction in suicidality when all protective factors were considered together. When we investigated individual associations between risk constructs and suicidality, moral injury was the strongest correlate. However, when risk constructs were studied simultaneously, none of the factors accounted for a significant amount of the variance in suicidality.
Findings suggest that among Veterans, social contribution possibly protects against suicidality and this could be a possible treatment target for the prevention or reduction of suicidality.

ORAL SESSION: CONSIDERATION OF SOCIAL STRESS

Chair: Ana Portillo-Van Diest, IMIM (Institut Hospital del Mar d'Investigacions Mèdiques)

55. ORAL WITHDRAWN

56. Associations between Adverse Social Determinants of Health and Suicide Death

Elyse Llamocca*[1], Hsueh-Han Yeh[1], Lisa Miller Matero[1], Joslyn Westphal[1], Cathrine Frank[1], Gregory Simon[2], Ashli A Owen-Smith[3], Rebecca Rossom[4], Frances Lynch[5], Arne Beck[6], Stephen Waring[7], Christine Y Lu[8], Yihe Daida[9], Cynthia Fontanella[10], Brian Ahmedani[1]

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Background: Only about half of individuals who die by suicide have a diagnosed mental health disorder. Identification of individuals experiencing adverse social determinants of health (SDoH) may help to capture individuals at high-risk for suicide who would be missed using clinical risk factors alone. Diagnosis codes, which are routinely collected during clinical care, may be a useful method to identify such individuals. The objectives of our study were to identify adverse SDoH ICD-9-CM code prevalence among individuals who died by suicide and to examine associations between documented adverse SDoH and suicide death. We hypothesized that, while prevalence of documented adverse SDoH identified using ICD-9-CM codes would be low, as these codes may have been underutilized during the ICD-9-CM era, documented adverse SDoH would be positively associated with suicide death.
Methods: We performed a case-control study using linked medical record, insurance claim, and mortality data from 2000 to 2015 obtained from nine Mental Health Research Network-affiliated health systems. We included 3,330 individuals who died by suicide and 333,000 randomly selected controls matched on index year and health system location. Subjects had ≥10 months of healthcare plan enrollment prior to study index date, the suicide date for each case and their matched controls. We estimated the prevalence of documented adverse SDoH using generalized linear mixed models with a binomial distribution and an identity link. We used logistic regression models conditional on index year and site to estimate the odds of suicide death associated with adverse SDoH while controlling for age group, gender, and mental health diagnosis history.
Results: Adverse SDoH documentation was low; only 6.58% (95% CI: 5.74%-7.42%) of cases had ≥1 documented adverse SDoH in the year prior to suicide death. Prevalence of several documented adverse SDoH categories was lower than would be expected based on prevalence of these issues in the general US population. Any documented SDoH and several specific adverse SDoH categories were more frequent among cases than controls. Any documented adverse SDoH was associated with higher odds of suicide death (OR=2.76; 95% CI: 2.38-3.20), as was documentation of family alcoholism/drug addiction (OR=18.23; 95% CI: 8.54-38.92), being an abuse victim/perpetrator (OR=2.53; 95% CI: 1.99-3.21), other primary support group problems (OR=1.91; 95% CI: 1.32-2.75), employment/occupational maladjustment problems (OR=8.83; 95% CI: 5.62-13.87), housing/economic problems (OR: 6.41; 95% CI: 4.47-9.19), legal problems (OR=27.30; 95% CI: 12.35-60.33), and other psychosocial problems (OR=2.58; 95% CI: 1.98-3.36).
Discussion: Although documented SDoH prevalence was low, documentation of several adverse SDoH was associated with increased odds of suicide death, supporting calls to increase

SDoH data captured in medical records. This will improve understanding of SDoH prevalence and assist in identification and intervention among individuals at high suicide risk.

57. A Network Analysis of Depressive Symptoms, Psychosocial factors, and Suicidal Ideation in Adolescents Aged 12-20 Years

Shaoling Zhong*[1], Daomeng Cheng[2], Jinghua Su[2], Jiahuan Xu[2], Jiawen Zhang[2], Ruoyan Huang[2], Meng Sun[2], Jiali Wang[3], Yi Gong[2], Liang Zhou[2]

[1]The Affiliated Brain Hospital of Guangzhou Medical University, [2]The Affiliated Brain Hospital of Guangzhou Medical University, Guangzhou, [3]Xiangya School of Public Health, Central South University, Changsha

Background: Suicide has aroused global concern, and a better understanding of the relationships between suicide ideation and psychological symptoms and psychosocial factors among adolescents is critical. The study aimed to investigate the factors relating to suicidal ideation.
Methods: This study adopted a cross-sectional study design and a multistage stratified cluster sampling method. We recruited adolescents from middle and high schools between December 2020 and September 2021 in Guangzhou, China. We assessed loneliness, social support, bullying victimization, depressive symptoms, and suicidal ideation. We used network analysis to examine the network structure of these risk and protective factors relating to suicidal ideation and identify central symptoms and bridge symptoms.
Results: A total of 347 (4%) adolescents reported suicidal ideation in the past two weeks. Network analyses identified ‘hopeless’, ‘psychomotor’, and ‘failure’ were the three strongest edges linked to suicidal ideation. The most central nodes were identified as 'hopeless' being the most central node, followed by loneliness and verbal bullying victimization, while sexual bullying victimization, sex, and relational bullying were the strongest bridging symptoms in the network.
Discussion: This is the first study to employ network models to examine the correlation among suicidal ideation, depressive symptoms, loneliness, bullying victimization, and social support in a large representative sample of adolescents in China. The study sheds light on the complex relationships between suicidal ideation and various risk and protective factors in adolescents.

58. Divorce and Risk of Suicide Attempt in a Swedish National Cohort

Alexis Edwards*[1], Henrik Ohlsson[2], Mallory Stephenson[1], Jessica Salvatore[3], Casey Crump[4], Kenneth Kendler[1], Jan Sundquist[2], Kristina Sundquist[2]

[1]Virginia Commonwealth University, [2]Lund University, [3]Rutgers University, [4]Icahn School of Medicine at Mount Sinai

Background: In multiple theories of suicidal behavior, a lack of social integration or connectedness features prominently as a risk factor. Accordingly, divorce, which indicates the end of an important, and frequently long-term, interpersonal relationship, has the potential to precipitate suicidal behavior. While prior studies indicate that risk of suicide attempt or death is increased after divorce, further research is needed to characterize the persistence of this association, potential sex differences, and the extent to which the association may be causal versus attributable to confounding factors.

Methods: Survival analyses and co-relative models were used to estimate the association between divorce and first suicide attempt in a cohort of married individuals born 1960-1990 (N=1,601,075). Analyses were stratified by sex. Observation began at the date of marriage and ended at registration for suicide attempt, emigration, death, or end of follow-up (12-31-2018). A series of survival models were adjusted for sociodemographic covariates, psychopathology, and aggregate genetic liability to suicide attempt in the form of family genetic risk scores (FGRS). In co-relative models, relative pairs of varying genetic relatedness (cousins, half-siblings, full siblings, and monozygotic twins) were compared to account for familial confounding factors that could jointly increase risk of divorce and suicide attempt.
Results: Among this cohort, 25.7% divorced during the follow-up period and 1.6% had a registration for suicide attempt. In survival models accounting for sociodemographic covariates, divorce was associated with suicide attempt (hazard ratio [HR] = 2.94; 95% confidence intervals [CI] 2.85; 3.02). This association was weaker among males than among females (HR = 0.83; CI = 0.79; 0.87 and subsequent analyses were stratified by sex. In models further adjusted for psychopathology and FGRS, the association between divorce and suicide attempt was attenuated but remained significant for females (HR = 1.77; CI = 1.69; 1.84) and males (HR = 1.66; CI = 1.59; 1.74). Co-relative analyses suggested that the observed association between divorce and suicide attempt was partially attributable to familial confounding factors but that a potentially causal effect remained (HRs 1.45-2.13). Supplementary analyses revealed that the risk of suicide attempt declined with increasing time since divorce, and that risk of attempt was higher among those whose marriage had been shorter.
Discussion: Divorce is associated with increased risk of suicide attempt even after accounting for a range of sociodemographic and psychiatric covariates. While familial confounding contributes to this association, especially among females, a residual causal relationship suggests that prevention and intervention efforts could lead to improved outcomes, particularly if pursued in the period shortly prior to or after divorce.

59. Risk Factors of Subsequent Suicidal Acts in China Suicide Prevention Hotline: A Prospective Study

Yongsheng Tong*[1], Yi Yin[2]

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Background: Hotline is a low-cost and effective measure in suicide prevention. However, few studties investigated risk factors of suicidal acts among hotline callers.
Methods: This prospective study was conducted in the largest suicide prevention hotline in China. Potential risk factors of suicidal acts, including suicidal ideation and plan, severity of depresion etc., were evaluated for every callers while the index calls were received. In total, 8911 callers of the Beijing Psychological Support Hotline, had been followed for up to one year after their index calls. The outcome is subsequent suicidal act (suicide attempt or suicide death) occurred during follow-up period. Cox proportional harzard regression was used to select risk factors.
Results: Totally, 807 callers made subsequent suicidal acts within one year, among them, 789 callers making suicide attempts, other 15 and 3 callers died by their first and second subsequent suicidal acts. Compared with callers without subsequent suicidal acts, callers with subsequent suicidal acts were younger, more likely being female, and experiencing suicidal ideation or

plan, hopelessness, severe depression, and previous suicide attempts,. Results: of Cox regression analysis indicated that, experiencing suicidal ideation (HR=2.55, 95% CI:1.86-3.49) or suicidal plan (HR=6.55, 95% CI: 4.70-9.12) in last two weeks, current high hopelessness (HR=2.10, 95% CI: 1.60-2.75), current severe depression (HR=1.53, 95% CI: 1.24-1.89), previous suicide attempts history (HR=1.88, 95% CI: 1.59-2.22), had severe physical illness (HR=1.38, 95% CI: 1.15-1.66), and previous history of being abused (HR=1.41, 95% CI: 1.20-1.65) were major risk factors of subsequent suicidal acts among suicide prevention hotline callers.
Discussion: While deliver psychological intervention to callers of suicide prevention hotline, operators should comprehensively estimate callers' suicide risk and focus on callers reporting suicidal ideation, plan, or previous suicide attempts, and those with severe depression or physical illness.

60. Daily Suicidal Ideation in Spanish University Students

Ana Portillo-Van Diest*[1], Laura Ballester Coma[2], Jordi Alonso[3], Beatriz Puértolas-Gracia[4], Paula Carrasco Espi[5], Raquel Falcó[6], Francisco H Machancoses[7], Jose A Piqueras[6], Maria Luisa Rebagliato[8], Tíscar Rodríguez[9], Gemma Vilagut[10], Philippe Mortier[11]

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Background: Previous research using Experience Sampling Methods (ESM) has shown that suicidal ideation (SI) can fluctuate in a matter of hours or even minutes. Samples in the literature are predominantly clinical and small, and do not assess representativity of the sample regarding the target population. Here we present first descriptive results from a 14-day ESM study focusing on mental health problems among Spanish undergraduate students.
Methods: n= 2,427 undergraduate students from 5 public universities completed a web-based self-report baseline survey including well-validated mental disorder screening instruments, and measures for a wide range of risk and protective factors (PROMES U project, www.promesinfo.org). A total of 1,259 participants were subsequently invited through quota sampling to participate in a 14-day smartphone-based ESM study. Students were assessed daily for 24-hour passive and active suicidal ideation, sleep, alcohol use, and types of experienced stressful events. In addition, momentary assessments were conducted four times a day at random times within 2-hour intervals (morning, midday, afternoon and evening) focusing on momentary stress, positive and negative affect, and specific social context and interactions (project registered at osf.io/p7csq).

Results: A total of 782 students (62.1% of invited) participated in the ESM study (79.2% female; 73.8% aged 18-21). Of them, n=645 completed the ESM study (i.e., answered at least one assessment on day 14). Participation was higher among female students (OR=1.41) and lower among those aged 30+ (OR=0.2 vs those aged 18-21), with a history of childhood-adolescent emotional abuse (OR=0.75), recent death of a friend or family member (OR=0.72), and with a 12-month suicide attempt (OR=0.26). ESM completion was lower among those with childhood-adolescent sexual abuse (OR=0.42) and neglect (OR=0.56), those having experienced 12-month sexual assault or rape (OR=0.29) and having 3 or more 12-month stressful life events (OR=0.58 vs none).

Among the 167 (21.4%) that reported 30-day SI (passive or active) at baseline, 96 (57.5%) reported 24-hour SI (passive or active) in at least one ESM assessment, and 18 (10.8%) reported 24-hour SI (active or passive) for at least 7 of the 14 days. Corresponding figures for 24-hour active SI are 60 (35.9%), and 5 (3%), respectively. Among those without 30-day SI in the baseline survey, 70 (11.4%) reported 24-hour SI (passive or active) in at least one ESM assessment, and 3 (0.5%) reported 24-hour SI (active or passive) for at least 7 of the 14 days. Corresponding figures for 24-hour active SI are 20 (3.3%), none with active SI for 7 days or more.

The Intra-class Correlation Coefficient of 24-hour passive SI was 0.44 among those with 30-day SI (passive or active).

Discussion: Our findings are in line with previous epidemiological research documenting high prevalence of suicidal ideation among undergraduate students. The initial descriptive analysis from this ESM study suggests high within-individual variability of suicidal ideation across short periods of time. Current analysis (with expected results by October 2023) are therefore focusing on developing explanatory multilevel models for suicidal ideation, considering a wide range of risk and protective factors. Findings suggest that ESM participation and completion may be determined by gender, age, specific childhood-adolescent and recent adverse experiences, as well as recent suicidal behavior. This calls for carefully designed missing data handling techniques to address potential non-response bias.

Tuesday, October 17, 2023

1:15 p.m. - 2:45 p.m.

ORAL SESSION: NEUROBIOLOGY AND ENVIRONMENT

Chair: Lisa Pan, University of Pittsburgh

61. Neurometabolomics of Depression and Suicidal Behavior

Lisa Pan*[1], Anna Maria Segreti[2], Joseph Wrobleski[3], Annie Shaw[3], Keith Hyland[4], Marion Hughes[5], David Finegold[6], Robert Naviaux[7], David Brent[2], Jerry Vockley[8], David Peters[3]

[1]University of Pittsburgh, [2]UPMC/ Western Psychiatric Institute and Clinic, [3]UPMC/MWH, [4]Medical Neurogenetics, [5]UPMC, [6]University of Pittsburgh School of Public Health, [7]University of San Diego School of Medicine, [8]UPMC/CHP

Background: Background: Refractory depression is a devastating condition with significant morbidity, mortality, and societal cost. Approximately 15% of patients with major depressive disorder are refractory to currently available treatments. We hypothesized metabolic abnormalities contributing to treatment refractory depression are associated with distinct findings identifiable in the cerebrospinal fluid (CSF). Our hypothesis was confirmed by a previous small case-controlled study. Here we present a second, larger replication study.
Methods: Methods: We conducted a case-controlled, targeted, metabolomic evaluation of 141 adolescent and adult patients with well-characterized history of depression refractory to three maximum-dose, adequate-duration medication treatments, and 36 healthy controls. Plasma, urine, and CSF metabolic profiling were performed by coupled gas chromatography/mass spectrometry, and high-performance liquid chromatography, electrospray ionization, tandem mass spectrometry.
Results: Results: Abnormalities were identified in 67 of 141 treatment refractory depression participants. The CSF abnormalities included: low cerebral folate (n = 20), low tetrahydrobiopterin intermediates (n = 11), and borderline low-tetrahydrobiopterin intermediates (n = 20). Serum abnormalities included abnormal acylcarnitine profile (n = 12) and abnormal serum amino acids (n = 20). Eighteen patients presented with two or more abnormal metabolic findings. Sixteen patients with cerebral folate deficiency and seven with low tetrahydrobiopterin intermediates in CSF showed improvement in depression symptom inventories after treatment with folinic acid and sapropterin, respectively. No healthy controls had a metabolite abnormality.
Discussion: Conclusions: Examination of metabolic disorders in treatment refractory depression identified an unexpectedly large proportion of patients with potentially treatable abnormalities. The etiology of these abnormalities and their potential roles in pathogenesis remain to be determined.
*testing is ongoing and more data may be available at the time of the presentation

Keywords: Cerebral folate deficiency; metabolomics; suicide; tetrahydrobiopterin; treatment refractory depression.

62. Accelerated Epigenetic Aging in Patients with a History of Suicide Attempt

Jussi Jokinen*[1], Marie Åsberg[2], Adrian Boström[2]
[1]Umeå University, [2]Karolinska Institutet

Background: Suicide attempts (SA) are associated with excess non-suicidal mortality, putatively mediated in part by premature cellular senescence. Emotional unstable personality disorder (EUPD; previously borderline personality disorder, BPD) is associated with excess natural-cause mortality, comorbid medical conditions, poor health habits and stress related epigenomic alterations. Previous studies demonstrated that GrimAge - a state-of-the-art epigenetic age (EA) estimator - strongly predicts mortality risk and physiological dysregulation. Herein, we investigated if violent SA with high intent-to-die is predictive of epigenetics-derived estimates of biological aging. Further, in another clinical cohort of women with EUPD, we utilized the GrimAge algorithm to investigate whether women with EUPD and a history of recent suicide attempts exhibit EA acceleration (EAA) in comparison to healthy controls.
Methods: The genome-wide methylation pattern was measured using the Illumina Infinium Methylation EPIC BeadChip in whole blood of 88 suicide attempters and 97 EUPD patients and 32 healthy controls.. In the first cohort, the subjects were stratified into two groups based

on the putative risk of later committed suicide (low- [n = 58] and high-risk [n = 30]) in dependency of SA method (violent or non-violent) and/or intent-to-die (high/low).Estimators of intrinsic and extrinsic EA acceleration, one marker optimized to predict physiological dysregulation (DNAmPhenoAge/AgeAccelPheno) and one optimized to predict lifespan (DNAmGrimAge/AgeAccelGrim) were investigated for associations to severity of SA, by univariate and multivariate analyses.
Results: The first study was adequately powered to detect differences of 2.2 years in AgeAccelGrim in relation to SA severity. Baseline DNAmGrimAge exceeded chronological age by 7.3 years on average across all samples, conferring a mean 24.6% increase in relation to actual age. No individual EA acceleration marker was differentiated by suicidal risk group ($p > 0.1$). In the second study, EA estimator DNAmGrimAge exceeded chronological age by 8.8 and 2.3 years in the EUPD and control group, respectively. Similarly, EAA marker AgeAccelGrim was substantially higher in EUPD subjects when compared to controls, in both univariate and multivariate analyzes ($p < 0.00001$). Tobacco usage conferred substantial within-group effects on the EA-chronological age difference, i.e., 10.74 years (SD = 4.19) compared to 6.00 years (SD = 3.10) in the non-user EUPD group ($p < 0.00001$).
Discussion: Preventative healthcare efforts aimed at curtailing excess mortality after suicide attempt may benefit from acting equally powerful to recognize somatic comorbidities irrespective of the severity inherent in the act itself.These results underscore the importance of addressing medical health conditions along with low-cost preventative interventions aimed at improving somatic health outcomes in EUPD, such as efforts to support cessation of tobacco use. The independency of GrimAge to other EA algorithms in this group of severely impaired EUPD patients, suggest it may have unique characteristics to evaluate risk of adverse health outcomes in context of psychiatric disorders.

63. Perseveration on Suicidal Thoughts and Images in Daily Life: An Examination of the Cognitive Model of Suicide Using Ecological Momentary Assessment

Megan Rogers*[1], Keyne Law[2], Olivia Lawrence[3]
[1]Texas State University, [2]Seattle Pacific University, [3]Teachers College, Columbia University

Background: Suicide-specific rumination, characterized by repetitive and perseverative thoughts about suicidal thoughts and images, has been consistently linked to increased risk for suicide-related outcomes, including past suicide attempts (Rogers and Joiner, 2018), concurrent suicidal ideation severity (Rogers et al., 2022), and suicidal intent at three-day follow-up (Rogers et al., 2021). However, suicide-specific rumination has not been examined within briefer timeframes (i.e., over the course of hours) nor within the context of a theoretical model of suicide. For instance, the cognitive model of suicide (Wenzel and Beck, 2008) proposes that, within the context of acute life stressors, hopelessness interacts with attentional fixations on suicide-relevant stimuli to increase short-term risk for suicide. The present study examined these relationships in a high-risk sample utilizing ecological momentary assessment (EMA) and a dynamic systems modeling analytic approach.
Methods: A sample of 237 community-based adults at high risk for suicide (Mage = 27.12 years, 61.6% cisgender women) completed six EMA prompts per day for two weeks that assessed various cognitive (e.g., suicide-specific rumination), affective (e.g., hopelessness), and contextual (e.g., life event stress) risk factors and suicide-related outcomes. A multilevel modeling approach informed by dynamic systems theory (i.e., dynamic systems modeling) was used to simultaneously assess stable and dynamic temporal processes underlying stress, hopelessness, suicide-specific rumination, and suicidal intent.

Results: Stress, hopelessness, suicide-specific rumination, and suicidal intent were each significant negative predictors of themselves (Bs = -.85 to -.64, SEs = .01, ps < .001), indicating that each variable demonstrated temporal stability, with relatively stable patterns across the study period. Additionally, several coupling effects emerged. Stress destabilized the trajectory of hopelessness (B = .03, SE = .01, p < .001), but not suicide-specific rumination (B = .00, SE = .01, p = .639) or suicidal intent (B = .00, SE = .00, p = .437); when stress was high, hopelessness subsequently increased. Hopelessness destabilized the trajectories of stress (B = .07, SE = .02, p < .001), suicide-specific rumination (B = .06, SE = .01, p < .001), and suicidal intent (B = .04, SE = .01, p < .001); when hopelessness was high, individuals subsequently had higher levels of stress, suicide-specific rumination, and suicidal intent. Suicide-specific rumination destabilized hopelessness (B = .11, SE = .01, p < .001) and suicidal intent (B = .04, SE = .01, p < .001), but not stress (B = -.00, SE = .02, p = .979); when suicide-specific rumination was high, hopelessness and suicidal intent subsequently increased. Finally, suicidal intent destabilized hopelessness (B = .10, SE = .02, p < .001) and suicide-specific rumination (B = .06, SE = .01, p < .001), but not stress (B = .05, SE = .03, p = .066); when suicidal intent was high, individuals subsequently had higher levels of hopeless and suicide-specific rumination.
Discussion: These findings provide support for the cognitive model of suicide, with expected reciprocal temporal patterns occurring across early (i.e., stress and hopelessness) and later (i.e., hopelessness, suicide-specific rumination, and suicidal intent) stages of the theoretical framework. Moreover, these findings align with the fluid vulnerability theory (Bryan and Rudd, 2016) and provide evidence for potential trajectories that lead to the onset and escalation of acute suicidal crises (Rogers, Chu, and Joiner, 2019). Results will be contextualized within the broader literature, and limitations and future research directions will be discussed.

64. Genomic Exploration of Suicide Risk: A Psych Array-Based GWAS Study in the Indian Population

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Background: Suicide is a preventable, but escalating global health crisis. GWAS studies to date are limited and some are underpowered. Most of these studies were performed in the Caucasian population. In this study, we aimed to perform the PsychArray-based GWAS study to identify single nucleotide variations associated with suicide in the Indian population.
Methods: For this study, we enrolled a total of 607 participants, comprising 313 cases who died by suicide and 294 controls who experienced non-suicidal deaths. To gather comprehensive information about the cases, we conducted psychological autopsies by interviewing the family members or informants (known as LARs) to collect socio-demographic and medical records data. Cases with insufficient details about the deceased were excluded from the study. The control group consisted of individuals without any diagnosed psychiatric illnesses. Blood samples were collected from all participants, and DNA was extracted using the organic extraction method. Genotyping was performed on the 607 samples, including both cases and controls, utilizing the Illumina Infinium PsychArray-24 BeadChip v1.3. In addition, we included samples from the South Asian population (SAS) of the 1000 Genomes Project as supplementary control samples. This was done to account for population stratification and facilitate imputation analyses in our study.
Results: The genomic inflation rate was approximately 1.04 which falls under the acceptable range and indicator of good-quality data. We conducted an association analysis on 4,47,072

hard-called SNPs that passed quality control and were shared between controls and suicidal cases in this study. We used a relaxed p-value (1e-5) for identifying any significant SNP. The top SNPs found with the relaxed p-value cut-off are enlisted in Table 2, which might be interesting for suicidal behavior.
Four SNPs crossed the threshold of significance level <1e-5 spanning across the three chromosomes. One of them is intronic rs1901851 (p = 1.606e-06, OR= 1.799) located on chromosome 2 in close proximity to MIR3681HG and three are intergenic one being rs3847911 (p = 3.86e-06, OR 1.814) on chromosome 12 located in the proximity of 2 genes PPM1H, AVPR1 and rest two are located on chromosome 8 rs2941489 (p = 8.572e-06, OR =1.754) & rs1464092 (p = 8.572e-06, OR =1.754) whose nearest gene being HNFG. Additionally, at a significance level of 5e-5, we found fourteen more SNPs, the majority of them being intergenic variants. The SNPs were functionally annotated using Annovar and MAGMA, for their related genes. There were no SNPs found in the exome region. All SNPs were either intronic or intergenic. For most alleles, a relatively high odds ratio (range=1.63-2.68) was observed. The associated genes of these SNPs were known to have various important functions ranging from cell signaling, GTP binding, GPCR binding, and transcription factor binding.

Discussion: In agreement with various previous studies on attempted suicide cases, we obtained genes, which are associated with various immunological, neurological, and infectious diseases. None of the identified SNPs, genes, or loci were earlier identified in previous GWAS studies. However, the major functional ontologies like cell signaling, neurological effect, cell adhesion, and transcriptional activities were found to overlap with previous studies. The SNPs identified in our study were not earlier reported. The results indicate few novel SNPs that may be associated with suicide and require further investigation. Their clinical significance is to be studied in the future.

65. Differences in White Matter Structural Networks in Family Risk of Major Depressive Disorder and Suicide: A Connectome Analysis

Nora Kelsall[1], Elizabeth Bruno[1], Yun Wang[2], Marc Gameroff[3], Jiook Cha[4], Jonathan Posner[2], Myrna Weissman[3], Ardesheer Talati[3], Milenna van Dijk*[3]

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Background: Major Depressive Disorder (MDD) and suicide are leading global causes of disability and death and are highly familial. As personal history of MDD and suicide are associated with neurobiological markers such as decreased white matter connectivity in individual regions, it is important to understand how these findings extend to family risk and multi-region brain models. Here we employ graph theory and network-based analysis to investigate how global and local measures of white matter connectivity networks are altered in individuals a family history of MDD and family history of suicide.
Methods: We applied graph theory methodsto diffusion tensor imaging (DTI) derived fiber tracts to create network models of 97 individuals with detailed familial and personal histories of major depressive disorder and of suicidal ideation, attempts and completions. Network models were computed using 108 cortical and subcortical regions of interest as graph nodes and DTI streamline count as edge weights. Global and local summary measures (clustering coefficient, characteristic path length, and global and local efficiencies) and network-based

statistics (NBS) were utilized for group comparison of family history of MDD and, separately, of suicide.
Results: Global efficiency was reduced in individuals with a family history of suicide (p <0.001), indicating brain-wide decreased integration and information transmission. Clustering coefficient was lower in individuals at high family risk for MDD (p<0.005), signifying neighboring regions are less likely to be connected. NBS analysis showed hypoconnected subnetworks in individuals with a high family risk for suicide (middle and frontal gyrus, thalamus and precuneus; p<0.005) and in individuals with high family risk of MDD (inferior, middle and superior frontal gyrus and putamen; p=0.01).
Discussion: Our resultsdemonstrate that family history of suicide and MDD are associated with hypoconnectivity between subcortical and cortical regions and network parameters suggest brain-wide impaired segregation and information processing even in unaffected individuals with family history of psychopathology.

ORAL SESSION: ARE THERE ENDANGERED GROUPS?

Chair: Novalene Goklish, Johns Hopkins Center for American Indian Health

66. Differences in Suicide among Blacks and Whites Aged 10-29: Identifying Latent Themes in the NVDRS, 2013-2019

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Background: Suicide rates for adolescents and young adults (AYA) have risen dramatically in recent years – by almost 60% for Americans aged 10-24 years between 2007-2018. This increase has occurred for both whites and Blacks, with the rise in suicide among Black youth of particular note as Blacks historically exhibit lower rates of suicide relative to whites. By 2018, suicide had become the second leading cause of death in Black children aged 10-14 and the third leading cause of death among young Black people aged 15-24. Given these trends and the limited research employing culturally relevant theories of suicide, the National Institutes of Mental Health, among other groups, has called for more research on Black youth suicide.
Methods: To gain insight into the underlying causes of suicide among AYA, we use data from the National Violent Death Reporting System (NVDRS), an incident-based violent death surveillance system established by the CDC to assist states and local communities in violence prevention efforts that links information on decedents who died by lethal violence from multiple sources, involving medical examiner and coroner reports, toxicology reports, law enforcement records, and death certificates. We examine medical examiner reports from the NVDRS for over 26,000 Black and white decedents ages 10-29 who died by suicide between 2013-2019 in the United States. We apply structural topic modelling (STM) approaches to describe the broad contours of AYA suicide by investigating the topic words and exemplar narratives produced by the model, paying close attention to racial differences in circumstances and to possible new and/or unique latent themes.
Results: The model identified 110 latent themes, which we organize into nine broad categories. One of these categories (containing 24 topics) captures boilerplate text or phrases included in the narratives prepared by medical examiners that are less amenable to interpretation and not considered. The remaining 86 themes are classified into two groups – social, messaging, health

and substance use factors and physical and technical features (mechanism of suicide, timing, discovery and response). Our findings reveal distinct patterns by race. Guns, violence and the criminal justice system are central features of Black suicide, whether through the mechanism used in the suicide, either by firearm or other violent means such as fire or electrocution, the existence of criminal or legal problems/disputes, the location of death in a jail, or the presence of police. In contrast, the narratives of white AYA are more likely to reference mental health or substance abuse problems. Access to resources, as measured by county median household income, overlay these patterns. Themes more prevalent among Blacks are more common in poorer counties; those more prevalent among whites tend to be more common in wealthier counties.
Discussion: Our findings are consistent with other studies that suggest Black people experience greater exposure to violence and other traumas, systemic racism and interpersonal discrimination that may elevate the risk for suicidal behavior. Black suicide also tends to involve less planning and therefore room for intervention – Black suicide is more impulsive and/or reckless in circumstance and method, and Black youth are less likely to leave a message. Nonetheless, results suggest that culturally attuned interventions are necessary, given the racial distinctions in the etiology of suicide. A social justice approach that acknowledges inequality in access to resources and power and its systemic nature, such as n the case of the criminal justice system, community violence or barriers to mental health treatment for Blacks, offers promising avenues for suicide prevention.

67. The Intersection of Gender-Diverse Identity Status, Self-Referential Processes, and Suicidal Ideation in Youth

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Background: LGBTQ+ youth are four times more likely to attempt suicide than their cisgender heterosexual peers. Within gender-diverse youth, which includes the spectrum of transgender and gender-nonconforming identities, as much as 50% seriously considered or attempted suicide. The gender minority stress perspective posits that increased suicidality in gender-diverse youth is related to unique stressors imposed by cisnormativity–an assumption that gender is binary and should reflect one's biological sex. These stressors have been linked to suicidal ideation (SI) in youth via internal factors. As gender-diverse youth face persistent criticism and judgment in their social environment, they may be particularly vulnerable to self-critical rumination– repetitive thinking focused on negative self-evaluation and lack of self-reassurance–providing compassion to self. The associations between in-the-moment self-critical rumination and self-reassurance and SI and how these links may differ depending on one's gender identity remain remarkably understudied. To fill this critical gap, we examined how being self-critical and self-reassuring may affect in-the-moment and subsequent suicidal ideation in cisgender and gender-diverse youth in their home environment.
Methods: Youth report of gender identity was used in the study, and the transgender, nonbinary, and gender nonconforming/fluid categories were collapsed into a single gender-diverse identity status (yes/no) variable for the analyses. In-vivo self-critical rumination, self-

reassurance, and SI were assessed 3 times a day over 2 weeks via ecological momentary assessment (EMA) technology in 61 children and adolescents (1425 observations) recruited primarily from the partial hospitalization program at Bradley Hospital.
Results: The average age of participants was 13.5 years (SD=2.26, range 12-15), and the majority were assigned female at birth (60.7%). 21 participants (34%) identified as gender diverse. Regarding race, 4.9% were Asian, 6.6%–Black, 11.5%–Hispanic or Latino, 63.9%% –White, 8.2%–more than one race, and the rest (4.9%) preferred not to answer. A series of generalized linear mixed models showed that greater levels of self-critical rumination were linked to higher concurrent and subsequent (within the next assessment window) SI (B=0.28, SE =0.01, p<0.01; B=0.19, SE =0.01, p<0.01). Lower self-reassurance was also linked to higher concurrent but not subsequent SI (B=–0.07, SE =0.01, p<0.01). There was a significant interactive effect of gender-diverse identity status and self-critical rumination on concurrent and subsequent SI (B=-0.13, SE =0.01, p<0.01, B=-0.15, SE =0.02, p<0.01), but not self-reassurance (p=<0.05). We examined the form of these interactions graphically. We found that the links between self-critical rumination and suicidal ideation were stronger in youth whose gender identity differed from their sex assigned at birth. In other words, among gender-diverse youth, those with higher levels of self-critical rumination evidenced the greatest concurrent and subsequent SI.
Discussion: Due to a modest number of participants who identified as gender-diverse, we collapsed multiple gender identities into a single category. Future research examining these identities separately is needed to identify which categories may be particularly vulnerable to self-critical rumination and those which may benefit from self-reassurance most. These preliminary findings highlight the increased suicide risk among gender-diverse youth and suggest the clinical relevance of assessing and targeting self-critical rumination, particularly among gender-diverse youth, to reduce suicidal ideation.

68. Association of Ethnic Concordance between Patients and Psychiatrists with the Management of Suicide Attempts in the Emergency Department

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[1]Rambam Health Care Campus

Background: Suicide attempt is a psychiatric emergency that can be treated with different approaches. Understanding of patient- and physician-related determinants of psychiatric interventions may help to identify sources of bias and improve clinical care. Previous studies found that ethnic concordance between patients and physicians resulted in a better therapeutic experience and improved continuity of care. However, little is known about the role of ethnic concordance in effective suicide prevention.
Methods: Leveraging cultural diversity among patients and staff in Rambam Health Care Campus, we analyzed all emergency department (ED) visits following suicide attempts carried out by adults between 2017–2022. Two logistic regression models were built to examine whether patient and psychiatrist's demographic variables (age, gender, ethnicity) can predict 1) the clinical decision to provide a continued psychiatric intervention and 2) the setting for the psychiatric intervention (inpatient or outpatient).
Results: In total, 1,325 ED visits were evaluated, corresponding to 1,227 unique patients (mean age; 40.47±18.14 years, 550 men [41.51%]; 997 Jewish [75.25%] and 328 Arabs [24.75%]]), and 30 psychiatrists (9 men [30%]; 21 Jewish [70%] and 9 Arabs [30%]). Demographic

variables had a limited predictive power for the decision to intervene ($R^2=0.0245$). Yet, a significant effect of age was observed as intervention rates increased with age. In contrast, the type of intervention was strongly associated with demography ($R^2=0.289$), with a significant interaction between patient and psychiatrist's ethnic identities. Further analysis revealed that Arab psychiatrists preferentially referred Arab patients to outpatient over inpatient treatment.
Discussion: The resultsindicate that while demographic variables, and specifically patient and psychiatrist's ethnicity, do not affect clinical judgement for psychiatric intervention following a suicide attempt, they do play a major role in selecting treatment setting. Further studies are required to better understand the causes underlying this observation and its association with long-term outcomes. Yet, acknowledging the existence of such bias is a first step towards better culturally mindful psychiatric interventions.

69. Suicidality among Transgender High School Students of Color in 15 States of the U.S.

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Background: Transgender high school students were found to have higher risk of past year suicidal ideation and attempt, violent victimization, substance use, and sexual behavior in comparison to cisgender peers in the CDC's 2017 Youth Risk Behavior Survey (YRBS). However, there is scarce data on the comparison of suicidality within trans populations. More data is needed on trans people of color in comparison to trans White people, especially in the study of suicidality.
Methods: This analysis focuses on the 2019 YRBS survey of highschoolers. Overall, 1,530,390 students were surveyed nation-wide, and 803,771 (52.5%) were from fifteen states that opted to administer the transgender identity module, then 201,901 answered the transgender identity question. Chi-square tests and logistic regressions were conducted to determine differences in proportions between populations and factors contributing to suicide outcomes. Analyses were based upon a created minority suicide framework combining a biopsychosocial interpretation of the interpersonal-psychological theory of suicide and the minority stress model.
Results: Trans students made up 2.1% (n=4,092/193,488). Over half of trans students identified as not non-Hispanic White (55.3%, n=2,088/3,774). Trans students endorsed a higher burden of past year suicidal thoughts and behaviors as compared to cis students on all measures. Regressions were adjusted for feeling unsafe at school, history of sexual assault or physical dating violence, and being bullied at school or cyberbullied. Trans students were 4.6 times more likely to seriously consider attempting suicide in the past year ($p < 0.001$, 95% CI [4.3, 4.9]) and were 6.6 times more likely to attempt suicide ($p<0.001$, 95% CI [5.9, 7.3]) than cis students. Among transgender students, students of color were half as likely to endorse symptoms of depression ($p<0.001$, 95% CI [0.32, 0.62]) and 60% less likely to seriously consider attempting ($p<0.001$, 95% CI [0.30, 0.57]), while actual attempts were equivocal.
Discussion: Transgender youth face unique challenges with minoritized gender identity, and transgender youth of color face different health risks from multiple marginalization. Trans students endorsed more depression, suicidal ideation, and behavior. Trans students of color were less likely to endorse depression or have suicidal ideation but did not differ from trans White students on other suicide measures. In terms of screening for suicide, trans youth of color may therefore be at greater risk of bypassing measures of detection and going on to attempt.

There is a great need to understand proximal risk factors for suicide in trans teens and how cultural expressions of depression and suicide ideation differ in trans youth of color. Further studies are needed to parse out how minority stress, stigma, and discrimination contribute to perceived psychological distress and suicidal behavior. This implies complex intersections of racial/ethnic and gender identity and a call to action for future suicide prevention efforts to protect and foster resilience in trans students of color.

70. Co-Creating a Causal Model of a Culturally Grounded, Upstream, American Indian Youth Suicide Prevention Intervention: The Elders' Resilience Curriculum

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Background: Indigenous culturally grounded interventions center tribal worldviews, values, and practices and combat historical trauma and resulting disproportionate mental health inequities, including suicide,among American Indian/Alaska Native (AIAN) communities. The Elders' Resilience Curriculum (ERC) is a culturally grounded, school-based program designed and implemented by the White Mountain Apache Tribe (WMAT) in which Elders teach youth ages 9-14 about WMAT values, traditions, andlanguage to strengthen youth identity and connectedness. This presentation describes mixed methods research gathering community perspectives about cultural protective factors and core components to inform the development of a causal model for the ERC.
Methods: Four WMAT community mental health specialists (CMHSs) and three non-Indigenous researchers involved in developing the ERC completed an online survey to prioritize and rate ERC core components and outcomes as "not needed", "useful", or "very important." Following survey completion, they participated in a virtual meeting to discuss results and decide on a final rating for each component. Thirteen WMAT Elders participated in two focus group discussion(FGDs) to share about youth protective factors, ERC core components, and experiences teaching the curriculum. Three FGDs with nine WMAT CMHSs, 11 WMAT youth ages 11-13, and 10 WMAT youth ages 14-17 engaged participants in a nominal group technique (NGT) activity to list and prioritize youth protective factors. FGD participants generated protective factors and then selected and rated factors they considered most important. The top protective factors identified were discussed.
Results: Nearly all core components in the survey were rated with complete or mostly complete consensus (i.e., at least five out of seven participants provided same ratings). Eight core components related to program activities were rated very important or useful, including four specific to youth (learning Apache language, engaging in cultural arts and crafts, learning Apache traditions, talking with family about lessons) and four specific to Elders (sharing songs, storytelling, encouraging youth to practice monthly responsibilities, speaking Apache during lessons). Elders' FGD data supported the eight program activities they believed to be most important, including youth learning Apache language and traditions and Elders sharing stories. The top four protective factors identified by WMAT youth and CMHSs in the NGT activity included connection to family, connection to religion/spirituality, connection to Elders, and connection to culture. Survey results revealed 14 outcomes that the ERC should have some or strong impact on, including physical, mental, emotional, spiritual, and social health, academic outcomes, identity,

intergenerational/family/community connectedness, belonging, Apache language, and cultural continuity. Elders in FGDs shared the ERC promotes holistic healing through mental, physical, spiritual, and emotional health, youth knowing their identity and language, and family and community wellness.

Discussion: The ERC is an innovative, culturally grounded program with enormous potential to prevent AIAN youth suicide. Study findings contribute to understanding how the ERC's causal mechanisms operate to prevent AIAN youth suicide through the voices and perspectives of WMAT youth, Elders, and CMHSs. Results of this ongoing study will inform developing a model of causal mechanisms of the ERC, piloting the model and culturally informed measures, and future development of a fully powered effectiveness study to support scaling of this intervention to other AIAN communities.

71. The NIMH-Funded National Center for Health and Justice Integration for Suicide Prevention (NCHATS): Description and Rationale

Jennifer Johnson*[1], Lauren Weinstock[2], Sarah Arias[3], Kimberly Sperber[4], Sheryl Kubiak[5], Benjamin Le Cook[6], James Barrett[7], Brian Ahmedani[8]

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Background: A central problem in suicide prevention is finding individuals at risk for suicide in the moment they are at risk, especially those who are not well-connected with care. Contact with the criminal-legal system (including 911, crisis centers, police, pretrial jail detention, court, probation, parole) marks high trait, state, and precipitating suicide risk. However, it is difficult to provide service linkage between criminal-legal and health systems at scale due to size, complexity (3,134 local jails, 17,985 local police departments, thousands of health agencies/payors), system fragmentation, and limited resources.

This Center uses advances in biomedical informatics applied to publicly available criminal-legal data to help managed care organizations, health systems, and other health entities be alerted to their patients' criminal-legal encounter to reach out to provide suicide prevention and service linkage. This solves problems in both suicide prevention and criminal-legal fields, demonstrating what has been extremely rare in practice to date, and never before evaluated as a method of improving any health outcome for a justice-involved population.

Methods: The National Center for Health and Justice Integration for Suicide Prevention (NCHATS; P50 MH127512): (1) uses contact with the justice system (e.g., police contact, arrest) as a novel indicator of suicide risk in the general population (i.e., a novel data type); (2) demonstrates how big data systems that efficiently track justice involvement can be linked to health system records and scaled to identify individuals at risk for suicide and connect them to care; and (3) examines effectiveness and scalability of suicide prevention approaches using these methods

The Center will consist of 4 projects including more than 100,000 people. Project 1 notifies health systems of jail booking and releases to prompt health system outreach for suicide prevention and tests a suicide prevention care pathway (n = 60,000). Project 2 notifies a managed care organization of subscriber jail booking and releases to prompt the managed care organization to: (a) send Caring Contact letters and (b) outreach to any behavioral health

provider who has seen the person in the past 6 months (n = 43,000). Project 3 assesses whether a suicide risk prediction algorithm using community Medicaid data is better than evidence-based suicide risk screeners in predicting suicide risk at the time of arrest and during the year after release from jail (n = 6,000). Project 4 assesses a novel partnership between police and emergency departments to identify and follow up with individuals at risk for suicide (n > 1000). Additional pilot projects will be funded. The Center involves a large national network of lived experience, health, and criminal-legal organizations as Consortium Partners (see www.nchats.org). All projects assess the understudied implementation science concept of scalability.

Results: This presentation will present the rationale for and description of the Center, as well as ways to be involved.

Discussion: The Center convenes health, justice, and suicide prevention communities to create novel solutions to a common problem. This work evaluates scalable approaches to identify the un-identified and reach the unreached, reducing suicide risk for millions of the US' most vulnerable.

ORAL SESSION: COMMUNITY BASED SUICIDE PREVENTION

Chair: Deborah Stone, Centers for Disease Control and Prevention

72. A Case Control Comprehensive Community Based Suicide Prevention Project: Program, Policies, Evaluation Results

Dan Reidenberg*[1], Holly Wilcox[2]

[1]SAVE, [2]Johns Hopkins Schools of Public Health, Medicine and Education

Background: Over the last few years there has been an increase in "comprehensive" suicide prevention among various governments, national strategies, task forces and programs. A Google search for the phrase "comprehensive suicide prevention" yields over 26 million links. While the Zero Suicide program suggests it is a comprehensive approach for healthcare (boundaried) systems and is working in communities, to-date there remains no published data that outside of the individual components of the Zero Suicide program having evidence, collectively (comprehensively) in suicidology.

The World Health Organization (WHO) promotes a comprehensive multi-sectorial strategy through their recently released Live Life Implementation Guide; in the United States major organizations such as the national Suicide Prevention Resource Center promotes a comprehensive approach to suicide prevention and the Centers for Disease Control (CDC) also promotes and funds a comprehensive approach to suicide prevention in 17 states with a special focus on populations that are disproportionately affected by suicide. Comprehensive programs in Canada, Europe, Hong Kong and Australia have shown promise, yet despite the proliferation in the use of the term comprehensive suicide prevention, one can find exceedingly few peer reviewed, published studies on the subject. As such, SAVE in the US set out to conduct the first ever case-controlled study of a comprehensive community based suicide prevention program.

Methods: Using a case control method, SAVE used Dakota County (USA) as an experimental county and Anoka County (USA) as the control county. Dakota was chosen due to the burden

of suicide and nonfatal suicide attempts, ranking 3rd in the states in both deaths by suicide and hospital admissions for self-inflicted injury in the years immediately preceding the project's implementation. Anoka carried a considerable burden of suicide and nonfatal suicide attempt, ranking 4th in the state in deaths by suicide and in the number of hospital admissions for self-inflicted injury in 2016-2017 in the state. Baseline data was obtained from the counties and State on suicide deaths, hospitalization, ideation and attempt data using the Youth Risk Behavior Survey, the Department of Health and hospitalization records from 2019-2022. SAVE created an Executive Committee in the experimental county, a logic model, determined high priority populations, implemented evidence based and best practice programs throughout the county and collected outcome evaluation data for analysis in change in knowledge, attitude, behavior and suicide outcomes by coordinating, implementing, and evaluating a comprehensive and integrated prevention program comprised of 14 linked strategies.
Results: Over 500 individuals were trained in suicide prevention. Over 1 million public service announcements were distributed using 12 different campaign taglines developed by the executive committee. Over 5,000 pieces of literature were distributed. 95% of participants trained were found to have increased knowledge, a changed attitude toward suicide prevention and 85% demonstrated behavior change.
Discussion: As suicidology looks toward comprehensive approaches to suicide prevention, there is a clear need for models that work to reduce the burden of suicide. In this case control study, a logic and program model were developed based on community input. Over 4 years outcome data was gathered, challenges and successes incurred and a model for replication in other communities was created. Sustainability was built into the model for the experimental county that will bring long-term benefits to the community and the replicable model for community based comprehensive suicide prevention programs.

73. Implementing Multi-Component Localised Suicide Prevention Strategies - Learnings from the Australian National Suicide Prevention Trial

Dianne Currier*[1], Kylie King[2], Sanne Oostermeijer[1], Teresa Hall[3], Adele Cox[4], Andrew Page[5], Meredith Harris[6], Philip Burgess[6], Jane Pirkis[1]

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Background: The Australian National Suicide Prevention Trial was funded by the Australian Government and took place from 2017 to 2021 at twelve sites across the country. The Trial aimed to gather evidence and further understanding about the implementation and effectiveness a multi-component suicide prevention approach at a local level and for at-risk populations.
Methods: A mixed methods evaluation was conducted of the implementation and the outcomes of the Trial. We completed consultations with 127 community members and 46 Primary Health Network (PHN) staff. Thematic analysis was undertaken to understand the process of community participation in the planning and implementation of the Trial.
Results: Trial Sites' took diverse approaches to developing and implementing a comprehensive approach to suicide prevention including methods for identifying local need (including priority populations), engaging community, establishing governance structures, and selecting, targeting, and implementing interventions. Key enablers for implementing the Trial included having a collaborative PHN; an engaged and passionate community; and key challenges included maintaining engagement; getting the right people involved; getting stakeholders to work together, and overcoming resistance to evidence-based models and approaches.

Discussion: Implementing large-scale multi-component suicide prevention interventions involves considerable stakeholder development and engagement effort, as well as continuous negotiation on governance, strategic approaches, and choice of activities. Future interventions may benefit from the provision of community participation skills training and support to enable a more coordinated and collaborative approach. Adopting an implementation science approach may also provide a useful framework for future large-scale multi-component interventions.

74. Community Led, Evidence Based Collaborations for Suicide Prevention: Promoting Community Conversations about Research to End Suicide (PC CARES) Intervention

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Background: Most suicide prevention efforts are clinically oriented and focused on identifying persons who are ‘at risk’ of suicide and needing expert intervention. However, this crisis orientation can have small treatment benefits, and is linked with practices (e.g. involuntary treatment) that can lead to treatment resistance and stigma. Such practices can exacerbate distrust for formal systems of mental health care, especially in marginalized communities. This reality means strict reliance on clinical mental health services for suicide prevention is not adequate among many marginalized and oppressed groups. For example, the majority of rural Alaska Native youth refuse and avoid mental health care, even when showing signs of anxiety and depression or when actively suicidal. A promising direction is to expand suicide prevention efforts to include community-based approaches before individuals are in crisis. Promoting Community Conversations About Research to End Suicide (PC CARES) is such an intervention, which builds on existing community support networks to implement upstream suicide prevention strategies using evidence-based approaches.
Methods: PC CARES employs a community learning model grounded in adult learning theory and flexible to local contexts via participatory strategies. In a series of Learning Circles (LCs), PC CARES brings together community members to learn about evidence-based suicide prevention strategies and engage in collaborative inquiry about how they can adapt and implement these strategies in their local community.
Our measures document community members’ suicide knowledge, beliefs, skills, collaborative relationships, and prevention-and wellness-oriented behaviors before, during and after the intervention. We use social network analyses techniques to report outcomes for PC CARES participants, and to track diffusion effects among their close associates and others within their community.

Results: PC CARES has shown promising evaluation resultsfor both in-person and virtual delivery settings. We provide an overview of the PC CARES model and describe the results of two cohorts of virtual PC CARES implementation that took place over 5 months of each school year (November-May, 2020-2022). Overall, 165 PC CARES participants had high levels of satisfaction across all sessions (>90%), with consistent attendance over 7 LCs. Participants exhibited statistically significant and clinically meaningful positive within-person changes in: suicide prevention knowledge, self-efficacy, and attitudes about developing a local community of practice to prevent suicide. Social network analyses show increases in participants'

prevention-oriented actions, with increases in 12 of the 18 measured network behaviors. We will share our social network approach and resultsof measuring diffusion by considering the prevention behaviors of PC CARES participants, their close associates (e.g. friends or family members), and others in their community.
Discussion: Our community mobilization approach acknowledges cultural diversity and supports local interpretation of research evidence, encouraging local Alaska Native participants to enact early suicide prevention strategies on multiple levels: community, family, and interpersonal, on their own terms. Results from the PC CARES intervention offer an important innovation for the field by demonstrating the capacity of social supports already existing in the community, and providing an approach for collaborative engagement of early suicide prevention strategies among and within local health, educational, and tribal institutions to support young people's wellbeing, increase safety, and reduce suicide risk.

75. Impact of Community Mental Health Services on Self-Harm and Suicide among People with First-Episode Schizophrenia: A Population-Based Cohort Study

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Background: Individuals with schizophrenia have a significantly higher risk of self-harm and suicide than the general population. Community mental health services, which are established to provide affordable and easily accessible assistance to people facing mental health challenges, should in theory reduce the risk of self-harm among people with schizophrenia. In Hong Kong, the community mental health services of Integrated Community Centre for Mental Wellness (ICCMW) and Mental Health Direct (MHD) were introduced in March 2009 and January 2012, respectively. However, the impact of these services on self-harm and suicide in people with schizophrenia has not been thoroughly examined. This study aims to investigate the immediate and long-term changes in the incidence of self-harm and suicide among individuals with first-episode schizophrenia after the introduction of community mental health services in Hong Kong.
Methods: Individuals aged ten years and above who received a first clinical diagnosis of schizophrenia between January 1, 2001, and March 31, 2021, were identified from the Clinical Data Analysis and Reporting System in Hong Kong. The interrupted time-series analyses were conducted to compare the monthly incidence of self-harm, suicide, and self-harm and suicide before (January 1, 2001, to February 28, 2009) and after (January 1, 2012, to March 31, 2021) the introduction of community mental health services separately. Data in the transition period (March 1, 2009, to December 31, 2011) were excluded. The start of the exposure period was further modified as 1) July 1, 2012, 2) January 1, 2013, and 3) January 1, 2014, to examine the six-month, one-year, and two-year delayed effects.
Results: A total of 43,380 people were included, with 23,462 (54.08%) females and 18,235 aged 25-44 years (42.04%). The incidence of self-harm, suicide, and self-harm and suicide combined was 5.91 (95% CI, 5.71-6.12), 1.51 (1.41-1.62), and 7.17 (6.94-7.40) per 1000 person-years, respectively. A significant immediate decline was observed in the incidence of self-harm (Rate ratio [RR], 0.70; 95% CI, 0.60-0.82) and self-harm and suicide (0.70; 0.61-0.81). For the long-term effect, a significantly decreasing trend was observed in self-harm (0.99 [0.99-0.99]) and self-harm and suicide (0.99 [0.99-0.99]) by the end of the study period (March 31, 2021). The resultswere similar when accounting for potential six-month, one-year, and two-year delayed exposure effects.

Discussion: We found a substantial immediate and long-term reduction in the incidence of self-harm and suicide after the introduction of regional community mental health services in Hong Kong. Findings from this study showed the potential benefits of community mental health services in reducing self-harm and suicidal behavior among individuals experiencing their first episode of schizophrenia, highlighting the importance of community-based care in improving mental health outcomes for this vulnerable population.

76. Developing a Suicide Risk Prediction Model for Use in an Indian Health Service Unit in the Southwestern United States

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Background: American Indian and Alaska Native (AI/AN) populations face disproportionately high rates of suicide compared to other racial and ethnic groups in the United States, a pattern that has been exacerbated by the COVID-19 pandemic. Increasingly, health systems across the US are using EHR-based risk tools to identify patients at increased suicide risk for additional assessment and intervention. However, very few of these efforts have focused specifically on AI/AN populations. In this study, we developed and evaluated an electronic health record (EHR)-based model for suicide risk specific to an AI patient population.
Methods: Using retrospective EHR data from the Indian Health Service (IHS) unit that serves the White Mountain Apache Tribe, we developed a model to evaluate risk of a suicide attempt or death in the 90 days following a patient visit. We included records from all patients over the age of 18 who had a visit to an inpatient or outpatient clinic between 1/1/2017 and 10/02/2021, and data from all such visits, as well as prescriptions filled at the IHS pharmacy were included. Suicide attempts were identified using the ICD-10-based phenotype developed by Kaiser Permanente and deaths were identified by matching the EHR data to death records maintained by the Tribe. Features used for prediction included patient demographics, prior attempts, mental health-related medications and diagnoses, documented substance use, mental health specialty and ED utilization, scores from several relevant screens, and some limited social determinants of health. We compared the predictive performance of regularized logistic regression and random forest models using 10-fold patient-level cross-validation. As a baseline, we considered a simple screen based on whether the patient had documented ideation or a positive suicide screen in the previous 90 days. We report the area under the ROC curve (AUROC) and relative risk at 22% sensitivity (the sensitivity of the baseline screen). Additionally, we evaluated model calibration using expected calibration error (ECE) and calibration plots.
Results: During the study period, 13,776 patients had 360,037 outpatient and inpatient visits. The average patient age at first visit was 40, 52% of patients were female, and 94% were American Indian. In total 361 (2.6%) patients had a code for a suicide attempt and 36 (0.3%) died by suicide during the study. Whether the person had ideation and/or a positive screen for suicide risk at index visit had AUROC of 0.59 [0.56 - 0.62], 22% [18% - 26%] sensitivity, and screen positive patients had 11.8 [4.8 - 18.9] times higher risk of an attempt or death in 90 days than screen negative patients. The logistic regression model had AUROC of 0.84 [0.81 - 0.88]

and, at 22% sensitivity, predicted positive patients had 18.7 [12.9 - 24.6] times higher risk than predicted negative patients. The random forest model had similar performance with AUROC of 0.83 [0.79 - 0.87] and, at 22% sensitivity, predicted positive patients had 14.8 [9.8 - 19.8] times higher risk than predicted negative patients. Both models were well calibrated with ECEs of 0.002 and 0.003 for the LR and RF models, respectively.
Discussion: A machine learning-based suicide risk identification model developed with data from one AI community showed a high level of accuracy in identifying patients at high risk of suicide attempt or death within 90 days of their previous encounter with the health system. In addition, the model is substantially better at identifying those at risk than existing screening approaches which has implications for current practice.

77. Data and Science Moving Comprehensive Suicide Prevention Forward in the United States

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Background: Suicide remains a major public health challenge in the United States with more than 48,000 deaths in 2021. Additionally, estimates from the 2021 United States National Survey of Drug Use and Health indicate, 4.8% of adults (12.3 million people) and 12.7% of adolescents (3.3 million people aged 12-17 years) seriously considered suicide in the past year. Concerning increases in suicide rates were observed between 2018 and 2021 among non-Hispanic Black (19.2%) and American Indian Alaska Native (26%) populations. The U.S. Centers for Disease Control and Prevention (CDC) implements a comprehensive public health approach to suicide prevention across national, tribal, state, and local jurisdictions with a focus on populations disproportionately affected by suicide and suicide attempts. Toward this end, CDC currently funds comprehensive suicide prevention (CSP) activities in 24 states and 4 tribes. The comprehensive approach includes convening multi-sectoral partnerships, using data to drive decision-making, inventorying suicide prevention programs in the jurisdiction to fill gaps, implementing evidence-based interventions, disseminating program and prevention information to multiple audiences, and evaluating the overall program and its components.
Methods: As part of its CSP approach, CDC works collaboratively to strengthen data and science for improved public health action in states and communities. This presentation will describe how CDC is leveraging new data sources and data science applications and the best available evidence outlined in its Suicide Prevention Resource (Prevention Resource) for Action to move the field forward. An example of improving suicide-related data for decision-making includes CDC and collaborators using machine learning to ensemble eight heterogenous data sources to estimate weekly U.S. suicide fatalities in near real-time resulting in high correlations to actual counts and trends ($r=.811$, $p<.001$). The method was further refined, automated, and operationalized, creating a real-time prediction and visualization platform CDC scientists can use to nowcast suicide death trends nationally. The nowcasting dashboard provides near real-time insights of suicide trends and accelerates timely situational awareness for public health action. Another example is implementing data linkage at the national and local levels. CDC and the Department of Defense (DOD) linked data from CDC's National Violent Death Reporting System and DOD's Suicide Event Report to better understand suicide risk factors among veterans and active-duty military. CDC also funded county-level research to link and visualize multiple local data sources within an interactive dashboard to enable the monitoring and evaluation of suicide prevention efforts. Taking

advantage of emergency department data, CDC developed and tested suicide-related syndromic surveillance definitions which are being used by states and CDC to identify upticks in suspected suicide attempts, allowing for a timely response and preventive action.
Results: Finally, in 2022, CDC updated its compendium of strategies with the best available evidence to reduce suicide. The new Prevention Resource supports comprehensive suicide prevention with more than 60 programs, practices, and policies that address the multiple factors associated with suicide at the individual, relationship, community, and societal levels.
Discussion: This work illustrates some of the ways CDC is enhancing data and science as components of a comprehensive public health approach to achieve its vision of no lives lost to suicide.

ORAL SESSION: THE LANGUAGE OF SUICIDE

Chair: Anna Radin, St. Luke's Health System

78. Using Natural Language Processing to Identify Suicide Crisis Syndrome Symptoms: A Preliminary Study Using Social Media Postings

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Background: Identifying mental states associated with suicide risk (e.g., hopelessness, emotional pain) is an important for improving suicide risk detection and predicting increases in suicide risk. Escalations in suicide risk can occur suddenly, with acute psychological and behavioral changes often occurring within hours of a suicide attempt. The acute, dynamic nature of suicide risk creates difficulties for accurately identifying changes in suicide risk. The Suicide Crisis Syndrome (SCS) is a proposed diagnostic entity that attempts to classify pre-suicidal mental states based on affective and cognitive dysregulation. However, many individuals entering a pre-suicidal/crisis state do not complete self-report measurements, creating difficulties for assessing SCS symptoms in real time.
There is growing evidence that natural language processing (NLP) can accurately infer individuals' mental states from their social media posts and other text-based data. Towards the goal of accurately detecting fluctuations in suicide risk, this study takes an important initial step by using NLP to identify SCS symptoms. We explored the linguistic signals associated with SCS symptoms from 20,000 Reddit posts. We hypothesized that language use associated with SCS symptoms would be most prevalent on a suicide-specific Reddit community (i.e., "suicidewatch") compared to other mental health communities (e.g., "depression", "anxiety"). Further, in line with prior SCS findings, we hypothesized that language associated with entrapment (e.g., "Nothing will ever change") and emotional pain (e.g., "I am in a lot of pain") would be most be most prevalent on the suicide subreddit.
Methods: We retrieved one month of Reddit data (Nposts = 20,110, Nusers = 6,095) from March 2018 to avoid artifacts related to the COVID-19 pandemic. Reddit data was taken from 17 mental-health related subreddits including "suicidewatch." We computed similarity statistics to embedded posts to a list of target sentences. Our targets were 12 items from the Suicide Crisis Inventory that reflected each factor of SCS (i.e., entrapment, panic/dissociation, ruminative flooding, fear of dying, emotional pain). Each item was slightly modified to present tense, first-person language (e.g., "Felt your thoughts were racing" to "My thoughts are

racing"). To normalize the relevance of the sentences into this cohort we used a simple positive and negative version of the sentence (e.g., "My thoughts are racing" to "My thoughts are not racing").

Results: Eleven of our 12 SCS symptom targets were statistically significant, with effect sizes ranging from d = -1.78 ("There is nothing I can do about this") to d = 1.16 ("My thoughts are racing"), and the smallest effect size being d = -.30 ("It's hard to describe what I'm feeling"). SCS symptom language use was most prevalent on the suicide-related subreddit, followed by depression and anxiety subreddits. SCS symptom language use was least present in addiction, bipolar, and ADHD subreddits. The most discriminative symptom targets for "suicidewatch" were "There is nothing I can do about this" (entrapment) and "I am in a lot of pain" (emotional pain).

Discussion: This study tested if using NLP could be a viable strategy for detecting SCS symptoms. Our hypotheses were supported by results showing that language use associated with SCS symptoms was most prevalent on suicide-specific subreddits relative to other mental health subreddits, and that entrapment and emotional pain language were the most important targets for "suicidewatch." Using NLP with individuals' smartphone text data (e.g., text messages, social media posts, search history) could be an effective strategy for identifying acute fluctuations in suicide risk through SCS symptom targets.

79. Identifying and Characterizing Suicide Decedent Subtypes Using Deep Embedded Clustering

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Background: Suicide is a multi-determined and low-frequency event, which makes phenotyping decedents a challenging task. Given the difficulty of collecting detailed information on suicide decedents and the rarity of the event, most prior efforts focused on subtyping suicidal behavior using samples that also include ideators and attempters. However, differences within-decedents may not emerge when assessing heterogeneous groups. The purpose of this work is to identify and characterize suicide subtypes using health records data of suicide decedents in the state of Maryland. We developed an unsupervised learning approach based on deep embedded clustering (DEC) to derive stable typologies that can be generalized to unseen data.

Methods: Setting and population: This is a retrospective study using Maryland's Statewide Suicide Data Warehouse (MSDW). The analyses included 2,147 individuals who died by suicide from 2016 to 2020 in the state of Maryland. The dataset consisted of health records data on diagnoses, procedures, and encounters from electronic health records (EHR) and hospital discharge data. In addition to demographics, comorbidities, and utilization, variables in MSDW are grouped into multiple risk indicator domains such as substance use, psychiatric illness, utilization, and social determinants of health (SDH).

Clustering approach: Only variables with at least 5% prevalence were used in the clustering. The DEC model developed in this study combines a multilayer perceptron autoencoder (AE) and a custom clustering layer based on k-means. DEC learns jointly a latent space representation of the input data, where similar data points are clustered together. We compare

the performance of DEC with other learning approaches including using generalized low-rank models (GLRM) or AE first then applying k-means. We considered cluster numbers k in the range of 2 to 10. We used a 5-fold stratified CV and evaluated the stability of the clusters on the holdout folds. The maximum k with a cross-validated prediction strength (PS) above the 0.8 threshold was used to select the best approach.

Results: The mean age of suicide decedents was 49.5 (SD=19.4) years, 76.3% were male, 77% were white, 15% were black, and 31.3% were married. 59.4% had an evaluation at the ED, 14.2% experienced SDH challenges, and 27.2% had substance use. 43.9% of decedents had at least one psychiatric illness, 30.4% had depression, 26.5% had anxiety, and 20.5% had suicidal ideation or a previous suicide attempt.
The best learning approach was DEC outperforming the other approaches in stability and internal validity metrics. The maximum cluster number above the 0.8 threshold was 6 with a cross-validated PS equal to 0.82 (SD= 0.146). At k=6, DEC displayed tighter separation with a higher Calinski-Harabasz index =1117.11 and a silhouette score of 0.69. Cluster 1 had 537 (25.01%) decedents; Cluster 2: 167 (7.78%); Cluster 3: 691 (32.18%); Cluster 4: 526 (24.5%); Cluster 5: 95 (4.42%); and Cluster 6: 131 (6.1%).

Discussion: We identified 6 distinct profiles by comparing different learning approaches. The best approach was DEC with k=6 with a cross-validated PS score of 0.82 (SD= 0.146). This means that on average 82% of the cluster assignments were recovered across the different validation folds. We found no differences in race, ethnicity, or marital status between the 6 groups; however, there were statistically significant differences (p <0.001) between clusters in age at death, percent of females, comorbidities, psychiatric illnesses, number of encounters, and SDH challenges. 4 out the 6 clusters had over 80% prevalence of ED evaluations, indicating opportunities for prevention at the ED discharge by ensuring safe transitions to continuing outpatient mental health care.

80. Network Modeling of Real-Time Suicidal ideation: Differential Associations with Passive and Active Suicidal ideation, and Acquired Capability

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Background: Suicidal ideation arises from a complex interplay of multiple interacting risk and protective factors over time. Recently, ecological momentary assessment (EMA) has increased our understanding of factors associated with real-time suicidal ideation, as well as those predicting ideation in the very short-term (hours, days). Network analysis may be applied to EMA-derived time-series data in order to model the temporal dynamics of factors associated with real-time fluctuations in suicidal ideation. Further, it may be examined how these factors differentially influence components of suicidal ideation (passive, active ideation and acquired capability).
Methods: The SAFE Study is a longitudinal cohort study of N = 82 with current moderate-to-severe suicidal ideation who completed 4x/day EMA over 21-days. We modelled contemporaneous (t) and temporal associations (t + 1) of suicidal ideation (passive, active ideation and acquired capability) and its predictors (incl. social contact, positive and negative affect, anxiety, hopelessness, loneliness, burdensomeness, optimism, impactful life events, stress, coping, substance use) using multilevel vector auto-regression (VAR) models.

Results: Moments of heightened passive suicidal ideation were concurrently associated with increased sadness, hopelessness, loneliness and burdensomeness, and with reduced happiness, calmness and optimism. Hopelessness and use of psychoactive medications predicted increased passive ideation at the subsequent assessment point. Moments of heightened active ideation were concurrently associated with increased sadness, hopelessness and burdensomeness, as well as feelings of stress, anger and shame, and reduced optimism and calmness. None of the included variables emerged as prospective predictors of active ideation. Increased acquired capability for suicide was concurrently associated with decreased happiness and calmness. Further, reduced optimism and increased hopelessness prospectively predicted heightened acquired capability at the subsequent assessment point. Suicidal ideation (passive, active and acquired capability) also exhibited positive autocorrelations, meaning that suicidal ideation at time t significantly predicted ideation at t + 1.
Discussion: Network modeling of suicidal ideation and its risk and protective factors provides unique insights into the temporal correlates of real-time fluctuations of suicidal ideation. A better understanding of the real-world context in which suicidal ideation may emerge has implications for improved safety planning and risk detection, and may provide new targets for acute interventions.

81. A Linguistic Analysis of a Pro-Choice Suicide Forum: How Big Data Can Inform Our Understanding of Suicidality and Virtual Communities

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Background: Linguistic analysis has been shown to reliably uncover perspectives on individual's cognitive processing of suicide-related thoughts and feelings. The purpose of this study was to conduct a linguistic analysis of discourse on a population of individuals who experience suicide ideation and communicate their experiences on a pro-choice suicide online dsicussionforum. Pro-choice suicide forums (PCSF) are virtual communities that act as a main channel for communicating suicidal thoughts, obtaining information about lethal methodsand interacting with likeminded individuals.
Methods: Data were extracted from a public PCSF on April 27, 2022. Contents of the forum, including all the metadata and accompanying files, were downloaded by means of a custom Python program. A frequency analysis on the extracted data was performed, resulting in a list of 200 most frequently occurring words (with grammatical words removed). Linguistic Inquiry Word Count (LIWC) software was used to quantitatively examine the dimensions of language, such as positive, negative, and neutral terms, cognitive processes terms, and content vs. style terms. These language dimensions were interpreted using previously published literature on the psychological meaning of words. For further qualitative thematic analysis to provide greater context, we extracted contexts co-occurring with pre-selected keywords, with a window size of 25 words to the right and left of the keyword in question. This study received approval from the university's Institutional Review Board.
Results: The data extracted from the forum contained: 81,067 discussionthreads and 1,482,313 individual messages/posts across all discussionthreads. There was a total of 23,919 users registered to the forum. The top 10 most frequently occurring keywords were I-words (including I've, I'll, I'd; 20,076x), like (16,886x), people (14,140x), life (10,518x), get (10,472x), know (10,472), one (10,100x), want (9,340x), think (9,340x), and feel (9,120x). The top 200 keywords contained content words that referenced life/death (suicide, suicidal, die, death, life), interpersonal relationships (friends, family, parents), and emotion/mood

(depression, anxiety). LIWC resultsshowed that of the total 200 top keywords, 29% were "cognitive processes," 8% were "positive tone," 4% were "negative tone," and 3.5% were "social words." Thematic analysis of a subset of posts containing the keywords anxiety, pain, and alone revealed that users frequently used the term anxiety to refer to their own struggle with anxiety, pain to refer to personal psychological and physical pain, and alone to refer to letting others know they are "not alone."

Discussion: The current study provides insight into the different categories of language and what these language patterns reveal about individuals' mental states and broader psychological universe. Results reveal that forum users frequently talk about themselves, make references to death, social relationships, and risk factors for suicide (e.g., anxiety, physical pain). Qualitative resultsalso show that individuals use this forum to offer support to other users, indicating that the forum serves multiple purposes beyond disclosing personal experiences and disseminating information about suicide methods. An important limitation of this study is the limited context in the language analysis, which makes it difficult to draw broader conclusions about the meaning of these keywords. Hence, the research team intends to conduct a follow-up study to examine the language patterns in a greater context (i.e., beyond analyzing keywords only).

82. Fluidity of Suicide Risk and Need for Evidence-Informed Intervention Tailored to Individuals Screening at Low Risk for Suicide

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Background: Evidence suggests that an individual's suicide risk level may vary significantly over short periods of time. Most clinical practice guidelines recommend specific interventions based on suicide risk level as assessed during a healthcare encounter. The suicide risk trajectory for patients who screen at low risk for suicide during a primary care or Emergency Department (ED) encounter is poorly understood and these patients may return home without receiving any suicide prevention intervention.

Methods: We reviewed Columbia Suicide Severity Scale (C-SSRS) screening resultsfrom ED and primary care encounters versus C-SSRS screeners later self-completed by patients during study enrollment for the Suicide Prevention Among Recipients of Care (SPARC) Trial. C-SSRS scores of 0 = no risk, 1-2 = low risk, 3 = moderate risk, and 4-6 = high risk. A qualitative change in risk was defined as a change from one risk level to another (e.g.: low risk to moderate risk). Risk ratios and 95% confidence intervals were calculated to compare the proportion of patients with qualitative increase in suicide risk between their referring encounter and study enrollment visit, assessing differences by location (ED vs primary care) and age strata (adolescents (12-17 years) vs adults (18+ years)).

Results: Complete data were available for 1,436 individuals, including 671 adolescents (12-17 years old) and 765 adults (18+). The analytic population was 72.1% female, 86.5% Caucasian or White, and 13.2% Hispanic or Latino/a. Over a mean of 8.1 days (SD= 8.5), C-SSRS scores for 84 (12.5%) adolescents increased qualitatively from low to moderate or high risk, or from moderate to high risk. C-SSRS scores for 113 (14.8%) adults increased qualitatively from low to moderate or high risk, or from moderate to high risk. There were no significant differences in the relative risk of a qualitative increase in suicide risk comparing ED patients to primary care patients (RR: 1.25, 95% CI: [0.94, 1.64], p=0.12), or comparing adults to adolescents (RR: 1.18, 95% CI: [0.91, 1.54]).

Discussion: Given the likelihood that a significant proportion of low-risk patients' suicide risk may escalate to moderate or high risk within days of their clinic or ED encounter, a brief tailored intervention to reduce the likelihood of suicide risk escalation and support patients who experience higher risk is warranted. Delivering a full Stanley-Brown Safety Planning Intervention (SPI) is not clinically appropriate for low-risk patients who have never experienced a suicide risk incident. To address this gap, we developed an evidence-informed intervention called Connection and Support Planning that incorporates key components of the SPI that are clinically appropriate for low-risk patients: psychoeducation on suicide risk, social connection and support, professional resources to contact should risk later escalate, lethal means counseling focused on firearm safety and medication safety, and reasons for living. The intervention is briefer than a full SPI and more clinically appropriate for low-risk patients. Additional research is needed to confirm these findings regarding escalation of suicide risk among individuals screening at low risk in other populations, and to formally assess the efficacy of Connection and Support Planning to prevent escalation of suicide risk in low-risk patients.

83. Pragmatic Pilot Trial to Increase Suicide Screening in U.s. Primary Care Clinics

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Background: Individuals with opioid use disorder (OUD) are at increased risk of depression and other mental health conditions, all of which can increase suicide risk. Nearly half of U.S. patients who die by suicide make a healthcare visit in the prior month, with most visits occurring in primary care, providing primary care clinicians (PCCs) opportunities to assess and address suicide risk. Despite this, systematic screening for suicide risk for people with OUD is rarely done.
In a study implementing an electronic health record (EHR)-integrated clinical decision support (CDS) tool designed to prompt diagnosis and treatment of OUD in primary care, we received supplemental funding to incorporate decision support to guide structured assessment of suicide risk for patients with OUD.

Methods: 15 primary care clinics in the US were randomized to receive a CDS intervention alerting PCCs to adult patients with OUD estimated to be at elevated suicide risk per machine-learning suicide risk models. PCCs were prompted to complete a Columbia Suicide Severity Rating Scale (CSSRS), and for those with elevated CSSRS scores, suicide safety plans. CSSRS completion was the primary outcome. Mental health (MH) engagement was a secondary outcome and defined as a MH specialty outpatient visit or a primary care visit associated with a MH diagnosis. MH engagement adequacy was determined by CSSRS score, with higher scores requiring earlier follow-up. If a CSSRS was not completed, acute risk was determined by item 9 of the Patient Health Questionnaire (PHQ9), which asks about thoughts of suicide. If neither the CSSRS nor PHQ9 was completed, patients were assumed to be at high acute risk. Linear mixed log-binomial regression models predicted the likelihoods of CSSRS completion (random clinic intercept) and adequate MH engagement (random clinic, patient intercepts).
Results: 115 primary care patients met inclusion criteria, with 57% women and a mean age of 39.3 years (SD 12.1). 81% were white and 83% were insured by Medicaid. Similar proportions of intervention and control patients (20.3% vs. 17.3%, p=0.70) completed CSSRSs within 14

days of the index visit. The proportion of patients with adequate MH engagement was 88% for intervention patients and 87% for control patients. The average number of days elapsed from one visit until the next was similar for control (19 days, SD 30) and intervention (16 days, SD 26) patients.

Discussion: The intervention had no impact on suicide prevention process measures, with relatively low rates of CSSRS completion in both groups. Somewhat reassuringly, the vast majority of patients had adequate MH follow-up for their estimate level of acute suicide risk. Our findings suggest a more robust intervention is needed to increase suicide prevention process measures, including use of the CSSRS.

ORAL SESSION: WHAT'S HAPPENING WITH YOUTH?

Chair: Cheryl King, University of Michigan Medical School

84. How Do Psychosis-Spectrum Symptoms Impact Suicidal Thoughts and Behaviors in High-Risk Adolescents? A Mixed-Methods Approach

Elizabeth Thompson*[1], Samantha Jay[2], Margaret Nail[3], Kate Guthrie[4], Peter Phalen[5], Jason Schiffman[6], Shirley Yen[7]

[1]Rhode Island Hospital/Alpert Medical School of Brown University, [2]University of Maryland, Baltimore County, [3]Rhode Island Hospital, [4]The Miriam Hospital/Alpert Medical School, Brown University, [5]University of Maryland School of Medicine, [6]UC Irvine, [7]Alpert Medical School, Brown University

Background: Teenagers with psychosis-spectrum (PS) conditions have a markedly high risk for suicidal thoughts and behavior (STB). Little research has examined the relation between STB and PS experiences among teens in an acute psychiatric setting, where STB are prevalent, proximal, and severe. The primary aim of this project, funded by AFSP and NIMH, is to characterize how high-risk teens in acute psychiatric settings understand the impact of their PS experiences on STB, using both quantitative and qualitative methodsA secondary aim is to compare information obtained from each methodology to evaluate the relative strengths and weaknesses of each approach.

Methods: Teens (aged 13-18; n = 52) with PS conditions were recruited from acute psychiatric settings within a pediatric hospital system in the Northeast U.S. To better understand the relation between positive PS symptoms (e.g., hallucinations, delusions) and STB, participants completed the RA-administered Suicide History Assessment for People with Psychosis-spectrum Experiences (SHAPE). The SHAPE assesses STB, with a particular emphasis on the temporality of positive PS symptoms and whether respondents report that these symptoms contribute directly to their suicidal ideation (SI) and past suicide attempts (SA). The Principal Investigator conducted in-depth interviews (IDIs) with a subsample of 12 teens to qualitatively explore self-disclosed events preceding recent STB, specifically probing whether endorsed PS experiences occur around and/or impact SI and SA. A coding scheme was developed to investigate concurrent validity with the SHAPE and support thematic analyses.

Results: Forty-nine of 52 teens reported lifetime SI, 38 reported SI in the past two weeks, and 25 reported making at least one SA. SHAPE analyses reveal that of the 49 teens with lifetime SI, 46 reported that at least one PS symptom co-occurred with SI and 36 reported that these symptoms directly impacted SI. Of the 25 teens with a lifetime SA, 22 reported PS symptoms occurring around and contributing to their SA. The most common PS symptoms reported to

contribute to STB (SI and SA) were paranoia (n =22/49 and 13/25), thought insertion (n = 22/49 and 12/25), and hearing voices (n = 21/49 and 9/25), respectively. Within the qualitative dataset (n = 12), most teens (n = 9) did not spontaneously disclose PS symptoms as contributing to recent suicidal events during the IDI. When probed directly, all teens did report PS symptoms contributing to STB either directly (n = 8; e.g., via command hallucinations or delusional thoughts driving unsafe behavior) or indirectly (n = 9; via increased stress, depression, hopelessness, or needing escape from symptoms). In comparing within-subject data from the SHAPE and IDI, most teens' data (n = 11) demonstrated general agreement that PS experiences either contributed directly to or occurred around (possibly indirectly influencing) STB. Notably, six teens endorsed links between specific PS symptoms and STBs on the SHAPE that they did not discuss in the IDI, and five teens had some discrepant reports across the measures that may highlight areas for further development. Emergent qualitative themes related to events leading to recent STB will also be discussed.
Discussion: Our findings highlight the importance of assessing PS symptoms and directly probing how these experiences may impact STB, as many teens may not spontaneously disclose or recognize these important links and thus, they may be overlooked in suicide prevention interventions. Preliminary evidence suggests that the SHAPE may be a helpful tool to solicit information about if and how PS symptoms influence STB, as the SHAPE demonstrates concurrent validity with more time-intensive IDI strategies.

85. Identifying Subgroups of Youth Suicide Decedents Based on Clinical Profiles of Psychiatric and Medical Diagnoses: A Latent Class Analysis

Amanda Thompson*[1], Christopher Henrich[2], Danielle Steelesmith[3], Jennifer Hughes[1], Donna Ruch[4], Jeffrey Bridge[5], John Campo[6], Cynthia Fontanella[7]

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Background: Youth suicide is a major public health problem. In the United States, the suicide rates for youth aged 10-24 years have increased by 48% from 6.88 to 10.16 per 100,000 between 2001 and 2020, accounting for 6,643 deaths in 2020. Youth at risk for suicide are a heterogenous group in terms of psychiatric and medical diagnoses; however, little is known about clinical risk profiles of youth suicide decedents. While it is well-known that psychiatric and medical disorders are more prevalent in youth who die by suicide, few studies have examined patterns of co-occurring physical and mental disorders in youth suicide decedents. This study uses a person-centered analytic approach, latent-class analysis (LCA), to identify clinical subgroups of youth suicide decedents based on co-occurring similar psychiatric and medical diagnoses. Understanding distinct patterns of psychiatric and medical disorders among youth suicide decedents has the potential to strengthen suicide risk identification and prevention efforts.
Methods: This population-based study linked Ohio Medicaid with death certificate data for Medicaid-enrolled youth aged 8-25 years who died by suicide between January 1, 2010, and December 31, 2020 (N=511). LCA was used to identify distinct clinical risk subgroups based on ICD-9 and ICD-10 diagnoses related to psychiatric and medical disorders in the year prior to death. Psychiatric disorders were categorized using an empirically driven and clinically relevant hierarchical classification system of psychopathology (HiTOP). The following

psychiatric and medical problems were examined given their association with suicide: internalizing problems, externalizing problems, thought problems, sleep problems, substance abuse, neurological conditions, cardiovascular and metabolic problems, chronic conditions, suicidal thoughts, and deliberate-self harm.
Results: The sample was predominantly male (69%), non-Hispanic White (73%), with a mean age of 18 years at time of death (SD=3.8). Three classes were identified. Internalizing problems were common across all classes but were especially prevalent in Class 1, the High Internalizing + Multiple Comorbidities group (n=152, 30%). A prior history of suicidal ideation and behavior was confined to Class 1 decedents, who were otherwise characterized as more likely to be female with a history of substance abuse, and multiple psychiatric and medical comorbidities. Class 2 decedents, the Internalizing + Externalizing group (n=176, 34%), were more often younger, male, Black, and unlikely to have a history of substance abuse. Decedents in Class 3, the Internalizing + Substance Abuse subgroup (n=183, 36%), were more often older and likely to have a history of substance abuse, but unlikely to exhibit externalizing problems.
Discussion: Internalizing psychopathology is common in youth suicide decedents, and study resultsare consistent with previous work suggesting that comorbid externalizing psychopathology, substance abuse, and medical problems contribute to heightened risk of youth suicide. Because less than a third of youth who die by suicide have a prior history of recognized suicidal thinking or behavior, universal screening for youth suicide risk should be considered, particularly in younger children, and efforts to integrate suicide prevention in traditional health care settings should be prioritized. All youth with recognized psychopathology, medical comorbidity, and/or substance abuse should be screened for suicide risk. Youth suicide risk detection and the integration of mental health services and suicide prevention interventions in traditional health care settings deserves greater attention and should be prioritized.

86. Enhancing the Effectiveness of Cognitive Processing Therapy among Suicidal Patients with PTSD

Craig Bryan*[1], AnnaBelle Bryan[1], Justin Baker[1], Lauren Khazem[1], Jaryd Hiser[1], Jose Moreno[1], Ennio Ammendola[1], Christina Bauder[1], Darrin Aase[1]

[1]The Ohio State University

Background: Cognitive behavioral treatments tend to be the most highly efficacious treatments for PTSD. Cognitive Processing Therapy (CPT) is one such treatment that has garnered a significant amount of empirical support, with a recent metaanalysis showing it was the most effective treatment for PTSD (Watts et al., 2013), typically yielding a 50% or larger reduction in PTSD symptoms from pre- to posttreatment (e.g., Chard, Schumm, Owens, and Cottingham; Forbes et al., 2012; Monson et al., 2006; Morland et al., 2014; Resick et al 2015; Resick et al., 2017). In addition to reducing PTSD symptoms, recent studies indicate CPT is also associated with significant short-term reduction in suicide ideation (Bryan et al., 2016; Gradus, Suvak, Wisco, Marx, and Resick, 2013; Resick et al., 2017), although suicide ideation generally increases in severity again several months after treatment conclusion. Enhancing CPT with crisis response planning (CRP), a procedure that has been shown to significantly reduce suicidal thoughts and behaviors, could augment the effects of trauma-focused therapy on suicide risk reduction during and after treatment completion. To test this possibility, a randomized pragmatic clinical trial was conducted to compare the effects of massed CPT enhanced with CRP (CRP) versus massed CPT with usual care (UC) suicide risk management procedures among U.S. military veterans diagnosed with PTSD or subthreshold PTSD.

Methods: Participants were randomized to receive either CRP or UC then completed 10 sessions of individual CPT sessions, scheduled 1 hour per day for 10 consecutive business days. Suicidal ideation was assessed at pretreatment, treatment start, mid-treatment, treatment end, and 6 months with the Scale for Suicidal Ideation (SSI). Linear mixed effects modeling was used to compare change in SSI scores between groups. Follow-up suicide attempts were assessed using the Self-Injurious Thoughts and Behaviors Interview-Revised (SITBI-R). Poisson regression was used to compare the number of suicide attempts between groups.
Results: Fifty participants endorsed active suicide ideation at baseline (CRP n=30, UC n=20). The rate of change in suicidal ideation significantly differed between groups (F(4,196)=2.5, p=.044). Suicidal ideation was significantly lower in CRP vs. UC at mid-treatment (M=4.4 vs. 8.9; F(1,196)=5.6, p=.019, d=0.7) but this difference had reduced by treatment end (M=4.3 vs. 6.9; F(1,196)=2.0, p=.163, d=0.4) and 6 months (M=6.1 vs. 7.7, F(1, 196)=0.9, p=.351, d=0.2). Participants randomized to CRP reported 49% fewer suicide attempts than participants randomized to UC (Wald chi-square (1)=3.6, p=.059): 33 CRP participants made 13 attempts (M=0.39 attempts per participant) and 26 UC participants made 21 attempts (M=0.81 attempts per participant).
Discussion: Among treatment-seeking military veterans with active suicidal ideation, enhancing massed trauma-focused therapy with CRP led to faster reductions in suicidal ideation and fewer suicide attempts than the same therapy with usual care suicide risk procedures. Results support the efficacy of CRP for the reduction of suicidal ideation and suicide attempts and suggest the procedure can be used to enhance the safety of trauma-focused therapies.

87. 24-Hour Warning Signs for Adolescent Suicide Attempts

Cheryl King*[1], Polly Gipson Allen[2], Sheikh Iqbal Ahamed[3], Michael Webb[4], T. Charles Casper[4], Alejandra Arango[2], Nadia Al-Dajani[5], Courtney Bagge[2]

[1]University of Michigan Medical School, [2]University of Michigan Medical School, [3]Marquette University, [4]University of Utah, [5]Miami University

Background: The distal risk factors for adolescent suicide attempts – those occurring in the months and years prior to an attempt – have been largely established; however, these fail to indicate when an adolescent may be at greatest risk, which is one of the major challenges facing clinicians, caregivers, and other adults who interface with at-risk youth. Due to the paucity of research examining near-term predictors of suicide attempts in adolescents, this study was designed to answer the question, "Why did an adolescent attempt suicide today, compared to a previous day when they were also at high risk but did not attempt suicide?" An improved understanding of warning signs (WS) would facilitate timely response, clinical disposition, and intervention.
Methods: This study incorporated a within-subjects, case-crossover design. Adolescents (N = 1,094, ages 13 to 18) with one or more suicide risk factors completed bi-weekly text message surveys for 18 months (one item queried for recent suicide attempt). Adolescents who reported a suicide attempt (SA) participated in a standardized interview regarding their thoughts, feelings/emotions, and behaviors/events during the 24-hours prior to their attempt (case period) and a prior 24-hour period (control period). Their parents participated in interviews regarding adolescents' behaviors and life events during these periods. Adolescent or adolescent and parent interviews were completed for 105 adolescents (81.9% female; 66.7% White, 19.0%

Black, 14.3% other). Logistic regression was used with models conditioned on subject (observations for SA and control time periods).
Results: Adolescent and parent reports of withdrawal from social and other activities (OR=17.31, $p < .001$, OR=8.26, $p < .01$, respectively) and suicidal communications (OR=3.97, $p < .03$, OR=10.65, $p < .03$, respectively) differentiated 24-hour case and control periods in multi-variable models. Adolescent reports of serious conflict with parents (OR=14.25), other negative life events (OR=6.56), sleep problems (OR=6.29), cognitions (suicidal rumination, OR=2.23; perceived burdensomeness, OR=2.10; hopelessness, OR=1.80; angry/hostile, OR=1.97), feelings (stirred up inside, self-hate, emotional pain, rush of feelings, scared' ORs = 1.83 to 4.43; rage toward others, OR=0.42; friends they trust, OR=0.24) also differentiated periods ($p<.05$) in multi-variable models.
Discussion: The clinicians who care for adolescents at risk for suicide, as well as caregivers and other adults in these adolescents' lives, are faced with the oft-repeated challenge of recognizing warning signs (WS) of proximal risk. In this study, adolescents' reports identified key differences in behaviors and events, cognitions, and affect during the 24 hours prior to their SAs, and the inclusion of parents as informants enabled us to identify behavioral WS that parents and other gatekeepers (e.g., teachers) could potentially learn to recognize. In addition to highlighting the importance of withdrawal, sleep problems, suicidal communications, and specific cognitions and feelings, resultsemphasize the importance of negative interpersonal experiences as 24-hour WS for suicide risk. This study's strengths include its relatively large and diverse sample of adolescents, its prospective design, its inclusion of parents as informants, and its use of a case-crossover design. Limitations include the short-term retrospective design involving biweekly surveys, although this strategy did not disrupt the natural unfolding of precursors due to more frequent self-monitoring or risk management intervention. Study findings provide an evidence base for the dissemination of information about signs of proximal risk for adolescent suicide attempts.

88. Universal Suicide Risk Screening in Pediatric Behavioral and Medical Clinics: Prevalence and Factors that Increase Risk

Allison Gornik*[1], Benjamin Schindel[1], Mwuese Ngur[1], Teresa Matte-Ramsdell[1], Paul Lipkin[1], Carmen López-Arvizu[1], Andrew Zabel[1], Suzanne Rybczynski[1]

[1]Kennedy Krieger Institute

Background: In 2017, our healthcare organization, which specializes in the care of individuals with neurodevelopmental (NDD) and related disorders, implemented universal suicide risk screening in outpatient clinics for all patients aged 8 years or older. Utilizing results of the Ask Suicide-Screening Questions (ASQ) tool, we analyzed suicide risk in children who presented for initial treatment in either a medical or behavioral clinic.
Methods: Screenings were performed as part of routine triage by a registered nurse or by a mental health clinician. Patients or caregivers were able to respond to the ASQ questions or decline participation in screening. A retrospective medical record review was conducted on all initial visits for patients aged 8-17 who presented for outpatient care from July 2019 to April 2023. Descriptive statistics and a binary logistic regression were performed on resultsof ASQ, who completed the ASQ, sociodemographic factors, and clinic attendance.
Results: A total of 13,450 patients aged 8-17 were eligible for screening with 9,531 screenings completed (age M=12.36, SD=2.84; 59.6% male). Declined screening tended to occur in slightly younger patients (M age=11.12, SD=2.69) than those who consented to screenings (M

age=12.36, SD=2.84). Caregivers were significantly more likely to decline screening in medical clinics (37.9%) than in behavioral health clinics (14.6%) and to decline screenings for boys (31.7%) more than for girls (25.0%).
Of the completed screens, 9.7% (n=921) were positive (a "yes" response to any ASQ question). Caregivers answered the screening questions in 18.1% of the patients. Caregiver-response screens were significantly less likely to be positive (3.7% positive screens) compared to patient-response screens (10.6% positive screens). Girls had a higher likelihood of a positive screen than boys (12.0% vs. 8.1%, respectively). Positive screens were more common in behavioral clinics (12.2%) compared to medical clinics (7.2%) and were found across the age span, including younger children (5.7% of 8-year-olds and 7.7% of 9-year-olds had a positive screen).

In a binary logistic regression that included sex, respondent, clinic type, and age group, all factors significantly contributed to increased risk for a positive screen. Specifically, patients who self-completed screens were 2.98 times more likely to screen positive than those whose caregivers completed the screens. Girls were 1.59 times more likely to screen positive than boys, while patients in behavioral clinics were 1.97 times more likely to screen positive than those in medical clinics. Older teenagers were 1.5 times more likely to screen positive than children aged 8-10.

Discussion: Our universal suicide risk screening program demonstrated that children as young as 8 years of age can have suicidal thoughts and behaviors. The American Academy of Pediatrics currently recommends suicide risk screening for children 8-11 years old only when clinically indicated, but our resultssuggest that children as young as 8 could benefit from universal screening. Moreover, given patient self-report was more sensitive than caregiver report in identifying patient suicidality, we suggest utilizing self-report in screenings. Our results support prior findings of increased risk for girls and those presenting for behavioral health care. Future research should continue to elucidate factors associated with suicide risk that are unique to patients with neurodevelopmental and related disorders.

Wednesday, October 18, 2023

11:30 a.m. - 1:00 p.m.

ORAL SESSION: PLACING SUICIDE IN CONTEXT

Chair: Maria Oquendo, University of Pennsylvania

89. ORAL WITHDRAWN

90. Suicide on the Toronto Transit Commission Subway System (1998-2021): A Time Series Analysis

Selina Chow[1], Yu Vera Men[1], Rabia Zaheer[1], Ayal Schaffer[1], Christine Triggs[2], Matthew Spittal[3], Maureen Elliott[4], Dalia Schaffer[1], Mathavan Vije[1], Navitha Jayakumar[1], Mark Sinyor*[1]

[1]Sunnybrook, University of Toronto, [2]Toronto Transit Commission, [3]Melbourne School of Population and Global Health, University of Melbourne, [4]Distress Centres of Greater Toronto

Background: The Toronto Transmit Commission (TTC) subway system is North America's third largest transit system by ridership. In 2011, TTC implemented Crisis Link - a suicide helpline on all subway platforms. Our primary objective was to investigate how suicide rates in the subway system changed after the introduction of Crisis Link. Our secondary objective was to determine whether media reporting was also associated with changes in suicide rates.
Methods: Suicide data were derived from the Office of the Chief Coroner of Ontario and the TTC, with calls to Crisis Link provided by Distress Centres of Greater Toronto (1998-2021). TTC-related media articles were identified through a database search of major Toronto media publications for TTC/subway related terms. Interrupted time-series analysis investigated the association between Crisis Link calls, media articles, and quarterly suicide rates on the subway system, while controlling for confounding variables.
Results: There were 302 suicides on the subway system from 1998-2021 and 243 calls to Crisis Link from 2011-2021. After controlling for confounders, the introduction of Crisis Link was associated with a 45% decrease in the suicide rate of the following quarter (IRR = 0.55, 95% CI = 0.30-0.97). However, this effect waned over time, with each subsequent post-Crisis-Link quarter experiencing an average 15% increase in suicide rate (IRR = 1.15, 95% CI = 1.03-1.28). Furthermore, for each TTC-related media article in the previous quarter, the suicide rate on the TTC increased by 2% (IRR = 1.02, 95% CI = 1.00-1.04).
Discussion: The introduction of Crisis Link was associated with a short-term decrease in suicide rates on the subway system. However, this effect was not sustained; this may, in part, be attributable to media reporting which was associated with increased suicides. These resultspoint to the utility of crisis helplines on subways, but also, the potential negative impact of media reporting. This should inform suicide prevention policies in Canada and around the world.

91. Suicide after Release from Prison among 1,471,526 People in Eight Countries from 1980-2018

Rohan Borschmann*[1], Marianne Riksheim Stavseth[2], Jane Pirkis[1], Matthew Spittal[1], Anne Bukten[3], Stuart Kinner[4]

[1]University of Melbourne, [2]Oslo University Hospital, [3]University of Oslo, [4]Curtin University

Background: People released from incarceration are at increased risk of suicide. However, not enough is known about the epidemiology of suicide in this internationally diverse population to inform the development of targeted, evidence-based responses.
Methods: Using linked administrative data, we examined suicide and other mortality outcomes in a cohort of 1,471,526 people released from incarceration in eight countries from 1980-2018, across 10,534,441 person-years of follow-up (range: 0-24 years per person). We conducted two-step individual participant data meta-analyses to estimate pooled cause-specific crude mortality rates (CMRs) with 95% confidence intervals (95%CI) for specific time periods after release, overall and stratified by age, sex, and region.
Results: A total of 6,199 deaths due to suicide were recorded, for a pooled CMR of 67 (95%CI 49-87) suicides per 100,000 person-years, with no difference between males (CMR: 68 [95%CI 49-90]) and (female CMR: 47 [95%CI 31-66]). The rate of suicide was highest during days 2-7 after release (CMR: 135 [95%CI 36-277]), second only to deaths due to alcohol and other

drug poisoning. The highest suicide rate was observed in Australia and New Zealand (CMR: 103 [95%CI 81-128]) and the lowest rates were in the USA (CMR: 31 [95%CI 18-48]) and Brazil (CMR: 37 [95%CI 31-44]).
Discussion: The elevated rate of suicide in the first week post-release underscores an urgent need for investment in evidence-based, coordinated transitional healthcare, including mental healthcare alongside social re-integration support. Variations in rates of suicide across time and regions, highlight the need for routine collection and monitoring of post-release suicide data.

92. Mapping Socioeconomic, Mental Health, and Policy Related Factors to Identify State-Level Strategies to Reduce Suicide Rates in Correction Facilities

Hayoung Kim[1], Corbin Standley*[2], Radhika Sood[2]

[1]Boston University, [2]American Foundation for Suicide Prevention

Background: The American Foundation for Suicide Prevention's Bold Goal to reduce the annual United States suicide rate 20% by 2025 is about leveraging systems change to save lives. How this change happens may vary from state to state, and a tailored approach will be our most effective strategy to realizing our Bold Goal. By analyzing suicide-related state-level data, we can better understand how socioeconomic factors, as well as state-level variables related to healthcare, emergency departments, corrections, and firearms may inform state-level strategy to reduce the suicide rate.
Methods: In Stage 1, we located and aggregated multiple publicly available data sources for variables related to suicide across four key areas: Firearms, corrections, healthcare systems, and emergency departments. Over 130 suicide and suicide-related variables were merged and analyzed to report descriptive statistics across 50 states. In Stage 2, we focused on corrections systems using 31 variables. Analyses occurred in three steps. First, correlational analyses were conducted to understand the relationship between suicide rates and corrections systems variables. Second, Latent Profile Analysis (LPA) was conducted to identify clusters by the patterns of correction systems across all 50 states. Lastly, an analysis of variance (ANOVA) was conducted to examine whether there were differences in suicide rates between different clusters of states. SPSS version 27.0 and Mplus version 7.0 were used.
Results: Data from 50 states indicated differences in suicide rates, firearm law restrictiveness, health care availability and utilization, and facilities and population in correction systems. More specifically, four unique clusters of states were identified based on their profiles of correction systems variables. States in the first cluster (n=13 states) showed the highest racial/ethnic and gender disparities in prison populations among the clusters. States in the second cluster (n = 28) showed average scores across all nine of the corrections system variables. The third cluster of states (n=4) showed the highest proportion of people incarcerated in privately owned and operated facilities with relatively low rates of other eight indicators. The fourth cluster (n=5) showed the highest incarceration rates in both prisons and jails among the clusters. Significant differences in jail, prison, and overall suicide rates between states with different correction system profiles were also found. Further analyses and explanations for these patterns will also be discussed.
Discussion: Findings from this project add to the literature in three ways. First, it goes beyond the individual level by looking at suicide prevention through an ecological lens. By looking at systems-level and structural data, we can begin to understand how these factors may be associated with suicide. Second, it adds to the implementation literature by informing tailored strategies for systems-level prevention that take state and community context and assets into account. Finally, it contributes to policy evaluation efforts by examining how state policies

(e.g., firearm laws, mental health parity enforcement, etc.) may be associated with suicide and its prevention.

93. ORAL WITHDRAWN

94. Lifetime Suicide Attempts in Otherwise Psychiatrically Healthy Individuals: Results from Two National Epidemiologic Studies

Maria Oquendo*[1], Shuai Wang[2], Melanie Wall[3], Mark Olfson[4], Carlos Blanco[5]

[1]University of Pennsylvania, [2]NIH, [3]Columbia University and Mailman School of Public Health, [4]Columbia University, [5]NIDA

Background: Not all people who die of suicide have a psychiatric diagnosis. Yet, little is known about lifetime suicide attempts (LSA) among otherwise psychiatrically healthy individuals (OPHI). Studies involving OPHI as a comparison group often exclude those with LSA. When they do not, many studies do not report LSA or suicidal ideation (SI) among OPHI, sometimes denoting data as "not applicable." However, LSAs and SI in OPHI are reported. If LSA in OPHI is common, this could have implications for suicide risk screening and nosology.
Methods: Sample weights adjusted for oversampling and non-response were applied to data from two representative US civilian, non-institutionalized samples aged 20-65 years [NESARC-2 (N= 34,653) and NESARC-III (N= 36,309)]. LSA frequencies (%) and 95% confidence intervals (CI) were calculated for whole samples, males and females and compared with X2 tests. Frequencies and 95% CIs of OPHIs and persons with lifetime psychiatric disorder among those with LSAs were calculated. Among those with lifetime disorders, frequencies of onset of LSA before, the same year, and after first disorder onset were calculated for both samples, males, and females, and compared with X2 tests.
Results:
In NESARC-2, 3.4% [N=1265; 95% CI: (3.3-3.5)] reported LSA. Of those, 4.7% [N=54; (95% CI: 4.0-5.4)] were OPHIs and 21.0% [N=256; (95% CI: 19.8-22.2)] had a LSA prior to psychiatric diagnosis onset. Females were more likely than males to have LSAs ($p<0.0001$), but there were no sex differences in the percent of those with LSAs who were OPHI. Females were more likely than males ($p<0.0015$) to have LSAs prior to psychiatric disorder onset, 22.2% [95% CI: 20.8-23.6] and 18.4% [95% CI: 16.6-20.2], respectively.
NESARC-III shows an uptick in LSA, with 5.2% [N=1948; (95% CI: 4.8-5.6)] reporting LSAs. Similar to NESARC-2, females were more likely than males ($p<0.0001$) to have LSA, 6.7% [N= 1348; (95% CI: 6.1-7.2)] and 3.6% [N= 600; (95% CI: 3.2-4.0)], respectively, and there were no sex differences in the percent of those with LSAs who were OPHIs. Males [N= 52, 8.6%, (95% CI: 6.0-11.2)] were less likely than females [N=195, 14.9%, (95% CI: 12.5-17.3)] to have a first LSA in the same year as psychiatric disorder onset, but males [n=410; 70.0%, (95% CI: 65.2-74.9)], were more likely than females [n=816, 60.3%, (95% CI: 56.9-63.7)] ($p<0.0001$) to have a first LSA after psychiatric disorder onset.
Discussion: Nearly 5% of LSAs in NESARC-2 and over 6% of those with LSAs in NESARC-III were OPHIs. Moreover, over 25% of people with LSAs in NESARC-2 and nearly 20% in NESARC-III had no antecedent psychiatric disorders. In both samples, males and females with LSAs were just as likely to be OPHI, but females were more likely to have LSAs than males. Females were more likely to make SAs before disorder onset in NESARC-2 and less likely to make SAs after diagnosis in NESARC-III.

Among respondents willing to report LSAs, it is unlikely that psychiatric symptoms were underreported, although, subthreshold conditions may have led to LSAs. Another possibility is that a suicide attempt, with its constellation of manifestations including antecedent SI and self-injury, is a syndrome that warrants consideration as a distinct diagnosis. It meets the criteria for diagnostic validity by being clinically well described, having postmortem and in vivo laboratory markers identified in research, it can be subjected to a strict differential diagnosis, follow-up studies confirm its presence at higher rates in those with a past diagnosis, and it is familial. These observations also challenge existing clinical notions of who is at risk for suicidal behavior and raise questions about the appropriateness of limiting suicide risk screening to psychiatric populations.

ORAL SESSION: SOCIAL AND BEHAVIORAL MARKERS IN YOUTH

Chair: Trine Madsen, DRISP, Danish Research Institute for Suicide Prevention

95. Social Connectedness and Adolescent Suicide Risk

Alejandra Arango*[1], David Brent[2], Jackie Grupp-Phelan[3], Bradley J. Barney[4], Anthony Spirito[5], Megan M. Mroczkowski[6], Rohit Shenoi[7], Melinda Mahabee-Gittens[8], T. Charles Casper[4], Cheryl A. King[1]

[1]University of Michigan School of Medicine, [2]University of Pittsburgh, [3]University of California San Francisco, [4]University of Utah, [5]Brown University, [6]Columbia University Irving Medical Center, [7]Baylor College of Medicine, [8]University of Cincinnati

Background: Suicide is the second leading cause of death among adolescents ages 12-17 in the United States (US). Moreover, 22% of US high school students report seriously considering making a suicide attempt and 10% report having made at least one suicide attempt within the past year (Youth Risk Behavior Survey, 2023). Given the tragedy of suicide, it is critical to identify what may be protective for youth. Despite evidence of the importance of interpersonal connectedness to our understanding of suicide risk, relatively little research has examined the protective (i.e., decreasing likelihood of adverse outcome) and buffering (i.e., lessening impact of risk factor on adverse outcome) role of connectedness. Study aims were to determine: 1) whether overall interpersonal connectedness and/or specific domains of connectedness (family, peer, school) serve as protective factors in reducing suicide attempts, and 2) whether these same factors buffer the prospective risk of suicide attempt for high-risk subgroups of adolescents (i.e., recent suicidal ideation and/or lifetime history of suicide attempt, peer victimization, or sexual and gender minority [SGM] status).
Methods: Participants were 2,897 adolescents (64.7% biological female), ages 12 to 17 (M=14.6, SD=1.6), recruited in collaboration with the Pediatric Emergency Care Applied Research Network (PECARN) from 14 emergency departments in the US for the Emergency Department Screen for Teens at Risk for Suicide Study (ED-STARS). Suicide risk and protective factors were assessed at baseline; three- and six-month follow-ups were completed (79.5% retention). Multivariable logistic regressions, adjusting for established suicide risk factors (recent suicidal ideation, lifetime suicide ideation severity, lifetime suicide attempts) were conducted.
Results: Higher overall connectedness (OR= 0.74, 95% CI = 0.59, 0.93; p=.010) and, specifically, school connectedness (OR=0.89; 95% CI =0.82, 0.96; p=.004) were protective

and associated with decreased likelihood of a suicide attempt during follow up. Overall connectedness was protective of post-baseline suicide attempts even among youth who were at elevated risk for suicide due to a lifetime suicide attempt history or recent suicidal ideation. However, the protective effect of overall connectedness was lower for youth with this history than those without. Overall connectedness and connectedness domains did not function as a buffer for future suicide attempts among adolescents with a history of peer victimization or SGM status.

Discussion: In this study's large and geographically diverse US sample, an overall sense of interpersonal connectedness and, more specifically, school connectedness were protective against suicide attempts, even when controlling for other established suicide risk factors. Resultshighlight the key protective role of connectedness and are in line with theoretical conceptualizations of suicide risk. Notably, resultsalso specify that the protective effect of connectedness appears to be less pronounced as the level of risk increases (i.e., history of suicidal thinking and behavior). Findings are important given recent disruptions in connectedness as a result of the COVID-19 pandemic and may inform clinical and community suicide prevention efforts.

96. Unreciprocated Eye-Contact During Conflictual Parent-Teen Interactions Predicts Suicidal Thoughts in Adolescent Girls

Kiera James*[1], Aleksandra Kaurin[2], Amelia Lint[1], Samantha Wert[1], Emily Hutchinson[1], Kirsten McKone[1], Rebecca Price[1], Cecile Ladouceur[1], Jennifer Silk[1]

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Background: Increasing rates of suicidal thoughts and behaviors (STBs) among youth underscore the need to identify early predictors of risk. The Research Domain Criteria project of the National Institute of Mental Health identifies social processes as a key domain for psychopathology, including STBs. Whereas factors related to affiliation and attachment (e.g., connectedness, perceived burdensomeness) form the foundation of theoretical models of suicide, less is known about the relation between STBs and social communication (i.e., the reception and production of facial and non-facial information in social interactions). Research aimed at understanding precise and potentially modifiable processes involved in social communication is essential given that the way in which one receives, processes, and produces information during social exchange contributes to components of affiliation and attachment (e.g., connectedness), which are conceptually and empirically linked to STBs. To narrow this gap, we present an empirical demonstration on patterns of eye-gaze during social interaction as a behavioral index of social communication and assess the extent to which eye-gaze reciprocity during conflictual parent-teen interactions prospectively predicts suicidal ideation in adolescent girls. Given evidence that brief periods of eye-gaze reciprocity during social interaction induce intimacy, trust, and affiliation, we hypothesized that disruptions in reciprocal eye-contact would increase girls' risk for suicidal ideation.

Methods: Participants were N=65 adolescent girls (ages 11-13; M=12.26; 72.3% White) and their parents. Girls and their parents completed a conflict discussionas a part of a laboratory-based interaction paradigm during which girls' and parents' gaze to their partners' eyes, face, and body was assessed using mobile eye-tracking glasses. Adolescents' suicidal ideation was assessed 12-months later using four items from the Mood and Feelings Questionnaire that form a suicide-related composite.

Results: Actor partner interdependence models within a multi-level structural equation modeling framework were conducted. The adolescent-to-parent partner effect for gaze to partners' eyes (i.e., less parental reciprocity of adolescents' gaze) predicted adolescents' suicidal ideation 12-months later (Est. = -13.06, $p < 0.01$). This effect was maintained when focusing only on active suicidal thoughts (Est. = -10.64, $p = 0.01$; versus passive death wish).
Discussion: Findings highlight the importance of reciprocal eye-contact during conflictual discussioonbetween parents and adolescent girls. Specifically, adolescent girls whose parents do not reciprocate their eye-contact during conflictual discussionsmay be at heightened risk for developing suicidal ideation within the next year. If replicated and extended in future research, patterns of eye-gaze during conflict discussionscould provide a promising target of intervention to reduce risk for future STBs in adolescent girls.

97. The Association between Physical Activity and Screen Time Sedentary Behavior with Suicidality in Adolescents

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Background: Emerging literature has described relationships between screen time sedentary behaviour (SSB) and suicidality (i.e., suicidal ideation and suicide attempts) as well as relationships between physical activity (PA) and suicidality. However, findings have been diverse and inconsistent. The objective of this study was to determine the longitudinal associations between SSB and PA, respectively, and suicidality.
Methods: This study cohort consisted of adolescents who participated in both the 11-year-follow-up and the 18-year-follow up of The Danish National Birth Cohort (DNBC). The 11-year-follow-up included self-reported information on daily SSB and PA. The 18-year-follow-up included self-reported information on suicidal ideation and suicide attempt. Data from DNBC were linked with individual level data from Danish Registers through Statistics Denmark further enabling information on hospital contacts for suicide attempt and a range of socio-demographic variables to be included. Associations were estimated using multinominal logistic regression models and were stratified by sex. To account for sample selection, we applied inverse probability weighting.
Results: In total, 28,613 adolescents were included in the analyses (17,101 females and 11,512 males). Higher duration of SSB was stepwise associated with higher odds ratios (OR) for both suicidal ideation and suicide attempt in both sexes. Compared with those spending
Discussion: Findings indicate that both lower PA levels and higher duration of SSB are associated with higher risk of suicidal ideation and suicide attempt in adolescents. Reducing SSB or increasing PA might help prevent suicidal ideation and suicide attempt in adolescents. Future prospective studies investigating the causal relationship are necessary.

98. Longitudinal Changes in Sleep Disturbance and Suicide Risk in Youth: Findings from the Adolescent Brain Cognitive Development Study

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Background: Suicide risk is increasing with the growing mental health crisis among youth. In the United States, suicide is the second leading cause of death in youth ages 10-24. There is a critical need to identify risk factors associated with suicidal thoughts and behaviors (STB) during childhood and early adolescence to improve prevention strategies. Sleep problems have been shown to predict the emergence of emotional and behavioral problems and sleep disturbances including insomnia, hypersomnia, and nightmares have been linked to suicide risk in studies of adults and adolescents. However, few studies have longitudinally examined changes in sleep disturbance and risk for suicide during the transition from childhood to early adolescence. This study examined the relationship between sleep disturbance and STB for youth in the Adolescent Brain Cognitive Development℠ Study (ABCD Study®).
Methods: The ABCD Study is a longitudinal study that follows children through late adolescence to examine factors that influence developmental trajectories. Data from baseline (participant ages 9-10), 1-year (ages 10-11) and 2-year (ages 12-13) follow-up visits from 11,876 participants (data release 4.0) were used to examine whether sleep disturbance predicted the onset of STB. Youth STB was assessed by the Kiddie Schedule for Affective Disorder and Schizophrenia suicide module completed by the youth. Recent STB included any suicidal thoughts or attempts reported by youth during the previous two weeks. Parents completed the Sleep Disturbance Scale for Children which assessed youth sleep disturbance in the previous 6 months including disorders of initiating and maintaining sleep (DIMS), sleep-disordered breathing disorders, disorders of arousal, sleep-wake transition disorders, disorders of excessive somnolence (DOES) and sleep hyperhidrosis. Mixed effects logistic regression models were used to examine the relationship between sleep disturbance and recent STB at each visit and changes in sleep disturbances associated with subsequent STB. For each model, family was nested within site as random effects controlling for age, sex, and household income.
Results: Recent STB were endorsed by a significant number of youth across study timepoints: 276 at baseline, 199 at 1-year, and 164 at 2-year follow-up. Total sleep disturbance was associated with STB at baseline (OR 1.28, 95% CI 1.14-1.45, $p<0.001$), 1-year (OR 1.34, 95% CI 1.17-1.53, $p<0.001$), and 2-year follow-up visits (OR 1.53, 95% CI 1.31-1.79, $p<0.001$). DIMS, DOES, and total sleep duration were also associated with STB during baseline, 1-year, and 2-year visits. Increases in total sleep disturbance (OR 1.04, 95% CI 1.02-1.07, $p=0.001$), DIMS (OR 1.11, 95% CI 1.05-1.17, $p<0.001$), and DOES (OR 1.11, 95% CI 1.03-1.19, $p=0.009$) predicted STB during the 2-year follow-up.
Discussion: This study revealed that children with STB had greater sleep disturbance, particularly difficulty falling and staying asleep, excessive somnolence, and shorter sleep duration. Importantly, sleep disturbance including difficulty falling and staying asleep and excessive somnolence predicted the onset of STB during follow-up. These findings have important implications, as insufficient sleep and poor sleep patterns have become a common issue for youth worldwide. Sleep disturbance is associated with decreased attention and inhibition may be related to difficulty controlling thoughts of suicide and regulating emotions thereby increasing risk for suicide. Disturbed sleep is modifiable and sleep interventions may inform suicide prevention efforts.

99. Reward Learning Biases in Young People with Self-Harm Behaviour

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Background: Previous research has suggested that adolescents with self-harm may show abnormalities in decision-making processes and that repetitive self-harm may be associated with higher levels of compulsivity. As part of the iMAGine study we aimed to extend previous findings to a young adult population and investigate for the first time the presence of reinforcement learning biases in self-harm behaviour using a computational modelling approach.
Methods: Young people were recruited from the community using social media and posters advertisements. Fifty-four young people aged 16-25 with self-harm in the past year (SH), 57 young people who have never self-harmed matched to the SH group on depression and anxiety (DA) levels, age and sex, and 51 healthy controls (HC) matched on age and sex, completed a reversal learning task were choices were reinforced with both points (win or lose 100 points) and social feedback ('yay' or 'boo' sound). Behavioural measures of perseveration errors, win-stay rate, lose-switch rate and probabilistic switch rate were computed and a reinforcement learning and drift diffusion model model was applied to the data.
Results: The self-harm group showed better performance on the task than healthy controls, with significantly lower perseveration errors. There were no differences in any other behavioural measure. Computational modelling showed higher learning rates and higher decision thresholds in both the self-harm and negative affect group compared to controls. The self-harm group also presented a higher drift rate in particular compared to the group with negative affect but no self-harm history.
Discussion: Our findings did not replicate previous evidence of greater behavioural inflexibility in individuals with self-harm. Future studies should clarify whether this may be due to age group differences. Similar to previous findings across psychopathology, we showed that young people with negative affect, both with and without self-harm history present a learning pattern suggestive of quicker adaptation to the most recent environmental cue, but a more cautious decision-making style. Our model suggests that individuals with self-harm are able to accumulate evidence faster than those with negative affect only, which may reflect hyper-vigilance to the social cues (boos and clapping) in the task.

ORAL SESSION: IMPACT OF NEGATIVE ENVIRONMENTS ON YOUTH

Chair: Tianna Loose, University of Montreal

100. Suicidality among Court Involved Non-Incarcerated Girls: The Roles of Dating Violence and Emotion Regulation

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Background: Court involved non-incarcerated (CINI) girls experience elevated rates of suicidality as well as dating violence behaviors (Collibee et al., 2020; Stokes et al., 2015). In turn, among general populations of adolescents, dating violence itself is a risk factor for suicidal thoughts and behaviors (Exner-Cortens et al., 2013). No work to date has examined these links among CINI youth, for whom these associations may be theorized to be particularly critical. Further, emotion regulation is linked to suicidality, dating violence involvement, and juvenile justice involvement itself (Abram et al., 2003, Ford et al., 2008; Shorey et al., 2011). Emotion regulation has been identified as a likely malleable and important component for

reducing dating violence, but its role in the associations between dating violence and suicidality among CINI girls is unknown. The current study aims to 1) provide a descriptive overview of suicidality among CINI girls, 2) examine the associations between dating violence and suicidality among CINI girls, and 3) test the hypothesis that emotion regulation will moderate the links between dating violence and suicidality among CINI girls.
Methods: Data is from the baseline of an RCT (spanning one year) of a dating violence prevention program for 245 court involved non-incarcerated involved (CINI) females (assigned female at birth) in the United States (M age = 15.58). Suicidality was measured by dichotomous items on the Youth Risk Behavior Survey (YRBS; CDC, 1995). Psychological and physical dating violence was measured using the Conflict in Adolescent Dating Relationships Inventory (Wolfe et al., 2001). Emotion regulation was measured using the Adolescent Self-Regulatory Inventory (ASRI; Moilanen, 2007).
Results: Descriptive analyses found 47% of CINI females thought about killing themselves and 30% endorsed having tried to kill themselves. Psychological and physical dating violence involvement was associated with both indictors of suicidality ($ps < .01$). Finally, we examined interactions between emotion regulation and dating violence in association with suicidality. As hypothesized, we found significant interactions for both psychological and physical dating violence involvement ($ps < .05$), such that the links with suicidality were strongest in the context of poor emotion regulation.
Discussion: Discussion will highlight the elevations in suicidality among CINI girls, a population receiving generally less attention in the field. Further, it will focus on the associations between dating violence and suicidality as well as the implications for targeting emotion regulation among CINI girls.

101. Suicidal Trajectories from Early Adolescence into Young Adulthood in a National Sample: An Analysis of the Intersections of Race/ethnicity and Gender

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Background: As U.S. adolescent racial/ethnic and gender suicidal thoughts and behaviors (STB) disparities continue to increase, early intervention can decrease lifetime and repeated suicide attempts. For over 30 years, the U.S. Centers for Disease Control has found disparate STB rates among racial/ethnic and gender groups. And while there are more prevention programs than ever, just since 2007 the U.S. adolescent suicide rate has increased over 70%.
Methods: Utilizing 14 years of survey data (1994-2008) from the Longitudinal Study of Adolescent to Adult Health (Add Health) dataset from across the U.S., this study examined racial/ethnic*gender STB disparities. This nationally representative study of adolescents aims to understand social, environmental, and genetic factors that shape the health and development of adolescents via in-home interviews. The final sample n=18,887, included 4,716 non-Hispanic white male, 4,883 non-Hispanic white female, 1,788 non-Hispanic Black male, 1,993 non-Hispanic Black female, 1,606 Latino, 1,614 Latina, 1,156 Asian, Pacific Islander, Biracial, Native American (NA/A/PI/BR) male, and 1,131 NA/A/PI/BR female adolescents aged 25 to 32 during Wave 4. Latent class analysis described how STB patterns presented longitudinally and how racial/ethnic minority*gender groups predicted different class STB memberships.

Results: Those most at risk for STB disclosed ideation and some risk of attempts in early adolescence (Waves 1 and 2). NA/A/PI/BR racial/ethnic females, Latinas, and non-Hispanic white females were the most prevalent in these waves. The second most prevalent group were those in their 20s who first disclosed ideation and also non-Hispanic white females. The smallest reported risk groups were those in their late 20s and early 30s who reported ideation and attempts first in their lifetime, with non-Hispanic white males and females most prevalent. Most surprising was that the lowest number of individuals entered Class 4 (high risk of ideation and some risk of attempts in Wave 4). While racial/ minority adolescents were less likely to enter Class 4, Black females—disclosed the highest ideation rates yet were under-represented in all other classes. Mother connections were protective for all age groups; yet not protective among Latinas chronically reporting higher STB risk but was protective for Latino males. Peer connections were not protective for most groups except non-Hispanic white males in Wave 3. Overall, there were no longer-term associations between social connections and STB. There was a negative link between social connections and high-risk STB classes among Black females, non-Hispanic whites (male, and female), and Latinos.
Discussion: As the U.S. becomes more racially and ethnically diverse, understanding the unique mechanisms related to these demographics is imperative. Findings indicated that the six groups had unique STB patterns and protective mechanisms. While Black females had the lowest risk for STB prevalence, by Wave 4, they had the highest disclosed ideation, which highlights that low risk does not mean no risk and highlights the need for engaging adolescents in identifying their stressors and coping resources to prevent STB over time. Tailoring existing interventions to include factors related to risk among intersectional communities could aid in prevention efforts.

102. Childhood Poverty and Self-Reported Suicidal Ideation, Self-Harm, and Related Emergency Visits by Early Adulthood: A Prospective Longitudinal Cohort Study

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Background: Childhood poverty has been consistently linked to various physical and mental health issues, yet its longitudinal association with suicide-related outcomes remains relatively unexplored. This study aimed to identify trajectories of childhood poverty from ages 5 months to 12 years and examine their prospective associations with self-reported suicidal ideation, self-harm, and related emergency department visits in early adulthood.
Methods: Participants were derived from the Quebec Longitudinal Study of Children Development (QLSCD), a population-based prospective birth cohort of individuals born in 1997/98 in Quebec, Canada. The QLSCD dataset was linked to the Quebec Emergency Department administrative databank (Banque de données communes des urgences) containing records of emergency department visits (N=2082). Poverty status was assessed at 10 different time points during childhood, spanning from 5 months to 12 years of age. Poverty status was defined using Canadian Low-Income Cut-offs, which consider household income, household size, and urbanization level. Serious suicidal ideation and self-harm (including suicide attempts and non-suicidal self-injury) were self-reported at ages 15, 17, 20, and 23 years. Emergency room visits related to suicidal ideation or attempts were extracted for ages 16 to 23 years. Lifetime scores were calculated for each suicide-related outcome (≥ one occurrence at any age vs. none).

Results: Using group-based trajectory modelling, two groups of childhood poverty exposure best represented the data. The low-income trajectory consisted of 28.2% (N=598) of participants who experienced sustained low income throughout childhood. Logistic regression analyses revealed that individuals in the low-income trajectory were more likely to report self-harm (both overall and specific items) but not suicidal ideation. Additionally, the low-income trajectory was associated with an increased likelihood of emergency room visits.
Discussion: Alleviating childhood poverty holds potential as an effective preventive strategy to reduce suicidal behaviors and self-harm during the transition to adulthood.

103. The Effects of Adverse Childhood Experiences, Internalized Stigma, and Social Connectedness on Suicidality among Sexual Minorities in the United States: Evidence from the Generations Study

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Background: Lesbian, gay, and bisexual (LGB or sexual minority) communities are at significantly higher risk for suicidality than their heterosexual counterparts. Minority stress, or stress related to a marginalized social identity, partly explains the variance observed in poor mental health among LGB populations. Still, additional non-LGB specific factors like adverse childhood experiences (ACEs) may also contribute. How ACEs and minority stressors influence suicidality requires further empirical research to illuminate the causes of extant suicide-related disparities and any modifiable protective factors like social connectedness that could attenuate the risk for suicide. This study explored the moderating role of social connectedness (social support and LGB community connectedness) on the relationship between ACEs, internalized LGB stigma, and suicidal thoughts and behavior (suicide ideation, suicide planning, and suicide attempts).
Methods: The Generations Study is a five-year research project to document generation differences in identity, stress, and health to improve the provision of health services and reduce health disparities related to sexual orientation. The study recruited a national probability sample from 2016 and 2017 of three age cohorts of sexual minorities labeled the pride (born 1956–1963), visibility (born 1974–1981), and equality (born 1990–1997) cohorts. Individuals were recruited from Gallup and were eligible for the study if they were a) 18 or older; b) identified as a cisgender or gender nonbinary sexual minority; c) belonged to the three cohorts under investigation (aged 18-25, 34-41, or 52-59); d) were Black, Latino, or White; e) completed at least sixth grade; and e) spoke English well enough to conduct the phone interview in English. We used baseline data (n=15,118) to conduct logistic regression analyses with three domains of ACEs (physical, emotional, and sexual abuse), internalized LGB stigma, two domains of social support (LGB community connectedness and general social support), and three suicide outcomes (suicide ideation, suicide planning, and suicide attempts). We used the provided weights to adjust for the Generations Study's complex sampling design. Demographic covariates included age, sex assigned at birth, gender identity, sexual identity, education level, and race and ethnicity.
Results: Relative to participants who had not experienced emotional abuse, those who had were 2.69 times more likely to report lifetime suicide ideation, 2.33 times more likely to report lifetime suicide planning, and 2.47 times to report a lifetime suicide attempt. Relative to those without a history of sexual abuse, those with histories were 1.35 times more likely to report a suicide attempt. Participants with higher levels of internalized LGB stigma were 1.89 times more likely to report lifetime suicide ideation. Those with higher levels of perceived social

support were 0.79 times less likely to report lifetime suicide planning and 0.83 times less likely to report a lifetime suicide attempt. Perceived social support significantly attenuated the relationship between emotional abuse and lifetime suicide attempts.
Discussion: Our findings highlight that childhood emotional and sexual abuse and internalized LGB stigma are relevant predictors for assessing suicide risk among LGB populations. Further understanding how LGB and non-LGB social supports influence suicidality among LGB populations could help develop of culturally-tailored interventions for this vulnerable population. Additionally, leveraging perceived social support could be a important modifiable protective factor in interventions to reduce suicide risk.

104. The Association between Bullying Victimisation and Self-Harm among Adolescents, and the Role of sex: Preliminary Findings from the REACH study, an Accelerated Cohort Study of South London Adolescents

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Background: Self-harm, defined as ‘self-inflicted injury or poisoning, irrespective of suicidal intent’, is one of the strongest risk factors for future suicide (Hawton et al., 2020; Hawton et al., 2012). Bullying victimisation has consistently been highlighted as a risk factor for youth self-harm. Less is known about associations by bullying sub-type (i.e. physical, verbal, relational–the ‘traditional’ in-person forms of bullying, and cyberbullying), among boys and girls. This study aimed to: (1) explore prevalence rates of bullying and lifetime self-harm; (2) explore the strength of cross-sectional associations between bullying (as a composite measure and by sub-types) and self-harm. Both aims explored the role of sex.
Methods: Preliminary baseline data on bullying victimisation and lifetime self-harm were drawn from an accelerated cohort study of adolescent mental health in South London, the REACH (Resilience, Ethnicity and AdolesCent mental Health) study (Knowles et al., 2022). Data on baseline self-harm and sex were available for 3,060 adolescents aged 11–15 years (Mage=12.4, 83.4% ethnic minority groups) from 10 schools (i.e. our analysis sample). Inverse probability weights (IPW) were created to account for potential non-response bias and restore representativeness to the full REACH cohort (n=4,945). Following the approach of the Centre for Longitudinal Studies (Silverwood et al., 2020), a combination of IPW and multiple imputation (i.e. IPW/MI) was used to account for missing data on variables of interest.
Results: Prevalence of young people reporting any form of bullying in the past 6 months was 22.2%, 95% CI [20.5% to 23.9%] and lifetime self-harm was 16.9% [15.4% to 18.4%]. Both were more common in girls than boys (adjusted risk ratios: bullying, 1.13, 95% CI [1.02,1.24]; self-harm, 1.44 [1.03,1.86]). By sub-type, cyberbullying had the lowest prevalence (3.9% [3.1% to 4.7%]) and physical bullying the highest (16.4% [14.9% to 18.0%]). Prevalence of the sub-types between boys and girls differed slightly (aRRs 0.75-1.48). Bullying was associated with self-harm in all models (aRR 3.23, 95% CI [2.72,3.75]) for both girls (aRR 3.58 [2.66,4.51]) and boys (aRR 2.89 [2.16,3.61]), independent of age, free school meals and ethnicity. The strongest association for girls was relational bullying and self-harm (aRR 4.42 [3.44,5.40]), while for boys it was cyberbullying and self-harm (aRR 4.37 [2.75,5.99]).

Discussion: Victims of bullying were over three times more likely to report lifetime self-harm than non-victims, with strong associations for boys and girls across four sub-types of bullying (i.e., physical, verbal, relational, cyberbullying). These baseline findings underline the importance of exploring nuances between bullying sub-types and self-harm, by sex/gender. The next phase of this research is to explore these associations longitudinally. Future research should explore the effectiveness of anti-bullying interventions across the bullying-sub-types, for boys and girls.

105. Longitudinal Patterns of Change in Suicidal Ideation from Ages 7 to 12 among Child Welfare-Involved Children

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Background: Preteen self-injurious thoughts and behaviors (SITB) have increased at an alarming rate in the United States (U.S.). Children involved in the child welfare system ([CWS], i.e., those who have been the subject of a child maltreatment investigation) are at especially high risk for suicide and are therefore an important population to prioritize. To inform the timing and content of suicide prevention efforts in these young, high-risk youth, we must first have a better understanding of when suicidal ideation seems to emerge and change, and for which groups of children.
Methods: We integrated data from two large, longitudinal studies following CWS-involved children over time to examine trajectories of change in suicidal ideation among preteens. Data came from the U.S.-based National Survey of Child and Adolescent Wellbeing-I (NSCAW-I) and NSCAW-II. We focused our analysis on the 2,381 children who were ages 7-12 at the first survey wave and examined change in suicidal ideation over three survey waves (18 months between waves, approximately). Suicidal ideation was measured using child self-report on the Children's Depression Inventory (CDI). We examined patterns of change in suicidal ideation in the sample and then conducted multinomial regression to explore inter-trajectory differences in demographics and other characteristics.
Results: An eight-trajectory model was supported by the data, showing that there were eight trajectories of individual change in suicidal ideation observed in this sample of young, high-risk children. Regressions revealed statistically significant differences between trajectories in some key characteristics including gender, race/ethnicity, age, and maltreatment characteristics.
Discussion: Findings can help to improve the field's understanding of how suicidal thoughts may develop and change in elementary aged children involved in the CWS. They also contribute to knowledge about how and when suicide preventive interventions may be most fruitful, and with whom. Taken together, the study findings will help to advance suicide prevention efforts in some of the most high-risk young children.

ORAL SESSION: HEALTH CONDITIONS MATTER

Chair: John Söderholm, University of Helsinki

106. The Association between Hospital Diagnosed Migraine and Migraine Medication with Suicidal behavior: A Nationwide Cohort Study

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Background: Migraine has been established to inflict great pain and suffering on those affected by it, further it has been shown to be associated with the development of psychiatric comorbidity and increased suicide risk. We aimed to assess if individuals with a hospital diagnosis of migraine or recorded use of migraine medication were associated with an increased risk of suicide and suicide attempts.
Methods: We utilized a cohort design and national longitudinal data on all individuals aged 15 or above who lived in Denmark between 1995 and 2020 . Diagnosis of migraine with or without aura was identified via the National Danish Patient Register. Treatment with either triptans, ergot alkaloids, and any other migraine drug was identified via the Danish National Prescription Registry and suicide attempts and deaths were identified in the national cause of death registries.
Results: From 1980-2020, observing 161,921,783 person years, 23,927 males and 11,556 females died by suicide. Of these, 153 (0.63%) males and 289 (2.5%) females had a hospital diagnosis of migraine, resulting in adjusted IRR for suicide of 1.2 (95% CI, 1.0 – 1.4) and 1.8 (95% CI, 1.6 – 2.0) for males and females, respectively, when compared to those not in treatment. In the same period we observed 52,282 male and 68,054 female suicide attempts, respectively. Of these 529 (1.01%) males and 1,546 (13.3%) females had a hospital diagnosis of migraine. Thus. the adjusted IRR for suicide attempt were 1.7 (95% CI, 1.5-1.8) and 1.5 (95% CI,1.5-1.6) for males and females, respectively.
Discussion: In this study we find that individuals with a hospital diagnosis of migraine experienced significantly higher suicide and suicide attempt rates than those not in treatment, this persisted when also adjusting for a large variety of covariates.

107. Advancing Perinatal Suicide Research with Dynamical Systems Theory

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Background: Suicide is a leading cause of death during the first postpartum year, yet there is limited understanding of factors contributing to the emergence of postpartum suicide risk. Pregnancy to postpartum is one of the most complex transitions in the human lifespan. Thus, advancements in perinatal suicide research will benefit from a theoretical framework that can account for that complexity. The overarching aim of the present study was to apply such a framework—namely, dynamical systems theory—to the prospective examination of sleep disturbances, emotion dysregulation, and desire to live among birthing parents during pregnancy and early postpartum.
Methods: Ninety-four English-speaking, women-identified birthing parents completed twice daily surveys and wore wrist actigraphs for 7 days during the 3rd trimester of pregnancy (wave 1), 6 weeks postpartum (wave 2), and 16 weeks postpartum (wave 3). Surveys included

measures about daily emotion dysregulation, desires to live, and self-injurious thoughts and behaviors as well as nightly sleep quality. Wrist actigraphs estimated sleep efficiency. Multilevel, change-as-outcome models were built to model nonlinear dynamic relations among sleep quality, sleep efficiency, emotion dysregulation, and desire to live. These models captured how changes in these variables predicted short-term changes in themselves and each other. Additional models tested desire to live as a moderator of sleep and emotion dysregulation dynamics (i.e., whether temporal patterns in these variables differed between those who experienced ambivalent versus consistently high desires to live over time).
Results: Descriptive resultsrevealed that by 16 weeks postpartum, 22.3% of the sample endorsed self-injurious thoughts (i.e., wishes to be dead, thoughts about suicide, thoughts about nonsuicidal self-injury), and more than half of those participants endorsed those thoughts for the first time during that wave. Paired samples t-tests indicated that participants' mean levels of desire to live were high and unchanging from one wave to the next. However, dynamical systems models revealed that participants tended to hover more rigidly around a lower desire to live after childbirth ($p < .001$). Similarly, despite t-tests indicating that emotion dysregulation did not change from waves 1 to 2, dynamical systems models revealed that after childbirth, participants tended to hover more rigidly around a higher level of emotion dysregulation ($p = .03$). Finally, compared to participants who reported consistently high desires to live over time, those who reported fluctuations, or ambivalence, in their desires to live hovered more rigidly around lower sleep efficiency during wave 1 ($p < .001$), and their sleep efficiency had a stronger effect on changes in emotion dysregulation during wave 3 (i.e., low sleep efficiency predicted increases in emotion dysregulation; $p = .05$).
Discussion: This study was the first to apply dynamical systems concepts to research on perinatal suicide risk. Examining nonlinear temporal patterns across multiple time scales (i.e., day-to-day, pre- to post-childbirth) conveyed a distinct and more informative story than investigating linear changes. In this sample, childbirth was an impactful time after which participants were more "stuck" in temporal patterns of lower sleep efficiency, higher emotion dysregulation, and lower desires to live. Furthermore, participants who experienced ambivalence in their desires to live exhibited more rigidly poor sleep during pregnancy and then had more difficulties regulating their emotions following nights of poor postpartum sleep. This novel study offers promising directions in research and clinical interventions to prevent postpartum suicide.

108. Borderline Personality Disorder and Depression Severity Predict Suicidal Outcomes: A Six-Month Prospective Cohort Study of Depression, Bipolar Depression, and Borderline Personality Disorder

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Background: Suicide risk is high in patients with major depressive disorder (MDD), bipolar disorder (BD) and borderline personality disorder (BPD). Whether risk levels of and risk factors for suicidal ideation (SI) and suicide attempts (SA) are similar or different in these disorders remains unclear, as few directly comparative studies exist. The relationship of short-term changes in depression severity and SI is under investigated, and might differ across groups, e.g., between BPD and non-BPD patients.

Methods: We followed, for 6 months, a cohort of treatment-seeking, major depressive episode (MDE) patients in psychiatric care (original n = 124), stratified into MDE/MDD, MDE/BD and MDE/BPD subcohorts. We examined risks of suicide-related outcomes and their risk factors prospectively. We examined the covariation of SI and depression over time with biweekly online modified Patient Health Questionnaire 9 surveys and analysed this relationship through multi-level modelling.
Results: Risk of SA in BPD (22.2%) was higher than non-BPD (4.23%) patients. In regression models, BPD severity was correlated with risk of SA and clinically significant SI. During follow-up, mean depression severity and changes in depression symptoms were associated with SI risk regardless of diagnosis.
Discussion: Concurrent BPD in depression seems predictive for high risk of SA. Severity of BPD features is relevant for assessing risk of SA and SI in MDE. Changes in depressive symptoms indicate concurrent changes in risk of SI. BPD status at intake can index risk for future SA, whereas depressive symptoms appear a useful continuously monitored risk index.

109. Multimorbidity Profiles and Suicide-Related Behaviors among Older Adults with Serious Mental Illness

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Background: Suicide accounts for 30% of excess mortality in adults with serious mental illness (SMI). Because adults with SMI have high rates of multiple chronic medical conditions, or multimorbidity, it is important to understand how patterns of multimorbidity may influence suicide risk for this population. This study seeks to identify multimorbidity profiles in mid- to late-life adults with SMI and determine how these profiles are associated with suicide-related behaviors.
Methods: The study leveraged a national, longitudinal and population-based cohort of 5 million U.S. veterans aged 50 years and over, followed 2012-2020. The dataset links multiple national databases to provide diagnoses, encounters and death data. A representative sub-cohort (N=169,104) was created, with primary diagnosis of schizophrenia, schizoaffective disorder or bipolar disorder. Cause-specific mortality data were obtained from the Mortality Data Repository and the Veterans Affairs Suicide Behavior and Overdose Report/Suicide Prevention Applications Network.
To determine profiles, 46 major comorbid conditions were considered across the study period based on their relevance to an older SMI population and as defined by the U.S. Centers for Medicare and Medicaid Services Chronic Conditions Warehouse.

Latent class analysis was used to identify profiles of comorbid conditions, with best-fitting model determined by a combination of fit statistics, clinical acumen and theoretical parsimony. Demographics, comorbid conditions and mortality outcomes were assessed using means and standard deviations or frequencies and proportions, with statistical significance of differences between classes tested by F tests for continuous variables and chi-square tests for categorical

variables. Suicide ideation, non-fatal attempt and mortality incidence rates were adjusted for age.

Results: Four comorbidity profiles were identified: The Low Comorbidity group (32.5%) had low prevalence (60%) of depression, anxiety and posttraumatic stress disorder. The Serious Medical and Psychiatric Illness group (27.7%) had high prevalence of ischemic heart disease, diabetes, chronic kidney disease, anemia, depression and anxiety. The Chronic Pain and Substance Use Disorders and Related Conditions (SUDRC) group (14.7%) was notable for high prevalence of arthritis, chronic pain, anemia, depression, anxiety, alcohol use disorder, tobacco use disorder and other drug use disorder.
There were 1007 suicide deaths during the study period, with 446 deaths via firearms (44%), 209 via drug overdose (21%), and 184 via hanging (18%). The Chronic Pain and SUDRC group had the highest (age-adjusted) prevalence of suicidal ideation (3.61%) and non-fatal attempts (7.85%) compared to the Low Comorbidity group with the lowest proportion (0.43% and 0.63%, respectively). The High Psychiatric Comorbidity group had the highest rate of (age-adjusted) suicide deaths (0.81%) followed by the Low Comorbidity group (0.65%), Chronic Pain and SUDRC group (0.47%) and Serious Medical and Psychiatric Illness group (0.20%).

Discussion: Among older adults with SMI, four distinct multimorbidity profiles had differing suicide-related outcomes. Although the high psychiatric comorbidity group had the highest rate of suicide death, the low comorbidity group had a similarly high rate, while those with serious medical illness had the lowest suicide death rate. Future work is needed to characterize suicide risk among these subgroups and identify targets for clinical and psychosocial intervention.

110. Suicides in times of COVID-19 in Iceland

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[1]Humus Inc., [2]U. of Iceland, [3]Directorate of Health, Iceland, [4]National University Hospital

Background: Extensive preventative measures were launched in Iceland to contain the COVID-19 pandemic and minimize its societal impact. We examined the impact of COVID-19 and these efforts on the incidence of suicides and suicidal behavior in the years 2020-21.
Methods: Mean incidence rates for the years 2020-21 were compared with mean incidence rates for the years 2000-19, in 5-year intervals, and 2015-19. We also assessed trends in data from the Red Cross helpline and two NGO research projects as well as survey data on the well-being of the nation and of students aged 14-18 years in COVID-19.
Results: Suicide rates in males decreased by 15.5% during the COVID-19 period but increased by 39.9% for females. The incidence increased most for 15-24 year-old females (175%) but smaller increases were observed for women in other age groups. The annual incidence rates for female suicides in Iceland are based on few events so major changes in subgroup proportions can easily arise. For males the largest decrease was found in the age groups 15-24 years (28.4%) and 45-64 years (24.2%). None of the observed changes were statistically significant. The resultsfrom the survey data showed an increase in loneliness and worsening mental health in COVID.
Discussion: The incidence of suicide increased numerically for women but decreased for men in 2020-21. These non-significant trends were in line with national survey data in that women´s mental health seemed to deteriorate more than that of males in COVID. The results call for more focused prevention measures for women during the next pandemic, but also in the long

run for males who have a threefold higher suicide rate than women in Iceland, and especially young males who have had the highest incidence of suicide observed in the Nordic countries.

111. Capturing a Continuum of risk: Developing the Autism Suicidality Inventory

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[1]University of Pittsburgh School of Medicine, [2]Vanderbilt University, [3]University of Utah

Background: Suicidal ideation and behaviors (STBs) occur at alarmingly high rates in autistic individuals; they are up to 7 times more likely to die by suicide than non-autistic people. These findings prompted calls to examine suicide risk factors and develop assessments of suicidality in the autistic community. However, existing measures may not be appropriate to use with autistic people without revisions for readability and inclusivity. Further, measures developed for non-autistic populations may miss factors that are unique to autism, such as autism-specific contributors to risk or previously undetected signs of suicidality in autistic people. Finally, most measures focus on imminent safety risk versus capturing a continuum of suicide risk, which limits utility in suicide research and prevention efforts.
Methods: The measure development standards put forth by the Patient-Reported Outcome Measurement Information System (PROMIS) initiative were followed to develop the Autism Suicidality Inventory (ASI) as a questionnaire of the propensity for suicide in autistic adolescents and adults. Steps included: 1) Development of a conceptual model based on the NIMH Research Domain Criteria, 2) meetings with a team of researchers, autistic adults, and those with lived experience of suicidality to generate items, and 3) cognitive interviews with 25 autistic participants (including those never suicidal to having a recent attempt). During cognitive interviews, participants reviewed each item and shared their thought process aloud. Each participant was administered the Columbia-Suicide Severity Rating Scale to assess for current and lifetime STBs as well as several questionnaires.
Results: A team of researchers, clinicians, and autistic adults generated initial items that cover multiple facets within the negative and positive valence systems, social processes, cognitive systems, and arousal, regulatory and sensory systems of the RDoC framework. Facets include constructs associated with current models of suicidality (e.g., thwarted belongingness, acquired capability), known constructs associated with suicidality that are more prevalent in autistic samples (e.g., lacking social support, impulsivity), and constructs that may be unique to autistic individuals (e.g., masking autistic traits, social exhaustion, reactions to sensory stimuli). A total of 273 items were drafted, with at least four items for each facet and a range of potential item difficulty. The resultsyielded specific guidance regarding optimal (and suboptimal) wording of suicide and other related constructs as well as conceptual insight regarding suicide in autism. Following cognitive interviews, items were dropped, added, and revised, which resulted in a complete item bank ready for psychometric analysis.
Discussion: This project produced the first item bank designed to capture a continuum of suicide risk versus imminent safety concerns, developed specifically for and with autistic people. A comprehensive model was generated that may provide new insights into suicidality in autism. A strength of our measure development process is that we included autistic adults at all steps of development (e.g., conceptual model generation, revisions), which maximizes its content validity and accessibility for autistic people. This participatory, inclusive process can also help inform how to adapt existing assessment tools and conduct clinical interviews for the autistic population. Next steps include administering the ASI to a large sample (n >1000) of

autistic people to conduct psychometric analyses. The ASI fills a critical gap in the literature and has the potential to enhance life-saving research and clinical efforts.

ORAL SESSION: A CLOSER LOOK - CHANGING ACCESS TO LETHAL MEANS

Chair: Rinad Beidas, Feinberg School of Medicine

112. Primary Outcomes From an Effectiveness-Implementation Trial of Strategies to Implement a Secure Firearm Storage Program as a Universal Suicide Prevention Strategy in Pediatric Primary Care

Rinad Beidas*[1], Kristin Linn[2], Christina Johnson[3], Melissa Maye[4], LeeAnn Quintana[5], Leslie Wright[5], Celeste Zabel[4], Katy Bedjeti[3], Arne Beck[5], Alison Buttenheim[6], Marisa Elias[7], Katelin Hoskins[6], Shari Jager-Hyman[2], Jason Lyons[5], Steven Marcus[8], Bridget McArdle[7], Debra Ritzwoller[5], Dylan Small[9], Courtney Wolk[2], Shiling Zhang[4], Brian Ahmedani[4], Jennifer Boggs[5]

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Background: Youth suicide has increased in the United States over the past 10 years, and over 40% of these deaths involved a firearm. Firearm storage is a modifiable determinant of youth suicidal injury and mortality in the United States. Pediatric primary care is an optimal venue for intervention, since most youth who die by suicide access primary care in the year preceding their death. However, despite the existence of evidence-based practices and recommendations from the American Academy of Pediatrics for clinicians to counsel parents on secure firearm storage, this practice is not routinely conducted in pediatric primary care. Our National Institute of Mental Health-funded Adolescent and child Suicide Prevention in Routine clinical Encounters (ASPIRE) randomized controlled trial (R01 MH123491) aims to address this problem by leveraging insights from implementation science and behavioral economics. At all well-child visits for youth ages 5-17, we delivered a universal suicide prevention program, S.A.F.E. Firearm, which includes (1) having a brief discussionon secure firearm storage with youth and their caregivers and (2) offering a free cable firearm lock. The study compares two active implementation strategies: "Nudge," a reminder embedded within the well-child visit template in the electronic health record (EHR) vs. "Nudge+," the EHR reminder plus practice facilitation, where a trained support facilitator checks in regularly with clinics, helps troubleshoot implementation barriers, and provides audit and feedback reports to clinical champions. In this presentation, we will release findings of the ASPIRE trial for the first time.
Methods: This cluster randomized hybrid effectiveness-implementation type III trial compares two active implementation strategies, Nudge and Nudge+, on clinician-reported delivery of both S.A.F.E. Firearm components (i.e., reach) over a one-year period in 30 clinics of two large health systems in Michigan and Colorado. Half of the clinics (k=15) received Nudge and half received Nudge+. Caregiver-reported receipt of the program was assessed via online survey after well-child visits.

Results: 43,421 well-child visits were eligible to receive S.A.F.E. Firearm during the one-year trial. Clinicians documented that they offered firearm storage counseling at 57.5% of eligible visits and documented offering free cable firearm locks at 40.2% of eligible visits; clinicians documented offering both at 39.4% of eligible visits. 39.8% of caregivers completed the survey. Caregiver report corroborated clinician documentation (48.3% of caregivers reported receiving firearm storage counseling and 31.2% reported being offered a free cable firearm lock; 30.6% reported receiving both). We will present primary resultsof the randomized trial, comparing the impact of EHR reminder + practice facilitation (Nudge+) vs. EHR reminder alone (Nudge) on reach, as well as secondary findings of caregiver-reported receipt of the program.
Discussion: At least one component of S.A.F.E. Firearm was delivered at nearly 25,000 well-child visits across two geographically, demographically, and culturally diverse health systems in just one year, suggesting promise for broad nationwide reach of this program in pediatric primary care. This study provides valuable insights into strategies to encourage pediatric clinicians and health systems to implement S.A.F.E. Firearm nationwide, with the goal of reducing unauthorized youth firearm access and, ultimately, saving youth lives. Given the rising youth suicide rate in the United States, successful implementation of evidence-based means restriction programs like S.A.F.E. Firearm is urgently needed.

113. Long-Term Evaluation of the Effect of the Barrier at Bloor Street Viaduct on Bridge-Related Suicide Rates in Toronto: 1998-2020

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Background: Suicide by jumping from the Bloor Street Viaduct was a serious public health concern in Toronto in the early 2000s. A suicide prevention barrier (Luminous Veil) was constructed in 2003 at this site. Previous research indicated that the barrier was effective in reducing suicide at the Bloor Street Viaduct with evidence of short-term location substitution, particularly at a nearby bridge. However, the long-term impact of the construction of the Luminous Veil on suicide in Toronto remains unknown. The objective of this study is to investigate the association between the construction of the Luminous Veil and suicide by jumping from bridge in Toronto between 1998 and 2020.
Methods: Quarterly counts of suicide data by jumping from bridges and by othermethodsin Toronto, Canada from 1998 to 2020 were calculated using data from the Office of the Chief Coroner of Ontario. The intervention of interest was the construction of the Luminous Veil completed in June 2003. Quarterly population in Toronto was determined using Census data and calculated by interpolation in non-census years between 1996 and 2021, and the unemployment rate was retrieved from Statistics Canada. Interrupted time-series analysis using Poisson regression was performed to examine the association between the construction of the Luminous Veil and bridge-related suicide. The model controlled for linear time trends, seasonal variations, unemployment rate, the number of bridge-related suicide cases in the previous quarter and the total number of suicide cases by other methodsin the same quarter.
Results: Time trend was not detected in bridge-related suicide during the pre-construction period (January 1998-June 2003). After controlling for other covariates, the construction of the Luminous Veil was associated with a 50% step decrease in bridge-related suicide in the next

quarter in Toronto (Incidence Rate Ratio (IRR)=0.50, 95% Confidence Interval (95% CI)=0.31-0.83). The post-intervention time trend indicated that there was no statistically significant rebound in bridge-related suicide after the original drop (IRR=0.99, 95% CI=(0.96-1.03), indicating that the observed reduction persisted over time.
Discussion: The construction of Luminous Veil was effective in reducing bridge-related suicide over time in Toronto. These findings are in contrast to our initial study of short-term effects that may have been confounded by problematic media reporting. They affirm the importance of structural interventions as a suicide prevention strategy.

114. Critical Gaps in Understanding Firearm Suicide among Hispanic/Latino Adults in the U.S.: Findings from the National Violent Death Reporting System

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Background: Suicide rates increased by 33.9% among Hispanic/Latino adults from 2013-2020, driven by highly-lethal firearm suicide deaths. However, there are critical gaps in characterizing firearm suicide risks and prevention opportunities in Hispanic/Latino adult populations in the U.S. Our objective was to describe Hispanic/Latino adult firearm suicide deaths reported through the National Violent Death Reporting System (NVDRS), including demographic characteristics, firearm choices, suicidal thoughts and behaviors, and mental health, compared to non-Hispanic adult firearm suicide decedents. As such, this study responds to the National Institutes of Health's call for researchers to identify risk factors and improve suicide prevention in racial/ethnic minority communities and better understand firearm injury among health disparity populations, specifically focusing on Hispanic adults.
Methods: We received data from the NVDRS Restricted Access Database on all adult firearm suicides from 2013-2019 through an approval process managed by the Centers for Disease Control and Prevention. The NVDRS program compiles comprehensive incident-level data on violent deaths from all 50 states, D.C., and Puerto Rico. Our study sample included 82,226 adult firearm suicide decedents (3,590 Hispanic/Latino and 78,636 non-Hispanic). Variables of interest were organized along biological, health care system, and sociocultural environmental domains using the National Institute on Minority Health and Health Disparities (NIMHD) Research Framework. We conducted bivariate statistical tests and estimated multivariable logistic regression models accounting for potential confounding factors.
Results: On average, Hispanic/Latino adults who died by firearm suicide in the U.S. were 38.8 years old. 37.1% of the Hispanic/Latino decedents were born in the Pacific and Mountain states. 15.9% of Hispanic firearm suicide decedents were born in Mexico (8.0%) or elsewhere outside the US (7.9%). Handguns were used in 74.9% of non-Hispanic firearm suicide deaths but more than 8 in 10 Hispanic/Latino firearm suicide deaths ($P < 0.001$). Compared to non-Hispanic decedents, Hispanic/Latino decedents were more likely to have a history of suicidal thoughts/plans and suicide attempts. 30.1% of Hispanic/Latino firearm suicide decedents had a mental health or psychiatric problem at the time of death, compared to 37.5% of non-Hispanic firearm suicide decedents. Only 13.8% of Hispanic/Latino firearm suicide decedents were undergoing treatment for a mental health or substance use problem prior to death.
Discussion: We identified key differences in demographic characteristics, firearm choices, history of suicidal thoughts and behaviors, and mental health between Hispanic/Latino and non-Hispanic decedents. Hispanic adult firearm suicide decedents were less likely than non-Hispanic decedents to have a mental health or psychiatric disorder prior to death, less likely to have been military veterans, more likely to have had a previous suicide attempt, and more likely

to use handguns to take their own lives. Our findings indicate a critical need for public health agencies and policymakers in the U.S. to promote initiatives reducing mental health stigma among Hispanics/Latinos and expand mental health treatment capacity in Hispanic/Latino communities. Preventing Hispanic/Latino firearm suicide may also be improved by incentivizing the use of lethal means counseling at local health systems and community organizations (e.g., Botanicas).

115. Lower Suicide Rates and Lower Death by Firearm among Those of Hispanic Ethnicity: Not Unrelated

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Background: Suicide death remain significantly rarer among Hispanic persons compared to non-Hispanic persons in the United States. Age-adjusted suicide rates were 51.3% that of non-Hispanic persons in 2020 (7.52 and 14.66/100,000 persons, respectively). Critically, though, there has been little research on why Hispanic populations tend to experience dramatically lower suicide rates than the general population. Specifically, there are critical gaps in examining how Hispanic suicide deaths differ in method of death and structural demographics. Examining the population of all suicide decedents in Utah from 2016 to 2020, we sought to address these gaps in the literature. We model the difference in firearm death while controlling for age, marital status, rural versus urban and gender. We also note large differences in firearm ownership attitudes between Hispanics and non-Hispanics revealed by a Pew Research Center survey conducted in October of 2022.

Methods: Data were collected in collaboration with the Utah Office of the Medical Examiner (OME) and linked to demographic information by the Utah Population Database (UPDB). With data on >11 million individuals, living and ancestral to today's Utah population, the UPDB is one of the world's richest sources of in-depth information supporting research on demography and public health.

Our analysis included 2,989 decedents for data exploration with complete information including method of death and marital status on 1,275. Analysis revealed no bias in those records for which marital status and method of death were not available. Our dependent variable was a binary measure of death by firearm (yes, no). Our independent variables were binary indicators of decedent ethnicity (Hispanic, non-Hispanic), as determined by the either the family of the OME, and county rurality (rural, urban), based on the county of residence for each decedent, as well as gender, and marital status. Age at death was logged and scaled. Estimation was conducted via a generalized linear model (GLM) with a binomial distribution. For ease of interpretation, we present the regression model coefficients in exponentiated form.

Results: Firearm suicide death was only 62.6% as likely for suicide decedents identified as Hispanic compared to non-Hispanic (P=0.039), after adjusting for the covariates described above. On average, decedents living in urban counties were only 75% as likely to die by firearm as decedents likely as living in rural counties (P=0.006), male decedents were almost 3.5 times as likely as female decedents to die by firearm, older individuals were significantly more likely to die by firearm and married suicide decedents were overall 50% more likely to die by firearm.

Although previous studies have shown firearm deaths and suicide rates are higher in rural areas compared to urban areas, we found that Hispanic firearm suicide deaths were no more common in rural areas than urban areas.

Discussion: Although previous studies have demonstrated that firearm-related deaths account for higher suicide rates in rural areas compared to urban areas, we found that Hispanic firearm suicide deaths were no more common in rural areas than urban areas. Recent research shows Hispanics are less likely to own firearm than non-Hispanics. Moreover, a recent public opinion poll conducted by Pew Research found that 73% of respondents identifying as Latinos favored firearm control [when questioned versus gun rights} compared to 52% of US adults overall (Pew Research, 2022), which may reveal a cultural aversion to firearms. Regardless, fewer firearm suicide attempts and fewer firearm suicide deaths will result in fewer suicide deaths overall. Surviving a suicide attempt is less likely for those who use firearms, given the 80-90% case-fatality rate.

116. ORAL WITHDRAWN

117. Non-Response to an Item Assessing Firearm Ownership: Associations with Suicide Risk and Emotional Distress

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Background: Firearm access increases the risk of suicide for all household members. Secure firearm storage practices, which limits access to lethal means (i.e., means safety), can decrease suicide risk. The reach of means safety efforts can be limited due to individuals not answering items about ownership. This study examines the characteristics of individuals who provide a non-response to a firearm ownership item in a community sample of adults.

Methods: Data was collected anonymously via Qualtrics Panels as part of a larger study. Quota sampling was utilized to enroll a sample similar to 2010 United States (US) census distributions. Participants answered an item assessing firearm ownership ("Do you personally own a gun or firearm?"). The sample was limited to those who answered "yes", "no", or did not provide a response (i.e., non-response). Multinomial logistic regressions were used to examine differences between the 3 response groups. Predictors were age, gender (male vs. female), race (White vs. Non-White), probable PTSD (score of >3 on Primary Care PTSD Screen), probable depression (score of >10 on the Patient Health Questionnaire; PHQ-9), recent SI (non-zero response on 9th item of PHQ-9), past-month SI (Self-Injurious Thoughts and Behaviors Interview-Revised; SITBI-R), and past-year SI (SITBI-R). Univariate models examined each predictor as an independent correlate of the response group. Multivariate models then examined each emotional distress-related variable's relative contribution when covarying for demographic variables.

Results: Out of the 10,556 participants, 26.2% were firearm owners (FOs), 60.4% were non-firearm owners (NFOs), and 11.8% were non-responders (NRs). Of the NRs, 100% denied current or prior military service. NRs were less likely to be male, White, and were younger than FOs and NFOs. Compared to NFOs, FOs were more likely to be male (OR=2.12) and White (OR = 1.89). FOs and NRs were more likely to endorse probable PTSD, probable depression, recent SI, past-month SI, and past-year SI than NFOs. Compared to FOs, NRs were more likely to endorse probable depression (OR=1.34). When covarying for demographics, FOs were more likely to endorse recent SI (AOR=1.70), past-month SI (AOR=1.79), past-year

SI (AOR=1.40), probable depression (AOR=1.91), and probable PTSD (AOR=1.91) than NFOs. Compared to NFOs, NRs were more likely to endorse recent SI (AOR=1.25), probable depression (AOR=1.22), and probable PTSD (AOR=1.41). NFOs were less likely to endorse recent SI (AOR=0.73), past-month SI (AOR=0.69), past-year SI (AOR=0.76), probable depression (AOR=0.85), and probable PTSD (AOR=0.74) than FOs.

Discussion: NRs may be demographically different than FOs. FOs and NRs may be experiencing elevated emotional distress and be more likely to have experienced SI than NFOs. Multivariate models suggest that while NRs may be more likely to endorse recent emotional distress than NFOs, they may be less likely to experience such distress compared to FOs. NRs may be hesitant to answer such an item for several reasons, including perceiving the item as being intrusive or threatening to their autonomy. While gun ownership is most common among individuals who are White and men, current findings suggest that individuals who are non-White and are female may be less likely to answer a gun ownership item. Individuals who do not fall into the typical demographic of owners may feel more hesitant to endorse ownership. Findings suggest that clinicians cannot rely on self-report assessment of ownership to determine if a discussionabout firearm means safety is needed. Means safety interventions and messaging promoting secure storage practices need to be delivered at the population level, regardless of voluntary disclosure of ownership.

Monday, October 16, 2023

M1. POSTTRAUMATIC STRESS SYMPTOMOLOGY AND NON-SUICIDAL SELF-INJURY: THE ROLE OF INTRUSION AND AROUSAL SYMPTOMS

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Background: Previous evidence has shown a strong relation between Posttraumatic Stress Disorder (PTSD) symptomology and Non-Suicidal Self-Injury (NSSI). The current study aimed to extend prior research by investigating the relationship between PTSD symptom clusters (arousal and intrusion) and NSSI, and putative moderators of this association within a large-scale adult sample in England.
Methods: A subsample of participants with experiences of trauma in adulthood (n = 2,480) from the Adult Psychiatric Morbidity Survey 2007 (APMS 2007) was utilized to examine the relations among PTSD intrusion and arousal symptom clusters, childhood interpersonal trauma, perceived social support and lifetime NSSI.
Results: Arousal symptoms were consistently associated with NSSI, even when adjusting for multiple covariates, and had a stronger relationship than intrusion symptoms. Childhood interpersonal trauma was independently and significantly associated with lifetime NSSI after adjusting for covariates. The moderating effects of childhood interpersonal trauma and perceived social support were not statistically significant.
Discussion: The overall findings support the role of PTSD arousal and childhood interpersonal trauma in relation to NSSI. This finding concerning arousal is consistent with other previous studies, which identified PTSD arousal as a mediator of the relationship between childhood interpersonal trauma and NSSI. This may explain the use of NSSI to regulate emotions associated with heightened arousal among individuals with PTSD.
The findings also indicate that retrospectively reported childhood interpersonal trauma was independently associated with NSSI. This finding adds to prior research in identifying childhood interpersonal trauma (e.g., childhood maltreatment) as an independent risk factor and an important predictor of adult NSSI.

Findings highlight the need for NSSI screening as well as for specific interventions that target the complex needs of those who exhibit elevated PTSD arousal symptoms, especially those with a history of childhood interpersonal trauma.

M2. SUICIDAL THOUGHTS AND BEHAVIORS AND SUBSTANCE USE IN ADULTS BEREAVED BY OVERDOSE, SUICIDE, OR BOTH

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Background: Research has reliably found that half of US adults know someone who has died by suicide and that suicide loss is a risk factor for suicide in survivors. Since 2000, more than 1 million people have died from suicidal and unintentional drug overdoses in the United States. A nationally representative study found that 42% of American adults knew someone who died by overdose. However, little research has addressed the impact of overdose bereaved adults. Qualitative studies have found that overdose bereavement is associated with significant suffering and, like suicide bereavement, experiences of social and internalized stigma.

However, it is not clear whether overdose bereavement confers increased risk for unintentional injuries including overdose or suicide outcomes. To explore the potential effects of overdose and suicide bereavement, we compared substance misuse and suicidal outcomes in adults who reported 1) only overdose bereavement, 2) only suicide bereavement, 3) both overdose and suicide bereavement, and 4) neither overdose or suicide bereavement.

Methods: We used the crowdsource platform Amazon Mechanical Turk to recruit US adults (n = 434) as part of a larger behavioral economics study of risky decision making, substance use, and suicidal thoughts and behaviors. Bereavement was evaluated with two items that assessed, "Do you know anyone who has died from drug/alcohol overdose?" and "Do you know anyone who has died from suicide?" We used the Alcohol Use Disorders Identification Test (AUDIT) and the Drug Abuse Screening Test (DAST) to evaluate substance misuse. We used cut-scores identified in the literature to dichotomize AUDIT (score > 8) and DAST (score > 6) scores into responses indicative of substance misuse and responses unlikely to be indicative of substance misuse. The Self-Injurious Thoughts and Behaviors Interview-Revised assessed participants' experiences of suicidal ideation and attempts. Logistic regression was used to compare the groups in terms of the probability of these adverse outcomes.

Results: Contrary to previous studies, most of the sample (53.9%) denied exposure to either overdose or suicide deaths. 80 participants (18.4%) reported exposure to both suicide and overdose deaths. 42 participants (9.7%) reported exposure only to overdose deaths and 78 (18%) reported exposure only to suicide deaths. Each of the bereaved groups were significantly more likely than the non-bereaved group to report alcohol misuse. Both of the overdose bereaved groups were significantly more likely than the non-exposed groups to report drug misuse. The suicide bereaved group had a higher likelihood of alcohol misuse while the two overdose bereaved groups had a higher likelihood of other substance misuse. Passive suicidal ideation was significantly more common among each of the bereaved groups compared to the non-bereaved control group, although the size of the effect was much larger in the two overdose bereaved groups. Active suicidal ideation was significantly more likely in both overdose bereaved groups but not the group bereaved only by suicide.

Discussion: Re-traumatization by external injury deaths appears to be common among suicide and overdose bereaved US adults. Exposure to overdose and/or suicide bereavement is associated with adverse outcomes. However, adults who are exposed to both suicide and overdose appear to be at increased risk for substance misuse and suicide outcomes. Research is needed to replicate these findings and to identify the mechanisms by which traumatic bereavement confers risk for life-threatening behaviors.

M3. THE ASSOCIATION BETWEEN CHILDHOOD ADVERSITY AND MORTALITY: A SYSTEMATIC REVIEW AND META-ANALYSIS OF LONGITUDINAL COHORT STUDIES

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Background: Adverse childhood experiences (ACEs) are potentially traumatic and challenging events that occur during the first 18 years of life. The CDC-Kaiser conducted the seminal study in 1988 linking ACEs to health outcomes. Since then decades of research have examined how ACEs contribute to disease burden through their impact on mental and physical health, behavior, and premature death. A previous meta-analysis found that ACEs are a leading

contributor to morbidity and mortality in the United States but existing meta-analyses don't review the relationship between ACEs and mortality from samples across countries. We conducted a systematic review and meta-analysis of retrospective and prospective cohort investigations that have provided estimates of the risk for suicide and all-cause mortality associated with ACEs.

Methods: We based our search strategy on PRISMA guidelines and conducted a systematic search in the PubMed, EMBASE, CINAHL, PsychINFO, and Cochrane databases to identify retro- and prospective cohort studies that evaluated all-cause and/or suicide mortality in people who experienced ACEs. Study review was conducted in Covidence and we extracted observed and expected suicide deaths in each cohort study. Pooled effect estimates will be derived using the quality effects model proposed by Doi and colleagues. We used the Newcastle-Ottawa Scale for assessing the quality of nonrandomized studies in meta-analyses.

Results: Our search resulted in 3,675 unique hits. Of these, we indentified 34 cohort studies in our meta-analysis of the association of ACEs with all-cause and/or suicide mortality. We included 20 unique cohorts in analyses of the association between childhood adversity and suicide mortality. Most studies were conducted in Denmark (18.5%), Sweden (24.6%), or the United States (24.6%). No studies evaluated the association between ACEs and mortality outcomes in low- or middle-income countries (LMICs). The earliest study prospectively followed participants from 1924 to 2009. The most recent study retrospectively assessed the association between childhood adversity and mortality from 1982-2020. Studies infrequently reported the racial-ethnic composition of the cohorts, but most studies that did report this breakdown focused on predominantly White/Caucasian cohorts. Men and women appeared to be equally represented in the included studies, but no studies addressed sexual and gender minority status. ACE assessments varied widely, whereas mortality was typically assessed using vital statistics registers. Analyses of pooled standardized all-cause and suicide mortality rates are underway.

Discussion: Preliminary findings highlight several limitations in the existing literature evaluating the association between childhood adversity and mortality outcomes. Specifically, the current literature fails to evaluate these outcomes in vulnerable populations including people living in LMICs and minoritized groups. Our findings also highlight the need for more widespread screening for exposure to ACEs using standardized measures. We will discuss the association between ACEs and mortality outcomes, as well as additional findings regarding publication bias and study quality.

M4. SUICIDAL IDEATION TRAJECTORIES AMONG SEXUAL AND GENDER MINORITIES ASSIGNED MALE AT BIRTH

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Background: Sexual and gender minority (SGM) youth are more likely to report suicidal ideation (SI) and suicide attempts (SA) than heterosexual/cisgender youth. SGM-assigned male at birth (AMAB) are at particularly high risk as most (75%) suicide decedents are AMAB. Challenges to prevention efforts include the dearth of prospective studies and past findings that SI is an unreliable predictor of SA for AMAB youth. The aim of this study is to identify phenotypes of SI and associations with SA in the RADAR cohort study.

Methods: RADAR (N=1,236) includes participants from three Chicago-based cohorts (baseline ages 16-20 years; 26.5% white, 32.9% Black, 29.4% Latinx, 11.2% other; 728 gay males, 261 bisexual/other-identified males, 110 transgender females, 137 nonbinary individuals). Participants completed YRBS STB items at 6-month intervals for a mean (SD) of

2.3 (1.8) years (range: 0.5-7.2) Baseline STB distribution was: 180 SI, 35 SA, 14 multiple attempts (MA).
Results: Among participants with follow-up data (n=1,083), STB reports were: 238 SI, 43 SA, 36 MA. Controlling for demographics and past attempts, baseline SI severity predicted time to follow-up SA (hazard ratio = 2.99, $p < .01$). Mixture modeling identified three longitudinal SI phenotypes: (1) high-frequency/high-variability, n=30; (2) low-frequency/high-variability, n=22; and (3) low-frequency/low-variability, n=264. Phenotypes differed in proportion of follow-up attempts: 46.7%, group 1; 36.4%, group 2; and 16.3%, group 3 (chi-square=18.8, p < 001).
Discussion: Findings suggest that SI severity, frequency, and variability are promising predictors of SA. Future studies should examine how these SI features change in real time and factors that facilitate transitions from SI to SA among SGM-AMAB.

M5. PAIN EXPERIENCE, DISTRESS TOLERANCE, AND ALEXITHYMIA AMONG INDIVIDUALS WITH NONSUICIDAL SELF-INJURY

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Background: Nonsuicidal self-injury (NSSI), a self-destructive behavior in which individuals intentionally damage their own body tissues, serves as a maladaptive strategy that individuals use to regulate their emotions. This study aimed to examine the subjective experiences of physical pain in individuals with NSSI in order to understand the mechanisms by which they respond to emotional distress through self-injurious behavior. In this study, we hypothesized that there would be a relationship between emotional expression difficulties, distress tolerance, and physical pain experienced by individuals who engage in NSSI.
Methods: This study included a sample of 1,080 individuals who engaged in NSSI on five or more days within the past year. The Inventory of Statements About Self-Injury (ISAS) was used to assess NSSI versatility, NSSI function, and physical pain experienced during self-injury. Participants were categorized into three groups based on their responses to the question "Do you experience physical pain during self-harm?" (i.e., yes, sometimes, no): High-frequency NSSI pain, Low-frequency NSSI pain, and No NSSI pain groups. Distress tolerance was measured using Distress Tolerance Scale (DTS), and alexithymia was measured using the Toronto Alexithymia Scale (TAS). Group differences in emotional distress tolerance and alexithymia were analyzed using analysis of variance (ANOVA).
Results: The level of perceived physical pain during NSSI was significantly correlated (all $p < 0.01$) with both intrapersonal ($r = .393$), interpersonal ($r =.232$) functions of NSSI, as well as with DTS ($r = -.271$) and TAS scores ($r =.215$). The ANOVA analyses revealed that the high-frequency NSSI pain group reported more intrapersonal and interpersonal functions of NSSI than other groups. The high-frequency NSSI pain group also reported decreased emotional distress tolerance ($F=42.803$, $p<.001$). Specifically, tolerance, absorption, and appraisal scores on the DTS subscales and difficulty identifying feelings and difficulty describing feelings scores on the TAS subscales showed significant between-group differences.
Discussion: The current results demonstrate that individuals who experience frequent physical pain during NSSI are more likely to endorse NSSI functioning and more vulnerable to emotional distress. Our findings imply that the presence of marked pain during NSSI does not serve as a deterrent to subsequent self-harm and highlight the challenges of treating people who frequently experience pain during NSSI.

M6. WHO ARE THE ONES THAT DO NOT SEEK HELP? – PEOPLE WHO DIE BY SUICIDE WITHOUT HAVING RECEIVED PSYCHIATRIC TREATMENT

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Background: Existing literature suggests that utilization of professional psychiatric care is low among individuals who die by suicide. The aim of this study was to identify distinct differences between those who died by suicide without having received psychiatric inpatient care and the general population. Detailed information about those who do not seek help may help shape future preventive efforts.
Methods: A case-control design was applied to Danish register data on all persons aged 15+ years and were living in Denmark at some point between January 1st, 2010, to December 31st, 2021. All individuals who died by suicide without ever having been admitted as an inpatient at a psychiatric ward were considered cases and matched with controls from the general population in a 1:10 ratio. Cases were matched to members of the general population that were alive on the date of the suicide (t0). Differences in characteristics were assessed using sex- and age-adjusted logistic regression analyses.
Results: In all 3,474 (48.8%) out of 7,119 persons who died by suicide between 2010-2021 in Denmark had not previously been treated at a psychiatric hospital. Male sex (OR: 3.9; 95% CI: 3.6 – 4.2), age of 80+ years (OR: 10.7; 95% CI 9.2 – 12.5 vs. 15-29 years), being widowed (OR: 1.3; 95% CI: 1.1 – 1.5 vs. never married), unemployed (OR: 2.1; 95% CI: 1.8 – 2.5 vs. working) and receiving disability pension (OR: 1.9; 95% CI: 1.6 – 2.2 vs. working) were over-represented among those dying by suicide when measured relative to their reference categories. Individuals exposed to recent stressful life-events, for instance, the death of a close relative (OR: 5.0; 95% CI: 3.5 – 7.2) and divorce (OR: 3.6; 95% CI: 2.7 – 4.9) were more likely to die by suicide without seeking help than those not exposed to these stressors. Higher odds of dying by suicide without seeking psychiatric care was found for those who recently had attended a general practitioner (OR: 1.1; 95% CI: 1.0-1.2) or were prescribed psycho-pharmacal medication (OR: 3.8; 95% CI: 3.5-4.2) when compared to those who did not.
Discussion: Individuals who die by suicide without seeking indicated psychiatric help are more likely to be male, older, on disability pension and unemployed. They are also more likely to be exposed to certain stressful life-event, as well as more likely to attend general practitioners or being prescribed medication for mental illness.

M7. ADULTS´ LIVED EXPERIENCE OF SUICIDALITY - A REFLECTIVE LIFEWORLD RESEARCH

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Background: The relationship between suicidal ideation and suicidal actions is not convincingly linear which may be a reason why measuring suicidal thoughts/ideation has failed to predict imminent suicide risk. Previous research has led to a number of theories and

statistical risk factors, which are to some extent incongruent with qualitative research findings regarding survivors´ experiences. Therefore it is important to extend the knowledge and understanding in how people experience suicidality. The aim of this study was to illuminate the lived experience of suicidality among adults who survived a suicide attempt.

Methods: Adults admitted to inpatient care after a suicide attempt were asked to participate in a face-to-face interview about their experiences. Four men and three women aged between 18 and 54, with a variety of psychiatric diagnosis where interviewed with life-world interviews. All interviews were conducted by the first author and started with the predetermined question "You recently attempted suicide, can you tell me about that?". The interviews were audio recorded, and transcribed verbatim and analysed with Reflective Lifeworld Research including phenomenological meaning analyse. All authors participated in the analyses, where preunderstanding and prejudice was consistently bridled. For the purpose of this abstract all interviews were read by all authors to gain an overall understanding of the data. Three of the interviews were carefully analysed and preliminary findings are presented below.

Results: PRELIMINARY FINDINGS:

The informants describe the time just before the suicide attempt as filled with mental pain that was impossible to endure. At the same time they were firmly convinced that the condition was impossible to alleviate. The descriptions suggest that suicidality was experienced as a process driven by losses of values, safety and contexts combined with triggering factors that gradually increased over time, sometimes since childhood. As a result, the informants found themselves entangled in excruciating mental pain with no hope of recovering, no value for themselves or others and total failure of own set life goals. They saw no point in seeking help since nothing or no one could ease their suffering. Due to bad experiences or assumptions they felt distrusted by the care and were frightened by the thought of inpatient care: " that is, if I were to be admitted, I would be locked in a room and have to feel this! To have no way out. It is the most horrible thing I could imagine"

Informant 4

According to the informants experiences, killing oneself was the only reasonable course of action.

Discussion: The preliminary findings shows indicates that suicidality express itself as a process in which the patient is driven by losses and triggers. The most decisive factor is when they found themselves being entangled in excruciating mental pain with the firm belief that there is no possibility of relief. This state appears to be similar to "entrapment", described in previous research, which has shown promising predictive values for imminent suicide risk. More research in this topic is urgently needed. The assumption of causal relationship between suicidal thoughts and suicidal act must be questioned, instead one way could be to examine the individual´s experience of the mental pain and their belief in the possibility of pain relief in relation to acute suicide risk. The previous negative experience from mental care in relation to the assumption that there is no help to get, indicates a need for further research aiming to find valuable preventive care and suicidal aftercare.

M8. RELATIONSHIP BETWEEN LETHALITY OF COVID-19 PANDEMIC, PUBLIC HEALTH MANDATES AND SUICIDE CRISIS SYNDROME

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Background: The COVID-19 pandemic has had a devastating psychosocial impact on a global scale. A detailed understanding of the mental health implications of this worldwide crisis is necessary for successful mitigation as well as preparation for future disasters. The present study utilized a large international sample to investigate the relationship between the severity and length of exposure to multiple COVID-19 parameters, such as the severity and length of exposure to deaths and the public health mandates, such as lockdowns, and the incidence of Suicide Crisis Syndrome (SCS), an acute negative affect state associated with near-term suicidal behavior. In response to the COVID-19 pandemic, the United States chose to address the crisis by laying off workers and providing support through social security and other benefits. In contrast, European Union countries prioritized maintaining employment.
Methods: The study surveyed 5,528 participants across 10 different countries through an online survey conducted from June 2020 to January 2021. COVID-19 parameters for the first wave of the pandemic were obtained from the World Health Organization (WHO) and the British Broadcasting Corporation (BBC) websites. SCS status was measured with the Suicide Crisis Inventory, v.2 (SCS-2). The severity (peak daily cases and deaths) and length of time of COVID exposure (days since peak daily cases, peak daily deaths, and the onset of government recommendations and lockdowns) were compared between survey participants with and without SCS. The study also compared SCS incidence in essential and non-essential workers who continued to work in the office or from home to those who were laid off from work or furloughed.
Results: Individuals with SCS lived in countries with higher peak daily cases and deaths during the first wave of the pandemic. Additionally, the longer participants had been exposed to markers of pandemic severity, the more likely they were to screen positive for SCS. Notably, time since national lockdowns had a particularly strong association with SCS. Time from dates of peak daily deaths and the onset of national lockdowns to survey completion had the strongest effect sizes in bivariate analyses. In multivariate analyses, the adjusted odds ratio for days since national lockdowns had almost non-overlapping confidence intervals with other time course variables, such as the time in days from the onset of critical COVID markers (peak daily cases, peak daily deaths, national recommendations) to survey completion for each study participant. Finally, essential workers experienced significantly less stressful life events and SCS than those who were furloughed or laid off from work. These findings reflected both country-to-country comparisons and individual variation within the pooled sample.
Discussion: Both the pandemic itself and the government interventions utilized to contain the spread appear to be associated with increased suicide risk, as indicated by the presence of SCS. Public policy should include efforts to mitigate the mental health impact of current and future global disasters. Helping people to maintain their employment appears to be a better strategy to protect mental health than solely providing financial support to laid-off or furloughed workers.

M9. THE EFFECTS OF LONELINESS AND NEGATIVE REACTIVITY TO PEER ADVERSITY IN DAILY LIFE ON DEPRESSIVE SYMPTOMS AMONG ADOLESCENT GIRLS

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Background: Adolescents are more likely to develop a first-onset depressive episode and are at increased risk for heightened rates and severity of depressive symptoms as compared to children and adults. Therefore, is critical to understand the mechanisms by which experiences in childhood and adolescence give rise to depressive symptoms to identify better and earlier

targets for intervention. Past studies have identified the experience of loneliness as a risk factor for the development of depressive symptoms, like suicidality, in adolescents. Research has also identified the experience of social adversity, especially with peers, as a risk factor for the development of loneliness, but most of this research has relied on questionnaires and has not investigated social rejection as it unfolds in daily life.
Based on this research, we proposed a mediational model in which negative reactivity to experiences of peer adversity in day-to-day life among adolescents leads to heightened feelings of loneliness, which then lead to increased depressive symptom severity. We tested this hypothesized model using ecological momentary assessment (EMA) data and clinical questionnaire data from the 3-wave longitudinal GIRLS: Brain Study, a completed empirical study examining neural and behavioral responses to emotional stimuli among adolescent girls at risk for anxiety and depression.

Methods: The GIRLS: Brain Study procedures were as follows: At Time 1 (T1; ages 11-13), participants completed clinical assessments, questionnaires, and 16 days of EMA data collection about daily social interactions. Loneliness was measured using the Loneliness and Social Dissatisfaction Questionnaire. The same measures were repeated two years later at Time 2 (T2; ages 13-15), and just the clinical assessment was repeated one year after that at Time 3 (T3; ages 14-16). Participants answered EMA questions in their real-world environments in order to capture a more ecologically valid estimate of "typical functioning" than would be observed in a lab environment or questionnaire. Among the EMA prompts were the two items: "Think about the last interaction that made you feel bad that you had with any other person. What happened?" and "Please rate how you felt during this interaction." Response samples were only kept for this analysis if the recent negative interaction was an instance of peer adversity.
Results: We hypothesized that that negative reactivity to peer adversity at Time 1 would predict depressive symptom severity at Time 3, mediated by experiences of loneliness at Time 2. We found significant effects of negative reactivity to peer adversity at Time 1 on depressive symptoms at Time 3, and of loneliness at Time 2 on depressive symptoms at Time 3. However, we did not find a significant indirect relationship that would indicate loneliness as a mediator of the relationship between negative reactivity to peer adversity and depressive symptoms.
Discussion: Our findings have implications for understanding the etiology of depression in adolescent girls, as they show that negative affect caused by peer adversity and loneliness independently contribute to depressive symptom severity. Future aims for this work include incorporating neuroimaging data and identifying alternative mechanisms or pathways by which the experiences of social adversity and loneliness influence depression.

M10. BUT ENOUGH ABOUT ME…INVESTIGATING ASSOCIATIONS BETWEEN NARCISSISTIC PERSONALITY AND SUICIDE IDEATION AMONG MIDDLE-AGED AND OLDER MEN

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Background: Middle-aged and older men have high rates of suicide, necessitating theory and research on factors that potentially confer suicide risk in this demographic. Clark (1993) theorized that age-related losses and transitions can trigger narcissistic injury in older men, and lead to declining mood, substance misuse, loss of insight, and increased risk for suicide. Researchers have variably found that Narcissistic Personality (NP) increases (Heisel et al., 2007; Ronningstam et al., 2008) or decreases risk for suicide ideation or behaviour (Coleman

et al., 2017), necessitating investigation of this question among middle-aged and older men facing a key life transition. The purpose of this study was to investigate associations between Suicide Ideation (SI) and NP traits among participants in Meaning-Centered Men's Groups (MCMG; Heisel et al., 2020), an upstream, community-based psychological intervention group for men transitioning to retirement.

Methods: We recruited a sample of English-speaking, cognitively-intact, community-residing men, 55 years and older into a study involving the development, refinement, testing, and initial dissemination of MCMG. Eligible participants (n=82; M=63.3 years of age, SD=4.6) met with research personnel in an academic health sciences center, and completed pre-group measures of Pathological Narcissism (Pincus et al., 2009), depression, suicide ideation (Heisel and Flett, 2006), and associated psychological risk and resiliency factors.

Results: Linear regression analyses identified a significant association between elements of NP and SI. Contingent Self-Esteem (NP) was specifically positively associated with overall SI scores (t=2.41, p=.019), and with interpersonal psychological (Loss of Personal Worth; t=2.10, p=.040) and existential (Perceived Meaning in Life; t=2.80, p=.007) aspects of SI, controlling for depression symptom severity.

Discussion: Findings suggest an association between thoughts of suicide and issues of self among middle-aged and older men in transition. Discussion will focus on broader themes of masculinity, losses and transitions, community engagement, and focused suicide prevention initiatives in middle-aged and older men.

M11. A SYSTEMATIC REVIEW and PSYCHOMETRIC META-ANALYSIS OF THE GERIATRIC SUICIDE IDEATION SCALE (GSIS)

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Background: The Geriatric Suicide Ideation Scale (GSIS; Heisel and Flett, 2006) is a multi-dimensional measure of suicide ideation and related factors developed for use with older adults. Since its initial development, and introduction in the literature more than 2 decades ago (see Heisel, Flett, and Besser, 2002), the GSIS has become a widely-cited measure of suicide ideation for use with older adults. The purpose of the present study is to systematically review the literature on the psychometric properties and general use of the GSIS with older adults across settings and contexts.

Methods: A search was conducted of the peer-reviewed literature contained within Pubmed/MEDLINE, PsychINFO, CINAHL, Scopus, Embase, Proquest Dissertation and Thesis, Web of Science, and other databases on the terms: “geriatric suicide ideation scale” OR “geriatric suicidal ideation scale.” Articles were included that reported on the internal consistency and other psychometric properties of the GSIS or its subscales, with middle-aged or older participants. Coding and data extraction were conducted in Covidence 2.0, with review by 2 or more independent raters, and consensual resolution of any conflicts.

Results: Of the 669 studies identified, 180 were retained for further analyses as they made direct reference to the GSIS in text. Sixty studies reported statistics for the GSIS (e.g., mean scores, psychometric values, etc.), as derived from 68 independent samples (N= 8,315 participants overall). Preliminary results from studies that reported internal consistency indicated excellent mean weighted reliability for the GSIS ($\alpha = .92$, 95% CI [.91, .93], $k = 29$) and its four subscales ($\alpha = .82 – .87$, $k = 19 – 24$), yet significant heterogeneity ($Q = 36.02 – 449.81$, $p < .001$).

Discussion: Findings indicate strong reliability for the GSIS, and suggest value in investigating potential moderators of its internal consistency. These and other findings will be discussed, along with findings on the construct validity and general use of the GSIS with older adults.

M12. FAMILY FACTORS AND SUICIDALITY AMONG HOSPITALIZED ADOLESCENTS: A LITERATURE REVIEW

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Background: Adolescent suicide is a growing public health problem and a leading cause of death among this population in the United States. Adolescent suicidality (i.e., suicidal thoughts and behaviors) has increased for the last two decades, growing disproportionately among racial and ethnic minority youth. As a result, there has been a significant increase in adolescent psychiatric hospitalizations for acute suicide-related concerns. The increased prevalence of hospitalizations highlights the need to better understand the contributing factors to adolescent suicide risk. Adolescent suicidality is often precipitated by factors within their immediate environment or in the context of interpersonal relationships, such as with parents and other family members. This review aimed to understand the current literature on the relationship between parent and family-level factors and suicidality among hospitalized adolescents.
Methods: A literature search was conducted using the PubMed, CINAHL, Embase, and PsycINFO databases in February 2022.
Results: Nineteen articles were included in this review. Fourteen studies examined family-level factors, such as family functioning, support, and conflict, and eleven studies examined parent-level factors, including parent-child relations, communication, attachment, and conflict. Seven studies focused on both parent and family-level factors. Adolescents hospitalized for suicidality report having more dysfunctional families and issues with family support, conflict, and environment. Regarding parent-level factors, adolescents report having more distant relationships and conflict and poorer communication and perceived attachment with their parents.
Discussion: Hospitalized adolescents often report family-related psychosocial issues as precipitating factors to their suicidality, and they report having more problems within their families and perceive greater challenges with their parents. Despite the limited number of studies, parent and family-level factors have been found to affect adolescent suicidality. Parent and family-level factors are risk and protective factors for adolescent suicidality; therefore, they are malleable targets for intervention to prevent adolescent suicide and behavior. Future research is needed to enhance our understanding of the relationship between parent and family-level factors and suicidality among hospitalized adolescent populations, as well as their potential causal, mediating, or moderating effects to bolster adolescent suicide prevention efforts.

M13. SELF-HARM BEHAVIOUR AND THE ACCESSING OF MENTAL HEALTH SERVICES IN ONTARIO, CANADA DURING THE COVID-19 PANDEMIC

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Background: Suicide is the ninth leading cause of death in Canada and Ontario, and self-harm (SH), with or without an intention to die, is a key risk factor for death by suicide. Access to mental health services (MHS) may modify risk in people who engage in SH. This study aims to understand whether there were differences in MHS use in Ontario, Canada among people who engaged in SH during the COVID-19.
Methods: We analyze the results of a cross-sectional survey of Ontario adults 18 years or older, representative of the provincial population based on age, gender, and location. The survey was conducted using Delvinia's AskingCanadians panel in timepoints August 2020 (n= 2,500), March 2021 (n=2,500), and March 2022, (n = 5,000). The survey asked about mental health and addiction service-seeking and/or access since the pandemic. We selected the sample of people with SH (i.e., reporting suicide attempt and self-harm) during the pandemic who did and did not access MHS services. A preliminary analysis for timepoint March 2022 was conducted using Chi-Square Tests, Mann-Whitney U-Tests for categorical and continuous measures respectively. Logistic regression analyses examining demographic and clinical associations, as well as additional test for timepoints August 2020 and March 2021 will be available at the time of the conference.
Results: A total of 350 survey respondents (7%) for the timepoint of March 2022 reported engaging in SH during the pandemic. Most did not access MHS (N = 203, 58%). Accessing MHS differed according to gender (Other 78.9% vs. female 44.2% vs. male 32.5%; X2=15.6, df 2, p<0.001). People who lived alone (alone 61% vs. company 57.1%; X2=0.38, df 1, p=.533) and people living in rural areas (rural 74.1% vs. urban 56.7%; X2=3.1, df 1, p=.078) were less likely to access MHS compared to other groups. Access was numerically least common in people aged 37-45 (N=43, 67.2%) and most common in people aged 18-27 (N= 40, 51.3%). Survey respondents alluded to feelings of "not being ready", financial constraints, or the inability to find the right service as the most common challenges to request for MHS support.
Discussion: MHS access is a key component of comprehensive suicide prevention and intervention. The most important finding of our survey is that most people who SH in the community did not access MHS during the covid-19 pandemic. This finding supports the iceberg model of self-harm and suicide. Our findings underscore that, during public health emergencies, populations at higher risk of SH such as men, people living alone, and people living in rural areas are less likely to access services. Strategies should account for these specific populations to reduce barriers and ensure timely service access.

M14. HOW DO INDIVIDUALS DESCRIBE THEIR AWARENESS OF CONSEQUENCES OF SUICIDE?

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Background: A more in-depth understanding is needed of the psychological processes which occur when individuals move from thinking about suicide to making a suicide attempt. Novel insights into these processes could help to improve risk assessment, management and psychological interventions for the prevention of suicide. It is known from previous qualitative research that the trajectory towards suicide involves frequent feelings of ambivalence about suicide, in which the individual is neither fully committed to living or dying. However, no studies to date have investigated the role of awareness of consequences of suicide in this process of ambivalence. In the current study, informed by a new theoretical approach to

understanding suicide, we explored the hypothesis that individuals attempt suicide when they have limited awareness of how their own death from suicide might impact on their personal goals (i.e. consequences of suicide). Using a qualitative design, we collected in-depth data on individuals' experiences and understanding of suicide through interviews. The study aimed to explore how individuals describe their awareness of consequences of suicide from a time when they contemplated or attempted suicide.
Methods: In-depth semi-structured interviews were conducted with 12 individuals who were recruited via social media, mental health charities, and the University of Manchester. The sample included individuals who had recently thought about suicide and individuals who had recently attempted suicide, although none of the participants were considering suicide at the time of the interview. Interview data were analysed using Thematic Analysis, which involved identifying patterns of meaning in the interview data (referred to as 'themes'), in order to understand participants' experiences.
Results: Preliminary coding of the interview data has now been conducted. Four themes have been identified in the interview data: Ambivalence about suicide; Desire to avoid upsetting others; Perception of suicide as the right decision; Suicide as an impulsive behaviour.
Discussion: Many participants described ambivalence about suicide and fears about upsetting others if they died by suicide. There were some key differences between participants in how they reported awareness of the consequences of suicide, depending on their circumstances. For individuals who had attempted suicide, thoughts of suicide were experienced in two different ways; some participants experienced suicidal thoughts as a sudden impulsive urge to take lethal action, whereas others experienced it as a gradual perception over a longer period of time that suicide was the right decision. Individuals who had thought about suicide only had a constant awareness that their desire to avoid potential negative consequences of suicide was stronger than their desire to attempt suicide. This study provides some insight into the psychological processes involved in attempting suicide and the role of limited awareness of consequences of suicide in these processes. Clinical implications of these **Results:** will be offered, such as more refined treatment targets when working with suicidal clients. Future research should use mixed methods to further explore the role of limited awareness of consequences of suicide in suicide attempts, in order to better understand suicide.

M15. DIFFICULTY DISENGAGING ATTENTION AWAY FROM SUICIDE-RELEVANT STIMULI: A WORD-LEVEL ANALYSIS

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Background: Cognitive models of suicide suggest that attentional biases towards suicide-specific stimuli are associated with a cognitive vulnerability for suicide, but inconsistent findings question this association. For instance, Chung and Jeglic (2016) found that only the word "suicide", but not "death" or "funeral" predicted future suicidal behavior on a Stroop task. Furthermore, it is hypothesized that difficulty disengaging attention away from suicide-relevant stimuli in particular, rather than toward stimuli, contributes to increased suicide risk through an attentional fixation on suicide as a solution to one's problems (Mandel et al., 2022). Limited research has specifically tested attentional disengagement from suicide-relevant stimuli as reaction times on the Stroop task cannot differentiate attention toward or away from stimuli. We sought to examine whether there were differences in interference specifically to the word "suicide" in comparison to other suicide-related words (i.e., "hang", "overdose") on a novel attentional disengagement task.

Methods: 109 adults (age: M = 42.5, SD = 12.8 ; % male = 78.9) participated while on a psychiatric inpatient at an urban US hospital. Participants were recruited for the study either for a recent suicide attempt (within 2 weeks of study participation), which represented almost half (49%, n = 54) of the sample, or with current suicidal ideation and either a history of a suicide attempt more than 1 year prior to study participation (26%, n = 28) or no prior suicide attempts (25%, n = 27). For the suicide-relevant disengagement task (Fox et al., 2001), participants were presented with a suicide-relevant ("hang," "suicide," and "overdose") or neutral word ("ruler," "chalk," and "notebook") at fixation and then a target ("X" or "K") appeared to the right or left of the word. Participants were instructed to identify the target ("X" or "K") as quickly and accurately as possible. Interference scores were calculated for each individual suicide word and across all suicide words by subtracting the average RT to correctly identify the target following a suicide word minus the average RT to correctly identify the target following neutral words. SI was assessed using the Scale for Suicidal Ideation (SSI, Beck et al., 1979) and attentional fixation on suicide was assessed using the Attentional Fixation on Suicide Experiences Questionnaire-Revised (AFSEQ-R, Mandel et al., 2022).
Results: Contrary to expectation, participants were overall slower to disengage from the word "overdose" (M = 723.44, SD = 290.39) than the word "suicide" (M = 708.01, SD = 262.74) or "hang" (M = 705.8, SD = 283.16). When comparing groups based on attempt history there were no significant differences in interference to any individual suicide word or the suicide category overall. Surprisingly, interference to the word "overdose" was negatively correlated with SSI, $r(107) = -.19$, $p = .046$, and AFSEQ-R scores, $r(107) = -.19$, $p = .046$, such that quicker disengagement away from the word "overdose" was related to higher SI and attentional fixation.
Discussion: This study adds to the growing literature investigating difficulties disengaging attention away from suicide-relevant stimuli and highlights the need for greater attention toward individual stimuli used in behavioral tasks. Furthermore, given that all participants in the study experienced elevated suicidal ideation at the time of study participation, it is possible that participants were less behaviorally fixated on suicide due to increased familiarity (i.e., habituation), consistent with the notion of acquired capability.

M16. ECOLOGICAL MOMENTARY ASSESSMENT OF THE INTEGRATED MOTIVATIONAL VOLITIONAL MODEL OF SUICIDE

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Background: Previous Ecological Momentary Assessment (EMA) studies have demonstrated considerable fluctuations in levels of suicidal ideation over time. However, less is known about the short-term variability in suicide risk factors, and the extent to which they predict proximal changes in suicidal ideation. This study aims to test theoretically informed hypothesis from the Integrated Motivational Volitional (IMV) model of suicidal behaviour, using an EMA design. Specifically, we aim to examine the relationship between entrapment and suicidal ideation and explore the extent to which this is moderated by burdensomeness and connectedness.
Methods: The EMA database included 25 participants (M age = 35.6, SD = 14.36; 58.6% female) with current suicidal ideation recruited through an outpatient clinic within a regional health care system in the Midwestern U.S. Participants were prompted to complete a short assessment, three times a day (morning, afternoon, and evening) for a period of 22 days. Seventy-eight percent of the EMA assessments were completed on average, resulting in 1,278 valid observations. Data was collected using the ilumivu research app on a smart-device.

Suicidal ideation and its predictors (entrapment, burdensomeness, and belongingness) were assessed using single item measures on a Likert Scale ranging from 1 to 8. Participants also completed a comprehensive baseline (T0) and post EMA (T2) assessment.
Multilevel models were used to examine associations between suicidal ideation and the three predictors as well as two-way interactions between entrapment and i) burdensomeness and ii) belongingness. Models were fitted with both concurrent (t) and lagged (t-1) predictors to investigate cross-sectional and short-term prospective relationships. Models were also adjusted for time-lagged suicidal ideation (t-1) to accommodate autocorrelation in the outcome.

Results: Intraclass correlations (ICCs) support variability in the IMV constructs with 30%, 22%, 31% and 40% of the variance in suicidal ideation, entrapment, burdensomeness and connectedness respectfully due to within-person variability. Analysis of concurrent predictors found that entrapment, burdensomeness and connectedness were all positively associated with suicidal ideation, beyond the effects of time lagged ideation. However, when considered prospectively, associations between the time-lagged predictors attenuated following adjustment for the time lagged outcome. There was some evidence for interactions in the concurrent models but not in the lagged models.
Discussion: Our findings add to emerging literature showing considerable within-person variability in suicidal ideation and its predictors, thus highlighting the value of EMA studies for identifying proximal risk factors and targets for intervention. Results from our multilevel models indicate strong evidence for concurrent, but not short-term prospective, relationships between suicidal ideation and entrapment, burdensomeness, and connectedness. When considered concurrently, our results support the hypothesis outlined in the IMV model, as both burdensomeness and connectedness were found to moderate the relationship between entrapment and concurrent suicidal ideation. Further research is needed to explore prospective relationships using EMA in a larger sample of participants.

M17. SELF-REPORTED MOTIVES FOR NON-SUICIDAL SELF-INJURY: EXPLORATION OF THE ANTI-SUICIDE FUNCTION IN DAILY LIFE

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Background: Nonsuicidal self-injury (NSSI) is a risk factor for suicidal ideation and attempts. Prior studies have found that individuals engage in NSSI for a number of reasons, with some of the most frequent NSSI functions being intrapersonal-negative (e.g., avoidance of negative states) or intrapersonal-positive (e.g., generate desirable states). However, less is known about a specific type of intrapersonal-negative function, which is the extent to which people engage in NSSI to cope with suicidal ideation or urges (i.e., anti-suicide function) on a day-to-day basis. Using intensive longitudinal data, the primary goals of this study of young adults at high suicide risk were to: (1) characterize the frequency of NSSI and specific motives (functions) for NSSI engagement, and (2) examine concurrent (same-day) relationships between specific NSSI functions and suicidal ideation severity.
Methods: Participants included young adults (mean age 20.93 years, SD = 2.07; N = 106) who participated in an 8-week ecological momentary assessment (EMA) study. Each day, participants reported on frequency of NSSI and thoughts of suicide. On days NSSI was present, we assessed motives for NSSI engagement based on the four-function model (i.e., intrapersonal-positive, intrapersonal-negative, interpersonal-positive, interpersonal-negative; Nock et al., 2007) as well as the anti-suicide function based on the Inventory of Statements

about Self-Injury (Klonsky and Glenn, 2009). Mixed effects models were used to examine the relationship between severity of suicidal ideation and NSSI-related outcomes (NSSI presence, NSSI functions) at both the within- and between-person levels.

Results: NSSI was endorsed on 4% of the days (N=148 observations out of 3378 available) by 35 unique individuals (33%). Forty-two of these observations (28%) included a report of using NSSI to cope with suicidal ideation. Other reasons for engaging in NSSI were: intrapersonal-negative (66%), intrapersonal-positive (43%), interpersonal-positive (7%), interpersonal-negative (5%), and for other reasons (19%). On days when suicidal ideation was present, the rank order of NSSI functions remained the same, with the anti-suicide function remaining the 3rd most frequently reported. Results from mixed effects models showed that participants who generally reported more severe suicidal ideation on a day-to-day basis were more likely to engage in NSSI to reduce suicidal thoughts/behavior (adjusted OR = 2.99, p <.001). Further, when participants had greater suicidal ideation severity on a given day, they were more likely to engage in NSSI for its anti-suicide function (adjusted OR = 7.47, p = 0.012). This general pattern was also significant for the intrapersonal-positive and intrapersonal-negative functions of behavior, suggesting that the anti-suicide function has a similar pattern of association to SI severity as the intrapersonal functions.

Discussion: The present study adds to the growing literature on understanding functions of NSSI behavior and its relationship to suicidal ideation and expands this by investigating the anti-suicide function of NSSI behavior. In this high-risk sample of young adults, more severe ideation was associated with a greater likelihood of engaging in NSSI to regulate suicidal thoughts and this association was similar for the other intrapersonal functions of behavior as well. Continued research on NSSI motives and their connection to suicidal thoughts and behavior may help inform treatment approaches for high-risk populations.

M18. MITIGATING RISK FOR SUICIDE IDEATION: TRANSGENDER AND GENDER NONBINARY SPECIFIC PROTECTIVE FACTORS

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Background: Transgender and gender nonbinary (TGNB) youth experience disproportionately high rates of suicidal thoughts and behavior compared to cisgender youth (Kuper et al., 2018). Over half (52%) of TGNB youth have seriously considered suicide and of those, 41% have attempted suicide (Trevor Project, 2020). Studies of suicide risk with this population are limited, tend to emphasize lifetime risk, and rarely examine identity-specific protective factors. Prior work with LGB youth suggests that holding a positive minority identity and connectedness to the LGBTQ community may protect against suicide, but these associations have not been explored among TGNB individuals. Drawing from the minority stress theory and Integrated Motivational Volitional model of suicide, we evaluated two hypotheses: 1) a positive TGNB-identity would moderate the pathway from minority stress to past-month ideation; 2) LGBTQ community connectedness would moderate the pathway from entrapment to past-month ideation.

Methods: To date, 57 participants (Mage = 22.0 yrs, SD = 2.32, 61.4% White, 43.9% GNB) completed the study. Data collection is ongoing. Approximately 550 participants will comprise the final sample presented at the conference. Individuals were recruited with targeted social media advertisements and invited to complete a screener survey. Eligible individuals received a confidential online Qualtrics survey link that assesses suicide ideation, TGNB positive

identity, connectedness to the LGBTQ community, minority stress experiences, and entrapment.
Results: Preliminary moderation analyses were conducted using the PROCESS macro (Hayes, 2022). The relationship between TGNB minority stress and worst-point past-month suicide ideation was significant among those with low levels of TGNB positive identity ($B = .079$, $SE = .03$, $p < .03$), but non-significant among those with high levels of positive identity ($B = .005$, $SE = .03$, $p = .87$). A similar pattern was observed for average past-month suicide ideation, supporting our hypothesis. The second interaction model between entrapment and LGBTQ community connectedness was non-significant for worst point past-month ideation ($p = .321$) but was significant ($p = .019$) for average past-month suicide ideation. The association between entrapment and average past-month ideation was significant among those with high levels of community connectedness ($B = .15$, $SE = .04$, $p < .001$), but not for those with low levels of community connectedness ($B = .05$, $SE = .03$, $p = .066$).
Discussion: Preliminary findings suggest that a positive TGNB identity may buffer effects of minority stress on the presence and severity of suicide ideation. For those experiencing less entrapment, LGBTQ community connection may help reduce risk for suicide ideation but when TGNB youth experience high entrapment, community connectedness may not buffer risk. Although preliminary, findings suggest proactive preventive interventions that strengthen TGNB positive identity and community connectedness may help reduce risk. However, once entrapment and suicide ideation worsen, additional factors and initiatives may be needed to mitigate suicide risk.

M19. EFFECTS OF LONELINESS AND FRIENDSHIP ATTACHMENT STYLE ON THE LINK BETWEEN ECOLOGICALLY DERIVED STRESS AND SUBSEQUENT SUICIDAL IDEATION IN YOUTH

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Background: Stress is a known significant proximal risk factor for suicidal ideation (SI) in youth. As not all youth who face daily stressors experience SI, there are likely trait level characteristics that moderate this link. Connections with peers are of paramount importance during this developmental period, and perception of loneliness might render youth particularly vulnerable to the proximal effects of stress on SI. Further, youth with an adaptive friendship attachment style may be more likely to effectively utilize peer support, buffering the effects of daily stressors in their SI. There is an urgent need to better characterize the intersection of trait level and proximal risk factors for SI in youth, including the moderating role of loneliness and friendship attachment style on the relationship between stress and SI. This project examined how trait level characteristics of friendship attachment style and levels of loneliness might affect the association between in-vivo experiences of stress and SI in youth.
Methods: Participants were 57 youth aged 12-15 years, primarily recruited from the partial hospitalization settings in a child psychiatric institution in the northeast of the US as part of an ongoing study of self-referential processing in youth. The average age was 13.5 y.o. (SD=1.12). The majority were assigned female at birth (59.6%). Regarding race, 5.3% were Asian, 7.0%–Black, 12.3%–Hispanic or Latino, 61.4% –White, 8.8%–Some other race, ethnicity or origin, and 5.3% preferred not to answer. Regarding ethnicity, 22.8% identified as Hispanic or Latinx, 71.9%– as not Hispanic or Latinx, and 5.3% preferred not to answer. Levels of stress intensity

and SI were assessed 3 times per day over a 2-week period via ecological momentary assessment (EMA) technology (1504 observations). Participants were asked to rate their current stress level from 0 (None) to 10 (Extremely High). A composite score of SI at each assessment was calculated by adding up the ratings (0-10) on multiple items assessing SI. Loneliness was assessed via NIH Toolbox Loneliness (Ages 8-17). Adolescent Friendship Attachment Classifications were used to assess friendship attachment styles.
Results: A series of linear mixed models were used to examine the relationships between composite SI score sand predictor variables. We first examined the effect of stress levels on subsequent SI and found significant main effects of stress on SI during the subsequent assessment window (B=0.20, SE=0.04, p0.05). There was also a significant loneliness x stress interaction (B=0.01, SE=0.003, p=.02). We examined the interaction graphically and found that the link between momentarily assessed stress and SI was stronger in youth with higher levels of loneliness. Next, we examined the moderating role of the friendship attachment style (adaptive vs. maladaptive) and found a significant friendship attachment x stress interaction (B=0.21, SE=0.08, p=.01), but no significant main effects of friendship attachment or stress on subsequent SI (p>0.05). We examined this interaction graphically and found that youth with maladaptive friendship attachment styles evidenced greater SI in the face of stress compared to those with an adaptive style.
Discussion: Among adolescents with higher loneliness and maladaptive friendship attachment styles, higher levels of momentary stress were linked to greater subsequent SI. These preliminary findings highlight loneliness and maladaptive friendship attachment as vulnerability factors for SI in youth when they are faced with daily stress.

M20. CANNABIS VAPING IS ASSOCIATED WITH PAST 30-DAY SUICIDE ATTEMPT AND SUICIDAL IDEATION AMONG ADOLESCENTS IN A PSYCHIATRIC INPATIENT SETTING

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Background: There is a growing body of evidence linking adolescent cannabis use (CU) to suicidal thoughts and behaviors (STB). CU has been hypothesized as both a risk factor for the development of psychiatric disorders as well as a means by which individuals “self-medicate” their psychiatric symptoms. Moreover, CU via vaping is a high risk activity: a) there is an impact of aerosols on oxygen delivery to the brain, and b) vaping is often the method by which individuals use high potency cannabis, which has more severe consequences. To date, vaping is a new yet increasing method of CU among adolescents, and has not been investigated as a primary route of administration among adolescents with impairing psychiatric concerns. It is crucial to evaluate the link between cannabis vaping and STB among adolescents experiencing acute psychiatric concerns, given their increased vulnerability to STB.
Methods: The sample included 470 adolescents (ages 11-18), was majority biological female (63.2%) and included the following racial/ethnic identities (with overlap): American Indian/Alaskan Native: 6.2%; Asian: 4.3%; Black 17.7%; Hawaiian or Pacific Islander 1.9%; White 63.8%; Middle Eastern 1.5%; Other 5.7%; Hispanic 29.6%. Upon admission, adolescents completed an assessment battery of brief measures, including the PROMIS

depression survey, Difficulties in Emotion Regulation Scale-Short Form (DERS), suicidal ideation questionnaire (SIQ-JR), a functional impairment survey, and a series of questions probing CU. Vaping was assessed by the question "Do you currently VAPE MARIJUANA? (for example, in a vaping pen, other portable device, tabletop vaporizer, e-cigarette, dab/oil rig [dabbing])", and a binary variable was created indicating if adolescents reported vaping as their most frequent CU method. Data analysis was a logistic regression testing the link between cannabis vaping and past 30-day suicide attempt and a regression to evaluate cannabis vaping and suicidal ideation. Covariates were age and sex.
Results: 26.8% of the sample reported attempting suicide in the 30 days prior to admission; 44.3% endorsed lifetime CU; 31.5% reported CU in the past 30 days. Of adolescents who used cannabis, 30.8% reported vaping was their most frequent method of CU and 49% reported their primary motive was to cope with negative feelings. There was a significant link between endorsing vaping as the most frequent method of CU and having attempted suicide in the 30 days prior to admission (OR = 2.27, $p = 0.004$; CI = 1.29-3.97). In a sensitivity analysis including factors associated with suicide attempt (suicidal ideation; functional impairment; depression symptoms; DERS impulse scale; using alcohol, e-cigarettes, or cannabis in the past 30 days), cannabis vaping remained significant (OR = 2.33, $p = .039$; CI = 1.04-5.23). Next, we found a significant link between vaping as the most frequent method of CU and greater suicidal ideation ($b = 8.90$, $p = .019$). In a sensitivity analysis to account for a robust predictor of suicidal ideation—depression symptoms—cannabis vaping was no longer significant ($b = 4.29$, $p = .177$).
Discussion: In a large sample of adolescents hospitalized in a psychiatric setting, we found that endorsing vaping as the most frequent method of CU was associated with a) significantly greater odds of having attempted suicide in the 30 days prior to admission, and b) greater suicidal ideation. Almost half of CU adolescents endorsed coping with negative feelings as their top motive for use. The data are cross-sectional so causality cannot be inferred. Although the mechanism is unknown, it is important to consider cannabis vaping as an indicator of higher risk among adolescents with acute psychiatric concerns, in general, and suicidal ideation and behavior in particular.

M21. EVALUATING ADOLESCENT SUBSTANCE USE AND SUICIDE IN THE PEDIATRIC EMERGENCY DEPARTMENT

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Background: Suicide is one of the leading causes of death among those 10-24 years old in the United States. Similarly, adolescent and young adult substance use is one of the leading causes of death in the United States as well by unintentional injury, homicide, and suicide. Therefore, it is important to understand the associations between adolescent substance use and suicidal thoughts and behaviors, and how to easily screen adolescents for these concerns universally. Many youth in the US receive routine care in the emergency department, making it a beneficial location to implement universal screening. Therefore, our study examined the relationship between substance use and impairment and current suicidal thoughts or behaviors in a sample of adolescent patients screened in a pediatric emergency department (ED).
Methods: Data were collected from adolescent patients who presented to a single, urban, pediatric ED in Pennsylvania, USA. Adolescents completed a computerized, self-administered

assessment that evaluates depression, suicide, posttraumatic stress, violence, traumatic exposure, bullying, and substance use. These assessments were administered as standard care to all ED patients aged 14 to 18 years. We used binary logistic regression to examine whether patient demographics (ie, age, sex, and race), substance use in the past month, and past-year substance-related impairment was associated with odds of reporting current suicidal thoughts or behaviors (SBTs).

Results: A total of 11,368 adolescent patients ages 14-18 (M = 15.7; SD = 1.27; 65.4% female; 52.9% African American, 32.1% White, 10.8% multiracial) completed the assessment. Lifetime tobacco use was reported in 11% of youth, whereas 21% reported alcohol use, and 19% reported marijuana use. In addition, 16% met criteria for lifetime suicide history, and 6.5% were currently at risk for suicide based on positive endorsement of SBTs within the past week leading up to survey completion. The younger the youth, the lower the odds of reporting current SBTs (odds ratio [OR], 0.79; 95% confidence interval [CI], 0.74–0.84). Compared to biological females, biological males were at 51% greater odds of reporting SBTs (OR, 1.51; 95% CI, 1.28–1.79), and those with past-month substance use were 85% more likely to report SBTs (OR, 1.85; 95% CI, 1.51–2.26). Interestingly, substance use impairment (OR, 0.44; 95% CI, 0.33–0.58) decreased the odds of reporting current SBTs.

Discussion: Consistent with previous research, we found that recent substance use and biological males were at increased odds of reporting current suicidal thoughts or behaviors during an ED visit than those who did not report recent substance use and biological females. Interestingly, Standardized screening during pediatric ED visits may allow for more efficient evaluation of patients in higher-risk groups.

M22. EVALUATION OF A NOVEL TELEHEALTH METHODOLOGY FOR DAILY MONITORING OF SUICIDALITY: A PILOT STUDY

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Background: Suicide is a leading cause of death among Veterans. To address this concern, the Veteran Health Administration (VHA) identified suicide prevention as a top research priority. These efforts led to several advancements in identification and intervention with Veterans at high-risk for suicide, such as the REACH VET program and the implementation of a nationwide Veterans Crisis Line (currently the “988 Suicide and Crisis Lifeline”). Despite these advancements, the rate of Veteran suicide remains high and warrants continued study. Aim: The current study comes from a randomized clinical trial pilot-testing a novel telehealth technology -- the VITAL Interactive Voice Response (IVR) application -- for daily, remote monitoring of suicidal ideation and related psychological symptoms. The current study sought to assess the performance of IVR against clinical interviews in detecting suicidal ideation over 12 weeks following hospital discharge.

Methods: In the parent study, participants were Veterans admitted to psychiatric inpatient units with recent suicidal behavior at three VA Medical Centers (Pittsburgh, Manhattan, and the Bronx). Upon discharge, participants randomized to the IVR condition received automated daily calls for three months. Study assessors conducted clinical interviews at 2-, 4-, 8-, and 12-weeks. Using a signal detection approach, this report focuses on the evaluation of IVR performance in terms of agreement/disagreement with positive/negative responses to similar suicidal ideation items on the Beck Scale for Suicidal Ideation (BSS) and the Columbia-Suicide

Severity Rating Scale (C-SSRS) from clinical interviews. All available IVR responses were used to match the period of time assessed during the clinical interview. That is, IVR responses from the week and month prior to the interview were compared the BSS and C-SSRS, respectively.
Results: This analysis included data from 17 Veterans who responded on the IVR and clinical interviews. From these participants, responses (n = 195) to five suicidal ideation items were included in the analysis. Overall, agreement between the two modalities was weak (Cohen's Kappa = 0.52). Results indicated that 92.9% of denials of suicidal ideation on interview items were also identified as negative on corresponding IVR questions. However, only 56.1% of all positive responses to suicide items on clinical interviews were reported as positive on the IVR. More specifically, the BSS detected more endorsements (37 of 39) of suicidal ideation over the past week than did IVR calls (23 of 39). On the other hand, recurring IVR calls over the month prior to the clinical interview detected more endorsements (9 out of 13) of active suicidal ideation than reported in the C-SSRS interview (4 out of 13).
Discussion: Findings highlight the shortcomings and possible value of tracking suicidal ideation via real-time assessments. While the BSS elicited more endorsements of passive suicidal ideation than did IVR calls, IVR elicited more endorsements of active suicidal ideation (i.e., "thoughts today of wanting to harm yourself") than did the C-SSRS. Thus, although IVR did not perform adequately in monitoring the entire spectrum of suicidal ideation, evidence that it may be better able to capture fleeting or transient active suicidal thoughts that, in some cases, may not be identified in a future clinical interview. It is important to note that in this study, no participants reported suicide intent/planning on either IVR or CSSR-S and, therefore, the performance of IVR in the assessment of suicide intent could not be evaluated. Further development of the IVR methodology utilized in this study is warranted before its implementation as a tool for detecting and monitoring suicidality.

M23. PREDICTING SUICIDE AND INTENTIONAL SELF-HARM RISK AMONG HIGH-RISK EMERGENCY DEPARTMENT PATIENTS IN SAFETY-NET HEALTHCARE SYSTEMS: A NOVEL MACHINE LEARNING MODEL

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Background: Safety net healthcare systems' emergency department (ED) patient populations are known to have a markedly elevated risk of near-term suicidal acts and intentional self-harm (ISH). However, predicting risk in this population is particularly challenging because this patient group has a high prevalence of known baseline risk factors (e. g. reduced healthcare access, economic instability, limited social support, mood and psychotic disorders, etc.), making traditional risk assessment methods less helpful than they might be in other settings. Point-of-care predictive models that increase accuracy in identifying ED patients at near-term risk of such behaviors could facilitate more judicious allocation of resources designed to prevent fatal and non-fatal suicidal and ISH acts. However, characterization of risk -- even within populations known to have the greatest risk density -- remains a work in progress.
The purpose of this study was to develop new predictive models specifically designed for safety-net ED populations with high-density risk by leveraging electronic medical record (EMR) data to provide actionable insights on individual patient risk at time of presentation for

care. The work was funded in part by the Jordan Elizabeth Harris Foundation and the JPS Health Foundation, and supported by Holmusk.

Methods: In this study, we have used a sliding time horizon window method to develop a machine learning (ML) based classification model that stratifies risk of fatal or nonfatal suicide attempts and ISH at each ED visit for individual patients. Structured data from the JPS Health Network EMR for behavioral health patients with ED visits in 2018 and 2019 was used in model development. Longitudinal patient trajectories were converted into sliding time horizon windows using a six-month pre-encounter observation window and 30-day and 90-day post-visit prediction windows. A total of 15,987 individual patients were included in the study. Cumulatively, 29.66% of these patients experienced a suicidal or ISH event at some point within the study timeframe, with 8.63% experiencing more than one such event. Patients were divided into training, test and validation/hold-out sets (60:20:20). Multiple ML models were developed and assessed for their predictive performance.

Results: A XGBoost based ML model incorporating both physical and psychiatric health concerns gave the best performance, reaching AUROC of 0.802 and 0.757 for the 30-day and 90-day prediction windows respectively. (Number of sliding time horizon windows in test set =51,906). Up to the top 2.5 percentile of predicted risk, the model was able to capture all actual suicidal and ISH events.

Discussion: A novel method for predicting both fatal and nonfatal suicide risk and other ISH events has been developed using a sliding window approach and ML methods. The predicted risk from this model can be used to estimate changing risk within the 30 and 90 days after a patient's ED visit. The net additive clinical utility of this risk stratification model when used with patient self-assessment and clinician assessment of risk and suggests ways in which the model can be used most effectively in clinical settings.

M24. NONVERBAL BEHAVIORS EXHIBITED DURING SUICIDE ASSESSMENTS WITH YOUNG ADULTS

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Background: Suicide is a leading cause of death among young people in the United States, yet only 15% of mental health professionals report feeling very confident assessing youth suicide risk. Researchers have thus sought to identify objective, empirically observable behaviors that can inform suicide risk detection. The present study aims to examine non-verbal behaviors (i.e., spontaneous facial action) exhibited during suicide assessments, and test whether these behaviors can be used to identify young adults with recent suicidal behavior. Facial action has long been thought to communicate emotion and intention, yet only two previous studies have tested facial action in a clinical context as a marker of suicide risk.

Methods: In the present study, participants were recruited through social media and partook in an hour-long video-recorded interview with master's level research staff, including an administration of the Columbia Suicide Severity Rating Scale (C-SSRS). Participants are 70 young adults (18-24 yrs) with either: (1) past-year actual, interrupted, or aborted suicide attempts or preparatory behaviors (n = 35), or (2) no history of suicidal thoughts/behaviors (n = 35). Participants are diverse with regard to gender (59% female, 21% nonbinary/gender nonconforming), sexual orientation (50% lesbian/gay/queer/asexual), and race/ethnicity (57% White, 29% Asian, 19% Hispanic/Latino, 11% Black). Spontaneous facial action exhibited by

participants and interviewers during the first two questions of the C-SSRS was coded by certified coders using the Facial Action Coding System (FACS), the most comprehensive approach to taxonomizing observable, anatomical movements on the face, known as Action Units (AUs). Based on previous research examining facial action in related contexts, we tested a distinct set of AUs to determine whether facial action during the C-SSRS can be used to identify young adults with recent suicidal behavior. We examined: Duchenne smiles (AU6+12), non-Duchenne smiles (AU12), lip corner depressors (AU15), chin raisers (AU17), nose wrinklers (AU9), lower lip depressors (AU16), brow lowerers (AU4), upper lid raisers (AU5), and inner (AU1) and outer (AU2) brow raisers.
Results: With regard to differences between suicidal and nonsuicidal participants, suicidal participants exhibited more Duchenne smiles ($U = 291.00, p < .01$), inner ($U = 208.50, p < .001$) and outer ($U = 190.00, p < .001$) brow raisers, brow lowerers ($U = 271.00, p < .01$) and non-Duchenne smiles ($U = 265.00, p < .01$) than did nonsuicidal participants. As for differences between interviewers with suicidal vs. nonsuicidal participants, interviewers exhibited more brow lowerers ($U = 87.50, p < .01$) and lip corner depressors ($U = 143.00, p < .05$) with suicidal participants than with nonsuicidal participants. Post hoc analyses will account for depression severity and assess whether facial action predicts ideation severity prospectively.
Discussion: Results from the present study suggest that facial action exhibited by both participants and interviewers during suicide assessments may be able to aid in the identification of suicidal young people. Future directions include the application of machine learning-based characterizations of a wide array of nonverbal behaviors (i.e., facial action, head motion, vocal characteristics), pilot results of which will be presented. Findings from the present line of research may be used to help paint a richer picture of that which occurs during suicide assessments by expanding our output beyond the solely verbal domain, potentially informing the development of a wider array of objective markers of suicide risk.

M25. EVALUATING THE VALIDITY OF SUICIDE RISK SCREENING TOOLS FOR PEDIATRIC PATIENTS IN MEDICAL SETTINGS

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Background: Youth suicide is a global public health crisis. In 2019, suicide was ranked the fourth leading cause of death among youth 15-19 worldwide (World Health Organization, 2021). Despite the fact that many youth who die by suicide have contact with medical professionals within weeks of their death (Ahmedani et al., 2014), many youth at risk go undetected, and nearly half lack a formal psychiatric diagnosis (Braciszewski et al., 2022). Moreover, most patients with somatic complaints will not disclose thoughts of suicide if not asked directly (Pan et al., 2009), further underscoring the importance of actively assessing for suicide risk among youth. Taken together, these findings indicate that a change in approach is needed to improve the detection of youth suicide risk. The current presentation focuses on an increasingly popular strategy to improve youth suicide assessments in medical settings: universal screening of suicide risk. As more healthcare settings continue to adopt screening tools into practice, it is important to evaluate their validity across different contexts. However, to date, a formal synthesis of research examining the accuracy of screening tools for pediatric patients across medical settings does not exist.
Methods: To address this knowledge gap, we will present findings from a systematic review of the past 50 years of research assessing the validity of suicide risk screening tools for pediatric patients presenting to medical settings, including primary care, specialty care, inpatient/surgical units, and the emergency department.

Studies will be selected for inclusion based on the following criteria: (1) full-text article is written in English, (2) the study population is youth aged 18 years old or younger, (3) the study population is pediatric medical patients, (4) the study empirically assesses the validity of a suicide risk screening tool (e.g., the ASQ, C-SSRS, CASSY, PHQ-9A, SBQ- R, PSS-3), and (5) the study is conducted in a non-psychiatric medical setting (e.g., primary care, specialty care, inpatient/surgical units, or the emergency department). Two reviewers will first independently screen study titles/abstracts for eligibility. Disagreements will be resolved through the consensus of a third blind reviewer. Two reviewers will then screen full texts for eligibility. Any disagreements will be resolved through the consensus of a third blind reviewer.

Data will be extracted from each article by two doctoral-level researchers with expertise in youth suicide research. The following data will be extracted from each article: (1) sample characteristics (e.g., participant age, sex, race, ethnicity), (2) study setting, (3) screening tool characteristics (e.g., name, language, modality of screening), and (4) screening tool psychometric properties (e.g., sensitivity, specificity, PPV, NPV, AUC).

Results: This review will focus on screening tool psychometric properties such as sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and area under the curve (AUC). The validity of suicide risk screening tools will also be evaluated for the following subgroups: (1) study setting (e.g., primary care, specialty care, inpatient/surgical units, or the emergency department), (2) suicide risk screening tool (e.g., the ASQ, C-SSRS, CASSY, PHQ-9A, SBQ-R, PSS-3), and (3) participant demographics (e.g., sex, race, ethnicity).

Discussion: Discussion will center around the validity of suicide risk screening tools. Additionally, recommendations for clinical practice and areas for future research will be examined. Finally, we will discuss considerations for the cross-cultural validity of suicide risk screening among diverse populations.

M26. BIG DATA DELIVERS - IMPACT OF UNIVERSAL SCREENING

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Background: U.S. suicide rates have increased by 27.6% over the past 15 years and, according to the CDC's National Center for Health Statistics (NCHS) and the United Health Foundation, suicide is now the 10th leading cause of death in the United States. There is broad variability in adoption of, and consistent adherence to, suicide prevention practices, leading to continuing increases in suicide rates. This is likely related to the fact that use of technology-enabled clinical platforms and industry-wide adoption of best practices have lagged while the development of evidence-based practices has dramatically increased over the past 20 years. In 2015, as the first important step in the process of understanding suicide prevention from a population health perspective, Parkland Health (Parkland), a large safety-net hospital in Dallas, Texas, implemented a universal suicide screening program in which all patients 10 years and older are screened for suicide risk during every provider encounter.

Methods: In order to understand the impact of Parkland's universal suicide screening program, analysis was completed on nearly seven million unique healthcare encounters to understand the distribution of levels of risk in the population both prior to implementation of the program (from 2010-2015, referred to as the pre-suicide screening period) and after implementation of the program (2015-2021, referred to as the post-suicide screening period). There was data from

2,943,526 encounters in the pre-suicide screening period and 3,809,958 in the post-suicide screening period.
Positive suicide risk identification in encounters in the pre-suicide screening period was defined by the presence of ICD 9/10 codes and SNOMED clinical terms related to suicidal behavior. In the post-suicide screening period, positive suicide risk identification in encounters was defined by the presence of ICD 9/10 codes and SNOMED clinical terms related to suicidal behavior and endorsement of standardized suicide risk screening items. Demographic characteristics were also examined, including sex, age, primary language, race/ethnicity, and marital and smoking status.

Results: In the pre-suicide screening period, suicide risk was identified in 16,547 (0.56%) encounters and in the post-suicide screening period suicide risk was identified in 128,016 (3.36%) encounters, demonstrating a six-fold increase in the identification of individuals at risk. As the suicide screening program is conducted in various locations throughout Parkland's health system, the analysis of suicide risk indicators included encounter ICD codes as well as clinical setting screening locations – emergency department/urgent care emergency center(ED/UCEC), general inpatient units (IP), inpatient psychiatry unit (Psych), community oriented primary care clinics (COPC), and unspecified. In the pre-screening cohort, 81.9% (13,556) of all positive encounters were found to be in the ED/UCEC setting, versus 66.9% (85,578) in the post screening cohort. In the pre-screening cohort, only 3.5% (576) of total positive encounters were identified in the COPC setting, versus 26.7% (34,143) of total positive encounters for the post-screening cohort, highlighting the value of screening across multiple locations to identify patients at risk, and increased identification of risk in the primary care clinic setting.
Discussion: The benefit of screening at every encounter to identify those at risk of suicide is clear, and the ability to identify six times as many individuals speaks to the impact of such an implementation. While not an easy initiative to implement, with supportive leadership, a robust electronic medical record system, and a champion to drive the work, the effort is worth it.

M27. PREDICTORS OF FIREARM SCREENING AND ACCESS IN A PEDIATRIC PSYCHIATRIC EMERGENCY DEPARTMENT

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Background: Firearms are the leading method of choice in child suicides and their presence increases the odds of suicide within the household threefold. Nevertheless, living with children, even children with self-harm risk factors does not reduce the likelihood of an American family keeping or safely storing a gun at home. Despite the threat of firearms, physician lethal means screening is highly infrequent. We sought to determine the frequency of firearm screening of patients seen by a pediatric psychiatric emergency service and explore factors impacting the likelihood of screening or access to guns.
Methods: Patient records were eligible for inclusion if the child presented to the pediatric psychiatric emergency service of our academic urban medical center in 2021. Electronic medical records were searched for keywords and then manually reviewed to confirm documentation of firearm screening, and among screened patients, record whether the patient had access to a firearm. We performed chi square analyses to determine relationships between demographic and clinical factors, firearm screening, and firearm access.

Results: Of 625 encounters, 68 (10.9%) documented firearm screening. Of those screened, 13 children (19%) reported firearm access. Males (13.5%) were more frequently screened than females (9.5%). The race breakdown of patients was 166 White (14.5% screened) and 459 Persons of Color (POC, 9.6% screened), a difference which approached statistical significance (p=0.08). Of those screened, gun access was more common among White vs. POC patients (33.3% vs. 11.4% respectively, p=0.028). The ASQ risk screening tool revealed 111 patients with active suicidal ideation (15.3% screened), 252 patients with recent active suicidal ideation (10.7% screened), 268 patients with recent passive death wishes (11.4% screened), 252 patients with past suicide attempt (11.8% screened), and 240 patients with recent thoughts that their family would be better off without them (11.3% screened). Of 322 patients who were later risk stratified with the Columbia Suicide Severity Rating Scale, lethal means screening occurred for 16.0% of high risk, 15.1% of moderate risk, 6.5% of low risk, and 10.4% of no risk patients. Only the racial difference in firearm access reached statistical significance in this data.
Discussion: Firearm screening is rare amongst pediatric patients presenting for psychiatric care, even for patients who are at higher risk of suicide independent of gun access. Of the patients that were asked, about one in five reported gun access, raising concern that an important suicide risk factor is not being identified in substantially at-risk patients, who could otherwise be counseled on lethal means restriction. Lethal means screening and counseling require increased attention and integration into emergency department workflow in order to appropriately address safety concerns and stem the steadily increasing rates of youth firearm suicide.

M28. COMPREHENSION OF DEATH AND SUICIDE IN YOUTH WITH AUTISM AND OTHER NEURODEVELOPMENTAL DISORDERS

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Background: Youth with autism and other neurodevelopmental disorders (ASD/NDD) are at greater risk for dying by suicide. Suicide risk screening is an important early detection strategy, but some level of understanding of death and suicide is required for effectiveness. There is limited research describing how youth with NDD conceptualize and understand death and its finality and even less on evaluation of understanding of what suicide means to them.
Methods: Children aged 8-17 years, English-speaking, and verbally fluent were recruited for participation in an ongoing suicide risk screening instrument validation study across 4 neurodevelopmental clinics. Research staff verbally administered an understanding death assessment developed for youth with ASD/NDD (e.g., "If you died, would you wake up the next day?") along with measures of suicide risk (including the Ask Suicide-Screening Questions [ASQ], a brief 4-item validated tool as well as 10 candidate items developed specifically for ASD/NDD youth). Additionally, participants also provided a definition of "suicide," which was scored for understanding by two independent raters. Response categories included: "completely understood," "somewhat understood," and "did not understand." A separate committee resolved any discrepancies between the raters.
Results: Of 312 eligible participants to date, 57.1% (n=178) were enrolled and screened (73.6% male, 55.1% White, 35.4% Black, mean age: 12.3 [SD 2.5]). 37.1% (n=66) had ASD/Intellectual Development Disorder (IDD) and those without had predominantly ADHD 97.3% (n=109). Approximately one-fourth, 27.5% (n=49) of participants screened positive on

the ASQ. 89.9% (n=160) of participants understood the finality of death (i.e., indicating that those who die do not wake up the next day). 83.7% (n=149) of all participants reported having heard the word "suicide" previously with 61.8% (n=110) being scored as having a "complete" understanding of the word. Youth with ASD or IDD did not have significantly lower odds of understanding compared to those with neither disorder (OR: 0.57 [0.03 – 04.57]) but the probability of understanding increased significantly with age [ages 13+ compared to 8-9] (OR: 13.8 [4.39 – 49.72].) Further statistics describing the ASD population compared to those with other NDD and how participants' understanding of death and suicide differed by ASQ outcome will be presented.

Discussion: While most youth with ASD and NDD understood the finality of death, nearly 40% did not have a complete understanding of the word "suicide." Given the limited knowledge and higher rates of suicide among ASD/NDD populations, awareness of the child with ASD or NDD's understanding of death and suicide can better inform the risk of suicide and related prevention measures. As complete understanding increased with age, it is important that age-based suicide prevention strategies be considered.

M29. SUICIDAL BEHAVIORS AND NON-SUICIDAL SELF-INJURY IN YOUNG ADOLESCENTS: THE EFFECTIVENESS OF A UNIVERSAL PREVENTION PROGRAM

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Background: Recent research implies that engagement in non-suicidal self-injury (NSSI; i.e., deliberately injuring one's own body tissue without suicidal intent) is starting at an increasingly younger age. This is alarming since NSSI is an important precursor to later suicidality and increases the risk of actual suicide2. Consequently, an earlier age of NSSI onset may lead to higher suicide rates at a younger age. The current study aims to examine the effectiveness of a universal prevention program to prevent the onset of both NSSI and suicidality and to improve resilience and mental health in young adolescents aged 12-14 years.

Methods: Flemish secondary school students (54.1% female), aged 12 to 14 years (M = 12.69; SD = 0.65), were invited to participate in a universal prevention program of five classroom hours, of which four hours focused on resilience and mental health and one hour specifically aimed to prevent the onset of NSSI and decrease stigmatizing. Next to the intervention group, a comparable control group of 74 students was administered. For both the intervention and control group (N = 148), a pre-, post- and one-month follow-up questionnaire was administered, containing reliable and valid measures for NSSI and suicidality, emotion regulation, help-seeking behaviors, wellbeing, resilience and psychological distress. The pre- and post-test have already been administered, the follow-up data collection is ongoing and will be finished in June 2023. During the conference, data analyses of pre-, post- and one-month follow-up will be presented.

Results: First preliminary results show that 21.9% of the participants reported NSSI and 4.9% report at least one suicide attempt. Analysis showed significant positive correlation between NSSI and suicidality ($p < .001$). Preliminary results comparing the intervention and control group for pre- versus post-measurement, indicated that a universal prevention program in schools is effective to reduce NSSI ($p<0.05$) for those adolescents already showing a history of NSSI at pre-test.

Discussion: Results indicate both NSSI and suicidality are highly prevalent in early adolescence in Belgium, even post COVID-19. Moreover, current prevalence rates suggest an earlier onset of such behaviors, in comparison to prior research. By investing in universal prevention in schools, we can avoid the development of NSSI, and the increased risk of actual suicide in young people.

M30. ETHICAL CHALLENGES OF PSYCHOLOGIST WORKING WITH SUICIDAL BEHAVIOUR - CONTENT ANALYSIS OF CASE STUDIES

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Background: Suicide and suicidal behaviour are ethically sensitive topics both for professionals in the field, as well as researchers. The everyday dilemmas of mental-health practitioners (and even researchers) include the decision on how to manage a suicidal person. This might differ also upon the field of work. Only a minority of research publications focusses on how professionals reflect ethical topics of suicidal cases in their everyday work. The aim of our study was to provide understanding of how the topic of suicide is reflected in ethical challenges perceived by psychologist in different areas of work.
Methods: With the help of the national association we identified 61 expert psychologists who took part in the study. They were asked to prepare case studies of the most frequent ethical challenges in their field. Eight out of the seventeen fields of psychologists' work included cases of suicidal behaviour. Content analysis was done, including precise coding of the themes emerging from the cases.
Results: The results were content analysed and show how lonely and fearful psychologists perceive the cases of suicidal behaviour. They often doubt their professional role, responsibilities, competences, as well are not sure to whom to turn for help on those occasions.

Discussion: Many of the problems are also rooted in the cultural context of a rather small country with a strongly interlinked psychologists' community and a lack of a regulatory system (such as a law or a licence) for psychological services.

M31. PROTOCOL FOR THE YOUTH PARTNERS IN CARE FOR SUICIDE PREVENTION STUDY: A MULTI-SITE, COMPARATIVE EFFECTIVENESS TRIAL FOR SUICIDAL YOUTH IN EMERGENCY DEPARTMENTS

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Background: Youth with suicidal thoughts or behaviors have been presenting to emergency departments (EDs) at an increasingly high rate over the past decade. While current evidence supports effectiveness of interventions for reducing suicidal behavior and supporting linkage to mental health care following ED visits, it is not yet known whether additional therapeutic follow-up contacts, following an evidence-based intervention in the ED, improves youth

outcomes. Answering this question is vital for guiding resource allocation and paving the way for successful implementation of short-term interventions in EDs across the United States.

Methods: In the current study, suicidal youth presenting to the ED are randomly assigned to one of two evidence-based interventions for reducing suicide attempts: (a) SAFETY-Acute (A), a crisis therapy/safety planning approach integrated within ED-care; and (b) treatment that combines ED/SAFETY-A care with brief therapeutic follow-up contacts after ED-discharge using the CLASP model. Participants will include 1,516 youth ages 15-24 presenting to EDs with suicidal ideation or behavior at four diverse sites across the country. Self-report questionnaires assessing suicide-related outcomes, mental health service utilization, and potential treatment moderators are administered at initial ED visit and three, six, and 12-months following discharge. We also engage stakeholders to ensure the translation of study findings into successful implementation, with the goal of meaningfully improving patient care and outcomes.

Results: The first aim of the present study is to evaluate whether the addition of CLASP contacts following ED-discharge, compared to SAFETY-A within usual ED care and follow-up protocols, leads to 1) reduced risk of suicide attempts and self-harm, and 2) increased rate of linkage to follow-up treatment. The second aim examines the differential effectiveness of the intervention based on participant factors such as racial/ethnic identity, socioeconomic status, or geographic factors (rural v. urban). Although participant recruitment is in its early stages (n = 182, Mage = 17.32, SD = 2.58; 71.8% female), preliminary data reflects a diverse sample with 31.4% identifying as Hispanic/Latinx, 46.3% as non-white, and 17.6% as gender minority, and approximately half of the sample (50.9%) identifying as non-heterosexual. Participants are also highly acute (40.7% reported a suicide attempt within the past 3 months) and less than half (42.9%) are connected to outpatient mental health care. To engage a diverse group of stakeholders in the design, implementation, analysis, and dissemination of products and strategies, a Stakeholder Council has been developed and meets quarterly, with weekly work-groups for a smaller sub-group.

Discussion: Results of the present comparative effectiveness trial will inform whether the additional resources needed to provide therapeutic follow-up calls following a short-term, evidence-based, ED intervention leads to improved safety for suicidal youth and improved access to mental health care. Preliminary data suggests a highly acute and diverse sample with limited connection to outpatient care at time of ED visit. As such, the sample allows for an examination of which patient subgroups may particularly benefit from a treatment approach that is time-limited, scalable, and facilitates access to appropriate mental health care. Results may inform policy makers regarding how to best develop and implement services within large and complex service systems to improve patient outcomes and achieve national suicide prevention goals, including decreasing mental health disparities to improve equity.

M32. ADDRESSING SUICIDE RISK AMONG HIGH-RISK ADOLESCENTS USING A TELEHEALTH FAMILY-BASED PROGRAM FOR NEW YORK CITY YOUTH AND FAMILIES

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Background: Suicide is a serious public health problem - it is the second leading cause of death in adolescents aged 15-24 years, and youth suicidal ideation and behaviors have significantly risen in the last 20 years, particularly since the COVID-19 pandemic. Parents and caregivers have the potential to mitigate suicide risk among youth, as has been shown in the case of other clinical outcomes such as depressive symptoms. While existing family-based,

prevention interventions exist for a variety of mental health issues, the field lacks a comprehensive approach to reducing suicide risk in youth. This pilot study sought to address this gap by testing the feasibility of the Family Check-Up - Telehealth (FCU-T), an evidence-based, family-centered intervention that was adapted for high risk adolescents in New York City (NYC) using telehealth.

Methods: Participants were youth between the ages of 12-17 and their parents in the NYC metropolitan area. Inclusion criteria was youth suicidal ideation and/or depression symptoms in the past year. Exclusion criteria included psychosis, substance use, or extremely violent behavior. Eligible families completed the FCU-T, a two-visit, brief intervention via HIPAA-approved Zoom meetings. Visit 1 included an initial intake interview, followed by a behavioral observation which was used to evaluate the teen-caregiver relationship. Visit 2 involved a feedback session to the caregiver, providing a profile based on the data collected and an individualized menu of options based on their family's profile and targeted needs.

Results: Of the 65 potential participants who indicated interest, 41 completed screening (63.1%), 23 were deemed eligible (35.4%), and 11 were enrolled (16.9%). The average age of the adolescents ranged from 11 years old to 15 years old and had a mean of 12.55 years old. 54.5% of adolescents identified as male while 45.5% of adolescents identified as female. In regard to race/ethnicity, 28% of adolescents identified as White, 31% as Hispanic, and 42% as Black. The mean depression score was 16.72 out of 27. Out of 11 adolescents, 9 participants endorsed suicidal ideation with 2 endorsing previous attempts. Additionally, 7 participants endorsed self-harm behaviors. The average severity of suicidal ideation reported was 4.3 with a minimum of 4 and a maximum of 7 on a scale of 0-10.

Discussion: This pilot study generated a significant amount of interest from families which indicates a need for accessible, family-based interventions for youth. Additionally, 56% of families that were screened met eligibility criteria which suggests the large reach that this intervention could have, including ethnic/racial minority families who may not typically have access to mental health care treatment. It is also notable that most of the adolescents were deemed eligible at screening due to depression symptoms reported by their parent, rather than suicidal ideation. However, once enrolled in the study, it was found that most adolescents self-endorsed suicidal ideation.This suggests that many parents may not be aware that their child is experiencing suicidal ideation which likely could decrease the likelihood of the child receiving mental health services. Thus, this study highlights the process by which the FCU-T can identify high-risk youth that otherwise may be overlooked and then incorporate the parents into the treatment process. Lastly, this study provides evidence that families are interested in this brief intervention and indicates that it may be an effective way of engaging high risk families who are more socioeconomically and ethnically/racially diverse.

M33. ADAPTATION OF THE FAMILY CHECK-UP FOR SUICIDE PREVENTION: TESTING THE FEASIBILITY OF THE FCU-SP

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Background: Suicide rates among adolescents have continued to rise in recent years. Adolescence marks the first substantial rise in the initial onset and maintenance of self-injurious thoughts and behaviors (SITBs), while suicide attempts were more likely to emerge in late adolescence. This suggests that intervening during adolescence can mitigate against eventual suicide death. The use of family-based interventions in suicide prevention are lacking. The Family Check-Up (FCU) is a brief, prevention intervention that promotes adolescent outcomes through positive parenting behaviors. It has demonstrated effectiveness with

reducing depression, substance use, and antisocial behaviors. Studies have shown the potential of the FCU in reducing suicide risk in adolescents. Yet, the FCU has not been formally used with high-risk adolescents. The present study examined the feasibility of the FCU-SP (FCU for Suicide Prevention), which was adapted for adolescents with a history of SITBs and their caregivers.

Methods: The FCU-SP was adapted to include assessments of SITBs and adolescent's perceptions of criticism from their caregivers; these assessments were incorporated into the self-report battery completed families prior to their initial visit. The visits included 2 sessions (intake, feedback) and a behavioral observation where adolescent and caregivers discussed assigned topics, which were coded and scored. Data was integrated into a Family Profile, which highlighted areas of strengths and needs in each family. Caregivers are provided with an individualized menu of options (i.e., choices for services) based on their family's profile and targeted needs.

Recruitment occurred in the New York City area via social media and flyers. Potential participants were screened by phone, and were eligibile if: 1) the adolescent is between 11 to 19 years old and living with their parents/legal guardians, 2) spoke English, and 3) engaged in SITBs in their lifetime. Feasibility was determined by the number of families contacted and screened during recruitment, eligible participants, retention, and follow-through with treatment recommendations. Outcomes were determined using parent and adolescent surveys of adolescent functioning and perceived criticism. Mean changes and effect sizes were examined.

Results: A total of 127 potential families from the community indicated interest in the FCU-SP. Fifty-one families (40%) were screened and determined ineligible. Among these families, 11 (21.5%) were eligible to participate, of which six (54.5)%) enrolled in the study. Retention was 100% retention through Visits 1, 2, and 1-month follow-up. Two out of six families (33.3%) engaged in at least one of the services/treatment recommendations from the feedback session. Enrolled families were racial/ethnically and socioeconomically diverse: Two families identified as African American, two as Latino, and two as European American. Families were mostly from working and middle classes.

Adolescents reported a decrease (d = 0.5) in emotional problems from baseline (MB = 1.17) to follow-up (MF = 0.93), as well as substance use (d = 0.6; MB = 0.28; MF = 0.11). Perceived parental criticism had a small decrease from baseline to follow-up (d = 0.13; MB = 6.17; MF = 5.83). Almost all adolescents endorsed suicidal ideation (83.3%), which decreased to 33.3% at one-month follow-up. About half engaged in nonsuicidal self-injury at pre-test, which went down to zero at follow-up.

Discussion: Enrolled families remained engaged and sought additional services based on the recommendations to their family. Outcomes indicated promise at decreasing adolescent distress from baseline to 1-month follow-up. Overall, the FCU-SP has promise at preventing SITBs among high-risk adolescents.

M34. EVALUATING ANHEDONIA AS A PREDICTOR OF CLINICAL RESPONSE TO SINGLE-SESSION BRIEF SKILLS FOR SAFER LIVING PSYCHOTHERAPY FOR SUICIDE RISK: AN OPEN-LABEL PILOT STUDY

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Background: There is an essential need to identify those at high suicide risk and to develop evidence-based interventions that are accessible and scalable across communities. Identifying who is at risk remains a critical challenge and, to date, no reliable predictor of suicide attempt has been established. Clinical anhedonia (a loss of interest or pleasure) and deficient reward processing represent potential markers of suicidality: suicidal individuals have trouble learning whether a reward is present and are less likely to expend effort to acquire it. Given that anhedonia may be predictive of suicide risk, it may also predict whether at-risk individuals respond to suicide treatment. The Brief-"Skills for Safer Living" (B-SfSL) is a novel single-session individual psychotherapy delivered remotely to mitigate risk in suicidal patients. Adapted from the 20-week SfSL group therapy program that significantly reduced anhedonia, B-SfSL incorporates therapeutic techniques that target this symptom, including emotion regulation and highlighting opportunities for positive reinforcement. Here, we build upon previous findings to determine the ability of anhedonia to predict reduction in suicidal ideation (SI) 3 months following B-SfSL.
Methods: A total of 77 adults with suicide risk were recruited across Canada to receive open-label B-SfSL. Following consent and screening, patients completed self-report measures of suicide severity, including the Beck Scale for Suicide Ideation (BSS). Baseline ratings of anhedonia were collected using the Dimensional Anhedonia Rating Scale (DARS), a 17-item self-report scale that measures levels of hedonic function across domains (i.e., hobbies, social activities, food/drink, and sensory experience) and facets (i.e., desire, motivation, effort, consummatory pleasure). An optional computerized Effort Expenditure for Rewards Task (EEfRT) also measured baseline motivation to acquire monetary reward through effort-based decision making (i.e, choosing between high effort/varying reward vs. low effort/low reward options). A single session of B-SfSL was delivered in an online format at baseline and follow up clinical assessments were performed at 1 week, 4 weeks, and 12 weeks post-therapy. The EEfRT task was repeated at the 12-week follow-up assessment.
Results: Linear mixed models revealed a significant effect of time, with SI scores (BSS: $\beta = -0.44$, 95% CI [-0.62, -0.27], $p < .001$) and anhedonia ratings (DARS: $\beta = 0.58$, 95% CI [0.24, 0.92], $p = .001$) improving during 12 weeks following B-SfSL treatment. In contrast, post-treatment preference for high effort choices did not significantly differ from baseline in the EEfRT task subsample ($n = 30$). Regression analyses revealed a significant association between post-treatment SI improvement and greater baseline anhedonia in the social domain ($\beta = 0.25$, 95% CI [0.052, 1.18], $p = .032$), but not global anhedonia or EEfRT performance.
Discussion: Our findings provide preliminary support for the effectiveness of single-session psychotherapy for suicide risk, representing a crucial step in providing widely accessible suicide services. These results have implications for treatment personalization, suggesting that suicidal individuals with high levels of social anhedonia may experience better therapeutic outcomes. By determining whether some patients benefit from intervention compared to others, our findings will assist with reducing ineffective treatments and transforming mental health care for those at risk for suicide.

M35. THE PHENOMENOLOGICAL APPROACH OF SUICIDE RISK IN ACTION BETWEEN EUROPE AND AMERICA

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Background: Based on the assumption that it is challenging to characterize differences in suicide research among European and American scholars, one can reflect on contributions from eminent authors and highlight the strengths and pitfalls of some models to depict suicide risk. Furthermore, it would appear that comparing what emerges from the medical model vs. the mentalistic approach helps foster a phenomenological perspective.

Suicide is usually viewed as a mental health issue from a broader perspective. This partly explains some gaps in the thinking about suicide that we find in suicidology, but there are also some distinct differences from mainstream mental health.

Methods: Suicidality has been traditionally viewed as a symptom of some central psychiatric illness (e.g., depression).

The Kraepelinian approach, which would seem less prone to understand the suicidal mind, emphasizes treating the diagnosed psychiatric illness with the assumption that treating the illness will reduce the symptom of suicidality. Such a medical model supports the notion that the suicidal patient is prescribed medication for the diagnosed illness with the expectation that successful pharmacological treatment of the illness will also include reduction of the suicidal symptom. However, drugs are paramount in reducing suicide risk, especially when they have consolidated antisuicidal properties like lithium or can ameliorate mental turmoil.

Each suicide is a multifaceted event, and biological, cultural, sociological, interpersonal, intrapsychic, logical, philosophical, conscious, and unconscious elements are always present. Still, the essential nature of suicide is psychological, meaning that each suicidal drama occurs in the mind of a unique individual.

Results: Mental pain can be clearly distinguished from depression or other psychiatric disorders for the uniqueness of suffering perceived by the subject and for the fact that he cannot stand it; the individual cannot see a way out and believes that ending life is a solution.

Discussion: I share the view of what Morselli called moral pain, the pain of the negative emotions – shame, guilt, abandonment, ennui, dysphoria, hopelessness, inanition; what Shneidman calls Psychache. I view suicidal impulses (thoughts and actions) phenomenologically, more like being in love than having a liver disease.

Apart from such a condition, childhood maltreatment is a significant risk factor for suicidal behaviour. The presentation will discuss these topics from theoretical and experimental perspectives, pointing to whether psychological pain could be associated with a recent suicide attempt and whether childhood traumatic experiences could be related to mental pain in psychiatric patients. Results from a multi-center observational study will be discussed because suicide attempters (compared to non-attempters) reported higher odds of reporting worse psychological pain and suicidal intent with/without a specific plan. Although this sample of psychiatric inpatients was approached with a traditional medical model, the investigation of mental pain unveiled an inner and crucial dimension that can effectively contribute to improved management of suicide risk.

M36. EXPANDING THE REACH OF BRIEF COGNITIVE BEHAVIORAL THERAPY FOR SUICIDE PREVENTION TO PEOPLE WITH DISABILITIES: PRELIMINARY FINDINGS FROM AN ONGOING TRIAL

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Background: People with disabilities are at increased risk of suicide but lack access to tailored, efficacious psychotherapies for suicide prevention that reduce barriers to treatment access. In the first trial of any suicide prevention intervention specifically for people with physical disabilities, Brief Cognitive Behavioral Therapy for suicide prevention (BCBT) is being adapted for telehealth-based administration in 60 adults in the US with disabilities impacting vision, hearing, mobility, and dexterity.

BCBT is a 12-session treatment protocol that is aimed at increasing emotion regulation, cognitive flexibility and problem solving in three respective treatment phases. In an initial randomized controlled trial, BCBT reduced the risk of suicide attempts by 60% as compared to treatment as usual in a sample of military personnel. In this adaptation of BCBT, specific focus in placed on disability-specific mechanisms that underlie increased suicidal ideation, including beliefs of burdensomeness, and assignments are adapted to meet the accessibility needs of participants, who are provided with electronic materials for skills practice. Further, this pilot trial includes a responsive feedback mechanism design, in which participant feedback is systematically integrated into adapting the treatment protocol throughout the trial to rapidly adapt the treatment for further testing and test whether these changes improve treatment outcomes.

Methods: Participants in the ongoing study are 60 people in the US with disabilities impacting vision, hearing, dexterity, or mobility and are experiencing suicidal ideation within the past week or have attempted suicide within the past month. We administer a series of measures and semi structured interviews at baseline and after sessions 5, 10, and 12, including the Interpersonal Needs Questionnaire to assess for beliefs of perceived burdensomeness and the System Usability Scale to elicit feedback about the usability and acceptability of the treatment administration and materials. We also administer the Scale for Suicide Ideation at each session to examine whether suicidal ideation decreases during treatment. We conducted a series of generalized linear mixed model to examined within-person changes in suicidal ideation throughout treatment and integrated qualitative feedback to refine BCBT.

Results: To date, 23 participants have completed at least one session of BCBT. Preliminary findings indicate that BSSI scores significantly decreased across participants over 12 sessions ($F(11,115.75) = 2.18$, $p=.02$). Specifically, significant differences between sessions 1-3 and 12. Additionally, perceived burdensomeness scores significantly decreased during treatment ($F(2,28.98) = 4.46$, $p=.02$), with significant differences observed between session one and treatment completion. Feedback from participants has resulted in creation of an accessible repository of BCBT materials for patients.

Discussion: BCBT adapted for people with disabilities demonstrates promise in reducing suicidal ideation and perceived burdensomeness, a cognitive correlate of suicidal ideation that is salient in this population. The next steps for this research include conducting larger-scale efficacy and implementation trials of BCBT for people with disabilities.

M37. EXPLORING THE CONTEXT OF SUICIDAL IDEATION AMONG PEOPLE LIVING WITH HIV IN KILIMANJARO, TANZANIA: A QUALITATIVE STUDY

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Background: In 2020, Tanzania had approximately 1.4 million people living with HIV (PLWH), 33,000 new HIV infections, and 22,000 AIDS-related deaths. Suicide is a leading cause of death among people living with HIV in Tanzania, where more than one-quarter of all deaths by suicide are among PLWH.
Unfortunately, there are only 55 psychologists and psychiatrists in all of Tanzania. As a result, mental health treatment is extremely limited, with counseling mostly provided by allied health professionals with limited mental health training.

To improve the mental health of PLWH in Tanzania, it is critical to build treatment capacity and ensure that existing services meet the needs of high-risk populations. The objective of this research was to understand the lived experience of PLWH in Tanzania who are experiencing suicidal ideation, which will inform future treatment approaches.

Methods: Trained nurses at two adult HIV clinics screened patients for suicidal ideation during routine HIV care appointments with a single yes/no question derived from the Columbia Suicide Severity Rating Scale, translated to Kiswahili: “In the last month, have you had any actual thoughts of killing yourself?” Patients (n=15) who responded "Yes" provided written informed consent, enrolled in the study, and completed semi-structured qualitative interviews. The interview guide explored the participant’s HIV and mental health history, prior experiences with suicidality, context of suicidal ideation, and care-seeking. All participants completed safety planning and received referral information for psychiatric care; those at acute risk were linked directly to care. Interviews were audio recorded, translated to English, and transcribed. We performed team-based qualitative analysis using an Applied Thematic Approach and NVivo 12 software to inductively develop a codebook of emerging themes, and systematically coded interview content onto the codebook.
Results: Participants described feeling overwhelmed by the challenges of life, perceiving them as impossible to endure. They expressed a sense of failure and a perception of their life moving backward. Several participants identified other mental health challenges, including depression and anxiety, as key factors associated with suicidal ideation. Participants also described the intersectional stigma of both HIV and mental health challenges, which led to social isolation and other discriminatory behavior.
Poverty, unemployment, and limited access to healthcare and social services were also contributors to distress. In the absence of treatment, maladaptive coping strategies such as alcohol and drug use were prevalent, and several participants drew parallels between their substance use, mental health challenges, and suicidal thoughts.

The fear of revealing one's HIV status to a partner or others often leads to thoughts of suicide. Many individuals believe that death is an escape from the challenges of living with HIV, such as facing rejection and enduring social stigma.

Participants, when considering their motivations for living, expressed concern for how their death would affect others, especially their children. They were generally willing to seek counseling and support, but limited treatment options hindered their ability to receive the care they needed.

Discussion: Suicide is an urgent public health challenge among PLWH in Tanzania, exacerbated by unique challenges such as stigma, discrimination, psychological distress, and lack of access to mental health care. Existing care options are often unavailable, inadequate, or not tailored to the needs of PLWH. Our findings can inform the improvement of mental health care for PLWH in Tanzania and similar low resource settings worldwide.

M38. SUPPORTING YOUTH RETURNING TO SCHOOL FOLLOWING HOSPITALIZATION FOR A SUICIDE-RELATED CRISIS

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Background: The immediate period following psychiatric hospitalization for a suicide-related crisis is marked by increased risk for suicide-related behaviors and re-hospitalization. Schools are a primary environment adolescents return to following hospital discharge, making them an important context for supporting adolescent recovery.
Methods: Adolescents previously hospitalized for suicide-related thoughts and behaviors (n=19), their caregivers (n=19), hospital professionals (n=7), and school professionals (n=19) completed in-depth interviews about school re-entry experiences. Transcribed interviews were examined using applied thematic analysis, a systematic and inductive qualitative approach.
Results: Key considerations include: (1) school supports and services to cultivate a positive psychosocial climate and address the needs of returning students; (2) hospital approaches that integrate consideration of school context into treatment planning and school reintegration into discharge planning; and (3) enhanced communication between settings (e.g., hospitals, schools) and families to improve school reintegration experiences following psychiatric hospitalization.
Discussion: Based on findings from our ongoing research that is developing school reintegration guidelines, this presentation identifies considerations for returning students across a continuum of services. Ultimately, school re-entry plans should be tailored to the unique needs of the returning student and their school.

M39. FEASIBILITY, ACCEPTABILITY AND IMPACT OF THE COUPLES CRISIS RESPONSE PLAN AMONG PSYCHIATRICALLY HOSPITALIZED INDIVIDUALS

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Background: Suicidal individuals do not exist in a vacuum. They are part of relationships and communities. Many theories of suicide explicitly incorporate interpersonal factors (Durkheim, 1897; Joiner, 2007; Klonsky and May, 2015). The connection is complex; ruptures in relationships can serve to increase risk, while support can reduce risk. However, research on suicide intervention has focused on the suicidal individual and excluded the relationship partner.
Romantic partners are often the first or only members of a suicidal individual's network to know about the suicidal crisis. Among civilians, half disclosed their history of suicidal thoughts

or behaviors to a romantic partner (Frey et al., 2016). Among service members, spouses and friends were the most common groups to whom suicidal thoughts were communicated (NCTT and DSPO, 2016). While romantic partners are well positioned for suicide prevention, they often are not fully aware of their partner's suicidality, underestimating the presence of past suicide attempts and future risk (May et al., 2019). Emerging literature suggests value to partner-involved suicide prevention interventions (SPIs). However to date, few SPIs exist that explicitly include the romantic partner. This is despite substantial evidence from other mental health conditions that including family members in care improves outcomes.

Methods: This presentation will describe the rationale for, design of, and preliminary Results: from a randomized controlled trial of the Couples Crisis Response Plan (CCRP) among US military personal hospitalized for psychiatric care. The CCRP is a single session SPI designed to help each member of the couple to develop their own, personalized crisis response plan, establish common language to describe suicidal and emotional crises, and practice asking about warning signs or suggesting coping strategies.
Ninety one participants and their romantic partners were recruited from an inpatient psychiatric unit. Couples were randomized to: 1) the CCRP condition or 2) a psychoeducation session and completed 1, 3, and 6 month follow up assessments.

Results: Feasibility analyses demonstrated that we were able to over-recruit participants, effectively use telehealth to include partners and receive approval from inpatient staff. Acceptability analyses suggested that 91% of patients and 87% of partners were mostly or very satisfied with the help they received. Both patients and partners report the interventions were more likely to help them manage their significant other's suicidal or emotional crisis then their own. There was no difference in acceptability between the two conditions. No significant differences were observed between the two conditions in suicide ideation as measured by the Beck Scale for Suicide ideation at follow up, suggesting the CCRP and the psychoeducation conditions performed similarly.
Discussion: Partner-involved SPIs are feasible and acceptable strategies. Results: suggested there is a great desire for these interventions both from patients and partners. However, more research is needed to determine what elements of partner-involved interventions are most effective as both psychoeducation and skill-based learning had similar impact.

M40. OPTIMIZING FAMILY INVOLVEMENT DURING YOUTH INPATIENT PSYCHIATRIC TREATMENT FOLLOWING A SUICIDE ATTEMPT: PERSPECTIVES OF YOUTH, THEIR CAREGIVERS, AND PROVIDERS WHO TREAT THEM

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Background: Defined as approach to the planning, delivery, and evaluation of health care that is grounded in mutually beneficial partnerships among health providers, patients, and families, family-centered care is a top priority for pediatric health care organizations. While family involvement is a critical component of family-centered care, little is known about the optimal amount of family involvement for pediatric patients who have been hospitalized for a suicide attempt. This study explores the perspectives of youth, their caregivers, and inpatient psychiatric providers approaches to and opinions about family involvement in inpatient psychiatric treatment following a youth's suicide attempt.

Methods: Drawing upon data collected during the first phase of an intervention development study designed to adapt and test a family-based intervention for suicidal adolescents for use on inpatient psychiatric settings, we conducted qualitative interviews with youth who had recently been hospitalized for a suicide attempt (n=15), their caregivers (n=15), and mental health providers employed on the unit in which youth participants were hospitalized (n=15). Interviews were designed to understand the experiences of inpatient psychiatric hospitalization with a particular focus on family involvement in care throughout the youth's stay on the unit. All youth participants were between the ages of 11 and 18 and had been discharged from the inpatient psychiatric unit within the previous six months. All data was coded in Atlas.ti and analyzed using reflexive thematic analysis.
Results: Several salient themes pertaining to family involvement emerged from our analyses. While caregivers universally expressed desires to be more involved in their child's inpatient care, and frequently did not feel included in care process during their child's recent stay, providers indicated that the extent of family involvement relied heavily on clinical judgment, family availability and motivation, and youth patient preference. Many providers noted that restrictive but necessary COVID-19 visitation policies limited their capacity to involve caregivers. Among youth, there was more variation in opinions about the participants about the degree of parent involvement desired; youth described several barriers to involving caregivers in treatment that centered primarily around intra-familial communication difficulties and perceptions about caregiver beliefs pertaining to mental health. Despite these challenges, most youth supported the notion that families should be involved in the care process to some degree and specifically with respect to safety planning.
Discussion: Findings indicate that there is substantial variation across three stakeholder groups of pediatric patients who have been hospitalized for a suicide attempt, their caregivers, and those who provide them with psychiatric care in the inpatient setting. The months following discharge from an inpatient psychiatric unit have been identified as an acute risk time period. Given that caregivers are often tasked with managing aspects of their child's psychiatric care and frequently function as gatekeepers to treatment following their child's discharge, it is critical to consider their input when developing new strategies to facilitate access to and continuity of care.

M41. IMPLEMENTATION OF CARING CONTACTS USING PATIENT FEEDBACK TO REDUCE SUICIDE-RELATED OUTCOMES FOLLOWING PSYCHIATRIC HOSPITALIZATION

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Background: Suicide risk is substantially elevated in the first 90 days post-discharge from a psychiatric hospitalization, particularly for those with a history of suicide-related behavior, self-harm, and/or depressive symptoms. Cost-effective, low maintenance interventions are critical to maintaining patient wellbeing and for preventing suicide-related outcomes post-discharge from psychiatric care. Caring Contacts (CC) are brief communications delivered post-discharge that feature messages of hope and resources to access, and have been shown to improve mental health symptoms. This three-phase quality improvement (QI) project focused on revising an existing CC intervention implemented at a major teaching hospital in Toronto, Canada based on patient and community feedback, as well as assessing the impact of these changes on reducing suicidal ideation (SI) post-discharge.

Methods: In phase one, participants from an inpatient psychiatric ward and community members with lived experience engaged in focus group to discuss suitability and acceptability of existing CC messages. Transcripts from focus groups were coded and thematically analyzed. In phase two, revised CC messages were reviewed by the Psychiatry Patient Family Advisory Council and modified again based on additional feedback. In the final phase, updated CC messages were piloted with a subset of participants from the inpatient psychiatric ward, and sent via email on day 2 and day 7 post-discharge. Participants completed questionnaires prior to discharge and on day 7 post-discharge. Demographic and health history measures were completed at baseline, feedback and acceptability of questionnaires measures were completed on day 7, and mental health symptom questionnaires, including the Hopkins Symptom Checklist-25 (HSCL-25), entrapment scale, and Beck Suicidal Ideation (BSI) scale were completed at baseline and day 7. T-tests and chi-square tests were used to assess differences in mental health symptoms over time.
Results: Coded transcripts from focus groups (inpatient n= 2 participants; community n= 13) indicated that participants felt empowered in contributing to meaningful updates to the CC intervention. Feedback showed that participants preferred fewer, shorter, more visually appealing messages delivered soon after discharge that included access to recovery-based and peer support resources. A total of 27 participants (7M, 18 F, 3 non-binary; Mage= 36.9 years [range 18-83 years], SD = 15.67) completed baseline questionnaires, with 16 completing baseline and day-7 measures (5M, 11F; Mage= 37.3 years [range 20-60 years], SD= 10.23). There were no significant differences between baseline and day-7 responses on the HSCL-25, $t(15)=.61$, $p=.55$, or the entrapment scale, $t(15)=.70$, $p=.50$. There was a trend toward significance over the study period on item 23 of the HSCL-25, which assesses SI, with less SI at day 7 compared to baseline, $t(15)=1.00$, $p=.33$. In total, 81.3% of participants agreed that CC messages helped them feel more connected to the hospital community and 64.7% noted that the messages encouraged them to return to the hospital if they needed further support.
Discussion: This pilot study demonstrated the acceptability of updates to CC messages and indicated that these communications were positively received and promoted help-seeking behaviours. Further, phase 1 participants expressed that the opportunity to provide input on this evidence-based intervention was a beneficial experience. Conclusions are limited by a small sample and attrition post-discharge. Further QI efforts, including larger trials, are needed to evaluate the impact of CC messages on patient outcomes following psychiatric hospitalization.

M42. ZERO SUICIDE ACADEMY: ADAPTATION OF IN-PERSON TRAINING SESSIONS INTO AN ONLINE CURRICULUM

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Background: Experience has shown that implementation of the Zero Suicide (ZS) framework can be challenging with limited resources. With permission from the Zero Suicide Institute, Nationwide Children’s Hospital (NCH) is working to bridge the gap between the academy and implementation by guiding applicants through the process and providing insight, implementation experiences, and expertise through one to one and group interactions. NCH’s ZerOH Suicide Academy adaptation will provide grant funding to participating organizations in hopes to positively impact suicide prevention in the state of Ohio.
We know that clinicians and professionals encounter multiple barriers when accessing evidence-based education, including lack of time, funds, and availability. To alleviate those barriers, NCH has also adapted its synchronous ZerOH Suicide Academy offerings into

interactive, on-demand asynchronous courses that will be provided for free to a national audience. The curriculum will be offered on an online learning management system, which is an effective and efficient vehicle for providing educational resources across many topics to diverse audiences.

Methods: The ZerOH Suicide Academy includes five collaborative sessions with education on the ZS framework, along with monthly, individual team meetings throughout its year-long program. Participants are asked to complete a 5-question survey before and after their participation, which collects data on comfort and confidence implementing the ZS framework. All sessions were recorded for integration into on-demand courses.

The Behavioral Health Learning Library (BHLL) will provide interactive adaptations of the ZerOH Suicide Academy session offerings for professionals to complete on an online learning management system. All five collaborative sessions will be available for participation on the platform. Data will be collected through a QI survey on the platform to assess barriers to education access and actionability of the content. BHLL hopes to launch its full ZerOH Suicide Academy curriculum in Autumn of 2023.

Results: The ZerOH Suicide Academy saw improvement in all five survey questions from the pre-survey to post-survey completion. 14% of providers felt more confident asking patients direct and open questions about suicidal thoughts and behaviors and in screening patients for suicide risk. There was a 2% increase in the number of providers who always assess a patient's suicide plan and intentions as a part of suicide risk assessment and a 34% increase in the number of providers who feel confident providing care to patients who have been identified as being at elevated risk for suicide. And by the end of the program, 100% of participants reported always obtaining information about risk and protective factors when conducting suicide risk assessments, a 30% increase from baseline. Pre- and post-survey data from participation in the BHLL asynchronous version will be gathered and compared to the synchronous presentations.

Discussion: In summary, NCH's adaptation of the ZS framework into a year-long program with implementation support was successful and allowed participants to improve multiple self-reported suicide prevention and care metrics. NCH hopes that the creation of asynchronous ZerOH Suicide modules to be hosted on a learning management system will help overcome more barriers to accessing evidence-informed education and will allow expansion of the program to a larger audience.

M43. WHAT ARE COMPLEX INTERVENTIONS IN SUICIDE RESEARCH? DEFINITIONS, CHALLENGES, OPPORTUNITIES, AND THE WAY FORWARD

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Background: It has been argued that effective action towards addressing a complex concern such as suicide requires a combination of evidence-based strategies. While these complex public health approaches have recently gained importance, little is known about their characteristics and what contributes to their complexity.

Methods: This is a comprehensive review exploring terms and definitions related to use of a combination of evidence based strategies in suicide research and prevention.

Results: The use of interchangeable terms such as multilevel, multicomponent, community based, and inconsistent definitions of these approaches creates confusion around what it is and what it is not. In practice, this disorder is reflected in a substantial variation in the design, implementation, and evaluation of complex approaches in suicide research. While it is impossible to resolve all existing inconsistencies in terminology, this review explores a range of terms and definitions to connote complex interventions. It aims to unpack multiple meanings of these terms and their diverse usage in suicide literature.
Discussion: The potential implications of this fluidity and plausible pathways to make sense of this complexity for suicide research are also discussed. With a shared understanding of what constitutes a complex intervention, we can expect to see an improved representation of the real-world complexities in our efforts to address suicide. This common language can also contribute toward quality implementation and dissemination and thereby advance our understanding of complex interventions.

M44. FAMILIAR METHODS IN NOVEL SETTINGS: IMPLEMENTING SUICIDE RISK SCREENING IN A PODIATRIC PRACTICE

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Background: As suicide rates continue to increase, it is important to extend suicide prevention efforts to novel settings. Leading medical organizations, such as the American Academy of Pediatrics, recommend suicide risk screening to identify patients at risk and connect them to mental health services. Outpatient podiatric medical and surgical clinics serve patients who frequently report chronic pain, injuries, or chronic illness (e.g., diabetes), symptoms which are associated with elevated risk for suicide. These outpatient podiatry practices present a novel opportunity to identify occult suicide risk that would otherwise go undetected. Additionally, many patients with foot and ankle disorders may visit specialty podiatry practices more frequently than a primary care setting where suicide risk screening and assessment typically occur. Specialized podiatric physicians may be a patient's most frequent medical contact, positioning them as ideal partners to identify those at risk and connect them to mental health services.
Methods: Between November 2021 and April 2022, suicide risk screening was implemented at an outpatient podiatry practice in Maryland, U.S. using a Plan-Do-Study-Act Quality Improvement design. Office staff completed an online training webinar describing screening procedures, followed by an in-person training. Following an initial pilot trial in 2020, all patients aged 10 and above were screened using the Ask Suicide-Screening Questions (ASQ), a brief four-item tool to identify suicide risk. All patients who screened positive received a physician administered ASQ Brief Suicide Safety Assessment (BSSA) to operationalize next steps for care. For the purposes of analysis, data will be reported for both youth (10-24 years) and adult (25 years and older) patients.
Results: During the implementation period, 703 patients completed the suicide risk screening tool as standard of care. The majority (86.9%, 611/703) of patients were adults (mean age: 58.7[16.8], range: 25-93 years; 62.2% Female; 59.1% White; 13.7% Hispanic/Latino). 13.1% (92/703) of patients were youth (mean age: 15.8[4.5], range: 10-24 years; 64.5% Female; 54.0% White; 12.5% Hispanic/Latino). Among adults, 1.3% (8/611) patients screened positive for elevated suicide risk on the ASQ. Youth demonstrated a 3.3% (3/92) positivity rate. No

patients screened acutely positive or required emergency interventions during the study period. According to physician report, the BSSAs for positive screens took approximately 5 minutes to complete and did not interfere with a busy workflow. Specific case examples of positive screens and their relevance to outpatient specialty clinics will be discussed.
Discussion: Suicide risk screening was feasibly implemented in an outpatient podiatry clinic with pediatric and adult patients. The screen positive rate did not overtax a busy outpatient specialty practice but was high enough to warrant screening. Quality improvement methodsthrough the PDSA framework were essential to successful implementation. Considering that mental health symptoms may exacerbate physical health conditions, such as chronic pain or injury recovery, suicide risk screening identified psychological distress that was important to overall patient care. The higher screen positive rate among youth is consistent with prior studies and may reflect the ongoing youth mental health crisis, while presenting an opportunity for intervention and strengthening skills to cope with physical illness. Outpatient specialty clinics are well-positioned to be valuable partners in suicide prevention efforts for both youth and adults.

M45. IMPLEMENTATION OF A BRIEF CONTACT INTERVENTION TO REDUCE SUICIDALITY FOLLOWING PSYCHIATRIC HOSPITALIZATION

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Background: Suicide is the 11th overall cause of death and the 3rd leading cause in the 15-24 year age group. Long-term therapies (e.g., SSRIs, psychotherapy) have been extensively studied as effective means of preventing suicide in high-risk patients. Shorter term interventions are becoming important as the national suicide rate is increasing with a peak rate of 14.5 per 100,000 people in 2021. Additionally, 25% of patients exhibit suicidal behavior and/or ideation in the first 30 days after discharge from inpatient psychiatric hospitalization. A "caring contacts" program is a form of outpatient follow-up that consists of sending short non-demanding messages (e.g., texts, patient portal messages) to patients at high risk of suicide following discharge. Prior studies investigating the impact of caring contacts on suicidality have been mixed. The goal of this project was to create an automated system within the electronic medical record (EMR) that sends a caring contact to patients discharging from the psychiatric hospital and who are at elevated risk of suicide. We encountered several challenges that we hope to share with providers elsewhere who may be interested in this intervention.
Methods: In collaboration with the UCLA Health Informatics team, a conditional formula was created to automatically send a brief message to any adult patient who discharged from UCLA's Resnick Neuropsychiatric Hospital (RNPH) and was identified as being at elevated risk for suicidal behavior based on responses to the Columbia-Suicide Severity Rating Scale (C-SSRS) at any point during hospitalization. Elevated risk was defined as answering "Yes" to any of questions 2-6 on the C-SSRS. The system was deployed in 12/2020 and was improved through four iterations of plan-do-study-act cycle.
Results: Between 12/2020 and 8/2021, 2702 patients met inclusion criteria for receiving a message, however, only 12 (9%) received messages as intended. Further investigation showed that around the time of intervention launch, how C-SSR data was recorded by nursing in the EMR flowsheets changed and this change was not reflected in the conditional formula that generated these automated messages. Additional errors in the message trigger were identified related to the patient's hospital encounter location and the limit set for patient age. Between 6/2022 and 2/2023, 1159 patients met criteria and 823 (71%) received the message.

Discussion: We faced several implementation challenges with the UCLA RNPH Caring Contacts program. We selected patients at elevated risk of suicide to make the intervention more relevant. However, this increased complexity in the message trigger and led to errors in correctly identifying patients who should have receive the automated message. In addition, messages were sent to patients via UCLA Health's patient portal, MyChart, which requires patients to activate their accounts upon initial discharge. As such, only patients who were able and motivated to activate their accounts would receive the intervention. Another challenge is that prior interventions using caring contacts involved sending repeated messages at predetermined intervals (e.g., 1 week, 1 month, 6 months, 1 year) after discharge. Once the conditional formula can successfully identify patients and automatically send the initial message, we plan to modify it to send additional messages at standardized intervals. Lastly, measuring intervention outcomes, including suicidal ideation, suicide attempt, and death by suicide may be challenging. While our ultimate study goal is to determine if this intervention impacts suicidality of patients in the short and long terms, we hope this information proves helpful in the meantime to providers hoping to implement caring contacts at other institutions.

M46. PROMOTING SCHOOL-BASED SUICIDE PREVENTION THROUGH NATURAL IMPLEMENTATION SUPPORT: FINDINGS FROM A PILOT PROJECT

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Background: Among OECD countries, Canada has one of the highest prevalence rates of youth suicide. School staff, including teachers, can play an important gatekeeper role in youth suicide prevention, as they are in daily contact with students and thus have multiple opportunities to intervene and refer youth to mental health services. Yet, many school staff have not been trained in suicide prevention, and are not comfortable talking to youth about suicide. Thus, training for school staff is needed. However, the brief trainings that are feasible in real-world schools are often not enough to support participants to retain and use skills in the long-term. Yet, offering more intensive training to all teachers takes time and resources, both of which are consistent implementation barriers in school settings. In this presentation, we will describe a new suicide prevention training and implementation model designed to meet the needs of real-world schools. In this model, we offer more intensive intervention to existing sources of support in the school building (i.e., a smaller, targeted group of natural suicide prevention leaders), who can then go on to support their colleagues' adoption and implementation of a brief gatekeeper training (Question, Persuade, Refer (QPR)©) in real time.
Methods: This study was conducted in two school divisions in Alberta, Canada, with 51 teachers/other school staff and 17 natural suicide prevention leaders. Participating schools were stratified by location and school size, and then randomized to condition: intervention (6 schools) or attention-control (12 schools). Intervention schools received the natural leader training and QPR©. Attention-control schools received QPR© only. A team of natural leaders (~n=2-4/school) were chosen using principal selection at each of the intervention schools. The natural leader intervention was developed by the research team, and consisted of 6 hours of synchronous and asynchronous training (centered in intersectional understandings of youth suicide), the creation of a tailored prevention support plan for their school building, as well as ongoing technical assistance across the school year. Teachers/other school staff completed surveys before (pre-test), after (post-test), and 2 months following QPR© training to assess (1) perceived preparedness to intervene and (2) role-appropriate suicide prevention knowledge

(Wyman et al., 2008). Both teachers/other school staff and natural leaders also participated in interviews at the end of the project.

Results: Participants were mostly women (82.4%) with more than 15 years of teaching experience (54.9%). From pre-test to two-month follow-up, participants in both conditions reported significant and large increases in their preparedness to serve as a suicide prevention gatekeeper, and in their knowledge about role-appropriate responses. Interview data indicated that participants found QPR© to be a useful and feasible training for school staff. Natural leaders described that the most valuable part of their enhanced role was building a team so they had support, and did not feel that one person had to take on everything to do with suicide prevention in the school building. Natural leaders also reported that the additional training they received increased their comfort to intervene because they were able to role play and receive feedback from the research team.

Discussion: In this study, teachers/other school staff in both a brief gatekeeper training-as-usual condition, and an enhanced condition that included natural leader support, reported large changes in suicide prevention knowledge and perceived preparedness to intervene at follow-up. Implications for school suicide prevention implementation will be discussed.

M47. ALL-CAUSE MORTALITY, SUICIDE, SUICIDE ATTEMPT, AND DELIBERATE SELF-HARM FOLLOWING DISCHARGE FROM PSYCHIATRIC HOSPITALIZATION IN CATALONIA, SPAIN (2014-2017) – A REGISTRY-BASED COHORT STUDY

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Background: The period following discharge from a psychiatric hospitalization is a high-risk period for suicide attempts and death by suicide. While previous research has important limitations such as inflated incidence rates induced by short follow-up periods, and small sample sizes, this large prospective cohort study aims to investigate mortality and self-injurious behaviour following psychiatric hospitalization in Catalonia, Spain.

Methods: All patients with a psychiatric hospitalization during the period 01/01/2014-31/12/2017 in the region of Catalonia, Spain (7.5 million population) were followed for subsequent all-cause mortality, death by suicide, suicide attempt, and deliberate self-harm. The first hospitalization during this period was selected as the index hospitalization. The patient cohort was followed until 31/12/2018, emigration from Catalonia, or the outcome event, whatever came first. Centralized registry data were retrieved from the Catalan Public Data Analysis for Health Research and Innovation Programme (universal health coverage), and

personal information interlinked from: (1) mortality data, (period 2014-2018); (2) data on clinically confirmed suicide attempts (period 2014-2018) registered through the "Codi Risc" suicide attempt surveillance programme; (3) electronic healthcare data (period 2008-2018) on psychiatric hospitalizations and associated mental disorders, and on episodes of deliberate self-harm (DS-H) registered at various healthcare settings.

Results: The cohort consists of n=41443 patients with a first hospitalization during 2014-2017 (aged 10+ at discharge, 52.7% male). Median duration of hospitalization was 16 days (IQR 21). Median observation time was 1134 days (IQR=782). Most frequent primary and secondary mental disorders associated with the index hospitalization were psychotic (32.4%), substance-related (29.3%), alcohol-related (25.3%), depressive (19.1%) and personality disorders (17.5%). 31.6% had at least one previous hospitalization during 2008-2013, and 39.7% had at least one rehospitalization after index discharge. During the follow-up period, 1290 patients in the cohort (3.1%) had at least one clinically confirmed suicide attempt (incidence rate [IR] =1043/100000 person-years [PY]; 2.1 times higher in females), and 4295 (10.4%) had at least one DSH episode (IR = 3678/100000 PY; 1.5 times higher in females). Moreover, 2926 patients (7.1%) died during follow-up (IR = 2321/100000 PY; 1.3 times higher in males). Among those deceased, n=349 (11.9%; 0.8% of the total cohort) died by suicide (IR = 277/100000 PY; 1.6 times higher in males). Suicide rates were 2.0 times higher among patients with at least one suicide attempt during follow-up, and 3.1 times higher among those with at least one DS-H episode during follow-up (compared to those without these outcomes during follow-up).

Discussion: Compared to the general Catalan population, risk for all-cause death following psychiatric hospitalization is at least 8 times higher and risk for suicide death at least 40 times higher. This points to the high societal costs associated with premature mortality related to mental disorders, and to the need for more effective prevention interventions, including more systematic follow-up of patients post discharge, and enhancing patient safety through post-discharge monitoring of suicide risk and safety planning. Developing accurate prediction models to identify those at highest risk following discharge may facilitate the targeted allocation of such interventions. Funding: PI22/00107 (Instituto de Salud Carlos III; co-funded by the European Union); Fundación la Marató de TV3 (202220-30-31); AGAUR 2021 SGR 00624; ISCIII-FSE CP21/00078.

M49. TRENDS IN SUICIDE RATES BY RACE AND ETHNICITY AMONG MEMBERS OF THE UNITED STATES ARMY

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Background: Large scale efforts to examine trends in suicide rates over time among United States military personnel by race and ethnic groups have been limited. To address this gap, efforts were focused on identifying differences in suicide rates and time-dependent hazard rate trends, overall and within age groups, by race and ethnicity among United States military

members (Army) who returned from an index deployment (Iraq/Afghanistan, October 2007 to September 2014).
Methods: This retrospective cohort study was conducted using an existing longitudinal database, the Substance Use and Psychological Injury Combat Study (SUPIC). Demographic (e.g., race and ethnicity) and United States military data from the Department of Defense compiled within SUPIC, as well as Department of Veterans Affairs data were linked with National Death Index records (through 2018) to identify deaths by suicide including those that occurred after military service. The analytic cohort consisted of 860,930 individuals. Crude and age-adjusted (using the direct standardization method) suicide rates were calculated per 100,000 person years over the time period October 1, 2007 to December 31, 2018 by race and ethnicity. Hazard rates for suicide, over time since the end of index deployment were calculated by race and ethnicity using the life-table method. Pairwise tests of parallelism were then used to compare trends between racial/ethnic groups.
Results: Among those aged 18-29 at the end of their index deployment, the suicide rate for American Indian/Alaskan Native (AI/AN) individuals was 1.51 times higher (95% confidence interval [CI]: 1.03, 2.14) compared to White non-Hispanic individuals (WNH), and lower for Hispanic and Black non-Hispanic (BNH) than for WNH individuals (RR=0.65 [95% CI: 0.55, 0.77] and RR=0.71 [95% CI: 0.61, 0.82], respectively). However, analyses revealed increasing trends in hazard rates post-deployment (≤ 6.5 years) within groups of Hispanic and BNH individuals (Average Annual Percent Change [APC]: 12.1% [95% CI: 1.3%, 24.1%] and 11.4% [95% CI: 6.9%, 16.0%], respectively) with a smaller, increase for WNH individuals (APC: 3.1%; 95% CI: 0.1%, 6.1%).
Discussion: Findings suggest that key subgroups are at risk for post-deployment suicide (i.e., WNH, AI/AN and younger individuals). Heterogeneous trends overtime were also noted, with rates and trends varying within race and ethnic groups, by age groups. Results highlight the importance of looking at large data sets over time, with the goal of identifying trends in suicide by subgroups. Such work can only be completed using longitudinal datasets, and likely requires merging of data from separate sources. Post-deployment suicide prevention efforts that address culturally relevant factors and social determinants of health associated with health inequities are needed.

M50. RISK OF SUICIDE AMONG PEOPLE WITH CANCERS: A REGISTER-BASED COHORT STUDY

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Background: Aim: To analyse whether people diagnosed with cancers have higher rates of suicide than those not diagnosed while accounting for social factors and other relevant covariates. Additionally, it will be examined whether suicide rates vary with respect to cancer-specific markers, such as time of diagnosis, number of tumors, stage of cancer, as well as psychiatric comorbidity.
Methods: Method: All persons aged 15 years or older residing in Denmark between 2000 and 2021 were identified and cancer diagnoses were identified using the Danish Cancer Registry. Suicide rates for persons with and without cancer were compared and summarized as incidence rate ratios (aIRR), using Poisson regression models. The analyses were adjusted for sex, age

group, calendar period, civil status, education, income, Charlson comorbidity scale, history of psychiatric diagnoses, and history of suicide attempt.
Results: A total of 6,987,831 persons were included, of whom 420,299 persons had been diagnosed with cancer. Out of 13,950 suicides, 713 (5.0 %) had been diagnosed with cancer. The suicide rate for persons diagnosed with cancer was 34.0 per 100,000 person-years, while those with no cancer had a rate of 13.4; adjusted analysis resulted in an aIRR of 2.15 (95 % CI: 2.10-2.21). The cancer types associated with the highest suicide rate were: mesothelioma (aIRR: 6.95; 95% CI: 4.35-11.10); pancreatic cancer (aIRR: 5.97; 95% CI: 5.10-7.00); and oesophagus cancer (aIRR: 5.14; 95% CI: 4.34-6.08). The rate of suicide was found to increase relative to increasing stage of the cancer (stage 2: aIRR: 1.16; 95 % CI: 1.05-1.29 vs stage 4: aIRR: 3.07; 95 % CI: 2.81-3.35) when compared to persons with stage 1 tumors.
Discussion: Conclusion: Persons diagnosed with cancer had a 2.1-fold higher incidence rate of suicide compared to the background: population when adjusting for relevant confounders. Higher suicide rates were associated with more severe cancer types. Individuals with cancer are often in contact with care provides; thus, options for identification of individuals at risk exist. Given that it is a large patient group, the findings form this study might help target the high-risk individuals.

M51. TRENDS IN MORTALITY AFTER EMERGENCY DEPARTMENT PRESENTATION FOR NONFATAL SELF-HARM

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Background: Suicide is the 10th leading cause of death in the U.S. Emergency department (ED) patients, especially those presenting with deliberate self-harm, face extremely elevated risk of suicide and all-cause mortality. Although public health entities routinely conduct systematic tracking and reporting of mortality risk among other health care patients (e.g., cancer or cardiac surgery patients), mortality surveillance among self-harm patients is nonexistent. Tracking and reporting trends in these patients' risk of suicide and other mortality would be valuable for intervention and secondary prevention efforts.
Methods: We used California's statewide, individually-linked patient record and mortality data on all ED patients who presented with a nonfatal deliberate self-harm event in the first 6 months of each calendar year between 2010-2016. Because linkage to state death data was available only by the calendar year, we calculated 6-month rates of suicide (ICD-10 codes X60-X84.9, Y87.0, U03) and all-cause mortality (ICD-10 codes A00-Y89.9) among each patient cohort. Trends were examined descriptively; formal statistical testing for trends is ongoing.
Results: Between 2010 and 2016, there was a total of 111,664 patients with an index self-harm event in a given calendar year. During the six-month follow-up period across all study years, there were 505 suicide deaths and 1,612 all-cause deaths. Self-harm patients' 6-month suicide rates declined 32% over the study period, from 530.1 per 100,000 in 2010 to 357.8 per 100,000 in 2016. Much of this decline occurred between 2015 and 2016. Their all-cause mortality rates also decreased, albeit to a lesser extent (18%) – from 1,654.0 per 100,000 in 2010 to 1,354.7 per 100,000 in 2016. Again, this decline occurred most precipitously from 2015 to 2016. Across the study period, suicide accounted for approximately 30% of all observed deaths among self-harm patients, while unintentional injuries (including drug overdoses) accounted for between 14% and 23%, and natural-cause deaths accounted for between 40% and 55% of observed deaths.
Discussion: In this population-based study of self-harm patients, suicide and all-cause mortality declined from 2010-2016, although suicide remained a leading cause of death in this

patient group, and their overall mortality was very high. Our results were somewhat surprising, as both suicide and all-cause mortality rates in the general population of California slightly increased during this period. Whether our observed trends are real or an artifact of changing state-led linkage practices awaits further investigation. Regardless, the potential to observe such changes in mortality outcomes underscores the value of ongoing surveillance efforts for understanding population health burden and hypothetical effects of policy and program changes on a highly vulnerable group of patients.

M52. GEOSPATIAL SUICIDE RISK PREDICTION WITHIN THE STATE OF MARYLAND

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Background: Suicide is among the leading causes of mortality in the United States, with the national rate increasing by 15.5% between 2011 and 2018. Ecological risks of suicide death are generally understood, but not commonly monitored. It is possible to identify geographic and sociocultural factors related to suicide as part of a population health monitoring program, that facilitates intervention by alerting community care providers in a timely manner. This work makes use of the Maryland Suicide Data Warehouse (MSDW) a comprehensive state-wide registry of suicide death incidents occurring between 2012-2020. Our central aim is to leverage these diverse sources of information to identify regions of interest in the detection and prevention of suicide death, from a healthcare policy perspective.

Methods: The MSDW contains a wide range of administrative and clinical records for Maryland decedents, including information about the circumstances, manner and causes of death as reported by the State Office of the Medical Examiner (OCME). Additional social determinants of health (SDH) were identified with disease prevalence estimates, using the 5-year estimates of the American Community Survey (ACS) and CDC's PLACES survey tool, respectively. Additional features include counts of substance use and mental health facilities and firearm incidents per tract. Negative binomial regression for the cumulative incidence of suicide death was used for multiple ecological model fits. A subsequent Kulldorff cluster analysis was performed to further characterize the location of clusters.

Results: Model fit statistics were found to improve with the successive addition of SDH and condition prevalence features, with the best performing model including individual components of the area deprivation index (ADI) and PLACES-derived estimates. Generally, ADI and its component were found to be significantly related to counts of suicide death, but health conditions were more equivocal. The Kulldorff clustering procedure identified five regions with significantly elevated counts of suicide death ($p < 0.05$). These tended to be more rural, have greater depression prevalence and majority Caucasian than the rest of the state.

Discussion: This work identified multiple ecological factors related to death by suicide and regions throughout the State of Maryland where a greater than expected rate of suicide had occurred. The MSDW provided a means of tracking and quantifying the severity of these risks. The relatively small count of deaths per Census tract proved to be a methodological limitation, since there were no other statistically significant clusters. We hypothesize that a detailed understanding of the ecological factors related to suicide incidence can inform policy and aid in the identification of patients at risk. Exacerbations of poverty, substance use and lack of

employment vary both in time and location. Each is known to affect incidence of mental health crises, including suicidal ideation and attempts.

M53. SUICIDE IDEATION AMONG SECONDARY SCHOOL STUDENTS IN HONG KONG: AN INTERSECTIONAL MULTILEVEL ANALYSIS OF INDIVIDUAL HETEROGENEITY AND DISCRIMINATORY ACCURACY

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Background: The relationships between mental health issues, suicidality and certain social identities such as gender, sexual orientation, and gender expression have been established. However, prior studies seldom investigated how these identities collectively contribute to suicide ideation among adolescents. Additionally, the influence of sexual orientation and gender expression on suicidality has been understudied in Chinese contexts. Thus, this study aims to adopt an intersectionality perspective to examine how gender, gender expression, and sexual orientation intersect to shape the social patterning of suicide ideation among secondary school students in Hong Kong.

Methods: The data utilized in this study was obtained from the Youth Sexuality Study (YSS), which is a territory-wide survey of sexual attitudes, knowledge, and behaviors of secondary school students in Hong Kong. Multilevel analysis of individual heterogeneity and discriminatory accuracy (MAIHDA) was employed to examine how gender, sexual orientation, and gender expression jointly impact suicide ideation in the past 12 months, with individuals (Level 1) nested within intersectional strata (i.e., every possible combination of gender, sexual orientation, and gender expression, Level 2). MAIHDA has been shown to be more effective than traditional intersectionality methodsby identifying between- and within-stratum heterogeneity across a wide range of strata, while providing conservative estimates for strata with limited sample sizes. All the models in this study were fitted using the Markov Chain Monte Carlo (MCMC) method.

Results: A total of 8025 adolescents were included in the analysis. Some marginalized strata (e.g., those including sexual minority and/or gender nonconforming) showed higher prevalence estimates of suicide ideation. The highest value was found among girls who self-identified as non-heterosexual and gender nonconforming (46.80%), followed by girls who self-identified as non-heterosexual and gender neutral (44.60%) and boys who self-identified as non-heterosexual and gender nonconforming (36.41%). The model that conflated additive and interaction effects has an intra-class correlation coefficient (ICC) of 11.88%, indicating that 11.88% of the total variation in suicide ideation among secondary school students in Hong Kong was due to stratum-level differences. However, the ICC in interaction-effect only model was 0.22%, suggesting that little differences are attributable to intersectional interactions.

Discussion: Adopting an intersectionality perspective has allowed us to better comprehend the diverse experiences of those who are at risk for suicide, which in turn can contribute to the development of tailored interventions. It is recommended that future studies also adopt an intersectional approach and include other important social identities, such as race, in their analysis.

M54. SUICIDE FOLLOWING THE COVID-19 PANDEMIC OUTBREAK: VARIATION ACROSS PLACE, OVER TIME, AND ACROSS SOCIODEMOGRAPHIC GROUPS; A SYSTEMATIC INTEGRATIVE REVIEW

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Background: The purpose of this review is to systematically examine changes in suicide trends following the initial COVID-19 outbreak, focusing on geographical and temporal heterogeneity and on differences across sociodemographic subgroups.
Methods: Systematic integrative review: studies were included if they reported original, peer-reviewed research published between 01/01/2020 and 07/10/2022, and included population-based estimates of suicide counts or suicide mortality rates before and after the initial COVID-19 pandemic outbreak, with or without explicitly estimating the effect of the pandemic on variations in suicide. We focused on examining studies' methodological approaches and built maps to depict geographical and temporal heterogeneity in trends.
Results: Of 46 studies, 26 had low risk of bias. In general, suicides remained stable or decreased following the initial outbreak – however, suicide increases were detected during spring 2020 in Mexico, Nepal, India, Spain, and Hungary; and after summer 2020 in Japan. Trends were heterogeneous across sociodemographic groups (i.e., there were increases among racially minoritized individuals in the US, young adults and females across ages in Japan, older males in Brazil and Germany, and older adults across sex in China and Taiwan). Variations may be explained by differences in risk of COVID-19 contagion and death and in socioeconomic vulnerability.
Discussion: Monitoring geographical, temporal, and sociodemographic differences in suicide trends during the COVID-19 pandemic is critical to guide suicide prevention efforts.

M55. SUICIDE DEATHS BY GAS INHALATION: A CONTINUING OBSERVATIONAL STUDY OF EMERGING METHODS OF SUICIDE IN TORONTO (1998-2020)

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Background: Suicide by gas inhalation was a novel suicide method in Canada. Previous research has documented the demographic profiles of people who died by different types of gas inhalation. However, it is unknown whether the trend of gas-related suicide and the characteristics of people who died by these methodshave changed in recent years. Therefore, this study aims to understand the trend of suicide using inhalational gas in Toronto and explore the profiles of individuals who died by different types of inhalational gas using 23 years of data.
Methods: A total of 5,288 suicide deaths in Toronto were identified from the coroner's records (1998-2020). All deaths were classified into compressed gas (helium and nitrogen), charcoal burning, motor vehicle exhaust and all other methodsbased on the mode of dying. Trends of each type of inhalational gas were explored. Bivariate analysis (ANOVA and chi-squared tests) and additional pairwise comparisons were performed to examine the differences in the demographic and clinical characteristics of individuals in the four categories.
Results: Between 1998 and 2020, suicide death by inhalational gases (N=229) accounted for 4.3% of all suicide in Toronto. For 2016-2020, there was a decrease in suicide by helium (-38.2%) and charcoal burning (-57.1%) compared to 2011-2015, while suicide by nitrogen increased by 100%. More males used inhalational gases compared to people who died by other methods: (compressed gas 83.8%, charcoal burning 83.7% and motor vehicle exhaust 81.5% vs. other methods: 63.5%, $p < 0.05$). People who died by compressed gas and charcoal burning

were more likely to leave suicide notes compared to people who died by other methods: (compressed gas 72.4% and charcoal burning 60.5% vs. other methods: 28.7%, $p < 0.01$). The majority of people who died by compressed gas used one tank (74.3%).

Discussion: Although suicide by most inhalational gases has decreased in recent years in Toronto, suicide by nitrogen should be closely monitored. Suicide prevention strategies including restriction access to suicidal means and responsible media reporting should be continuously advocated.

M56. THE CHANGING RISK OF SUICIDE IN THE UNITED STATES, 1908-2018: AN AGE-PERIOD-COHORT ANALYSIS

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Background: Suicide is a major public health concern in the United States (US), with suicide rates rising 35% between 2000 and 2018. Population-level data indicate suicide rate increases, however recent evidence suggests that certain demographic subgroups, such as youth, may be at particular risk.

Youth aged 10-24 have exhibited year-by-year increases in suicide rates since 20073, a trend disproportionately affecting young females. Across the lifespan, males exhibit higher suicide rates than females, although this gap may be narrowing in younger age groups due to rising rates among female youth.

Rising suicide rates, particularly among young females, mark concerning trends meriting further examination. It is of interest to determine whether the observed increase in suicide rates are indicative of an age, period, or cohort effect. This study explores trends in lifetime suicide rates of 5-year birth cohorts in the USA between 1908 and 2018 using an age-period-cohort analysis.

Methods: Publicly available suicide data were drawn from the Wide-ranging Online Data for Epidemiologic Research (WONDER) database and the Mortality Statistics records provided by the Centre for Disease Control (CDC). Records with an underlying cause of death listed as suicide or intentional self-harm were included. Crude rates per 100,000 people were calculated by WONDER and intercensal population data from the US Census Bureau.

An age-period-cohort analysis was run using categorical age as a sole predictor, with period and cohort parameters iteratively added to the model. Model fit was assessed following the addition of each parameter.

Results: Calculations of average crude suicide rate by cohort, collapsed across age, established the 1934-1938 cohort as having the lowest suicide rate in both sexes. In reference to this baseline, female rates remained stable from the 1934-1938 cohort until the 1984-1988 cohort (suicide rate ratio (SRR), 1.37; 95% CI, 1.07-1.77). SRRs continued to rise within each successive female cohort, with a peak in the 2004-2008 cohort (SRR 5.80; 95% CI, 3.48-9.67). By contrast, male SRRs began to rise significantly from baseline in the 1949-1953 cohort (SRR 1.44; 95% CI, 1.15-1.81). Across cohorts, male SRRs continued to increase, with rates similarly culminating in the 2004-2008 cohort (SRR 4.55; 95% CI, 2.63-7.88).

Discussion: This study demonstrated a marked cohort effect on suicide rates in the US. Both sexes exhibited increased SRRs in recent cohorts, however this trend was most pronounced in the youngest female cohort, aligning with emerging research from the US and Canada documenting rising youth suicide rates, specifically amongst female youth. Potential factors contributing to rising suicide rates may include the increased popularity and usage of social media and heightened exposure to harmful depictions of suicide and self-harm within traditional media over the study period. These findings highlight emerging suicide trends among US youth, emphasizing the need for further research to examine factors contributing to suicide risk, with the ultimate goal of developing effective suicide prevention strategies for youth.

M57. WHAT IS THE LINK BETWEEN ENDOCRINE PARAMETERS, PLASMA LITHIUM CONCENTRATIONS, AND COGNITIVE FUNCTIONS AMONG INDIVIDUALS WITH AFFECTIVE DISORDERS AND RISK OF SUICIDAL BEHAVIOR? A STUDY PROTOCOL

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Background: Neuroimaging, genetic, and neuroendocrine findings support the existence of biological underpinnings related to suicidal behaviour and the need to identify acute, modifiable, and treatable clinical biomarkers that would provide substantial benefits in multidimensional suicide preventive strategies and treatment planning [1, 2].
Therefore, this study offers a unique way to better understand mechanisms that contribute to the risk of suicidal behavior.

Methods: A cross-sectional controlled study design will be used. All individuals, consecutively hospitalized for the treatment of affective disorders with suicidal behavior (group 1), hospitalized at for the treatment of affective disorders without suicidal behavior (group 2), and individuals without history of mental disorders or suicidal behavior attending for physical rehabilitation (group 3), will be invited to participate in this study. Inclusion criteria for the whole study population: 18 years of age and older; ability to understand the essence of the research and sign the informed consent form; understands, speaks, and writes in Lithuanian.
Exclusion criteria for the individuals are: organic mental disorders, schizophrenia, diagnosis of mental retardation, unstable somatic/neurological state, thyroid disorders or using thyroid medications, and using medication that contain lithium, pregnancy and breastfeeding; and for the control group: any mental disorder, history of suicidal behavior.

All study participants will be assessed for current mental disorders and cognitive function by a psychiatrist using structured clinical interview (MINI 7.0.0) and neuropsychological test (CANTAB). Biochemical blood samples will be collected for analysis of endocrine parameters (thyroid-stimulating hormone (TSH), free thyroxine (FT4), free triiodothyronine (FT3), thyroid peroxidase antibodies (Anti-TPO), prolactin, testosterone, sex hormone binding globulin (SHBG)), biochemical liver parameters (TBIL, DBIL, ALT, AST, GGT), kidney function biochemical parameters (Urea, Creatinine), and trace lithium concentration (Li).

Results: Highlights:

- This study offers a unique way to better understand mechanisms that contribute to suicidal behavior.
- The study could help to answer the question 'are specific biomarkers linked to affective disorder, to cognitive functions, or only to suicidal behavior?' as a specific behavior model.
- This cross-sectional study will limit the testing of causal relationship but will help to provide a model for associations of plasma lithium concentrations, endocrine parameters, cognitive functions, and risk of suicidal behavior in individuals with affective disorders.

Discussion: Our previous research on brain structural changes in subjects with suicidal behavior [3], thyroid axis functioning in suicidal individuals [4], and findings of the inverse relationship of lithium concentration in drinking water with suicide mortality rates [5] encourages us to hypothesize about existence of a biological parameters, related not only to the affective disorders, but to the risk of suicidal behavior.
Due to the scarcity of evidence and the conflicting findings among observational studies, we aim to be, to our knowledge, the first ones to explore the association of the natural plasma lithium concentration, thyroid axis hormones, and cognitive function with suicidal behavior in individuals with affective disorders. The evaluation of the endocrine parameters, plasma lithium concentrations, and cognitive functioning among individuals with and without affective disorders and suicidal behavior, and comparison to healthy control individuals, may help better understand the specific association among complex suicide risk factors.

M58. ASSOCIATION OF MATERNAL PREGNANCY INFECTIONS WITH OFFSPRING SUICIDE ATTEMPT AND MORTALITY: A DANISH NATION-WIDE STUDY

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Background: Maternal infections during pregnancy may impact offspring brain development and increase the risk of mental disorders, but their contribution to suicide attempt and mortality remains unclear. We investigated the association of offspring's exposure to maternal infections in pregnancy with suicide attempt and mortality in the general population.
Methods: A cohort design was applied to individual-level register-based data covering the entire Danish population. All persons born in 1953 or later and living in Denmark between 1980 and 2020 were included. Outcomes were inpatient or outpatient visits for suicide attempt and death by suicide obtained from administrative registers. Data on maternal infections in pregnancy were obtained from the Medial Birth registries since 1973. Poisson regression models adjusted for potential confounding factors were used to estimate Incidence Rate Ratios (IRRs) from Incidence Rates (IRs).
Results: A total of 2,430,630 individuals were followed up for 44,697,157 person-years. Overall, 29,911 (IR 66.9 per 100,000 person-years) individuals had one or more suicide attempts and 2,506 (IR 5.6 per 100,000 person-years) died by suicide. Overall, 368,077 (17.8%) children were exposed to maternal infections during pregnancy. After adjustment on sociodemographic characteristics and parental mental disorders, children exposed to maternal infections during pregnancy had a higher rate of suicide attempt (IRR 1.3,5 CI 1.31-1.39) and death by suicide (IRR 1.12, CI 1.02-1.24) when compared to non-exposed. For suicide attempt,

significant associations were identified for following specific infections: hepatitis (IRR 2.00, CI 1.68-2.37), genital (IRR 1.43, CI 1.34-1.43), respiratory (IRR 1.35, CI 1.31-1.39), and urological (IRR 1.27, CI 1.13-1.38). Compared to non-exposed of the same infection type, associations were statistically significant for infections due to viral and other (i.e., parasitic) pathogens (respectively IRR 1.22, CI 1.13-1.21, and IRR 1.22, CI 1.16-1.29) but not for bacterial pathogens (IRR 1.11, CI 0.90-1.37).
Discussion: The findings showed that in-utero exposure to infections was associated with later risks of suicide, pointing out to the long-term risk of early adversity on suicide. Understanding the biological and psychosocial mechanisms of these associations is important to inform prevention.

M59. MEDICAL ASSISTANCE IN DYING FOR MENTAL DISORDERS IN CANADA: LEGAL, ETHICAL CHALLENGES IN SUICIDE PREVENTION

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Background: Medical Assistance in Dying (MAID) for mental disorders as the sole underlying condition is set to become available in Canada in March 2024. The paper presents the summary of the ongoing debate and the potential impact of the expansion of MAID expansion on suicide prevention efforts.
Methods: This paper presents
a) the legal history related to Medical Assistance in Dying in Canada. In 2016,

b) the ongoing debate between Canadian psychiatry organizations on the legalization of MAID for mental disorders.

c) the ethical issues raised related to offering MAID when there are enormous barriers to mental health and addiction care.

d) the difficulties in determining irremediablity in mental disorders, a core criterion for MAID eligibility, in Canada.

e) the difficulties in differentiating a MAID request from suicide ideation among people suffering with mental disorders when death is not foreseeable.

Results: The majority of surveys conducted among psychiatrists in Canada demonstrate that a) most psychiatrists are in favour of MAID for physical health conditions when death is foreseeable, b) most psychiatrists are not in favour of offering MAID for mental disorders. Canadian policymakers have drafted criteria for MAID that do not have appropriate safeguards that prevent someone who has a treatable mental health problem from accessing MAID. For example, a person has to consider "reasonable treatment" but the individual does not have to take the treatment. The person does not have to necessarily wait for appropriate treatment. The Canadian Association of Suicide Prevention and Canadian Mental Health Association have publicly stated that they do not support the expansion of MAID for mental disorders.
Discussion: It is important for other countries to pay attention to Canadian policies related to Medical Assistance in Dying because other countries are considering legalizing MAID. In a matter of 7 years, there has been substantial expansion of MAID eligibility without the expansion of appropriate resources and treatment for mental disorders. Suicide Prevention researchers, clinicians, and policymakers around the world should be concerned about the impact of MAID expansion.

M60. ASSOCIATION OF NTRK2 GENE WITH SUICIDALITY: A META-ANALYSIS

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Background: Previous research has demonstrated that genetic factors play an important role in suicidal ideation and behaviours (SIB). However, the risk of SIB is likely contributed by many genetic variants. We have previously reported on the Brain-derived neurotrophic factor (BDNF) gene Val66Met polymorphism being associated with suicide attempt. We aimed to follow up with an investigation of the NTRK2 gene, which encodes for the protein Tropomyosin receptor kinase B/Tyrosine receptor kinase B (TrkB), a receptor for BDNF, for possible association with SIB.

Methods: We conducted a literature search using keywords “NTRK2”, “TRKB”, and “suicid*” in PubMed and Web of Science, and selected papers on single-nucleotide polymorphisms (SNPs), NTRK2, and SIB. We performed meta-analyses on both genotype and allele count data using the R package meta, followed by leave-one-out analysis, funnel plot, sub-group analysis, and meta-regression analyses.

Results: Our literature search yielded six samples with available summary data, and together with data on six additional sample sets with available individual-level data, we meta-analyzed 20 SNPs (total sample size of up to 2629 suicidal cases and 5838 controls). Suicide attempts were associated with rs1867283 genotypes (random-effects: odds ratio (OR)=0.73, 95% confidence interval (CI)=0.54-0.99), p = 0.04), and rs10868235 genotypes (random-effects: OR=1.34, CI = 1.05-1.72, p = 0.02), rs1147198 genotypes (fixed-effects: OR=1.38, CI=1.06-1.80, p=0.02), and rs1147198 genotypes (OR=1.36, CI=1.03-1.80, p=0.03).

Discussion: From the meta-analysis results, there are potential associations between NTRK2 SNPs and suicidal attempts. We will be presenting results: from additional analyses, including haplotype and SNP-SNP interaction analyses.

M61. MOST DIVERSE GENETIC STUDY OF SUICIDAL THOUGHTS AND BEHAVIORS TO DATE IDENTIFIES BOTH ANCESTRY-SPECIFIC AND CROSS-ANCESTRY RISK LOCI AMONG U.S. MILITARY VETERANS

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Background: Death by suicide accounts for nearly 800,000 deaths each year globally; however, the genetic basis of suicidal thoughts and behaviors remains largely unknown.
Methods: To help address this pressing issue, we conducted a cross-ancestry meta-analysis of four ancestry-specific genome-wide association studies (GWAS) conducted among U.S. military veterans, including 452,767 veterans of European ancestry; 121,118 veterans of African ancestry; 51,608 veterans of Latin American ancestry; and 8,285 of Asian ancestry. Ancestry-specific GWAS was performed separately in each of the four cohorts, controlling for sex, age, and genetic substructure. Meta-analysis was then performed to identify cross-ancestry risk loci. A total of 633,778 military veterans (9% female; 121,211 cases) were included in the cross-ancestry meta-analysis.
Results: Within the European-ancestry cohort, we identified 12 genome-wide significant (GWS) loci associated with suicidal thoughts and behaviors, including (among others) EXD3, ESR1, and DRD2. Gene-based tests identified 4 additional European-specific genes not identified through meta-analysis. EUR-specific risk genes were enriched for expression in brain tissue and for many GWAS catalog terms, including autism spectrum disorder or schizophrenia, neuroticism, and feeling guilty. Over-Representation Analysis (ORA) identified 20 FDR-significant pathways, including axon guidance; glutamatergic synapse; oxytocin signaling; morphine addiction; long-term potentiation; and long-term depression. Within the African ancestry cohort, one GWS loci was identified on chromosome 4 in PET112/GATB and subsequently replicated in a large international cohort. Similarly, within the Latin-American ancestry cohort, one GWS loci was identified at an intergenic locus on chromosome 4. No GWS loci were identified within the Asian ancestry cohort; however, ORA identified multiple FDR-significant KEGG pathways within the AFR, HIS subset, and ASN subsets, including 5 pathways that demonstrated enrichment across all four ancestries: axon guidance, cAMP signaling, focal adhesion, glutamatergic synapse, and oxytocin signaling; however, axon guidance was the only pathway that was FDR-significant across all five analyses. The cross-ancestry meta-analysis identified multiple GWS cross-ancestry risk loci that were concentrated in seven regions on chromosomes 2, 6, 9, 11, 14, 16, and 18. Top loci were largely intronic in nature, and five were independently replicated, including ESR1, DRD2, EXD3, DCC, and TRAF3. Gene-based tests identified 24 additional genes not identified in the meta-analysis. The cross-ancestry genes were significantly enriched for expression in brain and pituitary tissue. Gene-set analysis revealed significant enrichment for eight terms, all of which related to synapse and ubiquitination structure and processes. We also observed significant enrichment for eight GWAS Catalog terms (e.g., autism spectrum disorder or schizophrenia; bipolar disorder) and 13 KEGG pathways, including amphetamine addiction, axon guidance, and dopaminergic synapse. Taken together, these findings represent a significant advance in our understanding of the molecular genetic basis of SITB and provide compelling evidence for ESR1, DRD2, TRAF3, and DCC as cross-ancestry candidate risk genes.
Discussion: More work is still needed to replicate these findings and to determine if, and how, these genes might impact clinical care. Additional work is also needed to increase the diversity of GWAS cases. As expected, we observed a robust association between the number of GWS loci identified and the number of cases included in each of the four ancestry-specific GWAS.

M62. HIGH WET BULB TEMPERATURE, HEAT INDEX and AMBIENT TEMPERATURES' ASSOCIATION WITH INCREASED SUICIDALITY IN AN ENVIRONMENT OF SUMMER SUICIDE PEAK COUNTS

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Background: Following Foillet, et al, 2006, which showed excess death when maximum temperatures remained above a threshold during the French heat wave of 2003, we examine suicide counts during recent summers in the US state of Utah. Utah's smoothed suicide counts are highest during the summer months. Kjellstrom, et al, 2010 found thresholds associated with wet bulb temperatures that varied based on acclimatization.
Methods: From hazard analysis, superposed epoch analysis above thresholds differing for the annual March peak and the sustained summer high plateau of suicide counts is conducted for each of three measures of temperatures. The data is examined for apparent temporal displacement (are the suicides shifted forward in time followed by a trough?) versus overall increased suicide loss. The data are additionally examined for differential impacts on two populations of special interest, the unhoused those of identified Hispanic ethnicity.
Results: We see a summer only peak for the Hispanic population and a positive association between "excessive" wet bulb temperature and suicide counts.
Discussion: Increasing summer temperatures with periods of sustained wet bulb temperatures above thresholds known to induce physical harm also have severe mental health impacts. The difference between the somewhat limited spring season peak and the sustained higher counts in the summer months in the mid-latitude environment may be explained as an acclimatizing need for the first heat following winter versus multiday heat stress that tests biological limits, particularly for those without access to relief. Policy implications are clear: at a minimum, cooling stations or temporary shelters for those without the means to avoid sustained exposure to the heat can be implemented during times of forecasted high wet bulb temperatures, similar to warming shelters during the cold weather periods in winter.

M63. GLOBUS PALLIDUS SHAPE ALTERATIONS ASSOCIATED WITH SUICIDE IDEATION IN LATE-LIFE DEPRESSION

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Background: The elderly have higher suicide rates than younger populations in most countries. Neurocognitive deficits are associated with vulnerability to suicidal ideation and behaviors. However, corresponding neural correlates are poorly understood. This study aims to characterize the neural basis of suicidal ideation in late-life depression.
Methods: Structural magnetic resonance imaging (MRI) was used to measure morphometric differences in patients with late-life depression: 29 with current suicidal ideation (suicide ideators (SI) mean age=66.7±6.9 years old, 20% male) and 25 with no current suicidal ideation (patient controls (PC) mean age=65.3±4.8 years old, 24% male). MRI data were processed using the MAGeTbrain pipeline to generate volumetric, cortical thickness, and surface-based segmentations and morphometry estimates across the striatum, thalamus, and pallidum. General linear models were used to predict volume, surface displacement and surface area to determine differences between groups were performed in R/3.5.1 with RMINC/1.5.2.2 co-varying for age, sex, education, and depression severity (HAMD-17), multiple comparisons were corrected using FDR.

Results: Groups did not differ in age, sex, or education. Linear modelling of all volumetric segmentations and cortical thickness respectively were not statistically significant after correction for multiple comparisons. Nevertheless, posterior-superior regions of the left and right globus pallidus, more specifically the external segment of the globus pallidus had increased surface area in current SI compared to PC. Hedges g* effect sizes were large in both hemispheres: g*=0.9226 in the right dorsoposterior pallidum and g*=0.8652 in the left dorsoposterior pallidum.
Discussion: Alterations of the bilateral superior posterior regions of the globus pallidus, specifically a larger surface area, may be associated with vulnerability to suicidal ideation in late-life depression.

M64. ROLE OF CELL-MEDIATED IMMUNITY IN MDE PATIENTS WITH HISTORY OF SUICIDALITY

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Background: There is a need to identify relevant biomarkers for suicide risk (SR) in patients with MDD to guide a personalized medical approach and improve early detection and intervention chances. A compelling body of evidence has emerged in recent years, suggesting the immune system's role in developing depressive symptoms and SR. Considering that a history of suicidality determines SR and there is a significate bidirectional cross-talk between systemic and brain immune cells and that peripheral immune cells may serve as highly informative markers for central processes, we aim to compare the distribution and activation state of circulating monocytes in MDD patients with and without history of suicidality, to find possible biomarkers of SR.
Methods: This multicentric case-control study started in March 2019 and finished in December 2022. To be included, patients should meet the following criteria: (a) age between 18 and 65 years, (b) diagnosed with DSM 5 MDD or BPD by MINI. Patients were excluded if they: (a) have a comorbid diagnosis by MINI, (b) have a diagnosis of borderline personality disorder by SCID-II, or (c) have a diagnosis of substance use disorder in the last 30 days.
Healthy controls (HC) between 18 and 65 years of age were included. Exclusions for HC were: (a) having the diagnosis of any mental disorder by MINI, (b) having a first-degree relative diagnosed with a mood disorder. Exclusions for all participants (patients and HC) are (a) the presence of an active physical illness with an inflammatory component, (b) receiving medication with anti-inflammatory or immunomodulatory properties, (c) getting infected with SARS-CoV-2 in the 30 days previous to the evaluation, (d) having received the vaccine for SARS-CoV-2 or any other vaccine in the 30 days previous to the evaluation, (e) being pregnant, breastfeeding, having had an abortion during the previous 30 days to the evaluation.

Four groups of participants will be defined. Lifetime history of suicidality and any recent (last month) suicidal ideation and/or behavior were measured with the Columbia-Suicide Severity Rating Scale (C-SSRS).

Group 1: Patients with a lifetime history of suicidality.

Group 2: Patients with any recent suicidal ideation and/or behavior.

Group 3: Patients without any history of suicidality.

Group 4: healthy controls.

Circulating monocytes were analyzed in peripheral blood employing combination of antibodies and defined as classical, non-classical, and intermediate monocyte by flow cytometry.

Normal variables were compared using the ANOVA and non-normal ones were compared using the Kruskal-Wallis test. When variables showed a significant difference between groups, pairwise comparisons were made using the Holm-Bonferroni adjustment. P value < 0.05 was considered significant.

Results: 121 participants were recruited, Group 1: n=42, 34.7%; Group 2: n=21, 17.4%; Group 3: n=16, 13.2%; Group 4: n=42, 34.7%. There were no significant sociodemographic differences between groups.
The monocytes absolute count increased in Group 1 vs Group 4 (p=0.008) and in Group 2 vs Group 4 (p=0.045). The percentage of classical monocytes decreased in Group 1 vs Group 4 (p <0.001). The percentage of intermediate monocytes is higher in Group 1 vs Group 4 (p<0.001) and in Group 2 vs Group 4 (p<0.001). The percentage of non-classical monocytes is higher in Group 1 vs Group 4 (p<0.001) and in Group 2 vs Group 4 (p<0.001).

Discussion: While comparing percentages of three different monocyte subsets, clear differences in their distribution among the control and patient with a history of suicidality groups were appreciated, indicating that patients with a lifetime or recent history of suicidality show an activated monocyte profile, a possible SR biomarker.

M65. THE IMAGINE STUDY: INVESTIGATING MOTIVATIONAL ABNORMALITIES GUIDING SELF-HARM BEHAVIOUR IN YOUNG PEOPLE.

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Background: Self-harm is a reinforcing behaviour with initial evidence suggesting possible commonalities with neurocognitive mechanisms involved in addiction. The iMAGine study aimed to investigate the presence of motivational processes in young people with self-harm. In particular whether self-harm and associated cues may become incentivised, and exposure to these cues may trigger approach towards self-harm, which could contribute towards persistence of the behaviour. Aberrant sensitivity for general rewards may also confer risk for self-harm.
Methods: Fifty-four young people aged 16-25 with self-harm in the past year (SH), 57 young people who have never self-harmed matched to the SH group on depression and anxiety (DA) levels, age and sex, and 51 healthy controls (HC) matched on age and sex, completed a Self-harm Dot Probe Task, and a modified Incentive Delay Task with images of self-harm, images of happy social scenes, and money as rewards. Task performance (attention bias index, accuracy and money won) was analysed using Kruskal-Wallis tests and ANOVAs.
Results: The SH group avoided self-harm cues in the Dot Probe Task compared with HCs, but not the DA group. The SH group performed with greater accuracy across the whole Incentive Delay Task than the DA group, although this was not specific to self-harm trials, and also won more money than HCs, but not the DA group. Exploratory correlational analysis showed that individuals in the SH group who endorsed higher positive reinforcement function of self-harm and more positive emotional responses to self-harm imagery had faster and more correct responses to self-harm cues in the Incentive Delay Task.
Discussion: We did not find evidence for incentive sensitisation to self-harm stimuli overall in a community sample of young people with self-harm. However, certain self-harm characteristics (function, imagery) may may strengthen motivation to engage in the behaviour.

Further, it may be possible that avoidance of self-harm cues may reflect conflict around self-harm behaviour, consistent with ambivalence models supporting approach-avoidance patterns in addiction.

M66. ALTERED NEURAL ACTIVITIES IN EMOTION REACTIVITY AND REGULATION IN NONSUICIDAL SELF-INJURY: AN FMRI STUDY

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Background: Emotion dysregulation is a central feature of nonsuicidal self-injury (NSSI), wherein individuals engage in self-injurious behaviors as a maladaptive coping strategy to regulate unwanted emotional experiences. Despite the high prevalence of NSSI, the underlying neural mechanisms of emotion regulation in this population remain poorly understood. In this study, we aimed to examine neural alterations during the processing positive and negative emotions in individuals engaged in NSSI.
Methods: We recruited 29 individuals with a history of NSSI and 25 age, sex, and handedness-matched control participants to complete an emotion regulation paradigm (ERP) while undergoing fMRI scanning. During ERP, participants were asked to either attend to their emotions elicited from presented images (attend condition) or to regulate emotion by cognitive reappraisal strategies, distancing (regulate condition). The ERP consisted of negative, positive, and neutral pictures from the international affective picture system (IAPS) and the open affective standardized image set (OASIS). The difficulties in emotion regulation scale (DERS) was used to measure the severity of emotion dysregulation. Statistical parametric mapping 12 was used for preprocessing and analyzing the BOLD signal of fMRI data, and statistical analyses for correlations between neural activities and severity of emotion dysregulation were performed using SPSS version 25.
Results: During the negative emotion reactivity condition (attend negative > attend neutral), individuals with NSSI exhibited increased neural activation in the right parahippocampal gyrus and superior temporal gyrus compared to the controls. NSSI individuals also showed greater activation of the right middle temporal gyrus and left superior temporal gyrus in the positive emotion reactivity condition (attend positive > attend neutral). In addition, during negative emotion regulation (regulate negative > attend negative), control individuals showed enhanced activation in the left inferior frontal gyrus, left supplementary motor area, right putamen, right lingual gyrus, and right superior temporal gyrus. The control group also exhibited enhanced activation in the left ventral striatum, ventromedial prefrontal cortex, and right superior temporal gyrus during the positive emotion regulation condition (regulate positive > attend positive). Higher DERS scores in the NSSI group were significantly correlated with increased superior temporal gyrus activation during the negative emotion reactivity condition and decreased supplementary motor area activation during the negative emotion regulation condition, respectively.
Discussion: These findings provide the first evidence of altered neural activities in the reactivity and regulation of positive and negative emotions in individuals with NSSI and its correlation with emotion dysregulation. Understanding these neural mechanisms may improve our comprehension of NSSI psychopathology and facilitate the development of tailored interventions for individuals who engage in NSSI.

M67. OCCURRENCE AND TRAJECTORY OF SUICIDAL IDEATION IN OTHERWISE PSYCHIATRICALLY HEALTHY INDIVIDUALS

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Background: Suicidal behavior is often conceptualized as a consequence of psychiatric illness. Yet, psychological autopsy studies show that 5-10% of suicides in western countries have no mental disorder, with estimates as high as 40% in low and middle income countries. This suggests that suicide attempts and ideation (SI) occur in the psychiatrically healthy as well. We characterized SI in healthy volunteers (HVs) and Major Depressive Disorder (MDD) patients and compared SI trajectories and the impact of negative life events on SI in both groups.

Methods: . Patients (N=80) and HVs (n=42) underwent full SCID I and II assessment and provided 7 days of Ecological Momentary Assessment (EMA) data about SI (9 adapted Scale for Suicidal Ideation items) and 8 life event types. Repeated-measures Wilcoxon rank test for clustered data compared HV and patient EMA SI scores. Longitudinal mixed effects logistic regression models, with AR(1) correlation structure for within subject observations, compared HV and patient reports of SI and life events. Mixed effects linear regression models, with AR(1) covariance structure, compared HVs' and patients' SI score change from the previous epoch's SI score when each of the 8 life events occurred relative to no event.

Results: HVs had no lifetime Axis I or II diagnoses or first-degree relatives with Axis I disorders. HVs reported less frequent SI than MDD patients (OR=7.72, p
MDD patients reported more life events than HVs for negative life events (7 of 8) [odds ratios from 3.5 (CI=2.4-5.0) to 17.5 (CI=3.1-37.8); all $p < 0.001$] and had increased SI ($0.0001 < p < 0.0472$) in response to them. HVs were less affected by life events, reporting minor SI increases only in the context of neglect ($p < 0147$).

Discussion: Although SI and SAs are documented among psychiatrically healthy individuals, scientific attention to these observations has been scant. In a psychiatrically well-characterized sample, measurement of real-time SI found that both MDD patients and HVs reported SI and both initially manifested passive SI (decreased wish to live). While this may be viewed as reassuring, epidemiologic studies show that "desire for death," another type of passive SI, is associated with suicide attempt risk even when SI (thinking about killing yourself) per se is absent. Some reports indicate that desire for death may predict suicide. Life events may be more common among MDD patients than HVs, and MDD patients are also reported to be more sensitive to the environment and may construe events that others view as neutral, as disappointments or neglect. As expected, we found patients reported more life events and significantly greater SI in response to them. Notably, not only did HVs report fewer life events, but they responded to most with no SI, except for losses, which evinced minor SI increases.
Given that HVs were carefully screened for Axis I and II disorders and family history, findings support the hypothesis that SI occurs in psychiatrically healthy individuals just as suicide does. This study validates the importance of real-time SI assessment and implies that suicide risk screening that is focused on those with mental disorders may be too narrow an approach.

M68. EXPLORING SUICIDE-RELATED KEYWORDS ON A PROFESSIONAL-ORIENTED SNS PLATFORM AND THEIR LINK WITH ACTUAL SUICIDE RATES IN SOUTH KOREA

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Background: This study investigates suicide-related keywords in posts on a professional-oriented SNS platform (BLIND) and explores their potential association with actual suicide rates.
Methods: Using Python's Selenium package, we collected posts from the SNS platform (2018-2022). Morphological analysis was performed on suicide-related keyword-containing posts (N=52020) using the Konlpy (Korean Natural Language Processing) package. The relationship with monthly suicide rates among working age population was explored.
Results: Representative suicide-related keywords (e.g., depression, suicide, wanna die) exhibited a significant correlation in monthly frequency. However, the frequency of suicide-related posts did not significantly associate with monthly suicide rates. No notable findings emerged regarding authors' employment types.
Discussion: While no significant correlation was found between the frequency of suicide-related keywords and suicide rates, these keywords exhibited a simultaneous occurrence pattern. Proactive monitoring and addressing of suicide discussions on social media remain crucial for comprehensive prevention efforts, promoting awareness, support, and a positive online environment.

M69. SMARTPHONE-BASED SUICIDE PREVENTION RESEARCH WITH HISPANIC ADULTS

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Background: Suicide among Hispanics in the United States is a growing public health problem that has received little attention. Hispanics are the largest ethnic/racial minority group in the United States and are expected to constitute over 25% of the nation's population by 2045. Suicide rates among U.S. Hispanics have risen drastically in the last two decades, especially among women. Research since the 1990s has indicated an increased risk for suicide ideation and attempts among Hispanic adolescent girls compared to their non-Hispanic counterparts. Accordingly, we can soon anticipate a large rise in suicidal behavior among Hispanics as these adolescents reach midlife (45-55 years of age) – a time of already heightened risk. Problematically, suicide among Hispanic adults remains relatively understudied and little is known about how to prevent suicide in this population. Hispanic adults in mid-life are also more likely to be foreign-born and Spanish-speaking than their younger counterparts, creating geographical and linguistic barriers to inclusion in suicide prevention research. Smartphones have the potential to overcome geographical and linguistic barriers to suicide prevention research but are underused in research among adults in mid-life and older.
Methods: The current presentation will discuss the challenges and opportunities to using smartphone-based active and passive (e.g., GPS/ambient audio) ecological momentary assessment (EMA) with Hispanic adults in mid-life who are primary Spanish-speakers. Data will be presented from a feasibility/acceptability EMA pilot study (n=16) and an ongoing suicide prevention clinical trial (n=60) (using EMA to measure outcomes) with Hispanic adults in mid-life at risk for suicide. Participants across both studies are majority Puerto Rican (~90%), female (~80%), and born outside of the U.S. mainland. Participants in both studies are provided with study smartphones programmed to receive 4 semi-random EMA prompts

(occurring every 3 hours between 10:00am and 10:00pm) daily for 14-days assessing suicidality and associated risk factors.

Results: Adherence to EMA is good (74%) and comparable to EMA adherence rates in English speaking (adolescent/younger adult) populations. A majority of participants consented to active and passive remote assessments and reported the acceptability of study procedures. Adherence to EMA was high and not associated with symptom severity. EMA instances completed were not associated with symptom severity at follow-up. Average point-to-point variability in suicide ideation and risk factors were moderate to high, respectively. EMA captured more dramatic changes than standard baseline and follow-up assessments.

Discussion: Results: provide preliminary support for the feasibility and acceptability of using smartphones to assess suicide risk in a real-time and real-world setting among high-risk Spanish-speaking adults. Challenges to smartphone-based suicide prevention research with adults in mid-life will be discussed, including technological literacy and availability, stigma/distrust, methodological limitations, and ethical considerations. The benefits of using both passive (GPS/ambient audio) and active (subjective self-report) EMA to assess outcomes (e.g., suicide risk; social risk factors) in this population will be discussed, as well as directions for future research (e.g., ecological momentary intervention).

M70. THE CONTRIBUTION OF EXPOSOMIC RISK TO SUICIDE ATTEMPTS AMONG MARGINALIZED YOUTH

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Background: While the etiology of suicide is not fully understood, it is known to be influenced by a combination of distal and proximal environmental stressors. One approach of modeling environmental burden is through calculation of exposomic risk scores that aggregate the weighted sum of adverse exposures. Because environmental stressors disproportionately affect marginalized populations, we hypothesized that differences in exposomic risk may help explain disparities in youth suicide attempts.

Methods: We analyzed data from 2 American cohorts:

(i) The Adolescent Brain Cognitive Development Study (ABCD) that follows N=11,876 diverse youth (Mean age 12, 47.8% Female, 21.2% black, 20.6% Hispanic, 2% gender minority [GM]), with 3% rate of self-reported past suicide attempt.

(ii) Electronic health records of N= 19,803 youth presenting at the emergency department of Children's Hospital of Philadelphia (CHOP-ED, Mean age 15.3, 65.4% Female, 56.2% Black, 7% Hispanic, 0.7% GM), with 10.2% rate of suicide attempt.

In each cohort, we first conducted Exposome-Wide Association Study (Ex-WAS) to identify exposures associated with suicide attempts. ExWAS systematically assessed 311 exposures in ABCD and 10 exposures in CHOP-ED for their association with suicide attempt in a data-driven manner (without apriori hypotheses). We then calculated aggregate exposomic risk scores (ERS) that sum the weighted risk exposures for suicide attempt for each individual.

Lastly, we compared ERS across diverse populations in each cohort (i.e., differential exposures) and tested for interactions of ERS with race/ ethnicity/GM groups in association with suicide attempt (i.e., differential effects).

Results:

There were marked disparities in suicide attempt rates in the 2 cohorts. In ABCD, compared to non-Hispanic White youth (2.3% suicide attempt), non-Hispanic Black youth and Hispanic youth endorsed more suicide attempts (5.0% and 3.8% respectively); GM youth reported more suicide attempts compared to non-GM youth (18.1% vs. 2.8%, respectively). Adjusting for age and sex, there was a significant association for Black race, Hispanic ethnicity and identifying as GM with suicide attempt (odds ratio [OR] = 2.3, 1.5 and 8.0, respectively, all P's<.05). In CHOP-ED, similar trends were observed, with higher suicide attempt rates among non-Hispanic Black (12.3%) and Hispanic (14.3%) youth compared to non-Hispanic White youth (8.3%), and among GM (34.3%) compared to non-GM (10.0%) youth. Adjusting for age and sex, there was a significant association for Black race, Hispanic ethnicity and GM identity with suicide attempt (OR = 1.5, 1.7 and 4.7, respectively, all P's<.001).
When comparing exposomic risk, we found evidence for differential exposure among marginalized youth in both ABCD and CHOP-ED cohorts, whereby the ERS of non-Hispanic Black youth and of Hispanic youth was greater compared to non-Hispanic White youth, with small to medium effect sizes (all P's< 0.02), and the ERS of GM youth was greater than non-GM youth with large effect sizes (P's<0.001). We did not find evidence for differential effects of the association between exposomic risk and suicide attempt across marginalized groups (for all ERS X race/ethnicity/GM interactions, P's>0.1).**Discussion:** Environmental stress is critical for suicide attempt risk. Novelmethods of estimating aggregate environmental adversity using ERS scan help illuminate drivers of disparities in adolescent suicidal behavior. This study, in two independent large American cohorts, suggests that differential exposure to exposomic risk, and not differential effects, contributes to the elevated rates of suicide attempts among marginalized US youth.

M71. EDUCATIONAL REPRESENTATIVES: A CRUCIAL PERSPECTIVE IN ADOLESCENT SUICIDE REVIEW

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Background: Adolescent suicide mortality data surveillance through the U.S. National Violent Death Reporting System (NVDRS) most often includes data extracted from death certificates, coroner/medical examiner reports, and law enforcement reports. In 2005, the U.S. National Center for Fatality Review and Prevention created a data center for child death review (CDR) teams, which includes suicides, that is crucial for documenting and understanding adolescent deaths across the U.S. CDR teams utilize interdisciplinary records and encourage collaboration between law enforcement, judicial and medical professionals, public health officials, medical examiners, and guest perspectives at the discretion of the review team.
One such review team guest is a school representative, such as a counselor—an under-utilized but crucial perspective in CDR. According to a 2023 publication utilizing National Fatality Review-Case Reporting System (NFR-CRS) data, only 28.4% of child suicide death review team meetings included a school representative, and only 9.2% of reviews had any access to school records at all. Schools remain places where adolescents spend nearly half of their lives. Further, alongside child abuse and family discord, school concerns are one of the most reported risk factors in adolescent suicide. The NRF-CRS data reports a 56% occurrence of school problems in suicide deaths, double the 28% rate in non-suicidal deaths. School data and involvement is a necessary and advantageous tool for CDR, particularly for suicide.

Methods: Our own experiences with an adolescent suicide review team have made clear the need for school perspectives. Our team was established by representatives from the regional

education agency and the county's largest public school district. School representatives have provided invaluable insight on their own observations of adolescents in their school, their family dynamics, and the circumstances and context leading up to their death; information that was missing from the coroner/medical examiner report. We will share anonymized examples of cases in which the contributions of a school representative revealed peer victimization, truancy, issues around sexual orientation and gender identity, and social supports (e.g., caring adults or teachers, friends); all of which were undocumented in the coroner/medical examiner report.
Results: The utility of these school testimonials notwithstanding, there are challenges and barriers that need to be addressed to scale efforts for wider suicide prevention. We will explain these challenges that have arisen in our review team experience, including school staff reluctance due to fears about liability and privacy; issues around complicated grief; timing of the review in relation to recency of the loss; and sharing confidential information from the review team to the official documents forwarded to NVDRS.
Discussion: National suicide mortality surveillance systems strive to gather as much information about the decedent as reasonably possible. In the U.S., nearly all these data are gleaned from statements from next-of-kin gathered by death investigators and law enforcement. Richer and more detailed narratives can improve suicide prevention, and it is imperative that school representatives' knowledge about adolescent decedents are included in reviews and that those data make their way into NVDRS.

M72. ATTORNEYS ON THE FRONTLINES: A MIXED-METHODS: STUDY OF FAMILY LAW ATTORNEYS' EXPERIENCES AND OPINIONS ABOUT SUICIDE PREVENTION

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Background: Negative life events (e.g., bankruptcy, divorce, job loss) are common risk factors for death by suicide and often require legal system involvement. Specifically, family law attorneys work constantly in emotionally-charged situations distinct from other legal specialties. The U.S. National Strategy for Suicide Prevention identified nonclinical industries, including family law, as key gatekeepers for suicide prevention. Yet, family law attorneys' experiences and advice for suicide prevention efforts are not well-documented, so opportunities are missed to improve gatekeeper training. This mixed methods: study explored family law attorneys' experiences with clients at-risk for suicide, barriers unique to family law, and suicide training recommendations.
Methods: Qualitative data are from interviews with attorneys (n=17) and quantitative data from an online survey with a convenience sample of attorneys (n=177). They were recruited through e-mail via publicly available lists of attorney contacts and State Bar association listservs.
Results: In the qualitative study, most (64.7%) were women, and the average age was 57.1 years. Participants reported an average of 27.8 years (range 8-45 years) of experience in family law practice. Vexing themes emerged from attorneys recalling, at times, harrowing experiences with clients with suicidal thoughts/behaviors and having little to no training about mental health during law school. Many relayed feeling their "hands were tied" and could not escalate help or notify others about a client's mental health concerns. This theme co-occurred with a theme of "ethical quandaries" of attorney-client privilege, confidentiality, and fears of jeopardizing their client's case. Feeling like their "hands were tied" also related to a theme of "across the table," in which attorneys recounted experiences when the opposing side's client appeared at risk for

suicide or died by suicide; situations in which they felt they could not intervene. To bridge the gap in training, attorneys suggested using current requirements around continuing legal education, outreach to students during law school training, and working with State Bar associations to vet resources specific to family law attorneys. In the online survey, 60% were women, most identified their race as white (84.1%), the average age was 53.2 years, and most (89.8%) were in their position for more than 5 years. The majority (70%) had worked with a client at risk for suicide at some time in their career, and 33% reported working with such clients in the past 6 months. Over one-third (37.3%) had experienced a client die by suicide, and 24.3% had experienced the opposing side's client die from suicide. Only 26% of respondents reported receiving suicide prevention training. The three most highly endorsed prevention strategies were a website specific to what attorneys can/should do for at-risk clients (46.9%), printed materials that can be given to clients (45.8%), and web-based training seminars (42.9%). The lowest rated strategies were calling a hotline (30.5%) or someone in their profession for advice (27.1%).

Discussion: Family law is an industry long known to be exposed to suicide but rarely has been engaged in prevention compared to clinical industries. To our knowledge, this is one of the largest research studies yet focused on client suicide prevention for family law attorneys. Exposure to client suicide is very high; during their careers, 42% had a client or the opposing side's client die by suicide. Further research should explore how suicide prevention training can be adapted for the unique profession of family law. Web-based training focused at law schools and continuing education platforms may facilitate trials to test efficacy and effectiveness.

M73. EXPLORING SUICIDAL IDEATION WITHIN INDIVIDUALS EXPERIENCING HOMELESSNESS: APPLYING THE INTERPERSONAL THEORY OF SUICIDE

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Background: Individuals without housing are at a 10-times higher risk of death by suicide compared with the population at large (National Healthcare for the Homeless Council, 2018). Despite this, little research has investigated suicidality or the application of theories of suicide within this population. This study aims to investigate the interpersonal theory of suicide (IPTS) (Joiner and Silva, 2012) among individuals without housing.

Methods: Participants were recruited from a men's homeless shelter in the Bronx, New York. The sample for this study consists of 30 individuals, all of whom were assigned male at birth and identified as male at the time of the study. All contacted individuals have some experience with homelessness, ranging from 0-6 months (35.7%, n=10) to more than 2 years (40%, n=13). The racial makeup of the study sample was 46.7% (n=14) African American, 26.7% (n=8) Hispanic/Latino, 20% (n=6) Mixed Race, 3.3% (n=1) White, and 3.3% (n=1) Asian. The hypotheses in this study were tested using regression analysis, bivariate correlations, mediation, and moderation analyses.

Results: NSSI frequency was not associated with fearlessness about death, $\beta = .04$, $t(24) = 0.19$, $p = .85$. Results: indicated no significant relationship between perceived burdensomeness (PB) and increased suicidal ideation, $\beta = -0.02$, $t(26) = -0.11$, $p = .95$. Findings indicated that thwarted belongingness (TB) was significantly associated with increased suicidal ideation, $\beta = 0.46$, $t(21) = 2.33$, $p = .03$. A mediation analysis was performed using PROCESS with a proposed mediating variable of social isolation. Though the direct effect of thwarted belongingness on suicidal ideation was significant $t(16) = 2.31$, $p = .04$, the indirect effect of

social isolation was not significant, 95% bootstrapped CI = (-1.51, 1.66). A moderation analysis was performed to assess the IPTS's components of PB and TB. The interaction between perceived burdensomeness and thwarted belongingness was found to be nonsignificant, B = 2.38, SE B = 3.14, 95% CI p = .46.
Discussion: The results: of this study indicate that the IPTS does not explain the high rate of suicidal ideation and behavior within the unhoused community. However, because there are little to no other studies focusing on this issue, the findings specifically surrounding thwarted belongingness and social isolation are key in determining how to best support unhoused individuals within a shelter setting. Moving forward, it is essential that additional research on this subject is conducted to better understand, address, and treat suicidal ideation within the unhoused community.

M74. PREVENTING SUICIDAL AND SELF-INJURIOUS BEHAVIOR IN CORRECTIONAL FACILITIES: A SYSTEMATIC LITERATURE REVIEW AND META-ANALYSIS

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Background: Rates of suicide and self-harm are elevated in carceral institutions. Inmates are a vulnerable group since they are exposed to multiple risk factors. This paper critically reviews empirical research on programs to prevent suicidal and self-harmful behaviors in correctional facilities and summarizes effect sizes across studies.
Methods: We searched PsychINFO, PubMed, IEEEXPLORE and the CRISE Documentation Centre Database to identify relevant articles published before June 2022. Inclusion criteria were: peer-reviewed and with outcome data on effectiveness of prevention activities. Two reviewers independently assessed 905 articles to determine inclusion eligibility. Quality was assessed by two independent reviewers using the Quality Assessment Tool for Quantitative Studies. Meta-analyses using random-effect models were used to pool effect sizes for each outcome. This review was conducted in accordance with PRISMA guidelines.
Results: Twenty-four of the 905 articles, published between 1980 and 2022, were included. Studies were frequently conducted in the United States (n=13; 54%) and used varying study designs; most frequently pre-post with no control group (n=9; 38%). Sample sizes and interventions varied considerably. Most were of moderate quality (n=21; 88%). On average, prevention programs in correctional facilities were effective in decreasing suicide deaths (pooled rate ratio of 0·35 [95% CI 0·23 to 0·55; p <0·001]; I2=68·01%), incidents of self-harm (pooled Hedges'g of -0·54 (95% CI: -1·03 to -0·05; p=0·031]; I2=81·34%), and suicidal ideation (pooled Hedges'g of -0·39 [95% CI: -0·65 to -0·14; p=0·003]; I2=47·09%).
Discussion: Prevention activities are effective in reducing suicide death, self-harm and suicidal ideation in correctional settings. Multicomponent programs, which include several preventive activities, seem to be most effective in reducing suicide deaths. Future evaluation studies should control for confounding variables by including control groups, having larger samples and limiting attrition. Standards for suicide prevention in jails and prisons should be included in National suicide prevention strategies.

M75. A NEW FRAMEWORK FOR LIVED EXPERIENCE ENGAGEMENT IN SUICIDE PREVENTION RESEARCH AND APPLICATION TO A SUICIDE

PREVENTION TRIAL FOR MEN WHO ARE NOT IN CONTACT WITH HEALTH SERVICES

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Background: More than 50% of people who die by suicide have not been in contact with formal mental health services prior to their death. The rate of people who fly ‘under the radar’ of mental health services is higher among men than among women, indicating a need to improve strategies and services targeted towards men who experience suicidal thoughts.
Engaging men with lived experience of suicidality in research and service design is important for understanding why men may choose not to engage with support services, and for identifying new ways to connect men with the range of support services that are available. A growing body of evidence highlights the benefits of lived experience engagement for increasing research relevance and impact. Calls from government and peak bodies nationally and internationally for greater levels of partnership between people with lived experience and researchers have increased efforts to undertake lived experience engagement. However, best practice guidelines often provide steps for ‘what to do’, not ‘how to do it’, leaving many people with lived experience who are consulted on research feeling disempowered and re-traumatised despite best intentions of professionals. Integrating a lived experience perspective into research methods effectively, requires careful planning and a relational approach to engagement practices.

Therefore, we co-designed a Lived Experience Engagement Framework to build the capacity of researchers to understand, plan and engage in what we call ‘safe and effective’ lived experience engagement. In this talk, we describe this new framework and outline how our experiences engaging men with a lived experience of suicidality highlighted the need for a Framework which builds the knowledge, understanding and skills of researchers to engage with people with lived experience from the community.

Methods: The ‘Under the Radar’ trial is a randomised controlled trial (currently underway) which examines the effectiveness of a brief video-based messaging intervention for encouraging engagement with support services by men with suicidal thoughts who are not in receipt of formal support (N=380). The trial compares the effectiveness of five different video messages, the content of which was informed by systematic reviews and survey studies, and with the input of men with lived experience of suicidality.

Results: Results from an evaluation of the co-design process employed in Under the Radar informed the development of a new Lived Experience Engagement Framework for research The evaluation highlighted a need to plan processes for establishing and maintaining relationships as well as effective methods to engage with people with lived experience. Key processes include developing governing principles to work by with people with lived experience, establishing a clear and shared understanding and expectations for the research methods and outcomes, and processes for identifying and addressing ‘power imbalances’ between professionals and community members in decision making structures.

Discussion: The Lived Experience Engagement Framework outlines a structured process for addressing key knowledge, attitude and practice requirements to effectively engage with people with lived experience, while ensuring the experience is safe and rewarding for everyone involved.

For the benefits of lived experience engagement in research to be actualized, there needs to be more investment in establishing best practices for researchers and people with lived experience to partner together on improving outcomes for people impacted by suicide.

M76. ADOLESCENT AND YOUNG ADULT AWARENESS, HELPING AND IMPACT OF THOUGHTS OF SUICIDE AMONG FRIENDS AND FAMILY: UNDERSTANDING THE COMPLEX CHALLENGES YOUTH FACE

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Background: While suicide rates for young people continue to be alarmingly high, a growing body of research also documents the high rates of awareness of thoughts of suicide among members of young people's social networks. Importantly, research shows that such exposure carries its own adversity burden for youth.
Methods: This presentation will report baseline data from a national longitudinal study of adolescents and young adults (ages 13-22) in the United States (N=3,750). Participants were recruited online through advertisements on social media.
Results: Eighty-six percent knew someone who had thoughts of suicide. Details were gathered for 700 unique incidents; 49% involved a friend they knew in person, 15% a friend they only knew online, 9% a romantic partner (or -ex), and 7% a brother or sister. Having thoughts of suicide was often not the only concern youth knew about with 77% saying they were aware of at least one additional thing the person was struggling with, including child abuse or neglect from a caregiver (21%), drug or alcohol problems (10%), being discriminated against (12%), relationship break-up (17%), an eating disorder (19%), bullying (17%), and dating violence (4%) – to name a few. On average, youth knew about 2.5 (SD=2.5) different additional concerns. Regression analyses suggest a linear relationship between the number of additional concerns one is aware of and how 1) upset and 2) afraid the participant felt about this person's thoughts of suicide. Odds of helping (reported by 65% of those with exposure) also increased with each additional concern the youth knew about (compared to those youth who did not know about any additional concerns) with those youth aware of 5 or more other concerns having a 4.8-fold increase in odds of helping that person.
Discussion: Implications for public health initiatives in communities include the need to de-silo our prevention curricula to connect skill building across key problems that adolescents face including family stress, relationship abuse, as well as suicide. Importantly, prevention efforts need to address the impact of suicidal ideation on the social networks in which youth live, learn, work and play.

M77. TALK SAVES LIVES FOR CORRECTIONS STAFF: STATEWIDE ROLLOUT AND EVALUATION

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Background: Suicide remains the leading cause of death in jails and rates have increased in prisons in recent years. To redress this issue, the American Foundation for Suicide Prevention (AFSP) developed the Talk Saves Lives: An Introduction to Suicide Prevention in the Correctional Environment (TSL – Corrections) presentation to educate corrections officers and

staff on (1) the scope of the issue of suicide, (2) recognizing the risk factors and warning signs, (3) help-seeking for both self and others, and (4) understanding facility-specific communication and linkage to care procedures between custody staff, unit teams, nursing, and mental health staff.

Methods: In partnership with the Indiana Department of Corrections (IDOC), AFSP adapted and implemented its TSL – Corrections presentation across all IDOC facilities for both new employee and annual in-service employee training and conducted pre- and post-program surveys using printed paper surveys that were then scanned by IDOC staff, uploaded to a secure cloud folder, read by AI survey software, and analyzed via Qualtrics and SPSS 27. During the first six months of implementation, 2,214 participants completed the post-program survey, and a total of N=1,116 surveys were matched to pre-program surveys using a unique ID. Data presented are for the matched sample.

Results: After viewing the presentation, 88% of respondents indicated that they believe suicide can be prevented (a 7% increase from the pre-survey; $\chi2 = 18.91$, $p < .001$). Post-survey results also indicate that 94% of respondents felt confident in their ability to recognize warning signs among incarcerated individuals (an 8% increase from pre-survey; $\chi2 = 34.17$, $p < .001$). Overall, 79% of participants reported a gain in knowledge, and 47% of participants reported knowledge gain despite having had previous suicide prevention training. Finally, 91% of participants would recommend the program to others. Additional findings, including crosstabs, will also be presented.

Discussion: Findings highlight (1) the importance of both curricula and evaluation being culturally relevant and tailored to contextual and logistical needs of diverse partners, (2) the utility of incorporating facility- and system-specific policies and procedures into prevention materials, and (3) that, even among those with previous suicide prevention training, AFSP's Talk Saves Lives – Corrections presentations yields increases in participant beliefs, confidence, and knowledge around suicide prevention in their jobs.

M78. THE COLUMBIA SUICIDE RISK PROTOCOL (C-SSRS): CURRENT STATE OF THE SCIENCE AND FRAMING OF SUICIDE SCREENING AS HUB OF A PUBLIC HEALTH APPROACH TO SUICIDE PREVENTION

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Background: Suicide is a global leading cause of death that requires a comprehensive, everyone-involved approach to prevention. Screening for suicide risk across the globe is a key component to a public health approach to suicide prevention. Suicide screening identifies individuals who are in desperate need of help. Universal acceptance and implementation of the Columbia Protocol can initiate and sustain a multifaced approach to preventing suicide.

Methods: A thorough literature search was conducted to identify the most salient and recent research studies on the C-SSRS. A top ten list of most pertinent findings was compiled.

The CDC's foundational public health model of suicide prevention was used to develop a public health approach that integrates suicide risk screening into all of the CDC's elements of suicide prevention.

Results: What the Science Indicates: The Top Ten

1) The Columbia Scale has demonstrated Sensitivity in Risk behavior Detection. The Columbia Protocol is the only screening protocol that can detect all types of suicidal thoughts

and behaviors. Unlike other suicide screening tools, The Columbia Protocol is sensitive enough to detect vague thoughts of suicide and past suicide attempt preparatory behavior.

2) The Columbia Determines Level of Risk: The Columbia Protocol is the only screening approach that can precisely determine if a person is at low, medium or high/imminent risk of suicide.

3) The Columbia Protocol Can be Used across the public health spectrum: The Columbia protocol has been effectively implemented by non-health providers. Anyone can effectively administer the screening tool and you do not need to be trained.

4) The Columbia Screening Tool can Predict Suicide Death: Recent empirical data shows that the Columbia screening tool can predict death by suicide.

5) The Colombia Protocol Lowers State Level Suicide Rates: Implementing the Columbia Protocol has lowered the level of suicide rates in multiple states in the US.

6) The Columbia Protocol Is established as the common method of detection across the continuum of care: The Columbia Protocol has established a common language to define and describe suicide risk that leads to timely and accurate risk detection of suicide risk.

7) The Columbia Protocol Limits False Positives and uniquely identifies those at high risk. The Columbia Protocol can detect subtle differences in suicide thinking and behaviors, delineating minimal suicide risk from high risk of suicide. The scale also demonstrates the ability to detect suicide risk when other tools may miss at risk behavior.

8) The Colombia Protocol is Cost Effective and Preserves Scarce resources: The Columbia Protocol reduces expensive hospital stays and repeated suicide attempts.

9) The Columbia Protocol is Effective with Children and Youth: The Columbia Scale has been used with youth to accurately detect imminent suicide risk among this population.

10) The Columbia Protocol Provides Liability Protection: the use of the Columbia scale can protect individuals who are intervening with people who may be at risk of suicide.

A novel public health approach to suicide prevention (graphic) will be presented.

Discussion: The most current evidence that supports using the C-SSRS in multiple settings and its ability to precisely identify levles of risk of suicide, including imminent risk will be discussed. The unique manner in which the C-SSRS defines suicidal behaviors and thoughts and it's sensitivity in detecting suicide risk will also be discussed.
The development of a novel public health approach with integrating the C-SSRS into each element of a comprehensive approach will be illustrated.

M79. SUICIDE PREVENTION: UNDERSTANDING THE LENGTHS YOUTH TAKE TO HELP

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Background: Suicide rates among adolescents and young adults remain alarmingly high (especially for youth who identify as members of gender or sexual minority communities) and additionally over 80% of young people in recent studies indicate they have been exposed to self-directed violence (SDV) by someone they know (most often a peer) and whom they tried

to help. While gatekeeper training programs are increasingly being offered to young people as a widespread prevention strategy, the helping process is still understudied. What are the range of helping behaviors that young people try and how does their helping relate to their own thoughts of suicide?

Methods: This presentation will use baseline survey data from a longitudinal sample of adolescents and young adults in the United States (N=3,750) to understand helping behaviors for others' thoughts of suicide and explore the array of ways youth try to help. Eighty-six percent of youth reported they have known someone who had thoughts of suicide in their lifetime. These participants provided details on over 700 unique situations they had experienced, including their relationship with the person, ways they tried to help the person, and the impact of those behaviors on the person exposed and the person at risk.

Results: Findings document the ongoing and multifaceted nature of the support youth provide to their at-risk friends and family. Indeed 65% of youth who know someone having thoughts of suicide did something to try and help them; many tried to help in multiple ways. Overall, youth reported using an average of 12.7 (SD = 7.0) helping behaviors for their peers with thoughts of suicide. Participants also reported a range of number of times they tried to help - from 10% helping one time to 27% helping more than 10 times. Poisson regression analyses revealed several incident and youth characteristics related to more types of helping, including identifying as a gender minority (IRR = 1.23), personal suicide ideation (IRR = 1.09), closer relationship with the person (IRR=1.36), and the number of other concerns the at-risk person was struggling with (e.g., substance use, child abuse and neglect, bullying) (IRR = 1.22).

Discussion: The findings from this study have implications for the design of innovations in our understanding and approach to SDV prevention and intervention. Specifically, suicide prevention policies and programs need to consider not only a focus on reducing suicide ideation and help seeking among those at risk but also how to support and train those in their social networks who may try to prevent or intervene. The interconnected nature of adolescents' and young adults own suicide ideation and their helping of others needs more study.

M80. AN INTERNATIONAL MIXED METHODS STUDY TO EXAMINE ATTITUDES TOWARD SUICIDE AMONG NATO MILITARY LEADERS

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Background: Suicide remains a significant public health concern across the globe, and particularly across the Armed Forces supporting 30 North Atlantic Treaty Organization (NATO) member countries. Suicide is a complex interplay among individual (e.g., age), relational (e.g., perceived burdensomeness), community (e.g., access to lethal means), and societal (e.g., mental health stigma) factors. Attitudes provide quick summary evaluations of objects in either a negative or a positive light, which in turn, can facilitate the response to that object (Eagly and Chaiken, 1998; APA 2023). Attitudes toward suicide can influence not only individuals but their interpersonal relationships and functions within their local communities, including the broader society. Accepting attitudes toward suicide, when compared with condemnatory attitudes, promote help-seeking behaviors and lower perceived stigma among those with suicidal thoughts and/or behaviors (Na et al., 2018). Attitudes towards suicide can therefore influence behaviors toward suicidal individuals, impact the suicide bereaved, and inform national suicide prevention programmatic endeavors across the globe.

An enhanced understanding of attitudes toward suicide, from the perspective of suicidal individuals and from the perspective of key individuals within their social network has often been at the forefront of suicide prevention endeavors. Additionally, research in this vein has often been siloed within one nation or geographical region. This dissertation project has been specifically designed to enhance the scientific understanding of attitudes toward suicide within an international community of military leadership. To accomplish this broad objective, the project will focus on a sample of operational and medical leaders across the Armed Forces serving in 30 NATO member countries. Broadly speaking, the objectives of this study are broken into two parts:

1. To quantitatively examine the demographic factors, military Service characteristics, leadership style and suicide-related exposure of NATO Nation military leaders associated with less condemnatory (more accepting) attitudes towards military suicide;

2. To qualitatively examine military leaders' attitudes and feelings about suicide and suicidal individuals.

Methods: A retrospective, cross-sectional, mixed-methods design with up to 480 military leaders from 30 NATO Nations serving as volunteer participants will be utilized. Data collection will consist of an anonymous web-based survey [Part 1] for all participants and a confidential telephone interview [Part 2] for a smaller subset of participants. Univariate and multivariate analyses will be performed to assess quantitative study hypotheses. Inductive thematic analysis will be used to identify common themes until the point of saturation is reached within the qualitative data.
Results: Data collection will be completed from June 2023 through September 2023. Preliminary quantitative and qualitative study findings will be presented at the conference.
Discussion: Military leaders, as stewards of cultural climate and national representatives, are uniquely situated to influence their subordinates and to serve as key gatekeepers for timely access and engagement with mental health care. An enhanced understanding of military attitudes toward suicide is expected to inform suicide prevention programmatic endeavors across NATO Nations and guide systematic messaging for anti-stigma campaigns in order to enhance international suicidology literature and the health care of those serving in the military.

M81. SEYMOUR: USING PARTICIPATORY SYSTEMS MODELLING TO INFORM POLICY MAKING IN SUICIDE PREVENTION

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Background: Suicide remains a leading cause of mortality among young people aged 15-24 despite increasing investment on suicide prevention strategies across the world. System dynamics modelling (SDM) offers the potential for a more nuanced approach to suicide prevention by recognising and mapping the dynamic interactions between variables that drive population mental health and suicide outcomes; and subsequently simulate interventions to inform with what intensity and for how long investments are required to sustain the effects of any given intervention. SDM is guided by a participatory approach to model building, evaluation, and implementation. This approach involves engaging with a diverse group of stakeholders to identify, contextualise and map causal pathways driving system behaviour. The evaluation of participatory systems modelling approach is important as it allows transparency

into how models are conceptualized and developed, thus, increasing model credibility. This paper will present the participatory system dynamics modelling approach adopted as part of SEYMOUR - an international project which will develop and evaluate a system dynamics model that will indicate which suicide prevention interventions could generate the most significant reductions in rates of suicide and attempted suicide among young people aged 12-25 in Australia and the UK.

Methods: A participatory system dynamics modelling informed the development of a computer simulation model of mental health service pathways and suicidal behaviour among young people in North-West Melbourne. Three participatory workshops were conducted with a diverse group of stakeholders (10-15) using purposive sampling to ensure maximum variation in the cases recruited, including: young people with lived experience of self-harm/suicidal behaviour; carers; healthcare professionals; service managers and policymakers across North-West Melbourne. Data collection was informed by a multi-scale evaluation framework assessing the feasibility, value, impact and sustainability of participatory system dynamics modelling methods, including feedback questionnaires; researcher observations through field notes (2 researchers x 3 workshops); workshop recordings; semi-structured interviews. Data is being analysed using codebook and reflexive thematic analysis.

Results: Key themes related to factors impacting the feasibility of participatory system dynamics modelling include: 1) diversity and inclusivity (or the lack thereof) within the stakeholder team; 2) power and social dynamics between stakeholders; 3) challenges in incorporating the technical aspects of the workshop and stakeholders' social insight; 4) how lived experience of self-harm/suicidal behaviour can meaningfully inform model development; 5) interaction between stakeholders (sharing and exchanging knowledge).

Discussion: The uptake of SDM in suicide prevention has been slower compared to other fields such as business, hydrology, engineering. Yet, SDM is an important analytical tool that has the potential to inform policy-making and strategic investment in suicide prevention. A participatory approach to model building, evaluation, and implementation could enhance confidence, transparency and model credibility. The findings of this study will highlight the merit of embedding a participatory modelling approach to model development; explore some of the challenges in relation to feasibility; and identify future directions to maximise the potential of participatory systems modelling.

M82. SUICIDE PREVENTION 2.0 CLINICAL TELEHEALTH PROGRAM IN THE UNITED STATES VETERANS HEALTH ADMINISTRATION

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Background: The United States (US) Department of Veteran Affairs' (VA) 2018 National Strategy for Preventing Veteran Suicide defined a broad vision for implementation of a public health approach to end suicide. The VA's Suicide Prevention 2.0 (SP 2.0) Strategic Plan emerged to unify specific clinical services and advancements within VA across the national, regional, and local levels with community-based suicide prevention (SP) policy, plans, and services.

As part of the full public health model approach, the SP2.0 Clinical Telehealth Program, launched in April 2021, is the first and only nation-wide virtual initiative providing Evidence-Based Practice (EBP) for SP to US Veterans. Based on the recommendations from the 2019 VA/DoD Clinical Practice Guideline (CPG): Assessment and Management of Patients at Risk

for Suicide, SP2.0 specifically reaches Veterans with a recent history of suicidal self-directed violence (SSDV).

Treatments include: Cognitive Behavioral Therapy for Suicide Prevention (CBT-SP), a 12-14 week individual therapy; Problem Solving Therapy for Suicide Prevention (PST-SP), a 6-12 week individual therapy; Dialectical Behavior Therapy (DBT), weekly individual and group therapy for a year; and the provision of the Safety Planning Intervention (SPI), a one-time 45-60 minute intervention. Therapist training and Veteran treatment modalities are virtual. Utilizing VA's telehealth program called "VA Video Connect," (VVC) most of the Veterans attend psychotherapy appointments in the comfort of their homes.

CBT-SP: 1) delivers interventions to reduce suicidal thoughts and behaviors among Veterans; 2) strengthens efforts to increase access to and delivery of effective programs for mental health for all Veterans; and 3) provides appropriate clinical care to Veterans affected by a suicide attempt.

Methods: This presentation will describe the creation and implementation of the nation-wide SP2.0 Clinical Telehealth initiative as well as the development and dissemination of CBT-SP therapist training and psychotherapy treatment.

Results: The SP2.0 Clinical Telehealth program is the first and only enterprise-wide, fully virtual infrastructure and capacity for the implementation of EBP therapies and interventions for suicide prevention, specifically reaching US Veterans with a history of SSDV. The program launched in April 2021, and received over 9,000 referrals in the first two years of implementation. Having trained over 100 licensed therapists, the SP 2.0 Clinical services are available to Veterans across 100% of the 139 VA Health Care Systems within the US.

CBT-SP, based on theory from seminal work by Wenzel, Beck and Brown (2009), was adapted in in a virtual program specifically for Veterans. Early data suggested proof-of-concept as two VA healthcare sites piloted the initial CBT-SP telehealth protocol and illuminated initial facilitators and barriers to implementation.

Discussion: The SP2.0 Clinical Telehealth initiative established a national, sustainable infrastructure to support the implementation and dissemination of EBPs for SP to reach US Veterans with a history of SSDV. The fully virtual training and treatment implementation includes approximately 100 trained therapists providing four treatments and interventions recommended by the CPGs.

M83. A SCIENCE OF SUICIDE… FOR WHOM? THE CHALLENGE OF INTERSECTIONALITY IN A 10-YEAR, NATIONWIDE, POPULATION-BASED SAMPLE OF PEOPLE WHO DIED BY SUICIDE IN THE UNITED STATES

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Background: In the United States, the national suicide rate decreased in 2019 and 2020 before increasing in 2021. Though these shifts are difficult to understand on their own, they also conceal an underlying nuance. Rather than monolithic "decreases" or "increases" in suicide, it turns out that risk changed in context-specific manners. For example, even as the suicide rate generally decreased in 2019 and 2020, young children and Black youth in particular were more likely to die by suicide. This finding echoes a classic issue in psychological research. Rarely do main effects like year-to-year change occur in a nomothetic manner. Instead, just as perspectives on suicide vary by complex cultural, religious, and philosophical contexts, the

relationship between some predictor and an outcome of interest might be better understood idiographically. The treatment of such idiographic effects as nomothetic might constrain existing efforts in suicidology and is worth further consideration.
Methods: I illustrate my concerns with nomothetic approaches by considering a straightforward question: in the United States, what is the relationship between age and risk of suicide? Using population-level data from the National Vital Statistics System from 2010 to 2019 (N = 435,166 deaths by suicide), I predict that as people are older, risk of suicide tends to increase. This finding is qualitatively apparent when inspecting a plot of age and suicide rate as calculated for each age (i.e., suicides per 100,000 for people of age 23). Yet, if I stratify the sample according to sex (male vs. female), race (White vs. Asian vs. Black), and marital status (married vs. single vs. widowed), 12 different "intersectional" graphs are revealed. A simple linear regression of suicide rate on age is performed for each plot. All graphs are displayed next to one another for qualitative inspection and comparison of regression coefficients.
Results: When the original graph is compared with the intersectional graphs, qualitative differences are readily apparent. For example, risk for White men is greater in late life, especially when compared to Black men and women. The significant association between age and suicide rate in the original plot therefore seems reasonable in some cases (in particular, those of unmarried White men) but unreasonable in others. In general, there is massive variability among the 12 intersectional graphs. Regression coefficients are in some cases not significant, in others significant and negative, and in others still significant and positive.
Discussion: Age is a common covariate in statistical models used for theory-building and prediction in suicidology. Yet, this presentation reveals that its effects are nuanced in complex, hard-to-describe ways. This illustrates a fundamental challenge to the science of suicide: who is such science describing? Though parsimonious statistical models are convenient, they may simply be ill-suited to the nature of suicide. In fact, a growing choir of academics - mostly in cultural studies - have critiqued nomothetic approaches previously. Like them, I suggest that any science of prevention also consider "critical suicidology". In turn, idiographic methods might be preferred. This could include random effects and machine learning models, which are effective at capturing high-order interaction effects, though these approaches are not parsimonious. Instead, qualitative methods might serve as one of the most promising paths forward. These approaches are, on their surface, less scientific than quantitative analyses. Yet, once again: who is the existing science "for" in the first place?

M84. SIMULATION NETWORKS AND REAL-WORLD IMPLICATIONS FOR SUICIDE PREVENTION: CHARACTERIZING AND COMPARING TEMPORAL NETWORKS OF NEGATIVE AFFECT AMONG HANDGUN OWNERS AND THOSE WHO DO NOT OWN HANDGUNS.

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Background: In 2020, suicide accounted for 54% of firearm deaths in the United States (US). Affect plays a crucial role in firearm acquisition and signaling suicide risk (e.g., affect changes, instability). Negative affect (NA) and hyperarousal each confer additional risk for suicide beyond existing psychopathology. Understanding temporal relationships between NA and arousal could identify unique trends that precede suicide risk onset among handgun owners (FOs) relative to those who do not own handguns (DNOs).

Methods: 140 adults (83 FOs, 57 DNOs) completed surveys (affect = I-PANAS-SF) six times daily for 28 days. This small sample would preclude stable estimates of network models (NM). Means, standard deviations, correlation matrix, and covariance matrix were drawn from I-PANAS-SF data to serve as simulation input values. The simulated sample yielded multivariate normal data equivalent to 1,000 participants (500 FOs and 500 DNOs). These simulated data facilitated NM estimation with Extended Bayesian Information Criterion selection as a Gaussian Graphical Model (EBIC GGM) where affect relationships were interpreted as partial correlations (edges). NM structure was informed by the Circumplex Model of Affect such that the latent construct of moderate arousal included NA components (nodes) of distressed, upset, guilty, hostile, irritable, and ashamed while high arousal included scared, nervous, jittery, and afraid. Separate FO and DNO NMs were estimated with GLASSO along with centrality indicators (strength, betweenness, and closeness), 95% accuracy of centrality, and stability of centrality by percentage case dropping. A network comparison test (Bonferroni-Holm correction) between FO and DNO NMs identified network differences (edge differences; $p < .05$). Graphical output also presented.
Results: FOs had more network connectivity (44/45 edges) and stronger average edge weight (0.097) relative to the DNOs (40/45 edges, 0.089). FOs and DNOs had similarities – upset and nervous had the most direct connectivity to other affective nodes (high strength); upset and nervous provided the shortest distance to connect other affective nodes (high betweenness). FOs and DNOs differed on nodes most responsive to (or catalyzing) network change (high closeness): FOs = afraid and upset, DNOs = upset and distressed. Centrality indicator accuracy was comparable between FOs and DNOs. Stability for centrality indicators suggested betweenness was least stable for FOs when as few as 15% of cases were dropped/missing (these centralities estimates were stable and fair to interpret; CS-coefficients = .75). FO and DNO NMs were different (network invariance $M = .18$, $p = 0$; global strength $S = .46$, $p = 0$). Relative to DNO, FO affect relationships were significantly stronger for distressed-upset (.43), upset-hostile (.10), and guilty-hostile (.08); other relationships discussed.
Discussion: Firearm suicide remains high in the US. Affect plays a unique role in suicide risk. This simulation study identified commonalities and differences between DNO and FO affect over time. Notably, betweenness centrality for FOs was unstable (consistent with notions of affect variability and suicide risk). Given the observed FO instability and small edge weights, other external influences may intersect with NA and risk factors to catalyze suicide risk further. Future studies may employ other temporality-sensitive analyses to assess the extent that NA cycles with other known temporally variable risk factors. Those other risk factors may cycle with NA such that the joint temporal effect amplifies suicide risk uniquely in FOs. Detecting such a temporal pattern among NA and other risk factors could have implications for developing life-saving interventions.

M85. OPEN BOARD

M86. DEVELOPING AND DISSEMINATING A NATURAL LANGUAGE PROCESSING PIPELINE WITH NATIONAL VIOLENT DEATH REPORTING SYSTEM DATA: A CASE STUDY ON CHARACTERIZING FEMALE FIREARM SUICIDE CIRCUMSTANCES IN THE U.S.

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Background: Little is understood about the circumstances preceding female firearm suicide death in the U.S. Data on the circumstances preceding female firearm suicide deaths are limited; however, useful information is available in the National Violent Death Reporting System (NVDRS). Supported by a research grant from the National Collaborative on Gun Violence Research, we pursued two objectives. First, we sought to develop and evaluate a natural language processing (NLP) pipeline to identify common circumstances preceding female firearm suicide from free-text incident narratives summarizing coroner/medical examiner (CME) and law enforcement (LE) investigative reports in NVDRS. Second, we sought to develop a publicly available educational course to enhance the dissemination of our NLP code and guide NLP pipeline development for NVDRS data users.
Methods: For our first objective, we manually coded free-text information from CME and LE incident narratives for 1,462 randomly-selected cases from the NVDRS Restricted Access Database. Decedents were included from 40 states and Puerto Rico from 2014-2018. Naïve Bayes, Random Forest, Support Vector Machine (SVM), and Gradient Boosting (GB) classifier models were tuned using 5-fold cross-validation (CV). We assessed model performance using sensitivity, specificity, positive predictive value (PPV), F1, and other metrics. For our second objective, we developed an asynchronous NLP pipeline development learning module using the cloud-based Thinkific platform. We gathered information from state VDRS program principal investigators and Washington VDRS program staff to inform the content and delivery of the learning module.
Results: For our first objective, the NLP pipeline performed well in identifying recent interpersonal disputes, problems with intimate partners, acute/chronic pain, and intimate partners and immediate family at the scene of the death. For example, the GB model had a mean of 98.7% specificity and 93.2% PPV in classifying a recent interpersonal dispute prior to firearm suicide death. The SVM model had a mean of 96.3% specificity and 80.7% PPV in classifying a problem with an intimate partner prior to firearm suicide death. For our second objective, we launched a publicly available online course for other NVDRS data users to access and adapt our NLP code. Strategies included (1) gathering feedback on the potential benefits and barriers to using NLP within NVDRS, (2) using our project as a use case for additional NLP pipeline development projects, (3) annotating our code, and (4) providing file formatting templates.
Discussion: We developed an NLP pipeline to classify five circumstances preceding female firearm suicide death using incident narratives from NVDRS, which may improve the examination of these circumstances. We also developed a publicly available online learning module to enhance the dissemination of our code. Together, these objectives will ideally help make sustainable advances in data science and prevent firearm suicide death among females in the U.S.

M87. PATIENTS ADMITTED TO ICU AFTER A SUICIDE ATTEMPT -A QUALITATIVE STUDY ABOUT THE PATIENTS' EXPERIENCES WITH TREATMENT AND AFTER CARE

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Background: Patients treated at an ICU after a suicide attempt are vulnerable. Patients with medically serious suicide attempts have a higher risk of suicide than others. Knowledge about how their stay at the ICU affects their healing, and the impact of the interactions with the ICU staff is relevant for the treatment of this patient group. Knowledge about the suicide attempt patients (SAP) experiences as an ICU patient may help us to optimize interventions during treatment and rehabilitation for suicide attempt patients. The patients are dependent on clinicians to receive the correct treatment. A lack of understanding of the patient's symptoms and non-verbal communication can be a missed opportunity to reduce suffering and to develop a relation based om trust. In Norway, most research is about epidemiology and risk factors, less about treatment. We need more knowledge about how the patients experience the treatment in the ICU, and how it affects the suicide attempt patient. This study explores this topic. The primary goal of this study is to better understand the experiences from the ICU in patients who have attempted suicide, hopefully, this knowledge can be useful in improving health services for this vulnerable patient group.

Methods: A qualitative study of patients treated at an ICU after a suicide attempt were performed at Oslo University Hospital, Norway during 2022-23. Suicide attempt methods were both self-poisoning and violent methods. This study includes findings based on ten in-depth interviews of patients recently submitted from the ICU after a suicide attempt. The interviews are being interpreted using Thematic Analysis by Braun and Clarke. The interviews were conducted by the ICU nurse/PhD student.

Results: An ICU stay is associated with a high degree of distress and discomfort. Patients who have attempted suicide often experience psychological struggle and complex feelings. Their experiences during an ICU stay are of great importance, because the treatment after the suicide attempt start at the ICU. The oral presentation will include results from the interpretation of the in-depth interviews and will include the following themes:

How do patients who have attempted suicide experience the stay at the ICU? And how were the meetings with the somatic healthcare personnel? How did the ICU stay affect the patient's life and well-being after discharge? Which elements of the stay were considered useful for the patient, in order to cope with suicidal thoughts and factors leading up to the suicidal attempt? What aspects of care did the patients find most valuable during their stay? And how was the follow-up afterwards?

Discussion: The results from this study will come to use as new knowledge about this specific subgroup including the patients experience and the follow-up they are offered after discharge. The health institution is required to ensure that ICU-personnel have specialist support, knowledge, skills and guidelines to provide for effective and emphatic care for the vulnerable SAP-population. The results from this project can point out where the treatment falls short and help build guidelines of new practice for the SAP. It is of great importance that we have knowledge enough for optimal treatment for the SAP, as they often meet the medical health care system in a state of crisis and suffering.

M88. CROSS-SECTIONAL ASSOCIATION BETWEEN MULTIMORBIDITY AND SUICIDAL BEHAVIORS IN PEOPLE WITH PSYCHOTIC DISORDERS – A SIGNATURE BIOBANK STUDY

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Background: People with psychotic disorders have a 10-to-20-year shorter life expectancy than the general population. This excess mortality is primarily explained by physical illness and suicide. In recent years, studies have focused on the potential impact of multimorbidity (defined as the accumulation of two or more chronic illnesses) on suicidal ideation. Thus, the present study aims to understand the association between multimorbidity and suicidal ideation and risk in people with psychotic disorders.
Methods: A cross-sectional analysis using the Signature Biobank - a database with biological and psychosocial data from patients recruited at the psychiatric emergency department. Inclusion criteria were adult patients admitted for a psychotic disorder. Exclusion criteria were patients with severe cognitive impairment of intellectual disability. Multimorbidity was defined as the cumulation of two or chronic conditions from a list of 14 illnesses. Suicidal ideation (during the past year) was measured with PHQ-9 in the first analysis and SBQ-R in the second. Suicidal risk was measured with the SBQ-R. Covariates included age, sex, and employment, psychotic symptoms (using the PSQ), and health behaviors (tobacco, alcohol and substance use) Three models of logistic regressions were run: model 1 (M1) included age, sex and employment, model 2 (M2) was model 1 + psychotic symptoms, model 3 (M3) was model 2 + health behaviors.
Results: A total of 748 participants (69% of men, mean age = 39.5 ± 14.1) was included. Amongst this sample, 54% had multimorbidity, 16% dealt with suicidal ideations, and 7% were at suicidal risk. Preliminary results showed a significant consistent association between multimorbidity and suicidal ideation in this population in all three models (M1: OR 2.95, 95% CI [2.11-4.15]; M2: OR 2.55, 95% CI [1.80-3.64]; M3: OR 2.25, 95% CI [1.57-3.25]). Similar associations were found for suicidal risk (M1: OR 2.43, 95% CI [1.58-3.77]; M2: OR 2.04, 95%CI [1.30-3.23]; M3: OR 1.82, 95% CI [1.13-2.93]). Furthermore, only psychotic symptoms (Suicidal ideation: M2: OR, 1.35, 95%CI [1.19 - 1.54] and risk: M3: OR 1.31, 95% CI [1.15-1.49 - M2: OR 1.50, 95%CI[1.26-1.78];M3: OR 1.51, 95% CI[1.27-1.82]), alcohol (Suicidal ideation: M3: OR 1.59, 95% CI[1.05-2.42] and risk: M3: OR 1.92, 95% CI[1.09-3.39]), and drug use (Suicidal ideation: M3: OR 1.63, 95% CI[1.01-2.62] and risk: M3: OR 2.12, 95% CI[1.09-4.13]) had significant associations.
Discussion: Our findings showed an association between multimorbidity and suicidal behaviors in people with psychotic disorders. Therefore, multimorbidity management should be considered as a potential suicidal prevention strategy among those with psychotic disorders. In addition, future longitudinal studies should give more insight on the nature of these associations.

M89. A TEST OF THE INTERPERSONAL THEORY OF SUICIDE IN A NON-CLINICAL EATING DISORDER SAMPLE

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Background: People with eating disorders have elevated rates of suicidal thoughts, behaviors, and death by suicide. The interpersonal theory of suicide (IPTS) provides a conceptual framework for understanding suicide risk and has a robust evidence base in many psychiatric populations but has limited empirical support specifically within eating disorder populations.
Methods: Participants (N = 87) with an eating disorder characterized by restriction or purging completed clinical interviews, computer tasks, and questionnaires assessing suicidal ideation (SI), suicide attempts (SA), and constructs of the IPTS. Based on the IPTS model, first a regression analysis was conducted predicting SI from thwarted belongingness, perceived burdensomeness, and the interaction. Next, a regression analysis was conducted predicting lifetime SA from belongingness, perceived burdensomeness, fearlessness about death, and the interactions. Exploratory analyses were conducted predicting implicit attitudes towards death and suicide from the IPTS constructs in one model and the IPTS constructs and their interactions in a separate model.
Results: 34% of participants reported a lifetime SA and 46% endorsed clinical SI (>3 on the suicidality subscale of the depressive symptom index; M= 2.31, SD = 2.73). In the first model, perceived burdensomeness was associated with current SI ($p < 0.001$) but thwarted belongingness and the interaction term were not. In the model predicting lifetime SA, none of the predictors or their interactions were significant. The first exploratory analysis found that perceived burdensomeness ($p < 0.006$) but not thwarted belongingness was associated with implicit attitudes towards death and suicide. In the full model, none of the predictors or their interactions were significantly associated with implicit attitudes towards death and suicide.
Discussion: Overall, this study failed to find support for the full IPTS model in a heterogeneous, non-clinical eating disorder sample with a prevalence of lifetime SA and current SI. However, a recent systematic review indicates that the association between perceived burdensomeness and SI is the most robustly supported component of the model, which is consistent with our findings. Longitudinal research is needed, but these results indicate that specifically targeting perceived burdensomeness may be an important target for suicide prevention and intervention efforts.

M90. DESIRE FOR HASTENED DEATH IN PATIENTS WITH CHRONIC PHYSICAL ILLNESS

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Background: Chronic physical illness increases the risk of suicidal behavior. This study examined factors associated with desire for hastened death (DHD) in patients with chronic illness.
Methods: Patients with cardiovascular, cerebrovascular, and renal diseases were recruited from two hospitals in metropolitan areas of South Korea between April and October 2021. Data of 365 patients were analyzed. Patients completed a survey including the Schedule of Attitudes toward Hastened Death-abbreviated; the physical quality of life subscale of the WHO Quality of Life Scale Abbreviated; the Interpersonal Needs Questionnaire-15; the Acquired Capability for Suicide Scale-Fearlessness About Death; the Beck Hopelessness Scale; the helplessness subscale of the pain catastrophizing scale; the loss of autonomy subscale of the Fear of Progression Questionnaire; the Patient Health Questionnaire-9; the 7-item Generalized Anxiety Disorder Scale. Network analysis was conducted to estimate the association between the DHD

and related factors, that is, physical well-being, perceived burdensomeness, thwarted belongingness, fearlessness about death, hopelessness, helplessness, loss of autonomy, depression and anxiety. Predictability, centrality, and relative importance were also assessed.
Results: Factors in the network explained 43.2% of the variance in DHD. Perceived burdensomeness, which explained most of the variance in DHD, was the factor most strongly connected to DHD, followed by anxiety and hopelessness. Physical quality of life was indirectly related to DHD through its negative association with hopelessness. On the other hand, depression was not directly related to DHD, but it was the central node with the strongest positive associations with other factors in the network with the highest expected influence.
Discussion: The current findings suggest that perceptions of being a burden as well as depression need to be addressed to prevent DHD in patients with chronic illness.

M91. SUICIDE REVIEWS IN THE CANADIAN ARMED FORCES

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[1]Canadian Armed Forces

Background: The Canadian Armed Forces (CAF) monitors suicide and mental illness rates and trends in its population to gain a better understanding of the underlying issues and to mitigate risks. There are 3 pillars for suicide prevention in the CAF: 1. Excellence in health care; 2. Effective leadership; 3. Engaged and aware members. Beginning in 2010, each suspected suicide of a Regular Force CAF member has been investigated through a standardized Medical Professional Technical Suicide Review (MPTSR).
Methods: The MPTSR is an in-depth medical review conducted by a two-person team typically composed of a primary care physician and a mental health clinician. In addition to a detailed review of the medical file of the deceased, these clinicians interview family, friends, colleagues, the chain of command, and health care providers to better understand the circumstances surrounding the death. A Suicide Event Report is filled containing information on the chronology of the events, the service member's care history, military and deployment history, suicide risk factors and psychosocial stressors.
Results: Based on the synthetized information, observations and recommendations are formulated aiming to improve CAF Health Services and the CAF Suicide Prevention Program. MPTSRs also have a part of the multipronged postvention efforts as the review process provides reflection and support for the impacted family members, friends, colleagues, and clinicians.
Discussion: The presentation will outline the MPTSR process (in-person and virtual), the multidisciplinary discussion of the findings and the provision of feedback sessions to the clinics where the service member received care. It will also highlight the findings which provide valuable data to understand the trends in suicide-related deaths in the Canadian Military which help to shape the suicide prevention efforts accordingly.
References:

1. 2021 Report on Suicide Mortality in the Canadian Armed Forces (1995 to 2020)

2. Report of the 2016 Mental Health Expert Panel on Suicide Prevention in the Canadian Armed Forces

M92. SUICIDE IDEATION AMONG LATINX AND BLACK ADOLESCENTS: THE ROLE OF THWARTED BELONGINGNESS AND PERCEIVED BURDENSOMENESS.

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Background: Suicide ideation (SI) is an important—yet neglected—aspect of suicide risk. Between 1991 and 2017, 1 in 5 adolescents reported SI (18.8%). Latinx and Black youth, the largest ethnoracially minoritized youth in the United States, have been at high risk of SI. The interpersonal theory of suicide (IPTS) can be used to evaluate suicide risk. Yet, it has not been sufficiently tested with ethnoracially minoritized youth. This study aimed to test whether thwarted belongingness and perceived burdensomeness were associated with suicide ideation among Latinx and Black youth.

Methods: Data were obtained from self-identified Latinx and Black adolescents aged 12-20 (N=81) with and without depression who were part of an ongoing National Institute of Mental Health (NIMH) intervention and diversity supplement studies. The parent study aimed at testing the effectiveness of an engagement intervention for Black youth with depression (n=21). The diversity supplement added a sample of Latinx and Black youth without depression (n=61) to examine whether interpersonal factors (i.e., belongingness and burdensomeness) were related to SI independently of depression. Suicide ideation was measured with question 9 in the Patient Health Questionnaire-Adolescent (PHQ-A) “Thoughts that you would be better off dead, or of hurting yourself in some way?” The interpersonal needs assessment (INQ-15) was used to measure Thwarted Belongingness (TB) and Perceived Burdensomeness (PB). We controlled for gender, age, and PHQ-A severity score as a measure of depression. Multivariate logistic regression analyses were conducted to examine the relationships between suicide ideation and the IPTS constructs.

Results: Most participants identified as male (60.5%) and Latinx (56.8%). Two participants identified as Afro-Latinx and were added to the Latinx sample for analysis. The mean age was 15. 2 (SD=1.42). Bivariate models show that both thwarted belongingness (TB) and perceived burdensomeness (PB) were significantly associated with SI. In these marginal models, increased TB was associated with increased odds of experiencing SI (OR = 3.2, 95%CI = 1.6–6.5), and increased PB was also associated with increased odds of SI (OR = 2.1, 95%CI = 1.3–3.2).

However, only thwarted belongingness (OR = 3.15, 95%CI = 1.04–9.57) remained significant when adjusting for age, gender, and even after adding the PHQ-A sum score. Notably, the interaction term (TB X PB) was not significantly associated with increased odds of suicide ideation in this sample.

Discussion: Our results show that for this group of Latinx and Black adolescents, the joint experience of thwarted belongingness and perceived burdensomeness was not significantly associated with SI. Thwarted belongingness, however, appears to be an important determinant of SI among this group, even after controlling for the PHQ-A score. Our study also found that with age, the risk of SI increases. These findings confirm the importance of examining the IPTS constructs and their relationship to suicide ideation in diverse populations. The relationship between thwarted belongingness (low connectedness) and suicide ideation in Latinx and Black youth suggests it may be an important target for suicide prevention.

M93. THE EFFECTIVENESS OF SUICIDE PREVENTION AND INTERVENTION TRAINING AMONG MENTAL HEALTH PROVIDERS

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Background: More than 500 people commit suicide and 5,000 people attempt suicide each year in Israel (Ministry of Health, 2020). Most Israeli mental health professionals are not officially trained in suicide prevention and intervention (Schmitz et al., 2012), studies have shown that significant number feel their training is insufficient to adequately address the issue of suicide (Schmitz et al., 2012).
One approach to address this knowledge gap is suicide prevention training for mental health providers. Previous reviews have shown that suicide prevention training for mental health providers is an effective strategy (Mann et al., 2005). Trainings have been shown to increase knowledge, self-efficacy, positive attitudes toward depression and suicidal behavior, as well as improve recognition and treatment practices (Gerrity et al., 2001; Oordt et al., 2009).
Until recently, no suicide prevention and intervention training program had been established in Israel at the national level. This study will be the first to examine the assessment of suicide training for mental health in a unique hybrid model.
Methods: 74 participants (55 females, 19 males) aged 24-64 (Mean= 41.78, SD=8.16) working in large therapeutic institutions in Israel (47 social workers, 17 psychologists, 2 art therapists and 4 psychiatrists (and 4 missing reports). 98.5% of the participants reported working with elderly, adolescents and hospital patients and 89% reported they had treated a suicidal population in the past.

The trainings were conducted as part of the Israeli national suicide prevention program led by the Ministry of Health. The intervention included a unique hybrid training model. To the best of our knowledge, this is the first suicide training that incorporates formal online protocol learning integrated with virtual group supervision which allows open-ended learning from real study cases. Four full days of training were delivered in videotaped lectures about suicide, prevention, risk assessment, Interpersonal Psychotherapy, Cognitive- Behavioral Therapy for suicide preventions well as varied enrichment lectures with in-depth discussion. The training was accompanied by zoom sessions with expert clinical supervisor for discussion and questions after the video training. During the video presentation, participants wrote notes and questions to prepare for the discussions in the zoom sessions. Pre and post training the assessment included questionnaires about theoretical knowledge in the field of suicide, participants' self-efficacy of coping with suicidality and fear of treating suicidal risk populations. These were assessed by questionnaires used in previous research (Indelicato et al., 2011; Matthieu et al., 2008 Cross et al., 2019; Ferguson et al., 2019; Shannonhouse et al., 2017).

Results: Paired samples t-test was conducted for all study variables. The analysis revealed significant difference in general knowledge before (M=3.13, SD=0.50) and after (M=3.59, SD=0.45) the training; [t (71) = -7.62, p = .00]. The second t-test revealed significant differences in self-efficacy before (M=3.54, SD=0.50) and after (M=3.73, SD=0.50) the training [t (70) = -3.55, p = .00]. Finally, the third t-test revealed a significant difference in

fear of treating patients at risk before (M=2.62, SD=0.91) and after (M=2.54, SD=0.96) the training [t (42) = 0.92, p = .00].

Discussion: The current study was carried out in an effort to assess the feasibility of theoretical suicide prevention and intervention training for mental health providers. The results indicate that the intervention is useful for improvement in self-efficacy and the level of knowledge and reducing fear of treating suicidal risk populations.

M94. FROM VENTING TO GOODBYE: AN EXAMINATION OF PSYCHOLOGICAL CONSTRUCTS AND SEVERITY OF THE ONLINE PRO-SUICIDE FORUM, SANCTIONED SUICIDE

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Background: Over the past few years, involuntary celibates (incels) have gathered in online communities to discuss their frustration with sexual and romantic rejection, espouse male supremacist attitudes, and justify violence against others. Recently, incels have kickstarted and migrated to an online suicide ring, known as Sanctioned Suicide. Sanctioned Suicide, in which ruminations about self-harm and suicidal intent are heightened and crystallized, offers a unique window into extreme violent cognition; at the same time, people frequenting such online communities might be at a higher risk of self-harm than the general population. Existing scholarship has examined the implications of online behavior and suicidal intent. However, studies concerning pro-suicide websites remain in their nascence.
Methods: Here, we use individual conversations (n = 137,052) from Sanctioned Suicide to examine correlates of self-harm and suicidal thoughts and behaviors (STBs) among its members. The current study has a few different aims. First, we will employ mixed-methods approaches - including Natural language processing (NLP) and content analysis - to explore indicators of psyche-ache, defeat, and entrapment (i.e., psychological pain, perceived low social ranking, and a desire to escape from an unbearable circumstance, respectively) across three forum tags: "Venting", "Methods", and "Goodbye", which we hypothesize to delineate increases in severity of STBs. Four raters will assign sentiment in six hundred randomly selected posts from each tag. Second, we intend to examine which posts elicit higher responses from members of the community. We hypothesize that posts using more inflammatory and emotionally charged language will garner more user-responses. Third, we expect that posts made with the "good-bye" tag will show decrease in negative emotion words in line with what previous findings have suggested: that, as a person draws closer to the time of their suicide, their mood may improve, a trend that has been documented in clinical notes in the days preceding a suicide.
Results: Given the unfiltered and unmoderated nature of this real-world dataset, findings will be relevant to identifying mental health concerns and STBs among individuals who are most in need of interventions.
Discussion: Discussion pending.

M95. HATE CRIME LAW ASSOCIATIONS WITH SUICIDAL BEHAVIOR, MENTAL HEALTH AND DISCRIMINATION EXPERIENCES AMONG TRANSGENDER AND GENDER DIVERSE ADULTS IN THE UNITED STATES

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Background: Hate crimes have pernicious effects for transgender and gender diverse (TGD) persons including such as suicide (e.g., Maguen and Shipherd, 2010). State-level hate crime laws are a proposed solution to hate crimes (Gerstenfeld, 2017). Hate crime laws may include statutes addressing protection of specific groups (e.g., gender identity), offender punishment, and law enforcement (e.g., hate crimes training, data reporting). Implementation of hate crime laws is driven by a variety of desired outcomes such as violence prevention and health enhancement of protected groups (ViPond, 2015). Evaluation of hate crime laws also necessitates accounting for public attitudes and multiple marginalized identities (White-Highto et al., 2015).

The present study investigated the following correlates of suicidal behavior, psychological distress, and discrimination experiences among TGD adults in the United States:

1. State hate crime law statutes (i.e., coverage of sexual orientation and gender identity; offender punishment; law enforcement).

2. Community attitudes (i.e., political ideology; anti-TGD beliefs).

3. Marginalized identities (e.g., sexual minority status; having a disability).

Methods: We merged three data sources. We drew demographic (e.g., gender identity, sexual orientation, disability status), 12-month suicidal behavior (no/yes), psychological distress (Kessler-6), and 12-month discrimination experiences (i.e., healthcare, workplace) from the 2015 United States Transgender Health Survey. The 2018 Cooperative Congressional Election Study provided state-level metrics of anti-TGD attitudes and political ideology. The 2015 Anti-Defamation League's (ADL) Hate Crime Map provided information regarding whether three statutes were present in each state: (1) protection (protection based on sexual orientation and gender identity), punishment (enhanced penalties and permitted civil action against the offender), and policing (required hate crime training and data reporting).

We conducted bivariate analyses of hate crime laws, community attitudes, and marginalized identities with each outcome. We then performed logistic regression analyses to identify significant hate crime law effects accounting for community attitudes and marginalized identities.

Results: Full bivariate and regression model results will be presented. Prominent findings included:

a) Increased odds of 12-month suicidal behavior were associated with living in a state with a greater degree of severity statues (β=.06, p=.03, AOR=1.06).

b) Worse psychological distress was associated with living in a state with a greater degree of severity statues (β=.06, p=.04, AOR=1.07), lesser coverage statutes (β=-.06, p=.02, AOR=0.94), and worse anti-TGD attitudes (β=1.81, p<.001, AOR=6.13).

c) Holding multiple minority identities was the most robust risk factor category across outcomes. For instance, having a disability was associated with worse odds for 12-month suicidal behavior (β=.94, p<.001, AOR=2.57), psychological distress (β=1.35, p<.001, AOR=3.88), healthcare discrimination (β=.46, p<.001, AOR=1.58), and workplace discrimination (β=.18, p<.001, AOR=1.20).**Discussion:** Coverage statute findings are

consistent with prior literature showing potential protective effects for mental health (e.g., Prairie et al., 2022). Severity statute findings suggest a possible backfire effect in which hate crime laws fail to deter anti-TGD violence and may exacerbate suicidal behavior. Comprehensive TGD mental health promotion and suicide prevention efforts should account for lived experience of persons with multiple marginalized identities and the impact of anti-TGD attitudes.

M96. DO BELIEFS ABOUT FIREARMS AND SUICIDE RISK VARY AMONG INDIVIDUALS WITH A HISTORY OF SUICIDE RISK? AN EXAMINATION IN A SAMPLE OF ARMY SOLDIERS

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Background: Limiting access to lethal means for suicide (i.e., means safety efforts) is an effective measure to reduce suicide rates. Firearms are the most lethal means for suicide and account for the majority of suicide deaths among United States (US) military servicemembers (SMs) and veterans. We examined the association between risk factors for suicide and beliefs about firearms and suicide risk, and if this association was moderated by lifetime suicide risk in a sample of Army soldiers.

Methods: Data was collected as part of a larger cross-sectional study examining behavioral health and mental readiness in a sample of 360 Army SMs. We examined how participant ratings of psychological flexibility, honor ideology, intolerance of uncertainty, entrapment, confidence in gun ownership beliefs, and gun ownership were associated with the extent to which they believed (1) firearm ownership and (2) storage practices were related to suicide risk. Multigroup path analyses examined whether these relationships varied as a function of a history of any lifetime suicidal thoughts or behaviors. Chi-square difference tests identified significant moderating effects.

Results: On average, participants endorsed slight beliefs that ownership and storage were associated with suicide risk, and moderate to strong confidence in these beliefs. Risk factors and demographic covariates explained only a small degree of the variance in firearm ownership beliefs ($R2=.12$, $p <.01$). Individuals with greater entrapment ($B=.16$, $p<.001$), more confidence in their ownership beliefs ($B=.17$, $p<.01$), who owned more firearms ($B= -.13$, $p<.05$), and did not have children ($B= -.18$, $p<.001$) endorsed stronger beliefs that gun ownership was related to suicide risk. A history of suicide risk moderated the relationship between educational level and gun ownership beliefs ($\Delta\chi2(1) = 6.74$, $p< .01$), such that individuals with greater education and a history of lifetime suicide risk endorsed stronger beliefs that ownership is related to suicide risk. In contrast, confidence about gun storage beliefs ($B=- .18$, $p<.01$) was the only risk process associated with gun storage beliefs ($R2=.04$, $p=.09$). Multigroup models indicated that individuals with a greater intolerance of uncertainty who had a lifetime history of suicide risk endorsed weaker beliefs that gun storage practices were related to suicide risk.

Discussion: Findings indicate that SMs tend to believe that gun ownership and storage practices are largely unrelated to suicide risk. The pattern of effects associated with ownership and storage beliefs varied, with experiential factors and entrapment contributing to stronger risk-ownership beliefs, and intolerance of uncertainty linked with weaker risk-storage beliefs, particularly among those with a history of suicide risk. These results underscore the need for

more tailored messaging (i.e., focus and source of messages) and suicide-gun violence prevention efforts (i.e., means safety) among Army SMs.

M97. UNDERSTANDING PATTERNS OF MENTAL HEALTH HELP-SEEKING BARRIERS, FACILITATORS, AND SUPPORT ACCESSED AMONG LATINE COLLEGE STUDENTS IN THE US: DIFFERENCES BY RISK FOR SUICIDE AND KEY DEMOGRAPHIC FACTORS

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Background: Suicide is the second leading cause of death among college-aged students, and prevalence rates of suicide risk indicators (i.e., suicidal thoughts and behaviors or STBs) have increased among Latine college students in the US over the past decade. To address growing risk for suicide, improving access to mental health resources and help-seeking amongst students is necessary. However, formal mental health help-seeking amongst Latine students remains low. Potentially, students are utilizing informal support in lieu of formal resources — however, no nationally-representative studies have examined informal and formal help-seeking concurrently amongst Latine college students. Furthermore, it is not well understood which help-seeking barriers and facilitators are most salient for Latine students. The purpose of this study is to (a) identify patterns of help-seeking barriers, facilitators, and support accessed; (b) examine student demographics as predictors of these patterns; and (c) estimate the association between these patterns and STBs among Latine students.
Methods: This study is a cross-sectional, secondary data analysis of the Healthy Minds Study (HMS) dataset between 2018–2019. Our study sample includes 2,515 Latine students ranging between 18–25 years old (M= 20.5). Seventy-two percent identified as cisfemales. Latent class analysis (LCA)—with key demographics such as gender identity, sexual orientation, and age included as covariates—was used to identify patterns of barriers (medication/therapy helpfulness, perceived and personal stigma, financial stress, sense of belonging), facilitators (mental health diagnosis, perceived need, knowledge of services), informal (peers, family) and formal (medications, therapy) support accessed. Finally, associations between risks for each type of STB (suicidal ideation (SI), non-suicidal self-injury (NSSI), attempts) and help-seeking patterns were estimated.
Results: Four patterns were identified: 22% High Knowledge of Services/Low Perceived Need with Low Overall Support, 36% High Knowledge/Perceived Need with Family/Peer Support, 18% Isolated and Financially Stressed with Peer Support, and 24% High Perceived/Evaluated Need with Informal and Formal Support. All covariates were significantly associated with memberships in each latent class such that older students ($p < .001$), students identified as cisgendered females ($p < .001$) or transgender ($p < .001$), students who were not heterosexual ($p < .001$) were more likely to be in the higher mental health need/barrier classes. Patterns with higher barriers and/or perceived mental health need were also linked with higher risks for STBs, regardless of levels of support. Specifically, for students in the Isolated and Financially Stressed with Peer Support class, 17% have reported SI, 16% reported both NSSI and SI, and 2% attempted suicide. For those in the High Perceived/Evaluated Need with Informal and Formal Support class, 13% have reported SI, 20% reported NSSI and SI, and 6% attempted suicide.

Discussion: Latine students reporting STBs were more likely to access peer support—regardless of mental health help-seeking barriers. Formal support sources were more commonly accessed by those reporting STBs only where barriers were reduced. Thus, efforts to improve access to mental health support among those at risk for suicide should entail education and training for their preferred social support systems. By activating their support systems, individuals struggling with STBs may be more easily identified and supported in receiving care. Future directions include examining help-seeking among students reporting STBs in Latin American countries to develop interventions relevant to their sociopolitical contexts.

M98. EVALUATING DELIVERY OF TWO UNIQUELY ADAPTED, RESERVATION-BASED INTERVENTIONS FOR SUICIDE PREVENTION

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Background: The Southwest Hub study evaluated the effectiveness of two interventions in preventing youth suicide in the White Mountain Apache community. The first intervention, New Hope, was adapted from validated brief emergency department (ED) interventions which show promise for connecting individuals with care and preventing re-attempts. Unique barriers to care in rural, reservation-based settings – stigma, lack of services, and lengthy travel distances – are not addressed in existing ED interventions, so New Hope is the first ED intervention adapted to American Indian cultural and resource contexts. It is a one-visit lesson that emphasizes the seriousness of a suicide attempt, teaches coping skills to reduce risk, and helps participants overcome barriers to treatment.
The second intervention, Elders Resilience, is designed to be delivered 2-3 months after a suicide behavior. It is taught by a case manager and Elder, focuses on reinforcing cultural strengths and resilience as protective factors to prevent suicide, and includes Apache language and traditions. As part of a larger study, we are conducting quality assurance (QA) of the intervention delivery, including understanding how the delivery may have changed during and after COVID-19. We know that some visits occurred over the phone when in-person visiting was limited, and to protect the Apache Elders, the Elders Resilience lesson has at times been delivered by video recording and by case managers alone.

Methods: We have completed three rounds of QA: one set from early study implementation, one set from the middle of the study, including pre-COVID, height of COVID precautions and late-COVID, and the third from more recent lesson visits. Each session is audio recorded, and a sample of those recordings were selected to include a range of participant ages and genders, and interventionists (n=20% of total study sample). All reviews use a standardized checklist asking about Lesson Delivery, Relationship with the Participant, and Adherence, Competence and Flexibility (ACF). Lesson Delivery is scored 'yes, no, unclear, not applicable.' The rest of the items are scored from '1, none' – '4, exceeds expectations.' The Elders Resilience reviews have been completed by community members fluent in Apache.
Results: We present the results from the QA evaluations of New Hope and Elders Resilience lessons, including duration of visits compared with what we expected, scores of the checklist

components, comments from reviewers, and other circumstances, trends, and participant-case manager relationship notes.

Discussion: These findings highlight the expertise that the community interventionists bring to implementation, such as relationship building and teaching skills. They also reveal ways the actual implementation of these interventions have differed from design. We will need to consider how these changes may impact the overall data on effectiveness of the interventions in preventing youth suicide. We will also need to consider if any of these differences are improvements on the original lesson design to be more relevant in the community, and if any reflect needed improvements in training or implementing.

M99. THE IMPACT OF THE COVID-19 PANDEMIC ON SUICIDE RISK SCREENINGS WITHIN PEDIATRIC NEURODEVELOPMENTAL AND RELATED CLINICS

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Background: In 2017, our healthcare organization implemented universal suicide risk screening in outpatient clinics for all patients aged 8 years or older presenting for treatment of neurodevelopmental and related disorders (NRD). Utilizing results of the Ask Suicide-Screening Questions (ASQ) tool, we analyzed factors that influenced suicide risk screening as well as suicide risk in children with NRD who presented for initial treatment in medical clinics before and after the onset of the COVID-19 pandemic.

Methods: Screenings were performed as part of routine triage for onsite visits by a registered nurse in our clinics for psychiatry, neurology, genetics, developmental pediatrics, neuromotor, rehabilitation, and autism spectrum and related disorders. Patients or caregivers could respond to the ASQ questions or decline participation. A retrospective medical record review was conducted on all initial visits for patients aged 8-17 years who presented for outpatient care from July 2019 to April 2023. Descriptive statistics were performed on results of ASQ, clinic attendance, and comparison of positive ASQ screening (a “yes” response to any question) frequency from before (July 2019-February 2020) and after (July 2022-February 2023) the onset of the COVID-19 pandemic.

Results: There were 5362 eligible children who presented for an initial visit, with 3326 eligible pre-pandemic and 2036 post-pandemic. A total of 3236 children between the ages of 8 and 17 underwent initial screenings, with 1851 completed pre-pandemic and 1385 post-pandemic. Significantly more screenings were declined prior to the pandemic than after (44.3% vs. 32%, respectively), $p < .001$. The prevalence of positive screens was 10% or greater in psychiatry (15.5%), autism spectrum and related disorders (13.1%), neurology (10.5%), and rehabilitation (10.3%) clinics. In contrast, developmental pediatrics (5.6%), genetics (4.0%), and neuromotor (3.0%) clinics exhibited comparatively lower prevalence rates. Although not statistically significant, we observed an overall increase in rates of positive suicide risk screening after compared with before the pandemic (7.1% vs 5.7%, respectively), $p = .104$. Qualitatively, rates of positive screens decreased by 3.5% for neurology, while rates slightly increased for genetics (+0.3%), behavior and development (+1.3%), neuromotor (+3.3%), and rehabilitation (+1.1%) clinics.

Discussion: Given rates of positive screenings across clinics, this study supports continued universal suicide risk screening of children with NRD. Patients were more likely to participate in suicide risk screening after the onset of the pandemic than before, perhaps due to increased focus on mental health. Our data suggested a trend toward increased positive suicide risk screenings, although it is unclear if this trend reflects changes in mental health risk factors related to the pandemic or if it reflects risk factors related to clinical populations. Deeper analysis of individual clinical groups may help to illuminate risk factors.

M100. POTENTIALLY TRAUMATIC EXPERIENCES, PREJUDICE EVENTS, POST-TRAUMATIC STRESS DISORDER, AND SUICIDALITY IN MULTIRACIAL AND MULTIETHNIC ADULTS IN THE UNITED STATES: A CROSS-SECTIONAL STUDY

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Background: Multiracial and multiethnic people are part of the fastest growing demographic in the United States, yet little is known about their mental health. This cross-sectional study aimed to investigate the relationships between potentially traumatic experiences (PTE), prejudice events, suicidal ideation, suicide attempts, and post-traumatic stress disorder (PTSD) in a sample of multiracial and multiethnic adults in the United States. The study also examined the potential moderating effects of psychiatric comorbidity on these associations.
Methods: A cross-sectional survey assessed for symptoms of depression, anxiety, post-traumatic stress disorder (PTSD), and suicidal behaviors; exposure to PTEs and prejudice events; estimated perceived stress, strength in ethnic identity, and perceived social support among adults who lived in or were from the United States and self-identify as multiracial and/or multiethnic. Responses were collected from October - December 2022. Regression analyses were used to examine the associations between these variables and the moderating effects of psychiatric comorbidity and ethnic identity.
Results: The prevalence of depression (42.1%), anxiety (40.5%), PTSD (40.4%), and suicidal behaviors (25.4%) within this sample of multiracial and multiethnic adults was higher than overall estimates from nationally representative surveys. Results indicated that PTEs and prejudice events were positively associated with suicidal ideation (OR: 1.10, 95% CI: 1.05, 1.15; OR: 1.13, 95% CI: 1.05, 1.20) and PTSD (OR: 1.18, 95% CI: 1.13, 1.22; OR: 1.18, 95% CI: 1.11, 1.25). PTEs were positively associated with suicide attempt (OR: 1.11, 95% CI: 1.04,1.20). Psychiatric comorbidity with depression or PTSD attenuated the association with suicidal ideation. Results indicated that certain individual events, such as physical assault and sexual violence, had greater odds of being associated with PTSD, suicidal ideation, and attempt, and that individual prejudice events were also positively associated with these outcomes. Increased compartmentalization of multicultural identities increased the odds of suicide attempts and PTSD.
Discussion: This study provides evidence to suggest multiracial and multiethnic adults in the United States have a high prevalence of mental health conditions and highlight the importance of considering both potentially traumatic experiences and prejudice events when assessing and treating individuals for PTSD and suicidal ideation and attempt. The results also suggest that the experiences of multiracial individuals may be particularly relevant in understanding the relationship between prejudice events and suicide. The findings from this study support

ensuring adequate sampling of multiracial and multiethnic people in population health research and surveillance to ensure public health efforts to achieve health equity are inclusive of multiracial and multiethnic communities.

M101. FACILITATORS AND BARRIERS TO IMPLEMENTING SUICIDE SURVEILLANCE AND PREVENTION SYSTEMS IN DIVERSE TRIBAL COMMUNITIES

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Background: Suicide is the leading cause of death for American Indian youth ages10-24, a pattern that has been exacerbated by the COVID-19 pandemic. However, suicide rates also vary widely across and within tribes, so it is imperative that suicide prevention efforts be based on local data that explain the nuances of the problem in that community. The White Mountain Apache Tribe (WMAT) leveraged tribal sovereignty to establish the Celebrating Life (CL) program, a community-based surveillance system that includes brief longitudinal case management provided by Apache community mental health specialists. The CL system, combined with other prevention initiatives, contributed to a 38.3% decrease in suicide rates in the six years after it was implemented. Based on this success, WMAT in partnership with the Johns Hopkins Center for American Indian Health, is working with five other tribal communities to implement CL in their contexts. Our research helps clarify the contextual determinants of CL implementation and how they align with constructs from the Consolidated Framework for Implementation Research (CFIR).
Methods: We convened four focus groups with stakeholders who are involved in implementing the CL system in their contexts. Within each focus group, we used Nominal Group Technique to elicit and prioritize barriers and facilitators to CL implementation. We coded the list of barriers and facilitators using the CFIR's codebook template. Codes were applied by two coders with discrepancies discussed. Data was then aggregated and summarized.
Results: Focus groups of 5-8 participants were held separately for 3 of the 5 sites, with 1 group discussion held in conjunction with the remaining 2 sites. Across all groups, participants rated "dedicated and motivated staff" as the most significant facilitator (mentioned by all 5 sites), and "stigma related to suicide" as the most significant barrier (mentioned by 3 sites). All domains of the CFIR were covered by the data, but some additional domains emerged that are not included in the CFIR, such as the spiritual burden of working on this issue in these communities.
Discussion: Results from this study can explain the implementation process of the CL program across diverse tribal contexts. Barriers and facilitators represented domains from multiple ecological levels. Most factors identified align with the CFIR, although several unique constructs need to be considered when implementing suicide prevention programing with tribal communities. The results of this study can inform selection and tailoring of implementation strategies for the local context and advance our understanding of implementation science in one of the most impacted health disparity populations in the United States.

M102. THE ROLE OF SLEEP DURATION IN SUICIDE RISK AMONG SEXUAL AND GENDER MINORITY ADOLESCENTS

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Background: Short sleep duration is linked with suicide risk in adolescence. Sexual and gender minority (SGM) adolescents experience substantially increased risk for suicide compared to their non-SGM peers, yet little research has investigated the role of sleep duration in this disparity.
Methods: Population-based, cross-sectional data are from the 2022 Minnesota Student Survey (MSS; N=85,610, Mage=14.8). Adolescents reported average school-night sleep duration; those reporting <6 hours were classified as having very short sleep duration. The MSS additionally assessed past-year suicidal ideation and suicide attempt. Mediation analyses assessed the role of sleep duration in explaining associations between SGM identity and suicide risk. Further, to examine intervention mechanisms, among SGM adolescents (n=20,171, 23.6%), a logistic regression model assessed associations
Results: As compared to non-SGM adolescents, SGM adolescents reported substantially higher prevalence of past-year suicidal ideation and suicide attempt and 2.6x higher prevalence of very short sleep duration (all $p < 0.001$). Mediation analyses demonstrated that very short sleep duration partially mediates the pathway between SGM identity and past-year suicidal ideation (15.5% mediated) and suicide attempt (17.2% mediated). Among SGM adolescents, a striking positive dose-response relationship was observed between level of perceived parental care and very short sleep duration such that as perceived parental care decreased so too did hours of sleep.
Discussion: Sleep duration is a crucial and understudied mechanism underlying suicide risk disparities affecting SGM adolescents. Family-based interventions may improve SGM adolescent sleep and reduce suicide risk.

M103. SUBSTANCES USED IN SUICIDE DEATHS BY SELF-POISONING IN TORONTO, CANADA: AN OBSERVATIONAL STUDY OF CORONERS DATA 1998-2020

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Background: This study aims to identify the substances used by people who die by suicide by self-poisoning in Toronto, Canada (1998-2020), to determine the correlates of specific categories of substances used, and to explore trends over time.
Methods: For all self-poisoning suicide deaths in Toronto (1998-2020), demographic data, clinical variables, all substances detected and those determined to be a cause of death were collected from records at the Office of the Chief Coroner of Ontario. Time trends for each major drug class were explored descriptively. Chi-square tests were used to examine the relationship between gender and demographic, and clinical factors.
Results: There were 887 documented suicides by self-poisoning over the 23-year period (mean age 51.7 years, 50.5% females). Fluctuations in self-poisoning suicides were observed from 1998-2020, with a rapid increase in 2016 and a gradual downward trend from 2017 onwards. The most commonly detected classes are sedative-hypnotics (n=452; 51.0%), opioid analgesics

(n=357; 40.2%), other antidepressants (n=339; 38.2%) and over-the-counter medications (n=304; 34.3%). One-half of all suicides were determined to have one specific substance as the cause of death (n=451; 50.8%). The most common lethal classes detected were opioid analgesics (n=231; 26.0%), followed by TCA (n=132; 14.9%) and sedative-hypnotics (n=118; 13.3%). Among people who died by self-poisoning, more males than females experienced employment/financial stressors, 14.1% male vs 9.8% female; X2 3.90, df 1, p=.0.048, police/legal stressors, 5.5% male vs 2.2% female; X2 6.29, df 1, p= 0.01, and substance abuse 32.1% male vs 24.8% female; X2 5.88, df 1, p=0.02. Females were more likely than males to have identified diagnoses of bipolar disorder, 14.1% female vs 8.7% male; X2 6.42, df 1, p= 0.01, PTSD, 3.3% female vs 0.9% male; X2 6.28, df 1, p= 0.01 and symptoms of paranoia, 2.0% female vs 0.5% male; X2 4.37, df 1, p= 0.04.
Discussion: Although the number of suicides by self-poisoning has declined in recent years, this suicide method continues to be a leading cause of suicide deaths in Toronto. Physicians and pharmacists should continue to be aware of self-poisoning trends for commonly used prescription and OTC medications and exercise caution when prescribing or dispensing to vulnerable populations.

M104. PROXIES OF ACQUIRED CAPABILITY AS PREDICTORS OF RECURRENT SUICIDE ATTEMPTS AMONG HIGH-RISK ADOLESCENTS: AN 18-MONTH INVESTIGATION

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Background: Suicide is a leading cause of death among youth worldwide. A history of self-injurious thoughts and behaviors (SITBs), such as suicidal ideation (SI), non-suicidal self-injury (NSSI), and suicide attempts (SAs) are among the strongest predictors of future attempts and death by suicide. Several studies have used cross-sectional designs to examine factors associated with a history of multiple (i.e., 2+) SAs among youth, though less have examined this question longitudinally. Relatedly, there is a dearth of work examining how youth with varying baseline histories of SAs and do not re-attempt during high-risk periods (e.g., following inpatient hospitalization) differ from youth with similar baseline histories but re-attempt during the same period. Exposure to, or presence of, emotionally and/or physically painful stimuli (i.e., history of SITBs, minority stress, childhood maltreatment, and depressive symptoms), is believed to play an important role in prompting suicidal behavior and may help differentiate youth at greatest risk. The aim of this study was to examine differences in such factors among youth with varying temporal patterns of SAs during a high-risk period. Specifically, relative to youth with other temporal patterns of SAs, youth who endorsed a baseline history of multiple SAs and then re-attempted during the 18 months following hospitalization were hypothesized to report the greatest SI and depressive symptom severity, threat levels, endorse a history of NSSI, and identify as a sexual minority (versus heterosexual).
Methods: A subsample of 136 adolescents (Mage = 14.85, SD = 1.35; 80.9% White; 83.1% non-Hispanic/Latino/a/x; 74.3% female; 57.4% heterosexual) with data for all variables of interest from a larger study were included in the present investigation. SI (SIQ-JR) and depressive symptom severity (CDI-2), lifetime NSSI history (SITBI), lifetime experiences of maltreatment (CTQ), and sexual identity were assessed at baseline. Five subgroups of youth were identified based on differing temporal patterns of SAs (C-SSRS): (1) no SAs at baseline

or at any time during the 18-month follow-up period; (2) one SA at baseline but none during the follow-up period; (3) multiple SAs at baseline but none during the follow-up period; (4) one SA at baseline and 1 (or more) SAs during follow-up; (5) multiple SAs at baseline and one (or more) SAs during follow-up. Kruskal-Wallis and chi-square tests in SPSS were used to examine differences among groups, with Bonferroni adjustments made to reduce Type I errors.
Results: Youth with histories of multiple SAs and re-attempt(s) during the 18-month follow-up reported greater SI and depressive symptom severity, as well as lifetime experiences of threat versus youth with no baseline or prospective history of SAs. These predictors did not effectively differentiate between youth with varying baseline and prospective patterns of SAs.
Discussion: Addressing these concerns during inpatient treatment among youth with multiple SAs may significantly decrease risk for another attempt during the 18 months post-hospitalization. Different predictors may distinguish youth with other temporal patterns of SAs.

M105. SUICIDES ON AND OFF WARD WHILE UNDER INPATIENT CARE: A NATIONAL HYBRID-REGISTER STUDY

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Background: Although patients treated in mental health settings, in general, have an increased risk for suicide compared to most other populations, the risk is particularly high during inpatient admission as well as after discharge. Whereas large-scale registry studies are suitable to demonstrate these increased risks, they usually lack information on clinical variables that could characterize the risk groups in more detail. The aim of this study was, thus, to combine register and clinical data to obtain more knowledge on people who suicide during inpatient care.
Methods: We adopted a hybrid registry design. First, a linkage was made between the Norwegian cause of death registry and the Norwegian patient registry, thus identifying all people who died by suicide (ICD-10 codes: X60-X85 Y10-Y35 Y870 Y872) who had been in contact with mental health services during the last 12 months before their death. Among these, we selected the suicides that had occurred during inpatient care from 2018 until 2020 and linked them with data collected by an electronic survey of the same patients. These survey data were reported by clinicians after a patient's death by suicide.
Results: A total of 81 inpatient suicides took place during the study period. Their mean age was 46,5 years, 56 % were male and 46 % had a mood disorder. Despite that these were all inpatients, only 30 (37 %) of the suicides took place inside the ward, whereas most of the remaining patients were on some sort of leave. Among those that died on the ward, hanging was used in 80% of cases compared to 25% among suicides taking place outside of the ward ($p < 0.001$). In more of the on-ward suicides there was a history of deliberate self-harm (80 vs. 25%, ($p < 0.007$)). Twelve (15%) of the patients were on special observation at the time of their death, most often intermittent observation. Most out-of-ward suicides occurred among patients admitted to community mental health care inpatient units (63 %) compared to psychiatric hospital units (37 %) ($p < 0.000$).
Discussion: The use of a hybrid-registry design enabled us to access more detailed clinical information on the important, albeit low frequent, suicides while under inpatient care. The high proportion of suicide by hanging shows that improved implementation of method restriction policies that have been shown to be effective in other healthcare systems might be warranted. That there was a relatively high proportion of suicides in community inpatient units suggests

that these units may be less effective in preventing inpatient suicide, although the design of our study does not allow us to draw any firm conclusions about the effectiveness of interventions. Our finding that a very high proportion of suicides among inpatients occurred outside of the ward, which is comparable to a previous UK study applying similar study methods, calls for a broader discussion among clinicians, users, and next of kin organizations as well as hospital managers as to how to more optimally balance between the difficult and often opposing needs, values, and goals of strengthening patient safety and therapeutic effects at the same time as considering patients' welfare and preferences when making decisions regarding leave from wards or the use of special observation or other potentially intrusive interventions.

M106. PREVALENCE AND RELATED INFLUENTIAL FACTORS OF SUICIDAL IDEATION AMONG COLLEGE STUDENTS DURING THE COVID-19 PANDEMIC IN CHINA: A 3-YEAR REPEATED CROSS-SECTIONAL STUDY

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Background: The first case of COVID-19 was reported in China in late December 2019, followed by a rapid increase in new confirmed cases across the country. The epidemic status in China plateaued in 2021, and the epidemic situation became more tense in 2022 due to the increase in newly confirmed cases. Considering the epidemic's evolution and the virus's mutation, China's various epidemic control measures were gradually lifted until December 2022. The COVID-19 pandemic tremendously threatens people's mental and physical health. Few studies reported the past 12-month prevalence of suicidal ideation among college students after the COVID-19 pandemic. Therefore, the purpose of this study was to investigate the past 12-month prevalence of suicidal ideation and its changes among Chinese college students during the three years following the COVID-19 pandemic outbreak and to explore the factors influencing suicidal ideation.
Methods: We used a repeated cross-sectional survey design to conduct a consecutive three years online survey among college students at seven universities in Shandong, Shaanxi, and Jilin Provinces, China. The survey time of the three times survey was about a year (T1: November 2020 to March 2021, N=6944), two years (T2: November 2021 to March 2022, N=4633), and three years (T3: November 2022 to March 2023, N=5011) after the COVID-19 pandemic outbreak, respectively. Suicidal ideation was measured according to participants' answers: "Have you ever thought about suicide in the past 12 months seriously?". Some suicided-related influential factors were collected, including age, gender, major, grade, nationality, community, one-child households, single status, school activity status, physical health status, mental health status, academic performance, and sleep quality. The multivariate logistic regression model explored the influencing factors of suicidal ideation among college students.
Results: The mean age of 16,588 college students was 19.42 (1.35) years. The prevalence of suicidal ideation was 20.07%, 3.89%, and 5.81% at T1, T2, and T3, respectively. Logistic regression analysis showed that survey time (T1: OR=7.60, 95%CI: 6.37-9.13; T3: OR=1.24, 95%CI: 1.01-1.53), female (OR=1.69, 95%CI: 1.48-1.94), urban household registration (OR=1.31, 95%CI:1.15-1.49), non-single status (OR=1.17, 95%CI:1.03-1.33), poor mental health status (OR=6.00, 95%CI:4.70-7.65), poor academic performance (OR=1.24,

95%CI:1.01-1.52), poor sleeping quality (OR=1.27, 95%CI:1.05-1.53), smoking (OR=1.71, 95%CI:1.34-2.17), drinking (OR=1.44, 95%CI:1.28-1.63), depressive symptoms (OR=2.35, 95%CI:2.02-2.72), anxiety symptoms (OR=1.89, 95%CI:1.63-2.19), and stress symptoms (OR=1.34, 95%CI:1.16-1.55) were risk factors of suicidal ideation. Non-medical students (Science: OR=0.76, 95%CI:0.61-0.94; Engineering: OR=0.72, 95%CI:0.61-0.86), sophomore students (OR=0.68, 95%CI:0.59-0.80), junior students (OR=0.70, 95%CI:0.57-0.85), and senior students(OR=0.69, 95%CI:0.53-0.90) were protective factors of suicidal ideation. No association was found between suicidal ideation and age, nationality, one-child households, participation in school activities, and physical health status.
Discussion: The past 12-month prevalence of suicidal ideation among Chinese college students was 20.07% after the COVID-19 outbreak and showed a trend of decreasing and then increasing in the latter two years. This trend is consistent with the epidemic situation in China. Suicidal ideation is a strong predictor of suicide attempts and suicide deaths. Universities and the government should take active measures to help college students cope with the reality of their difficulties.

M107. SUICIDE RISK ASSESSMENT AND MANAGEMENT PROTOCOL ADAPTED FOR COGNITIVELY CHALLENGED CLIENTS

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Background: Suicide and self-injurious behaviors are a frequent and serious problem, observed in children as well as in adolescents and young adults. In Latin America, suicide represents the second cause of death between 15 and 24 years of age. People with intellectual disabilities are often diagnosed with comorbid psychiatric disorders, which makes them a vulnerable population at risk of developing suicidal thoughts and behaviors.
Previous research has focused on suicide as a preventable phenomenon, demonstrating that early detection and intervention are key to reducing the risk of suicide. With this objective, various evidence-based tools have been developed to address people at suicidal risk, such as the Linehan Risk Assessment and Management Protocol (LRAMP)part of the Dialectical Behavioral Therapy (DBT) program. This tool has evidence of its usefulness in the general population, but given the complexity of the problem, it is difficult to implement in people with intellectual disabilities. For this reason, a specific adaptation for its use in people with cognitive challenges and suicidal risk is currently being developed.

Methods: Fundación Foro, DBT Iberoamerica and Skills System LLC have worked over the past year on the design of a protocol to address suicidal behavior in people with cognitive challenges, based on the L-RAMP structure that is part of DBT.
Results: The Suicide Risk Assessment and Management Protocol adapted for Cognitively Challenged Clients is a clinical guide that helps the professional in case management. It is an explicit tool that consists of 7 sections, with WHAT and HOW to intervene in each of them. Several elements of the Skills System Programs are used for its final version as well as the specific design of a safety plan intervention in the body of the protocol.
Discussion: It is of fundamental importance to have specific tools that attempt to address the problem of suicidal behavior in a specific population. People with intellectual disabilities and other cognitive challenges have been neglected as a focus for the design of specific

interventions. The Suicide Risk Assessment and Management Protocol adapted for Clients with Cognitive Disabilities is now a useful tool that is being implemented in the Skills System therapist working group. By the time of the International Summit we will also be able to share data on its implementation.

M108. IS MENTAL HEALTH MULTIMORBIDITY ASSOCIATED WITH CONTACT WITH HEALTHCARE SERVICES BEFORE SUICIDE? RETROSPECTIVE ANALYSIS OF IRISH CORONIAL VERDICTS, 2015-2018

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Background: The effects of physical illness or psychiatric disorders have been extensively investigated in fatal and non-fatal suicidal behaviour, with studies indicating that the presence of multiple psychiatric conditions is a strong predictor of subsequent suicide. Furthermore, It has been evident that health care services are vital interventions points before suicide, in particular for clinical populations with multiple physical or mental health conditions, described in literature as patients with multimorbidity. However, there is a lack of research on contact with health services among those with and without multiple mental health conditions before suicide.
Aim: To explore whether mental health (MH) multimorbidity is associated with contact with healthcare services before suicide.

Methods: A retrospective study was conducted using data from the Irish Probable Suicide Deaths Study (IPSDS), over the period 2015-2018. The IPSDS cohort (n=2,349), comprising deaths given a coronial verdict of suicide and and deaths likely (on the balance of probabilities) to have been caused by intentional self-harm, was divided into three mutually exclusive health groups: a) no mental health conditions, b) one mental health condition only, c) two or more mental health conditions ("MH multimorbidity"). Descriptive statistics and binary logistic regression analyses with odds ratios (OR) and 95% CIs are presented. The significance level was set at $p < 0.05$. With previous multimorbidity research indicating a differentiation of suicide risk based on specific sociodemographic factors, the binary models were further adjusted for sex, age and labour market position.
Results: 19% of the IPSDS cohort had two or more mental health conditions, with a higher proportion of females (29%) recorded as having MH multimorbidity, compared to males (16%; $\chi2= 74.13$, df=2, $p< 0.001$). MH multimorbidity was more prevalent among those 35-44 years of age (22%). The unadjusted logistic regression indicated that those with MH multimorbidity were significantly more likely to have contacted health services before suicide, compared to those with no mental health conditions (OR= 10.65; 95% CI, 8.10-14.01, $p <0.001$).
Discussion: Suicide risk assessments have not been proven effective for predicting suicide among people in contact with healthcare services, partly due to treating those with mental illness as a homogeneous group, without taking into account variation in the number of health conditions experienced. Our findings indicate that those who experience more than two mental health conditions are more likely to attend health services before suicide and suggest that suicide interventions should be targeted at this understudied vulnerable group.

M109. OPEN BOARD

M110. ADOLESCENTS TREATED WITH DIALECTICAL BEHAVIOR THERAPY: A QUALITATIVE STUDY AT LONG TERM FOLLOW UP

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Background: Dialectical behavior therapy (DBT) is a psychotherapeutic intervention with a large evidence base for treating people with borderline personality disorder. The treatment has been adapted for adolescents with severe emotional regulation dysregulation (DBT-A), and DBT-A has been shown effective in reducing self-harm and suicidal behavior in this population in three RCTs. Recently, DBT was recommended to the same group in the NICE guidelines as well. Most studies mainly report on efficacy, the importance of therapy, and on the therapy process immediately after treatment. Those that refer to effect up to two years later are also mainly quantitative. There is a great need to better elucidate various aspects of how and why DBT is useful. There are few qualitative studies on adolescents' perception of the treatment and in particular regarding how young patients experience the treatment. It is to our knowledge no studies on patients formerly treated by adherent DBT therapists and how these now young adults remember and evaluate the impact of DBT-A on their life.
Methods: The study uses a qualitative design with semi-structured interviews. Participants are recruited from a sample of former patients treated for self-harming behavior, participating in a randomized controlled trial looking at the efficacy of DBT-A vs enhanced usual treatment. All those who had attended DBT and who were going to ordinary interviews in connection with the main study were consecutively asked. Up to 15 people will be interviewed, and it has been 10 years or more since they went into DBT treatment. The interviews are transcribed and analysed by two of the authors using thematic text condensation.
Results: 10 interviews have been conducted, all respondents asked responded positive to be interviewed. The interviews have taken 60-64 minutes to complete. Transcription has been done, and each interview consists of 20-25 pages of written interviews. Preliminary results indicate that many people remember the treatment fairly well, and may point to specific elements as important. We will be able to say something more about the implementation, experiences and certain topics at the conference meeting.
Discussion: All respondents wanted to participate in the qualitative interviews, which is considered positive in itself. Many people remember elements of the treatment well, even after such a long time. This may indicate that a short intervention such as DBT-A, which has a clear structure and explicitly described content, may also have an impact beyond the time of the intervention itself.

M111. SUICIDAL BEHAVIORS IN AN ADOLESCENT PSYCHIATRIC INPATIENT POPULATION: A RETROSPECTIVE NATURALISTIC STUDY

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Background: Adolescents who have mental disorders face a greater risk of engaging in suicidal behaviors (SB), with between 48% and 87% of those with SB also suffering from disorders like depression, anxiety, substance abuse, attention deficit disorder, or conduct disorder. This complex clinical situation may require emergency department visits and possible hospitalization. Although there are high rates of psychiatric disorders and hospitalization linked with SB, only a few studies have investigated the clinical distinctions between adolescents with or without psychiatric disorders associated with SB. Additionally, there are even fewer studies examining the clinical characteristics of hospitalized adolescents with SB compared to those without SB. The current study had three objectives 1) to gain a deeper comprehension of factors related to suicidal thoughts and behaviors (STB) in adolescents who are hospitalized. 2) to compare the characteristics of those who exhibited STB with those who did not 3) to document the annual prevalence of STB.
Methods: We extracted retrospective data from 1,146 adolescents hospitalized at the Psychiatric Hospitalization Unit for Adolescents at the University Hospital of Lausanne, Switzerland. Chi-squared tests and t-tests were used to compare the differences between patients with versus without STB during the week before admission. Stepwise multiple regression analyses were used to test two blocks of predictors of length of stay among patients with STB: diagnoses and patient referral, controlling for demographic factors.
Results: Annual hospitalization trends showed a significant increase in patients with SB in 2020. Patients with SB were more often females, were more frequently addressed by other services within the same hospital, suffered more frequently from mood disorders, less often from schizophrenia, from developmental disorders, and from physiological disturbances. Finally, LoS of STB patients was significantly increased by 9.8 days for psychotic patients.
Discussion: Our study revealed a noteworthy rise in the number of patients with suicidal behaviors (SB) in 2020, primarily among girls, which supports the hypothesis that girls were more susceptible to the adverse effects of the COVID-19 pandemic than boys. To develop focused preventive and therapeutic interventions for girls with SB, further investigations are required.

M112. MACHINE LEARNING PREDICTION OF SUICIDAL IDEATION AMONG COLLEGE STUDENTS DURING THE COVID-19 PANDEMIC

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Background: College students are particularly vulnerable to mental health problems, including suicidal ideation. The COVID-19 pandemic, and the restrictive measures imposed to limit the spread of the virus, such as lockdown or university closures, have increased the vulnerability of college students to mental health problems. In this particular epidemic context,

our objectives were to (1) develop a predictive model of suicidal ideation among college students with a machine learning model; and (2) identify the most predictive factors.
Methods: We used random forest models to predict suicidal ideation among 346 French college students involved in the French CONFINS longitudinal cohort. We created models for predicting suicidal ideation at follow-up, based on 128 potential predictors reported at baseline that reflected socio-demographics, health, lifestyle habits, familial characteristics, and COVID-19-related characteristics.
Results: The most important predictors identified were depressive symptoms, self-reported mood, and anxiety symptoms. The predictive models showed moderately good mean values for the area under the receiver operating characteristic curve (0.74), sensitivity (0.69), specificity (0.74), and negative predictive value (0.89). To a lesser degree, the level of stress before the COVID-19 pandemic, optimism about the quality of life after lockdown, and health literacy contributed to the suicidal ideation prediction. In a subsample of students that did not report suicidal ideation at baseline, the main predictors were quite similar.
Discussion: We identified a small number of major predictors that provided moderately accurate SI predictions. Our results suggested that factors related to socio-demographic variables or the COVID-19 epidemic context, contributed less to SI predictions among students, compared to mental health variables. Regardless of the socio-demographic characteristics, the initial psychological state of the students (notably depressive and anxiety symptoms) were sufficient to identify the majority of students at risk of presenting SI. These predictors, derived from short and/or commonly used scales, might facilitate the development of a routine screening program for identifying students at risk. For example, these predictors could be integrated into a short, online screening questionnaire administered upon college entrance.

M113. THE RACIAL VIOLENCE OF SUICIDE THROUGHOUT HISTORY: DECOLONIZING CURRENT SUICIDE PREVENTION FOR YOUTH OF COLOR

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Background: Black suicide is woefully understudied in the US., despite suicide being the third leading cause of death among adolescents and is a silent epidemic affecting youth globally. New alarming data suggest that suicide rates are two times higher among Black children ages 5–12 compared with White children in that age range. These racial disparities have not been adequately addressed. The marginalization of Black youth suicide must be centered and prioritized—or these disparities will continue to widen and continue to take the lives of so many Black youth. To adequately address the Black youth suicide crisis, a ground zero approach is necessary to truly decolonize current evidence-based treatment that has been primarily developed for and tested with White youth.
Methods: To address the current Black youth crisis and disrupt current disparities, the research aims of this project were twofold. First, a review of current evidence-based treatments was conducted by searching PubMed, MEDLINE and PsychINFO for treatment efficacy trials aimed at reducing suicide ideation and/or suicidal behaviors among youth. Eligible articles were peer reviewed RCT/pilot/quasi-experimental studies comparing the effectiveness of interventions for suicidal thoughts and behaviors, study population with >30% African American/Black youth and youth participants up to the age of 25. Exclusion criteria include review articles, case series and case reports. Reporting was conducted using the Preferred

Reporting Items for Systematic Reviews and Meta-analysis guidelines. Second, to historically ground the work of suicide to date, a historical analysis was conducted to situate our data in a structural context. Our longue durée approach starts with the scientification of suicide in the 19th century when scientific racism flourished. Through archival research and Black theory, we sought to answer: What is the racial history of antiblack bias in the leading studies on suicide today as the ones we examined?
Results: The systematic search generated 751 records, but only 11 studies (2004-2021) met eligibility criteria and were selected. The 11 studies featured seven different manualized interventions: attachment-based family therapy, multisystemic therapy, adapted coping with stress intervention, cognitive behavioral therapy, motivational interviewing, prolonged exposure therapy and mode deactivation therapy. Psychotherapy manual content analysis revealed that cultural adaptation of suicide interventions is predominantly focused on discussion/training on racial/ethnic identity formation. Limited language, intervention characteristics and content, literacy and treatment outcomes were culturally relevant. Our historical analyses yielded parallel results indicating that racism does not figure as a site for intervention. Such a blind spot, as our historical research suggests, is an effect of the enduring legacies of structural racism in the medical sciences.
Discussion: Culturally adapted treatments for Black youth suicide are scant and sorely needed. Such suicide needs to be reframed as a form of structural violence, a reframing that is not only interdisciplinary but also critically draws on the ongoing history of antiblack racism. For the study of suicide is often assumed be neutral and color blind, but our research suggests that it is entangled in the racial logics of Western medicine whereby the White adult male has figured as the epistemic measure and the paradigmatic subject of care. These biases are reproduced in mental health treatment protocols, obfuscating the racial suffering of Black communities. This is to say that the enigma of suicide so often terminates at the racial boundaries of non-whiteness as the disparities research begins to reveal.

M114. FADED HOPE AND WILD FANTASIES: A SYSTEMATIC REVIEW OF EPISODIC FUTURE THINKING IN SUICIDALITY

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Background: Future thinking is theoretically connected to the development of suicidal thoughts and behaviors. In the Integrated-motivational model future thinking is included as positive and negative future thoughts, and functional or dysfunctional goals, while in the three-step theory, hopelessness for the future is theorized as a risk factor for the onset of suicidal ideation. However, seldom do studies in suicidality consider the theoretical advancements in the future thinking literature, such as the distinction between semantic (general) and episodic (specific and autiobiographical) future thinking. Episodic future thinking has been shown beneficial for pro-social behavior, goal-setting and goal-pursuit, and well-being in studies among other populations. Through exploring the unique contents of episodic future thinking among suicidal patients, we sought to provide an overview of its potential role in suicidal development, and thus to extend the current understanding of future thinking in suicidality. We expected that a synthesis of previous results would elucidate the characteristics of episodic future thinking in people with suicidal ideation and suicidal behavior.

Methods: Thus, we conducted a systematic literature review assessing studies on episodic future thinking with a suicidal patient group and non-suicidal controls. We examined all studies which included participants with either suicidal ideation, self-harm, or previous suicide attempts, and one or more control or reference group(s) without any form of suicidal thinking or behavior. Additionally, the studies had to include measurements of episodic future thinking. We examined all published studies on episodic future thinking in suicidality and found 4 articles containing 5 empirical studies (N = 274), and these were synthesized narratively.
Results: The review showed divergent findings in the specificity of imagined events, possibly because of the severity of suicidal symptoms. Less severe suicidal ideations are not associated with impaired details. Although suicidal ideation is a serious symptom of suicidality, experiencing suicidal thoughts was not associated with cognitive impairments, and does not represent an imminent suicide risk. More severe suicidal ideation was associated with flash-forwards, and may be an antecedent of a suicidal crisis. These flash-forwards are intrusive, suicide-related episodic simulations and seem to arise from thought-suppression. Ultimately, as suicidal behaviors were associated with EFT impairments, a suicidal crisis, in which one is at an imminent risk of suicide, may impair EFT abilities altogether. There may be that impaired EFT occurs during an imminent threat of suicide, or that a suicidal crisis impairs EFT abilities following a non-fatal suicide attempt.
Discussion: Based on these results, this review addresses distinct EFT deficits depending on whether the individual is in a suicidal crisis or not. Based on this distinction, we drew up two main hypotheses that explored the associations between suicidal symptoms and EFT. First, among individuals in a non-crisis suicidal state, deficits in EFT abilities may stem from maladaptive coping mechanisms. Second, for individuals in a suicidal crisis, deficits in episodic future thinking are impaired in its totality, and one's ability to project the self into the future is severely limited. Crucially, these findings aligns with and extends modern step-wise theories of suicide, such as the three-step theory and the IMV-model. Ultimately, an increased understanding of future thinking patterns in suicidal individuals may contribute to preventing future suicides.

M115. A LINGUISTIC ANALYSIS OF INSTAGRAM CAPTIONS BETWEEN ADOLESCENT SUICIDE DECEDENTS AND LIVING CONTROLS

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Background: Suicide rates in teenagers have been increasing since 2007. While suicide related language on social media has been studied previously, research concentrating solely on youth is lacking. Instagram has grown over the past decade to house over 1 billion users at the end of 2020. Some estimates show that Instagram users tend to skew younger, as 70% of users under the age of 18 have a public account. Instagram offers the opportunity to study the communications and online behaviors of adolescents with public accounts. This study aimed to analyze Instagram captions to examine if there are differences in language use among teens who died by suicide and matched living controls.
Methods: Subjects were between the ages of 13 to 19, had died by suicide within the last five years, had a public Instagram account, and had posted on Instagram within 30 days preceding their death. Subjects were identified searching the terms "teen suicide" and "teen obituary". Death by suicide was confirmed using online obituaries. After finding the public Instagram

account of a deceased teen, captions were extracted, and age, sex, race, and LGBTQI status were recorded. To identify living controls, we searched the followers list from several of the top influencers and celebrities followed by teens and used a random number generator to select and match the final group. Controls were matched to each suicide decedent based on based on age, gender, race, and LGBTQI status. To assess whether language content was related to suicide in teenagers, Instagram captions were analyzed using Linguistic Inquiry and Word Count (LIWC) software, where all categories were included. Data were analyzed using SPSS v.24.
Results: There were N = 89 subjects in each group. For both groups, subjects were on average 16.5 years old, N = 51 were male, and N = 81 were white. 715 posts from the suicide decedents (SD), and 494 posts from the living controls (LC) were found in the 90 day period before death, and 13,172 total words were included in the analysis. To analyze language differences between groups logistic regression analysis was performed. The logistic regression model explained 18.5% (Nagelkerke R2) of the variance in group and correctly classified 78.9% of suicide cases. Ten significant differences in language were found between the suicide decedent and alive teens. Instagram captions written by SD were characterized by a higher usage of words per sentence, more references to sadness, males, drives, and leisure, and less verbs and references to they, affiliation, achievement, and power.
Discussion: The current study found a difference in how teenagers who died by suicide communicated on Instagram in the months prior to their death as compared to their living peers. If the results of the current study could be replicated and further validated with larger samples, it could suggest linguistic features posted on Instagram that could identify those in need of active intervention and support. Machine learning algorithms trained on larger datasets might prove to further enhance prediction of suicide risk and inform prevention strategies.

M116. TEMPORAL RISK OF REPEAT DELIBERATE SELF-HARM AND ASSOCIATED RISK FACTORS: A NATIONAL COHORT STUDY OF ALL PATIENTS TREATED IN SPECIALIST HEALTH SERVICES IN NORWAY

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Background: Deliberate self-harm (DSH) often relapses and constitutes an important risk factor for subsequent suicide. Insightful knowledge of the temporal risk for DSH repetition and associated risk factors is vital for strategies to prevent this harmful behaviour.
Methods: The data on DSH and covariates under study were derived from several Norwegian population registers. Kaplan–Meier survival analysis was used to report the temporal rate of DSH repetition. The hurdle count model was used to assess the risks of single repeat and frequent repeat of DSH associated with personal socioeconomic status, psychiatric comorbidity and methods of DSH.
Results: In total, 38,433 episodes of DSH involving 25,623 individual patients were identified during the study period. 5151 of these patients (20.1%) were treated for a DSH repetition during the follow-up period up to 5 years, of which 41.3% repeated more than once. The cumulative incidence rates of DSH repetition within 1 month, 3 months, 6 months, 1 year, 2 years, 3 years and 5 years were 3.7%, 6.8%, 10.0%, 14.0%, 18.4%, 21.4%, and 25.0%, respectively. The rates were consistently and significantly higher in females than males and in patients of young ages. The analyses from the hurdle count model indicated that young age, female gender, psychiatric

comorbidity, native Norwegian, and single as marital status were associated with a significantly increased risk for both single recurrence and frequent repeat of DSH in subsequent years.
Discussion: The findings indicate that the period shortly after a DSH incident is a vital time to intervene for DSH repetition. Female gender and younger age should be highlighted to prevent repetitions and suicide future. Frequent repeat of DSH also should be attached importance for DSH and suicide prevention.

M117. A TYPOLOGY OF CALLERS AT IMMINENT SUICIDE RISK WHO TURN TO A NATIONAL ONLINE CRISIS HELPLINE

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Background: Online crisis helplines play an important role in suicide prevention by providing an accessible source of support for individuals at risk of suicide. Particularly for people at imminent suicide risk, helplines provide immediate assistance during hours when mental health services are unavailable.
Methods: The present study investigated the types of callers at imminent suicide risk who sought help from the Israeli online crisis helpline SAHAR. The data were composed of the chats of all callers who contacted the helpline during an acute suicide crisis from 2017 to 2021. This resulted in a total of 200 chats which were analyzed using qualitative and quantitative methods.
Results: Five types of callers were identified. (1) Repeat callers who had a history of calls to the helpline. (2) Receptive callers who cooperated with the helpline responder and were willing to receive guidance. (3) 'Grateful but despaired' - callers who expressed gratitude to the helpline responder but whose sense of hopelessness did not change. (4) 'Angry at the world' - callers who predominantly expressed anger or resentment during the chat. (5). 'Expose and disengage'- callers who declared imminent suicide intent and then disconnected the chat. These categories differed in terms of the length of the chat, the predominant affect expressed during the chat and response to the helpline responder.
Discussion: The findings suggest that individuals at imminent suicide risk who turn to online crisis helplines during a crisis differ in their expressions of distress. A better understanding of the characteristics and typology of such callers may help responders be more effective.

M118. CONTRIBUTION OF RISK AND RESILIENCE FACTORS TO SUICIDALITY AMONG MENTAL HEALTH SEEKING ADOLESCENT OUTPATIENTS: A CROSS-SECTIONAL STUDY

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Background: Peer-victimization is an established risk factor for youth suicidal thoughts and behavior (suicidality), yet most peer-victimized youth are not suicidal. More data is needed on

factors that confer resilience to youth suicidality. Aim: To identify resilience factors for youth suicidality in a sample of N=104 (Mean age 13.5 years, 56% female) outpatient mental health help-seeking adolescents.
Methods: Participants completed self-report questionnaires on their first outpatient visit, including the Ask Suicide-Screening Questions, a battery of risk (peer-victimization and negative life events) and resilience (self-reliance, emotion regulation, close relationships and neighbourhood) measures.
Results: 36.5% of participants screened positive for suicidality. Peer-victimization was positively associated with suicidality (odds ratio [OR] = 3.84, 95% confidence interval [95%CI] 1.95-8.62, P < 0.001), while an overall multi-dimensional measure of resilience factors was inversely associated with suicidality (OR, 95%CI = 0.28, 0.11-0.59, P = 0.002). Resilience factors did not moderate the association between peer-victimization and suicidality (peer-victimization by resilience interaction P=0.112).
Discussion: This study provides evidence for the protective association of resilience factors and suicidality in a psychiatric outpatient population. Findings may suggest that interventions that enhance resilience factors may mitigate suicidality risk, even among high-risk youth that are targets of peer-victimization.

Tuesday, October 17, 2023

T1. LIFE PROBLEMS IN CHILDREN AND ADOLESCENTS WHO SELF-HARM: IMPLICATIONS FOR RESEARCH AND CLINICAL PRACTICE

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Background: Self-harm, a significant and increasing global problem in children and adolescents, is often repeated and is associated with risk of future suicide. To identify potential interventions we need to understand the life problems faced by children and adolescents, and by sub-groups of younger people who self-harm. Young people who self-harm face a range of life problems yet detailed understanding of the nature of the problems faced by children and younger adolescents who self-harm is limited. In this study we: 1) Investigate the type and frequency of life problems in a large sample of children and adolescents who self-harmed. 2) Examine whether problems differ between those who repeat self-harm and those who do not.
Methods: We analysed data for 2000-2013 (follow up until 2014) from the Multicentre Study of Self-harm in England on individuals aged 11-18 years who presented to one of the five study hospitals following self-harm and received a psychosocial assessment including questions about problems which precipitated self-harm. In order to investigate the type and frequency of life problems reported (including by gender and age), cross-sectional categorical data on problems were analysed at an individual level with $\chi 2$. Cramer's V post hoc tests were used to measure effect size (strength of any association). Where there were more than two categories,

analysis of standardised residuals identified where more or fewer patients than expected by chance reported having a particular problem (positive or negative residuals >1.96 respectively). We corrected for multiple comparisons for each analysis using the Bonferroni method. T-tests were used to test for the differences in number of life problems reported between genders. To examine whether problems differ between those who repeat self-harm and those who do not, Logistic Regression was used (no repeat episode vs. repeat episode), within twelve months of each first assessed episode (longitudinal data). We also examined repetition using $\chi 2$ analysis in order to compare life problems for those who had not repeated, those with 1-2 further episodes and those with 3 or more episodes. Missing data were excluded from the relevant parts of the analysis. All analyses were conducted in SPSS v.24.
Results: In 5648 patients (12261 self-harm episodes), (75.5% female, mean age 16.1 years) the most frequently reported problems at first episode of self-harm were family problems. Problems around study/employment/study and relationships with friends also featured prominently. The types of problems that precede self-harm differed between late childhood/early adolescence. Abuse, mental health problems and legal problems significantly predicted repeat self-harm for females.
Discussion: This study demonstrates that life problems faced by children and younger adolescents preceding self-harm differ by age and gender, and also between those who repeat self-harm and those who do not. This has important implications for the assessment of children and adolescents who present to hospital for self-harm and for provision of interventions. The most common problems reported by both genders were social/interpersonal in nature, indicating the need for relevant services embedded in the community (e.g. in schools/colleges). Self-harm assessment and treat repeated self-harm individualised supports and services are particularly needed for abuse, mental health and legal problems. Life problems differ between children and younger adolescents compared to older adolescents which should be accounted for in psychosocial assessments and recommended interventions.

T2. LONGITUDINAL INTERRELATIONS BETWEEN SUICIDALITY, MENTAL HEALTH SYMPTOMS, AND SOCIOENVIRONMENTAL STRESSORS ACROSS EARLY ADOLESCENCE: A PANEL NETWORK ANALYSIS

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Background: Rates of youth suicide are rising, and younger age at onset can increase risk for persistent and severe suicidality. Early intervention may improve long-term outcomes, yet relatively limited research has examined early onset suicidality during the critical developmental period when youth begin transitioning into adolescence. Multiple domains of risk and protective factors have been identified, including mental health symptoms, socioenvironmental factors, and substance use. Suicidality may importantly result from both direct and indirect pathways between these factors. Yet, the interrelations between different domains of risk and protective factors are unclear. Network analyses that can evaluate pairwise relations between several factors may elucidate complex pathways of risk and protection. The present study applied a longitudinal network approach to evaluate how multiple domains of risk and protective factors relate to suicidality during the transition from late childhood to early adolescence.
Methods: Our sample includes 9,854 youth in the United States who participated in the Adolescent Brain Cognitive Development Study (Mage = 9.90 ± .62 years, 63% white, 47%

male at baseline). Youth and their parents/caregivers completed an annual measurement battery between ages 10-12 (i.e., three timepoints). Network structures were estimated using panel graphical vector autoregressive (panel GVAR) modeling, a cutting-edge technique that integrates the advantages of multivariate, vector autoregressive, and gaussian graphical models (Epskamp, 2020). Panel GVAR models estimated within-person temporal, within-person contemporaneous, and between-person associations between suicidality and several mental health symptoms, social factors, adverse life events, and substance use.
Results: Models demonstrated excellent fit (RMSEA = .03, CFI = .97, TLI = .96). Interpretation primarily focused on contemporaneous within-person effects (i.e., within the same measurement occasion), as the causal timescales for effects of the risk factors on suicidality are likely shorter than one year. In the contemporaneous network, suicidality had direct associations with family conflict, lower parental monitoring, lower school protective factors, low-level substance use, and internalizing symptoms. Potential indirect pathways were also observed, in which other mental health symptoms and adverse life events may influence suicidality through internalizing. A similar structure was observed in the between-subjects network, with an additional direct association between suicidality and adverse life events. In the temporal network, an autoregressive effect was observed for suicidality.
Discussion: Results highlight that family and school experiences are salient social risk factors for early onset suicidality. Additionally, internalizing symptoms appear to be a more central risk factor than other mental health symptoms, and internalizing could possibly be a causal pathway through which adverse life events influence suicidality. Thus, age-specific early interventions may benefit from prioritizing increased social support in family and school domains, as well as identifying and intervening on internalizing symptoms. Preventing early onset substance use may also protect against suicidality. Results support the use of longitudinal network approaches to understand how the interplay between different domains of risk and protective factors impacts suicidality.

T3. MOMENTARY AFFECTIVE EXPERIENCES AND SUICIDAL THOUGHTS: THE ROLE OF RUMINATION

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Background: Suicide deaths have been on the rise among young adults in the United States for the past two decades. Additionally, emergency department visits due to suicidal crises rose among young individuals between 2019 and 2021, highlighting a need for better understanding suicide risk and its antecedents, including suicidal ideation. Previous literature has illustrated that suicidal thoughts tend to fluctuate dramatically within individuals, underscoring the importance of understanding proximal and dynamic risk factors of suicidal thoughts in order to identify promising intervention targets. Prior work has shown that a range of negative affective states are linked to increased risk of suicidal thoughts measured “in the moment”, yet the dynamic processes by which these states exacerbate risk remain unclear. For example, momentary ruminative thinking processes were found to strengthen the relationship between distress and suicidal thoughts in a sample of community adults (Rogers et al., 2022). In the present study, we aim to replicate these findings in a high-risk clinical sample (i.e., emerging adults followed after an emergency department (ED) visit for a suicide-related crisis), and extend previous findings by examining associations among rumination, affective dynamics

(i.e., daily mean levels, daily variation, and daily persistence of negative affective states) and suicidal thoughts.
Methods: Emerging adults (N=106; Age[M(SD) = 20.93(2.1); range = 18-25], cisgender women = 67.9%, White =73.5%) were recruited following an ED visit. Individuals were enrolled in an ecological momentary assessment study, where they were asked to respond to four surveys per day for two months. A series of multilevel models examined affective intensity (i.e., sadness, nervousness, agitation) and its association with duration of suicidal ideation. Level of rumination was included as a moderator in each model. We hypothesized that greater rumination would strengthen the relationship between affective intensity and suicidal ideation duration.
Results: Findings illustrated that rumination moderated the relationship between all affective experiences, including sadness (B = 0.04, SE = 0.00, $p < .000$), nervousness (B = 0.03, SE = 0.00, $p < .000$), and agitation (B = 0.03, SE = .00, $p < .000$), and duration of concurrent suicidal ideation, such that greater rumination strengthened the relationship between affect and suicidal ideation. However, rumination did not moderate the association between affective intensity and next-observation (i.e., prospective) suicidal ideation, after accounting for prior duration of suicidal ideation (all ps > .072). Additional analyses will examine whether rumination also moderates the association between suicidal ideation and a range of affective dynamics, including mean affect intensity, affective variability, and affective autocorrelation (i.e., persistence of affective states), to further elucidate the interplay between rumination and affective experiences in a high-risk sample of young adults.
Discussion: These results extend findings from prior studies of community adults to emerging adults with recent suicidal crises, highlighting the importance of ruminative thinking processes in strengthening the relationship between momentary negative affect and suicidal ideation.

T4. A SYSTEMATIC REVIEW OF THE ASSOCIATION BETWEEN CHILDHOOD INTERPERSONAL TRAUMA AND NON-SUICIDAL SELF-INJURY: EXPLORING THE MEDIATING ROLE OF COMPLEX POSTTRAUMATIC STRESS DISORDER (CPTSD) EXPERIENCES

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Background: Childhood trauma was identified as a risk factor for developing Non-Suicidal Self-Injury (NSSI). However, those that are interpersonal (i.e., childhood abuse) were found to increase the risk of NSSI significantly compared to other types of childhood trauma. Previous research suggested that the link between Childhood Interpersonal Trauma (CIT) and NSSI is not direct, and several factors are involved in this relationship. Many of these factors were experiences associated with Complex Posttraumatic Stress Disorder (CPTSD). The review aimed to synthesize and evaluate the current evidence on the mediating role of various CPTSD experiences in the relationship between CIT and NSSI.
Methods: This review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The electronic databases (i.e., PsychINFO, MEDLINE, Web of Science) were searched to identify relevant studies published until 2023. The review protocol was pre-registered with PROSPERO. Both Data screening and quality assessment were conducted by two reviewers in parallel and disagreements were resolved through discussion. The study results were integrated and synthesized narratively.

Results: A total of 27 studies (with clinical and non-clinical participants) were identified. A wide range of CPTSD-related mediators (i.e., PTSD, emotion dysregulation, negative self-concept, and related constructs) were assessed in included studies. Despite the methodological limitations identified across included studies, the overall findings support the role of CPTSD experiences as potential mechanisms underlying the CIT-NSSI pathway. With regard to PTSD, the evidence supports its role as a significant mediator in the link between CIT and NSSI although there were inconsistencies concerning which symptom clusters were significant mediators. Similarly, the current evidence supports the mediating role of emotion dysregulation; however, the limited access to emotion dysregulation strategies appeared to be the strongest mediator compared to other emotion dysregulation aspects. With regard to Negative self-concept and relation constructs (i.e., negative self-evaluation, self-blame, perceived self-criticism, shame, and self-esteem), the overall findings support their role as mediators in the CIT-NSSI link. Finally, none of the identified studies measured the disturbances in the relationships, which makes it an important gap in the current literature.
Discussion: This is the first systematic review to specifically investigate the role of CPTSD-related mediators in the association between CIT and NSSI. The findings support the mediating role of CPTSD difficulties in the relationship between CIT and NSSI. These findings are consistent with several theoretical models of NSSI that highlight the role of CIT and CPTSD-related experiences such as negative self-scheme, emotion reactivity, and poor emotion dysregulation in the onset and maintenance of self-injury. The findings are also congruent with previous research highlighting emotion regulation as a common function of NSSI. Despite the identified limitations in reviewed studies, predominantly in relation to the use of cross-sectional design, the use of relatively small sample sizes for mediation analyses or the use of inappropriate mediation analyses. The overall findings indicate that CPTSD-related difficulties may in part explain the risk of NSSI among those with a history of CIT highlighting the need to adopt trauma-informed care and interventions aimed at addressing CPTSD-related stressors when working with individuals who self-injure.

T5. PATHWAYS TO REDUCING SUICIDE ATTEMPTS, IDEATION, AND PLANNING AMONG BLACK GAY AND BISEXUAL MEN: THE IMPORTANCE OF FAMILY

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Background: It has been well documented that men who identify with a sexual orientation other than heterosexual are at a greater risk for suicide related outcomes. What is lesser known are the protective factors that can reduce such negative outcomes and contribute to their resilience.
Methods: This study used data collected between December 1, 2021-January 2022 to understand how family factors contribute to or prevent suicide outcomes among young Black gay and bisexual men ages 18 to 29 (N= 400). A path analysis was conducted to explore the direct and indirect effects to suicide attempts.
Results: Surprisingly, there were nuanced findings, which showed having a family member or friend die by suicide was indirectly associated with suicide planning and suicide attempts. It was also unexpectedly noted that there was a positive relationship between higher rates of depressive symptoms and higher levels of support from family members.

Discussion: The population focused on in this study is understudied and has unique needs. Identifying familial support may not automatically reduce the thoughts and plans of young Black gay and bisexual men is an example of why their intersecting marginalized identities must be considered when conducting further research, creating interventions, and providing therapeutic services.

T6. EXAMINATION OF PROINFLAMMATORY ACTIVITY AS A MODERATOR OF THE RELATION BETWEEN MOMENTARY INTERPERSONAL STRESS AND SUICIDAL IDEATION

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Background: Peer-related interpersonal stress can increase risk for suicidal ideation (SI) among adolescents and young adults. However, not all individuals who undergo peer-related interpersonal stressors experience SI. Heightened proinflammatory activity is one factor that may amplify the relation between interpersonal stress and suicidal thinking. We hypothesized: (1A) a greater number of negative peer-related events would be associated with greater odds of the presence (versus absence) of SI at the same time point and next time point; (1B) perceived exclusion severity from peers would be positively associated with degree of SI intensity at the same time point and next time point; and (2) the relation between negative peer-related events (H1A) and exclusion severity (H1B) and SI would be particularly strong for those with greater proinflammatory activity.
Methods: This pilot study used a multi-method approach to examine the relation between interpersonal stress and SI in real time, as well as whether proinflammatory cytokine (IL-6 and TNF-a) activity moderated this association. This sample included 42 emerging adults aged 18-23 years (M = 19.55, SD = 1.29) with recent suicidal thoughts and behaviors. Participants were predominantly female (sex at birth: 83.3% female, 16.7% male) and woman-identifying (gender identity: 73.8% women, 16.7% men, 9.5% nonbinary), racially diverse (45.2% White, 16.7% African American, 16.7% Asian, 14.3% multiracial, 7.1% other), and predominantly non-Latino (88.1%; 11.9% Latino). The study included a baseline laboratory visit followed by 28 days of ecological momentary assessment (EMA). During the laboratory visit, participants completed a social stressor task and provided three saliva samples to assess proinflammatory cytokine output. During the EMA period, participants completed six surveys per day that assessed for occurrence of negative peer events, feelings of exclusion, and SI (presence vs. absence, ideation intensity).
Results: A series of two-level Bayesian generalized linear mixed models and multilevel models were conducted with observations nested within people. All models included time and estimation of random slopes. Time-varying predictors (negative peer events, exclusion severity) were separated into their component parts at each level (i.e., within-subject/level 1 and between-subject/level 2), and the person-level proinflammatory activity predictor was entered into level 2. There was a trend for within-person increases in feelings of exclusion to be associated with increases in concurrent SI intensity. Additionally, within-person increases in negative peer events were associated with increased odds of subsequent SI among individuals with very low IL-6 activity. However, this finding is considered preliminary, as the effect was only significant at IL-6 values that were below the range of observed data. No other hypotheses were supported.

Discussion: Evidence-based interventions targeting perceptions of exclusion may help decrease short-term SI intensity. Additionally, interventions that build social connection may offer protective effects. Findings require replication in larger samples to clarify the potential role of proinflammatory cytokine activity in the relation between interpersonal stress and SI, and thus must be interpreted with caution.

T7. AN IDIOGRAPHIC APPROACH TO UNDERSTANDING THE RISKS AND BENEFITS OF SOCIAL MEDIA ON SUICIDAL IDEATION IN ADOLESCENTS

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Background: The simultaneous of both adolescent social media (SM) and suicidal thinking in adolescents has raised public concern about its potential role in predicting suicide risk. Most research examining SM and suicidal ideation uses cross-sectional designs. Yet, SM use and suicidal thoughts fluctuate within-person and across days, which makes it critical to examine SM as a dynamic factor related to SI. Further, "SM screentime" is just one metric, and research indicates that emotional responses to SM may be more important in adolescent suicide risk. Using a within-person, intensive monitoring design, this study examines positive and negative emotional responses to SM and daily suicidal ideation among adolescents.
Methods: A total of 53 adolescents (Mean Age =16.04 years; 86% female; 60% LGBTQ+, 45% Black, Asian, and Biracial; 21% Latine) recruited on social media completed up to two months of daily surveys (M = 35.41 days). Adolescents reported whether they had active suicidal ideation that day and extent of emotional responses to SM that were negative (e.g., social comparison, fear of missing out, anxious, negative social interactions, overall negative impact) and positive (e.g., social support, inspired, and positive social interactions, overall positive impact). Multilevel modeling was conducted using R to examine the association between individual fluctuations of both total positive and negative emotional responses to SM that day, perceptions of impact, and same-day suicidal ideation.
Results: Results indicate that most adolescents (49%) had suicidal ideation on at least one day over the two-month period. There also was significant within-person variability (78%) of daily suicidal ideation. Significant within-person effects were found for both negative and positive emotional responses to SM and daily active suicidal ideation. Adolescents reported having active thoughts about suicide on days when they had more negative emotional responses to SM ($B=.11$, $SE=.03$, $p<.001$) and perceived SM to be more negative ($B=.25$, $SE=.08$, $p=.002$). In addition, within-person increases in positive emotional responses to SM and perceiving SM to be more positive were associated with a lower likelihood of having suicidal ideation that day ($B=-.08$, $SE=.04$, $p=.02$; $B=-.46$, $SE=.10$, $p<.001$).
Discussion: Findings highlight the importance of examining both SM and suicidal ideation using intensive monitoring designs, particularly for disentangling the nuanced relationship between SM and suicide risk. Results suggest that SM can both confer risk for and protect against suicidal thoughts. Using within-person analyses, findings suggest that more-than-usual negative SM experiences was associated with a greater likelihood of having same-day suicidal thoughts. In contrast, suicidal thinking was less likely to occur on days when adolescents had more positive experiences than they typically do. This the first study to examine SM experiences and SI on a daily basis, highlighting the importance of using intensive monitoring

designs to identify SM as a modifiable factor that can both confer risk and protect against suicide among a diverse, community sample of adolescents.

T8. INVESTIGATING THE CONTRIBUTION OF CHILDHOOD MALTREATMENT TO SUICIDE ATTEMPT AND MORTALITY: A MULTIVARIABLE MENDELIAN RANDOMIZATION STUDY

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Background: Childhood maltreatment has been associated with increased risk of suicidal behavior in observational studies. However, the contribution of childhood maltreatment to suicide risk is difficult to establish because of co-occurring risk factors, such as mental disorders, education, cognitive function, socio-economic factors, potentially confounding the association. We aimed to investigate the contribution of childhood maltreatment to suicide attempt and mortality using Mendelian randomization, a genetically informed method to strengthen causal inference.
Methods: We performed a two-sample Mendelian randomization study using summary statistics from genome-wide association studies (GWAS) of childhood maltreatment, suicide mortality and suicidal attempts, which come from participants of European ancestry. Multivariable Mendelian randomization analysis was used to investigate the association of childhood maltreatment with suicide attempt and mortality, while accounting for risk of major depression, schizophrenia, and attention-deficit/hyperactivity disorder (ADHD).
Results: We found evidence supporting a possible causal role of childhood maltreatment on suicide attempt (OR = 4.34; 95% CI = 2.36-7.97, P = 0.658). All subtypes of maltreatment (physical abuse, physical neglect, emotional abuse, emotional neglect, and sexual abuse) have significant associations with suicidal attempt. Multivariable Mendelian randomization analysis revealed that childhood maltreatment was associated with suicidal attempt independently from the other selected mental disorders (OR = 1.40; 95% CI = 1.02-1.91, P = 0.037).
Discussion: Our findings suggest that childhood maltreatment may play a causal role in increasing the risk of suicide attempt, and that this association is not fully explained by major mental disorders or other unmeasured confounding factors. However, evidence suggested no association with suicide mortality. Efforts to reduce childhood maltreatment is critical for the prevention of suicidal attempt. Further studies are needed to understand the mechanisms of this association and the differences across suicide-related outcomes.

T9. SLEEP HABITS, QUALITY, AND CHRONOTYPE IN A LARGE SAMPLE OF SWEDISH ADOLESCENTS: ASSOCIATIONS WITH SUICIDAL IDEATION AND DEPRESSION

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Background: Sleep is an essential aspect of overall health and plays an important role for the mental and physical development of adolescents. The increase in sleep problems during adolescence coincides with rising levels of mental health problems, including suicide and common mental disorders such as depression. Sleep and mental health problems are closely

interconnected, for example in diagnostic contexts, but also, a growing body of research suggests that the relationship between sleep problems and mental health problems are bi-directional. Improving the understanding of the relationship between sleep and suicidality as well as depression in adolescents could inform the development of preventive interventions and clinical treatments.
The primary aim of this study was to describe behavioral sleep habits and self-perceived quality of sleep in a large Swedish sample of adolescents aged 12 to 16 years. The secondary aim was to investigate the relationship between different sleep parameters and suicidal ideation as well as depression.

Methods: Questionnaire data were obtained from a representative sample of Swedish adolescents (n=10288; 50.3% boys; aged 12-16). Sleep parameters were assessed by a validated sleep measurement instrument, the Karolinska Sleep Questionnaire (KSQ). Depression was defined as >13 BDI-II scores, indicating clinically relevant levels of depression. Suicidal ideation was defined as seriously considering or planning for attempting suicide during the previous two weeks and was measured through an item from the Paykel scale. Logistic regression modelling estimated the effects of sleep duration, sleep quality, and chronotype on depression, adjusted for socio-demographic factors. Further analyses will be conducted to investigate the relationship between sleep parameters and suicidal ideation, both adjusted and un-adjusted for depression.
Results: On weekdays, approximately 46% of adolescents slept less than the recommended length of eight hours per night (depressed: 69%, non-depressed: 40%). On weekends, however, only 17% slept shorter than recommended. Short weekday sleep duration was more common among girls than boys (53% vs. 39%) and girls reported worse sleep quality. The regression model showed that depression was predicted by weekday sleep duration (OR=0.773, p <.0001), sleep quality (OR=0.327, p<.0001), and late chronotype (OR=1.126, p=.0017), but not by weekend sleep duration. A 30-minute increase in weekday sleep duration was associated with about 10% lower odds of depression.
Results from the analyses on the relationship between different sleep parameters and suicidal ideation (both adjusted and unadjusted for depression) will be presented at the conference.**Discussion:** A substantial proportion of Swedish adolescents do not seem to meet the sleep recommendations of eight hours per night. Short sleep duration on weekdays, poor sleep quality, and late chronotype were associated with increased risk of depression. Interventions promoting longer weekday sleep duration (e.g., later school start times) seem relevant in this context, but further research is needed to investigate the directionality and underlying mechanisms of these associations. Findings regarding the relationship between different sleep parameters and suicidal ideation will be discussed at the conference.

T10. THE WOUNDED HELPER: MORAL INJURY CONTRIBUTES TO DEPRESSION AND ANXIETY AMONG ISRAELI HEALTH AND SOCIAL CARE WORKERS DURING THE COVID-19 PANDEMIC

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Background: Background: The COVID-19 pandemic can affect the mental health of health and social care workers (HSCWs) who are frontline workers in this crisis. The pandemic poses unique challenges to HSCWs as they face morally daunting decisions while working with limited knowledge and resources. This study examined the relationships between exposure to

potentially morally injurious events (PMIEs) and depression and anxiety among HSCWs, as well as the mediators' role in these associations.
Methods: Method: A sample of 243 Israeli HSCWs completed validated self-report questionnaires that include measures of depression, anxiety, exposure to PMIEs, perceived stress, and moral injury symptoms.
Results: Results: About one-third (33.6%) of the sample met the criteria for major depressive disorder, 21.5% met the criteria for generalized anxiety disorder, and 19.1% reported comorbidity of depression and anxiety. Beyond demographic, COVID-19, and work-related characteristics, PMIEs contributed to depression and anxiety among HSCWs. The integrative model indicated the mediating role of perceived stress and moral injury symptoms in the associations of PMIEs with depression and anxiety.
Discussion: Conclusions: The study's findings highlight HSCWs' mental burden during the COVID-19 pandemic and the important contribution of exposure to PMIEs to this burden. Clinicians treating HSCWs coping with depression and anxiety following the COVID-19 should also attend to moral injury symptoms.

T11. BEYOND SELF-FOCUSED BELIEFS: THE UNIQUE CONTRIBUTION OF PRIMAL WORLD BELIEFS TO SUICIDAL IDEATION

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Background: Cognitive factors associated with suicidal ideation (SI) broadly focus on people’s beliefs about themselves, their future, or others (Beck’s cognitive triad), but recent research suggests examining people’s beliefs about the world overall, known as primal world beliefs (or primals), may offer unique insight into wellbeing, life satisfaction, depression, and SI (Clifton et al., 2019) and may serve as a new target for intervention to prevent suicide. To date, a single study (Clifton, 2020) has examined primals in relation to SI based on a single item (“Have you ever thought about or attempted to kill yourself?”), which found significant, negative correlations with several primal factors including viewing the world as Safe, Stable, Needs Me, and Meaningful, suggesting that negative beliefs about the world were related to a higher likelihood of having thought about or attempted suicide. The present study aimed to replicate these association using a well-validated measure of SI (Beck Scale for Suicidal Ideation, Beck et al., 1988) and explore whether certain primals were unique predictors of SI above and beyond other known predictors, including self-focused beliefs.
Methods: Data were collected from 130 undergraduate students at Catholic University who endorsed a history of SI on a prescreening survey. In return for course credit, participants completed an anonymous online survey including well-validated measures of primals, SI, depressive symptoms, hopelessness, dysfunctional attitudes, and stressful life events. This summer (June-August 2023) additional data will be collected from up to 75 community members with lived experience of suicide and 130 participants through the Prolific research platform. Analyses include bivariate correlations between primals and SI, hierarchical regression predicting SI from primals, depressive symptoms, hopelessness, and dysfunctional attitudes, and moderation analyses examining differences between samples (college students versus community members).
Results: Initial analyses supported a priori hypotheses of moderate, negative correlations between SI and primals Meaningful, Needs Me, and Pleasurable. However, hierarchical regression analyses found that primals did not contribute additional variance in predicting

current SI above depressive symptoms, hopelessness, or dysfunctional attitudes. Additional analyses will examine whether primals moderate the relationship between stressful life events and SI, such that stressful life events may be more strongly related to SI for those with certain negative beliefs about the world.

Discussion: Given the high prevalence and distress associated with SI and the need for interventions specifically addressing SI (Jobes and Joiner, 2019), this study raises the profile of primals as meaningful beliefs related to SI. Specifically, seeing the world as meaningful, pleasurable, and needing me may be protective against SI.

T12. SLEEP PROBLEMS ALTER PROXIMAL RISK OF NEGATIVE SELF-PERCEPTIONS ON SELF-HARM URGES

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Background: Self-injury (NSSI) and suicidal behavior are intricately connected and influenced by similar risk factors. Theoretical models emphasize negative self-perceptions as potential drivers of both behaviors (De Beurs et al., 2019; Hooley and Franklin, 2018; Jobes et al., 2011). There is strong evidence that perceiving oneself as a burden (Chu et al., 2017; Kyron et al., 2022) and high self-hate (Sorgi-Wilson et al., 2022; Turnell et al., 2019) are core internal experiences for elevated self-harm, but limited research has explored how state burdensomeness and self-hate relate to momentary suicidal and NSSI desires. Sleep problems also contribute to elevated risk for both NSSI and suicide behavior (Khazaie et al., 2021; Liu et al., 2020), but the impact on concurrent risk conferred by potential drivers of self-harm is unclear. This study utilized an ecological momentary assessment design to test the hypothesis that sleep problems would interact with both state and trait- level perceived burdensomeness and self-hate in predicting concurrent NSSI and suicide urges.

Methods: Data came from 25 treatment-seeking adults (Mage = 35.6, SD = 14.36; 58.6% Female) who had elevated scores on the PHQ-9 suicide item. After completing baseline questionnaires, participants were enrolled into a 28-day EMA protocol. Participants were notified three times a day (morning, early afternoon, evening) to complete a brief set of questions assessing theoretically derived risk factors including burdensomeness, self-hate, sleep hours, and sleep problems as well as urges to engage in NSSI and attempt suicide. Adherence to the daily surveys was 82.6%. We used Bayesian ordinal multilevel models with random intercepts for each outcome with 99% confidence intervals given the number of analyses ran.

Results: NSSI Urge had a positive relationship with prior night sleep problems (0.15; CI = 0.01, 0.29), while Suicidal Urge had a positive relationship with prior night sleep problems (0.16; CI = 0.04, 0.27) and trait sleep problems (1.64, CI = 0.67, 2.62).

For NSSI Urge, there was a negative interaction between within-person burdensomeness and between-person sleep problems (-0.15; CI = -0.30, -0.01). There was a negative interaction for within-person self-hate and between-person sleep problems (-0.19; CI = -0.34, -0.05). There was a positive interaction between-person self-hate and within-person sleep hours (0.08; CI = 0.01, 0.16), indicating a more negative momentary relationship between the number of sleep hours and NSSI Urge among those lower in trait level self-hate.

For Suicidal Urge, there was a negative interaction between within-person perceived burdensomeness and between-person sleep problems (-0.17; CI = -0.30,-0.04), as well as a negative interaction between within-person self-hate and between-person sleep problems (-

0.24; CI = -0.39,-0.12). Both results indicate that among those with more sleep problems in general, the link between momentary risk factors (burdensomeness, self-hate) and suicidal urges is less positive.

Discussion: These findings provide insight into how sleep problems may affect the way other risk factors impact suicidal and NSSI urges. While all three risk factors were significantly associated with increased urges, the significant interaction of sleep problems with self-hate and burdensomeness underscore the complexity of risk conferred and potential importance of sleep to suicide risk. Sleep problems appear to alter the effects of burdensomeness and self-hate on concurrent risk for both NSSI and suicide urges. This suggests that in addition to modifying negative self-perceptions, clinical interventions that focus on improving sleep (Bishop et al., 2020; Blake et al., 2020) may reduce near-term risk for self-harm.

T13. AN EXAMINATION OF CHRONOTYPE, MOTIVATIONAL COGNITIONS, AND SUICIDAL INTENT AMONG ADULTS IN THE UNITED KINGDOM

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Background: Chronotype determines the times at which people are most active and alert during the day. Prior research has identified a connection between evening chronotype and suicidality (Üzer and Kurtses Gürsoy, 2022) but the mechanism underlying that connection is not well understood. One potential theoretical explanation is that chronotype acts as a pre-motivational factor in the Integrated Motivational Volitional (IMV) Model of Suicidal Behaviour (O'Connor, 2011; O'Connor and Kirtley, 2018). The IMV posits that suicidal intent occurs as a result of feelings of defeat driving entrapment. Evidence suggests defeat, internal and external entrapment both play roles in suicidal behaviour among adults in the UK (e.g., Cramer et al., 2019). An understudied portion of the IMV concerns pre-motivational factors. Given the established connection between evening chronotype and suicidality, this individual difference is a prime candidate for a pre-motivational factor in the IMV model.
This is the first integration of morning-eveningness as a pre-motivational factor in understanding suicidal behaviour. Identification of suicide-related pathways rooted in sleep has the potential to inform suicide prevention and intervention efforts in the general population. To fill this knowledge gap, we examined the following research questions (RQs):

RQ1: Does suicidal intent vary across time?

RQ2: Does chronotype affect the change in suicidal intent over time?

RQ3: Do entrapment and defeat explain the association between morning-eveningness and suicidal intent?

Methods: Participants (n=187 UK Adults (64% female, mean age=35 years)) completed a baseline survey which included the following measures: demographics (age, race, gender, sexual orientation, and employment status), morning-eveningness (MEQ; Horne and Östberg, 1976), defeat and entrapment (E- and D Scales; Gilbert and Allen, 1998), and perceived intent to make a future suicide attempt (item 4 from the SBQ-R; Osman et al., 2001). Participants were invited to complete two further surveys 3 and 6 months later. These follow-up surveys included only the MEQ and SBQ-R measures.

Results: RQ1: A repeated-measures ANOVA using SBQ-R item 4 was significant ($p < .05$), such that suicidal intent decreases from baseline to the 6-month follow-up, indicating that suicidal intent does vary significantly across time.
RQ2: A mixed-model ANOVA using baseline MEQ and SBQ-R item 4 across time revealed a significant interaction ($p < .05$) between the two factors, such that the change across time is dependent on baseline MEQ.

RQ3: A multiple parallel mediation using the Preacher and Hayes (2018) bootstrapping method revealed that the relation between MEQ at baseline and SBQ-R item 4 at 6-month follow-up runs through defeat and entrapment, indicating the prospective power of chronotype as a pre-motivational factor.

Discussion: Our theoretically informed findings shed light on the psychological mechanisms linking chronotype (i.e., eveningness) and future suicidal intent by highlighting the role of defeat and entrapment. We propose that feelings of defeat might be derived from social jetlag caused by social misalignment for evening chronotypes. Entrapment may similarly manifest due to social jetlag, leading to greater future suicidal intent. Sleep interventions often focus on improving sleep hygiene, but rarely account for the relatively well-fixed physiology behind chronotypes. Within this context, defeat and entrapment may be good transdiagnostic and modifiable target variables for future intervention development. Going forward, these findings need to be explored more fully in those who engage in suicidal behaviours, using objective sleep measurements.

T14. IDENTIFICATION OF NOVEL CONSTRUCTS NEEDED FOR PARADIGM SHIFT IN SUICIDE RESEARCH: AN OBSERVATION OF ADOLESCENT SUICIDAL THOUGHT

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Background: Suicidal thoughts are increasingly common among adolescents, but progress in suicide science is severely limited by a lack of well-defined constructs. Experts suggest that progress relies on the identification and definition of relevant phenomena found through the rigorous descriptive study of suicidal thinking. This study leveraged newly available within-person methods to describe suicidal thinking and identify clinically relevant constructs in a sample of adolescents at risk for suicide.
Methods: Using an intensive experience sampling protocol we observed moment-to-moment changes in adolescents' suicidal thinking in their everyday context. Participants answered brief surveys sent via text message nine times daily for two weeks, reporting their experience of four suicidal thought characteristics (e.g., desire to die and controllability) and seven group level risk factors (e.g., hopelessness and burdensomeness) on each occasion.
Results: Ten adolescent participants, 13 to 19 years of age, each completed between 68 and 135 surveys (wake-time compliance rate over 90%). In accordance with the within person study design, each participant's data was analyzed as an individual study. For each participant we computed 1) means and variability statistics for each item, 2) time-of-day effects using one-way analysis of variance (ANOVA), 3) time-series network models using unified structural equation modeling (uSEM), and 4) predicted recovery times using a bootstrap approach for each item in the network.

Discussion: Temporally dense, within person observational data illuminated a set of constructs – magnitude of variability (MOV), trends in variability, predictability, calendar effects, and network effects – that we describe in narrative and quantitative form for use in future suicide research and formal theory development. We hypothesize that the proposed constructs are clinically relevant, not only to a population of adolescents, but to all individuals experiencing suicidal thought, and offer an objective and computational alternative to existing vague and subjective constructs that will help launch a needed paradigm shift in suicide research.

T15. PSYCHOSOCIAL CORRELATES OF SUICIDAL IDEATION AND BEHAVIOR IN ADOLESCENTS AND PREADOLESCENT CHILDREN DISCHARGED FROM EMERGENCY DEPARTMENT

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Background: Adolescent suicidal behavior is the most common reason adolescents present to the emergency department in pediatric hospitals. Recently, suicidal behavior has become more common in preadolescent children. It is important to understand the underlying nature of non-fatal suicidal behavior in children and how they may differ from adolescent to implicate unique prevention and management for this population. The current study aims to investigate the psychosocial characteristics associated with suicidal ideation and behaviors in an emergency department sample of 183 children and adolescents aged 7–18.
Methods: All participants completed a diagnostic interview, self-report and parent-report questionnaire of psychosocial risk factors. Cross-sectional correlational and regression analyses were used to determine significant correlates of suicidal outcomes within the two age groups.
Results: Among adolescents, suicidal thoughts and behavior were more common in females compared to males, while among children, the prevalence of males and females was similar. Depression was correlated with suicidal ideation for both adolescents and children. Moreover, anxiety and conduct symptoms correlated with suicidal behavior in children, whereas depression, anxiety, and emotional symptoms correlated with suicidal behavior in adolescents.
Discussion: These results add to the growing knowledge about risk factors associated with suicidality among children compared to adolescents, suggesting the importance of targeting different mechanisms in developing assessment and intervention strategies for the two populations.

T16. BARRIERS AND FACILITATORS OF HELP SEEKING AND ITS IMPACT ON PREVENTING DEATH BY SUICIDE AMONG ISRAELI DEFENSE FORCE (IDF)

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Background: While military settings may increase psychological distress, soldiers frequently avoid seeking professional help. This study aimed to examine barriers and facilitators associated with intentions to seek help and actually seeking help from a mental health officer (MHO) and how these differ among soldiers who had sought help in the past and those who had not.

Methods: This cross-sectional study included 263 combat and noncombat soldiers. The Health Belief Model and the Help-Seeking Model were the theoretical framework used to map the potential variables associated with soldiers' decision to seek help.

Results: Stigma and administrative barriers were found to be significant barriers to both the intention to seek help and actually consulting an MHO. These findings were more definitive among combat soldiers. The belief in the effectiveness of mental health treatment was positively associated with the intention to seek help. Positive associations were found between well-being, perceived seriousness of one's condition, and belief in the effectiveness of mental health care and intention to seek MHO help. Distress and self-concealment were positively associated.

Discussion: Military environments are unique in many aspects regarding suicide and suicide attempts including weapons accessibility and stigma associated with seeking mental health care. While there has been a marked decrease in death by suicide, it is still identified as the leading cause of death during peacetime in IDF. IDF initiated intensive and structured preventive interventions aimed at reducing death by suicide in response to incidence of death by suicide among soldiers. The main justification for the development of the suicide prevention program relates to the fact that IDF service is compulsory, and eligible soldiers are obligated to serve by law. The army, therefore, assumes legal and moral responsibility for the soldiers' physical and mental health. The IDF's Suicide Prevention Program (SPP) is grounded in professional knowledge and supported by military policy changes, and includes thorough psychoeducation and guidance, supervision, greater accessibility of mental health officers, and lower accessibility of nonessential weapons. In 2006, program evaluation results demonstrated effectiveness of the SPP in reducing the rate of suicide in the IDF between 1992-2012. Characteristics of IDF soldiers who died by suicide before and after the implementation of SPP were examined to evaluate the impact of the SPP. Evidence suggested that the program reduced the risk of suicide among soldiers supporting combat. A greater decrease in suicides was observed in males than females, but males still accounted for the majority of completed suicides. Ethiopian origin and psychiatric disorders remained risk factors after the SPP implementation. However, previously identified risks, specifically Druze origin, were no longer a risk factor after the implementation. It was found that low adjustment difficulties score (unique mark to IDF) correlated with suicide in the first year of service, and a correlation was found between suicidal events and low to moderate motivation for military service among males (unique mark to IDF), but these were not found to be risk factors in later examination over the years 1992-2016. It is essential to evaluate the impact of exposure to a suicidal event among those exposed, including potential impact on the clinical practice of and burden to IDF mental health officers along with the relationship between the assessment of risk factors for suicide and management of suicide risk by mental health officers.

T17. CULTURAL-SOCIAL MECHANISMS OF SUICIDE RISK AMONG HISPANICS IN THE UNITED STATES

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Background: In 2010 the Hispanic population in the United States (U.S.) reached 50.5 million, making Hispanics the largest ethnic or racial minority group in the nation. The U.S. Hispanic population is expected to double by 2045, constituting over 25% of the nation's population. Suicide rates among U.S. Hispanics have increased by approximately 20% since 2000. Despite the population size, suicide among Hispanic or Spanish-speaking adults remains relatively understudied and little is known about how to prevent suicide in this population. Hispanic ethnic/cultural identity is closely tied with cultural values (e.g., religiosity, familism) that may reduce risk for suicide despite the elevated presence of mental health problems and socioeconomic stressors among Hispanics in the U.S. Aspects of familism (i.e., familial connectedness), for example, have been associated with decreased suicidality and fewer suicide attempts among Hispanics. Conversely, acculturative stress (i.e., stress experienced by minority group members in adapting to the majority group's culture) has been associated with suicide ideation, attempts, and deaths among Hispanics.
Methods: The current presentation will examine culturally unique suicide risk factors among Hispanic adults from the Midlife in the United Sates (MIDUS): Survey of Minority Groups. Specifically, data examining demographic and social factors (i.e., acculturative stress, community integration and engagement, religiosity, ethnic cohesion) associated with neighborhood belonging and passive ideation among a large sample of Hispanic adults (n=968) from the MIDUS: Survey of Minority Groups will be presented.
Results: Overall, community integration, religiosity, and community engagement were unique positive predictors of neighborhood belonging; lifetime number of discrete events of discrimination was the only unique negative predictor. Among foreign-born respondents, community integration, community engagement, and discrimination were associated with neighborhood belonging, whereas, among U.S.-born respondents, only religiosity and community were associated with belonging. Neighborhood belonging was the only variable negatively associated with thoughts of death among depressed participants.
Discussion: Results will be discussed within the frame of prominent theories of suicide (e.g., the interpersonal theory of suicide), including integration with cultural risk factors, cross-cultural limitations, and opportunities for future research (e.g., intervening upon cultural-social mechanisms of risk).

T18. SOCIAL CONNECTION AS A MODERATOR OF SUBSTANCE USE AND OVERDOSE AND SELF-HARM ASSOCIATIONS

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Background: Both alcohol and cannabis use have been associated with suicidal thoughts and behaviors in adolescents. Social connection has been hypothesized as a protective factor of depression and suicidal thoughts and behaviors. We aim to describe a sample of patients admitted to an emergency room with a medical or psychiatric chief complaint and explore the role of social connections in moderating the association of cannabis and alcohol on adolescent self-harm and overdose.
Methods: A survey was distributed among adolescents seen in a pediatric emergency room in an urban hospital associated to an academic center. The survey contained: 1- A measure of Social Connectedness with which participants were asked, on average, how much they felt statements related to their parents, other adult relatives, friends and peers, teachers/other adults at school, and other people in the community cared about the participant (from "not at all true

for me" = 1 to "very true for me" = 4); 2- A question that asked participants if they had "ever deliberately taken an overdose (e.g., of pills or other medication) or tried to harm in some other way (such as cutting)?' with an option of yes, or no; and 3- A question about on how many occasions they had alcohol and/or cannabis in their lifetime. Descriptive statistics, correlations and logistic regression were used to explore associations between substance use (alcohol, cannabis) and history of overdose as moderated by social connection.
Results: A total of 155 participants ages 12 to 17 (Mean age = 14.5) completed the survey. Participants were mostly White (45.8%) and Black (41.9), with 5% being of other races, 6.5% of participants identified as Latin/Hispanic, 60% were females at birth, and 53.5% identified as of female gender. Of the total, 32% reported having attempted to overdose or self-harm in the past. There were differences in having attempted overdose or having tried to harm oneself by sex at birth (Chi-Square = 11.086; $p < 0.001$), and by gender (Chi-Square = 8.715; $p = 0.033$), with females reporting higher rates. Participants reported having had similar number of times of alcohol and cannabis use. Both cannabis use and alcohol use were associated with having attempted to harm or overdose in the past. This association was moderated by social connection for both cannabis and alcohol.
Discussion: This study found that close to one third of adolescents ages 12 to 17 recruited in an emergency department reported a history of overdose or self-harm, that history of cannabis and alcohol use was associated with history of overdose or self-harm, and that this association was moderated by social connections. These findings can guide interventions that promote social support in adolescents who use substances to prevent self-harm and overdose.

T19. RISK FACTORS OF SUBSEQUENT SUICIDE ACTS AMONG CRISIS HOTLINE HIGH-RISK CALLERS

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Background: The incidence and risk factors of suicide behavior among crisis hotline callers in China remains unclear.
Methods: From February 2020 to June 2021, 2093 calls were identified as high risk for suicide in Guangzhou crisis hotline. Four follow-up calls were arranged in the subsequent month at day 1, day 7, day 15, and day 30. Of them, 1830 callers were followed-up for at least once. Person-time incidence rate was calculated. Chi-square test and binary logistic regression were conducted to determine the risk factors.
Results: 200 hotline callers reported suicide attempts and 5 have died by suicide during the follow up. Person-time incidence rate is 15.99 cases/person-month. Those who were younger, unmarried, living alone, had a history of mental illness, had a history of suicide attempts, had a higher score of self-reported suicidal ideation after the intervention, and had suicide plans rather than only suicidal ideation were more likely to report suicidal acts during the follow-up period.
Discussion: Crisis hotline callers are at high risk of suicide even after intervention. Further suicide prevention strategies are warranted, particularly for those with higher risks.

T20. TRAJECTORIES OF SUICIDAL IDEATION AMONG TRANSGENDER YOUTH RECEIVING GENDER-AFFIRMING HORMONES

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Background: Transgender and nonbinary (TNB) youth are at greater risk for suicide than cisgender youth. Early intervention in the form of gender-affirming hormones (GAH) is associated with positive mental health outcomes, and reduced suicide risk is among the putative long-term benefits of GAC. Major gaps in the evidence base remain because there are few prospective studies of suicide risk in this population. Longitudinal data are needed to address this gap in the evidence base. The aims of this study are to identify trajectories of treatment response and risk and protective factors that differentiate outcomes.
Methods: Data for this study are drawn from the Trans Youth Care (TYC) Study, the largest US-based study of youth receiving GAC. A total of 315 transgender and nonbinary participants 12 to 20 years of age (mean [±SD], 16±1.9) were enrolled in the study. A total of 190 participants (60.3%) were transmasculine (i.e., persons designated female at birth who identify along the masculine spectrum), 185 (58.7%) were non-Latinx or non-Latine White, and 25 (7.9%) had received previous pubertal suppression treatment. A total of 303 participants provided longitudinal data on suicide risk. At baseline, 193 (63.7%) reported suicidal ideation (SI) and 72 (23.8%) reported a past suicide attempt (SA). Suicidal thoughts and behaviors were assessed at 6-month intervals for up to two years. We conducted growth mixture modeling to identify response trajectories.
Results: At follow-up, a large proportion of youth reported a favorable response to treatment such that SI declined over time (n=136; 44.9%) while another group reported chronic SI that did not remit during the study period (n=83; 27.4%). Half of participants with chronic SI (n=43; 51.8%) attempted suicide during the follow-up period, which was higher than the treatment responder group (n=24; 17.6%; chi-square = 58.8, $p < .001$).
Discussion: This study provides the first prospective data on suicide risk trajectories among transgender youth receiving gender-affirming care. Consistent with prior studies indicating elevated risk for transgender youth, rates of SI and SA were high at baseline and follow-up. Findings suggest that treatment response is heterogeneous and that most youth respond to care and that suicidal ideation should be monitored throughout treatment as an indicator of risk for suicide attempt.

T21. SUICIDE PREVENTION AMONG ISRAELI STUDENTS DURING COVID-19

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Background: In December 2019, with the Coronavirus outbreak, people were asked to lock themselves in their homes, and the guidelines for maintaining public health focused on physical distance. On March 13, 2020, the education system in Israel and worldwide moved to distance learning. Israel's education system was opened intermittently throughout the year, but seventh to tenth-grade students did not return to school for almost a year. This reality has led adolescents to feel that they have been 'forgotten at home,' far from decision-makers eyes.

Studies worldwide and in Israel have pointed to the psychological damage and increased risk factors for suicide among adolescents. All of the above has led us to accelerate adapting the 'Choosing Life - Talking Directly with Adolescents' about suicide to an online prevention program.
Methods: We opened 22 online trainings for education counselors and teachers, 308 educators in total. Data were collected from students from 180 classes in 3 sectors: 83 Druze, 56 Jewish, and 9 Bedouin. Data include measures of suicidal ideation, depression symptoms, well-being, and the ability to share with an adult when feeling distressed.
Results: Data collection for this project was recently completed. This presentation will include the main adjustments to the online training and program and present data on student outcomes. These outcomes will be compared to pre-COVID-19 data to help us understand the impact of the crisis on middle school students.
Discussion: This study clarifies the impact of covid-19 on adolescents' mental health and suicide ideation, plan, and behavior and the importance of online educational intervention during school hours.
Furthermore, our results regarding the significant increase in suicidal thoughts among girls and suicide plans and behavior among all adolescents during covid-19 were supported robustly by other results worldwide (Garcia et al.,2020). Thus, all outcomes reaffirm the alarming effect of risk factors on suicide and emphasize the need to take those risk factors very seriously, especially during a pandemic.

T22. COMPREHENSIVE SCALE PREDICTED LONG-TERM SUICIDE BEHAVIORS BETTER THAN ONE SUICIDAL ITEM AMONG HOTLINE CALLERS

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Background: Crisis lines face challenges in identifying individuals at high risk of suicide. We aimed to compare two routine methods for evaluating suicidal risk in China’s largest psychological hotline on predicting suicide act at different time points.
Methods: We recruited and followed 4072 callers from the Beijing Psychological Support Hotline. We screened their suicide risk through two strategies during their index calls: (a) one item of suicidal ideation or plan in the last two weeks; (b) a comprehensive suicidal risk assessment scale including 12 elements, such as depression, hopelessness, psychological distress, etc. We followed their suicidal attempts and suicides for one year through telephone.
Results: The number of callers who attempted suicide or died by suicide within 24 hours, 30 days, 180 days, or 1 year was: 102, 341, 615, and 802. The sensitivity for the one item and the comprehensive scale for predicting suicidal acts within 24 hours, 30 days, 180 days, or 1 year was: 87.3% v. 98.1%, 68.9% v. 93.0%, 88.3% v. 56.3%, and 47.9% v. 85.9%; the specificity was 81.6% v. 46.1%, 82.8% v. 47.1%, 88.1% v. 83.5%, and 83.6% v. 48.7%; the positive predictive values were 6.0% v. 2.1%, 20.0% v. 7.1%, 36.1% v. 12.8%, and 47.0% v. 16.6%; the Youden's index was 68.8% v. 44.1%, 51.7% v. 40.1%, 39.8% v. 36.2%, and 31.6% v. 34.6%.
Discussion: The predictive ability of subsequent suicidal acts within 6 months using one item of suicidal ideation or plan or behavior is acceptable in the suicide prevention hotline, but it is insufficient for predicting long-term subsequent suicidal acts. A comprehensive suicidal risk assessment scale performs better in predicting long-term subsequent suicidal acts.

T23. ADVANCING THE DETECTION OF SUICIDAL CRISIS BY TRANSLATING ECOLOGICALLY VALID, INTENSIVE LONGITUDINAL METHODS INTO CLINICAL PRACTICE

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Background: A major hurdle in reducing suicide is timely identification of increased risk within high-risk populations during high-risk times. Indeed, studies using ecological momentary assessment (EMA) suggest that increases in suicidal ideation occur at higher rates and are more variable than experiences reported by individuals who complete retrospective, self-reported assessments in laboratory settings. Commonly assessed correlates and predictors of mood and other mental health symptoms (e.g., hopelessness) may be more strongly associated with retrospectively assessed symptoms than with symptoms that are assessed in daily life. Fine-grained and ecologically valid assessments may stimulate innovation in suicide risk detection in clinical samples. We investigated the feasibility of detecting acute changes in suicidal ideation in a sample of 183 depressed US military Veterans who completed daily mental health assessments by telehealth.
Methods: Participants completed daily assessment administered by the VHA's telehealth vender, Medtronic. Items assessed mood symptoms, protective factors against suicide (e.g., social connectedness), and suicidal ideation. Items were selected by Medtronic and do not appear to be drawn from psychometrically sound measures. In cases where Veterans endorsed suicidal ideation or other concerning symptoms, a telehealth nurses received alerts and prompts to follow up with patients. Alerts are included in daily data.
Results: Participants were mostly White (79.6%), heterosexual (96.6%), malse (86.9%) who were not married (81.55%) at the time of the chart review. Many had histories of suicidal ideation (47.6%) and suicide attempts (66%). Suicide safety plans were documented in many of the participant charts (44.2%) but few had high-risk for suicide flags in their medical record (14%). The average number of days of assessment for participants was 1,289.94 (SD =944.99). On average, depressed Veterans were asked about suicide 5.59 times (SD = 6.76) over the course of their enrollment in daily telehealth assessments. Over the course of the study period, 8 Veterans reported that they were experiencing suicidal ideation. Within this subsample, the rate of affirmative responses ranged from 16.7% to 100%. Additional analyses describing the trajectory of suicidal ideation in this sample will be presented.
Discussion: Daily telehealth assessments with clinical populations may mirror ecological momentary assessment research methods. This research demonstrates that it is feasible to enroll depressed adults with a history of suicide attempts into a daily telehealth assessment protocol. This sample appears to have found this assessment schedule acceptable, given the long duration of response periods. The generalizability of study findings are limited by the overrepresentation of White males and the use of retrospective chart review methods. However, these findings suggest that EMA type assessments may be used to detect suicide risk in the course of routine care. Future research should address clinical decision making around to intensive longitudinal data.

T24. SUICIDE RISK SCREENING IN THE SCHOOL ENVIRONMENT: FAMILY FACTORS AND PROFILES

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Background: Recent research indicates that suicide rates have risen across all age ranges over the past two decades, with some of the most dramatic increases affecting adolescents (Lindsey, et al., 2019). Youth who have suicide ideation are at increased risk of developing later mood and anxiety disorders (Herba et al., 2007), as well as further suicide ideation and attempts later in life (Copeland et al., 2017). One important risk factor of suicide is the family environment. In our study, we aimed to identify profiles of adolescents based on family factors, whether those profiles were associated with suicidal risk, and whether those family profiles improve identification of suicide risk above and beyond other correlated risk factors (e.g., depression and bullying).
Methods: Our study used data from 12,760 students (mean age = 14.5; 53.7% female, 59.3% White) who were screened by the Student Assistance Program (SAP) in Pennsylvania, USA. The SAP program builds assessment teams in schools to evaluate youth for barriers to academic success. As part of the evaluation process, students are screened with the Behavioral Health Screen (BHS), which assesses multiple dimensions of adolescent mental health including suicide risk (Diamond et al, 2010, 2017). Latent class analyses were estimated using the R package poLCA. Maximum-probability assignment determined class membership; differences in covariates across classes were explored using chi-square analyses and ANOVA (for age). Class membership was used as a predictor in building a logistic regression modeling. Hierarchical regression modeling was used to determine if the addition of additional variables improved the model. The first block included only demographics, and each additional block added another type of suicide risk factor (in order: mental health variables, school factors, family functioning class membership). Model fit was measured via a pseudo-R2 and evaluated for significant improvement over the previous model.
Results: Latent class analysis identified four family profiles (high risk, moderate risk, low risk, and minimal disclosure) which were related to suicide risk, school concerns (academic performance, bullying) and mental health concerns (depression severity, anxiety). Students in the high family risk category (characterized by more critical parents, violence and arguing in the home, and no close adult to support them) were substantially more likely to report bullying, worsening grades, social isolation, and both mental health concerns and suicide risk. Hierarchical regression modeling found that inclusion of the family risk profiles in assessment models showed significant improvement in identification of suicide risk. In the final model, students in the high-risk family profile were twice as likely to report having current suicide risk compared to students in the low-risk profile.
Discussion: The present study investigated the role of family factors in understanding youth mental health in the school setting. These profiles were associated with school factors and suicide risk, supporting their importance in youths' lives and understanding their mental health. However, the minimal disclosure group was found to be at least somewhat non-compliant with the screening process, indicating they may also have unique characteristics not captured here. Overall, inclusion of family risk profiles improves suicide risk assessment and allows for more holistic and targeted responses by schools.

T25. DIFFERENTIATING BETWEEN YOUTH WITH A HISTORY OF SUICIDAL THOUGHTS, PLANS, AND ATTEMPTS

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Background: Limited research has examined factors distinguishing between patterns of adolescent suicidal thoughts and behaviors. The current study examined demographic, school, family/environmental, and mental health differences across patterns identified by Romanelli and colleagues (2022): history of thoughts only, plans with thoughts, attempt with thoughts and/or plans, and attempt without thoughts.
Methods: The sample consisted of 4233 middle and high school students referred to school Student Assistance Program (SAP) teams in Pennsylvania, USA and reported having suicidal thoughts and/or behaviors at some time in their life (SAMHSA, 2019). Initial groups were based on Romanelli and colleagues' (2022) four-group classification: 1) those with a history of thoughts only, 2) plans with thoughts, 3) attempt with thoughts and/or plans, and 4) attempt without thoughts or plans. However, the last group (attempt without thoughts or plans) was extremely small (n = 58), and initial analyses did not find evidence of differentiation from other groups. Therefore, this group was excluded from the analyses. The current study focused on three lifetime risk groups: thoughts-only (n = 2054), thoughts and plans (n = 585), and attempt with thoughts and/or plans (n = 1437). To explore potential risk factors and correlates with group membership, chi-square tests were used to examine omnibus differences across the three groups (except for differences in continuous age, tested with the F statistic).
Results: Membership in the three groups was predicted by demographic (race, gender, ethnicity, age), school (bullying, grades declining, skipping class), family/environmental (home/neighborhood violence, gun access, arguing in the home, adult support, parental monitoring), and mental health factors (anxiety, depression, traumatic distress, substance use, eating disorder). For example, both the "thoughts and plans" and "attempt" groups were more likely to report significant symptoms of anxiety, traumatic distress, and eating disorder compared to "thoughts-only".
Discussion: These results support the utility of examining suicidal thoughts, plans, and attempts as distinct indicators of suicide risk. In line with previous research, there were substantial differences between those with histories of thoughts and attempts (Adewuya and Oladipo, 2020; Borges et al., 2010; May and Klonsky, 2016), emphasizing the importance of examining thoughts and behaviors separately. This study also adds to the small but growing body of literature finding that those with suicidal plans in combination with thoughts may be unique from those with thoughts alone (Romanelli et al., 2022). Although there were no demographic differences between the "thoughts-only" and "thoughts and plans" groups, youth with a history of suicidal plans were more likely to report declining grades, violence and arguing at home, and lack of family support, alongside symptoms of anxiety, severe depression, traumatic distress, and eating disorders. After accounting for all factors, those with thoughts and plans were uniquely distinguished by two factors: lack of family support and increased depressive symptoms. These findings have implications for clinical decision-making, suggesting that youth reporting suicidal plans may warrant a more in-depth assessment before triage compared to those with thoughts alone.

T26. UNIVERSAL SUICIDE RISK SCREENING IN AN EMERGENCY DEPARTMENT AND AN ADOLESCENT CLINIC AT AN URBAN TERTIARY CHILDREN'S HOSPITAL

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Background: Suicide among youth and in particular transgender and gender diverse (TGD) youth represents a national crisis. The National Institute of Mental Health emphasizes the best way to prevent suicide is identification of those at risk and appropriate linkage to care. Universal screening for suicide involves asking all youth about suicidal thoughts and behaviors, regardless of risk factors or presenting concerns. A better understanding of youth who screen positive during universal suicide screening may inform ongoing intervention efforts. Our aim was to develop a novel keyword method for identifying TGD youth in the electronic medical record (EMR) and to employ this method to identify rates of suicidal ideation (SI) among youth in a pediatric emergency department (ED) and an adolescent medicine clinic.

Methods: We conducted a retrospective cross-sectional study of visits by youth who received the Ask Suicide-Screening Questions (ASQ) during initial implementation of universal suicide risk screening: 1) in the ED from November 2019-August 2022 and 2) in an outpatient adolescent medicine clinic from October 2022-April 2023. For both ED visits and adolescent medicine clinic visits, we determined screening positivity rates. For ED visits, we developed a keyword search strategy to identify transgender and gender diverse (TGD) youth. If any of 9 keywords (they/them, preferred name, pronouns, male-to-female, female-to-male, nonbinary, agender, transgender, or gender dysphoria) were present in the ED note, the surrounding text was extracted and manually reviewed to determine whether the text conveyed TGD status. To identify patient characteristics associated with positive screening responses, we then fit logistic regression models with positive screen and active SI as dependent variables, with age, gender, race and ethnicity, insurance status, child opportunity index, and mental health chief complaint to the ED as independent variables.

Results: Among 12,112 ED visits, 24% of ASQ screens were positive and 3.4% of youth endorsed active SI. Among 464 adolescent clinic visits, 23.7% of ASQ screens were positive and

Discussion: As universal suicide risk screening was implemented, we identified high rates of SI in an ED and adolescent clinic. Using a novel keyword-based method to identify TGD youth, we identified higher risk for SI in this group. Age and insurance status were also related to screening positivity rates. These results should inform future suicide prevention efforts. Further analyses will characterize youth who did not present with a mental health chief complaint but screened positive on the ASQ.

T27. THE ACCEPTABILITY OF TRAINING PEER SPECIALISTS IN THE SAFETY PLANNING INTERVENTION

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Background: Peer specialists (i.e., individuals with lived experience of mental illness who are certified to support individuals receiving psychiatric treatment) have been successfully integrated into many recovery-oriented services, such as substance abuse treatment. However, the suicide prevention field has been slow to incorporate peers3, despite national calls to the contrary. The limited involvement of peers in suicide prevention initiatives may stem in part from fears of contagion when peer supporters are working with high-risk populations. However, this has largely been based on conjecture without much empirical evidence supporting these claims. The present study sought to investigate the acceptability of training peers in an adapted version of the Safety Planning Intervention, and suicide ideation and behavior pre and post training.

Methods: Peer specialists working at RI International crisis center locations across the United States were invited to participate in a virtual SPI training adapted for peers. The training was modified from the original SPI training by placing a greater emphasis on making a strong connection with the individual at risk; balancing peer self-disclosure while still focusing on the individual at risk; instilling hope that one can effectively manage suicidal thoughts; and modifying certain words or phrases that either were clinical jargon or had a negative connotation.

Seventy-eight peer support specialists were enrolled in the training and 54 participants completed the training and all pre-and post-training assessments. Participants were asked to complete the Columbia Suicide Severity Rating Scale (C-SSRS), the Positive and Negative Affect Schedule (PANAS), and a survey developed for this project assessing self-efficacy, training satisfaction, acceptability, and feasibility.

Results: Suicide ideation did not increase from pre- to post-training ($t_{53}=-.306$, $p = 0.76$, $d = .89$) and rates of suicidal behavior from 3-months prior to the training, to immediately after the training exhibited a significant decrease ($t_{53}=5.00$, $p < .001$, $d = 0.52$), as measured by the C-SSRS.

Several negative emotions rated on the PANAS decreased from pre- to post-training (Distressed: $t_{52}=2.97$, $p < .05$, $d = 1.26$; Upset: $t_{53}=4.33$, $p < .001$, $d = 0.95$; Scared: $t_{53}=2.75$, $p < .05$, $d = 0.85$; Irritable: $t_{52}=4.44$, $p < .001$, $d = 0.94$). No negative emotions were elevated at post-training and one positive emotion, "interest," increased significantly ($t_{54}=3.12$, $p < .05$, $d = 1.00$) from pre- to post-training.

In addition, participants stated that they felt SPI was relevant to their role (M=4.69, SD=0.61), would be helpful in their role (M=4.72, SD=0.53), and that they had high self-efficacy that they could competently use the intervention in their work as a peer specialist (M=4.41, SD=0.84). Participants reported that it was acceptable (M=4.13, SD=1.01) and suitable (M=4.17, SD=1.00) for peer specialists to conduct the Safety Planning Intervention.

Discussion: These findings suggest the training was not associated with an iatrogenic effect for peer specialists. Moreover, the training was found to be acceptable and demonstrated a positive effect on participants as evidenced by significant decreases in several negative emotions immediately following the training. This represents an important step towards identifying how peers can be successfully integrated into suicide prevention efforts. Next steps include evaluating the peers' level of distress after conducting the SPI with suicidal individuals over a period of 6 months.

T28. CLINICIANS' EXPERIENCE WITH LETHAL MEANS ASSESSMENT AND COUNSELING IN AN URBAN PEDIATRIC EMERGENCY DEPARTMENT

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Background: Suicide is the second leading cause of death for young Americans, with firearms consistently the most common method used. Youth firearm suicide rates are higher now than they have ever been. Lethal means counseling, an evidence-based injury prevention intervention designed to limit individuals' access to potentially lethal methods of suicide when they are in a suicidal crisis, is a low-cost, evidence-based practice recognized as a gold-standard intervention for patients who are at increased risk for suicide. Lethal means counseling is contingent upon lethal means assessment, the identification of patients' access to highly lethal suicide methods like firearms, which increase the risk of death. Prior research has shown that many patients with suicidal ideation or attempt lack a record of lethal means assessment. Further, research in pediatric emergency departments (PED) evaluating lethal means assessment in this vulnerable population of adolescents is scarce. Lethal means assessment has proven to be incredibly useful for those at risk of suicide, and it is important to understand the experience with and preferences for lethal means assessment and counseling in clinicians. The purpose of this study is to evaluate the level of experience and confidence clinicians in an urban PED have with lethal means counseling and assessment.
Methods: PED clinicians (n = 25) completed an anonymous survey assessing their demographics and experiences with, training, knowledge of, and preferences regarding lethal means assessment and counseling in the PED.
Results: Out of all clinicians surveyed, 48% reported being trained in lethal means assessment 32% reported being trained in lethal means counseling. 79.16% of clinicians feel confident that they have the skills needed to assess patients for suicidality, but only 54.17% are confident that they can assess a patient's suicide risk severity, and only 45.83% reported that they know how to provide brief counseling to suicidal patients. 70.83% of clinicians report asking about guns in the home if the patient has described feeling suicidal in the past month, but only 41.67% of clinicians counsel families to lock up guns at home. 75% see lethal means assessment as a social worker's job. Lastly, only 8.33% believe that the staffing by mental health clinicians is sufficient to handle the patient care load.
Discussion: We found that the majority of surveyed clinicians in an urban PED are not being trained in lethal means assessment and counseling and are not confident in assessing a patient's suicide risk severity or offering brief counseling to suicidal patients, and do not often offer lethal means counseling. They also overwhelmingly feel that there are not enough personnel to handle patient care load. One potential avenue of support may be the implementation of safe firearm storage navigators in the PED to supplement lethal means screening and counseling, protecting patients from firearm suicide.

T29. COMPARISON BETWEEN TWO INSTRUMENTS FOR SUICIDAL RISK SCREENING IN SPANISH-SPEAKING CHILDREN AND ADOLESCENTS FROM ARGENTINA

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Background: Suicide and suicidal behaviors have become a frequent and serious problem, affecting people of any age. At present, suicide is among the leading causes of death and injury worldwide, becoming the fourth leading cause of death globally, and the second in many countries among young people between 15 and 24 years.
In this context, systematic detection emerges as a first step for reducing the suicidal risk in this adolescent population as a key Public Health strategy for prevention. At present, there are two strategies for screening suicide risk in this population: (1) the use of a tool designed for screening of depression that contains an item that evaluates suicidal risk (e.g. Patient Health Questionaire-9 (PHQ-9)), and (2) the use of a specific, easy and brief tool for detecting suicide risk in adolescents.

Given the absence of validated tools in Spanish for risk screening in this group, our research team carried out the first cross-cultural validation into Spanish of a suicide risk screening tool for adolescents, Ask Suicide-Screening Questions (ASQ), originally created by Dr. Lisa Horowitz and her team from the NIH (USA), obtaining strong psychometric properties, which demonstrates to be valid for identifying Spanish-speaking adolescents at suicide risk.

The objective of this study is to compare the psychometric properties of the Spanish version of ASQ against item 9 of the PHQ-9, which explores ideas of death or self-injurious behaviors, for suicidal risk screening in pediatric patients attending Public Hospitals in Buenos Aires, Argentina.

Methods: The present study is a secondary analysis of the data obtained from a validation study of the Spanish version of ASQ in Argentina that consisted of a cross-sectional, multicentric study with a convenience sample of outpatients and inpatients, between the ages of 10 to 18 years, who were assisted in Pediatric Services of Public Medical settings and one private psychiatric clinic. Participants completed the ASQ, the Suicidal Ideation Questionnaire (SIQ/SIQ Jr.), and the PHQ-9.
Sensitivity, and specificity, along with the 95% confidence intervals and AUC of item 9 of PHQ-9, were calculated to compare the performance of that item in detecting suicide risk, with the gold standard SIQ, and then the results were compared to the Spanish-validated ASQ.

Results: A sample of 301 participants (mean age of 14 +/-1,78 years) was included in this study. Eighty-three (27.6%) screened positive for suicide risk with the ASQ, with 89% (74/83) considered as "non-acute" risk, and 10% (9/83) as "acute" risk (presence of current suicidal thoughts), which represents 3% (9/301) of the entire sample. When comparing the proportion of adolescents at risk of suicide detected with both tools, differences were observed with 27.6% (83/301) detected with ASQ and 18.93% (57/301) with PHQ-9. Only 54.21% (45/83) of positives in ASQ have reported suicidal risk in item 9 of the PHQ-9.
Item 9 of PHQ-9 showed a sensitivity of 64.2%, specificity of 92.4%, and AUC of 0.78. In relation to the SIQ/SIQ-JR, the Spanish-validated ASQ had a sensitivity of 96.8%, a specificity of 90.4%, and an AUC of 0.93. When comparing the AUC of both tools ASQ showed a higher performance in detecting suicide risk adolescents than item 9 of PHQ-9 (p 0.000).

Discussion: Item 9 of the PHQ-9 is commonly used to assess suicide risk in clinical practice; however, the results obtained demonstrate its lower capacity to detect suicide risk in adolescents compared to the use of a specific tool such as the ASQ questionnaire. These findings demonstrate the importance of being able to use a specific tool for the detection of suicide risk as opposed to more specific tools not designed for this purpose.

T30. IMPACT OF PANDEMIC ON EMOTIONAL REGULATION AND SUICIDE RISK AMONG ADOLESCENTS

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Background: While completed suicides have registered a small impact of pandemic waves for what we now know, the number of suicide attempts and non-suicidal self-injurious behavior has dramatically increased, especially among adolescents. Literature reported that among children and adolescents, there was an increase in suicide attempts just after the first wave of the pandemic, which continued afterward. In addition, US figures demonstrated an increase in suicide attempts among adolescents. Specifically, there was an increase in suicide attempts among girls aged 12-17 years, pointing to suicide attempt ED visits increasing up to 51% when comparing the time frames of 2021 with 2019.

Methods: Depression and suicide-related concerns increased during the pandemic, and a unanimous call for action has been directed toward proper measures for containing the phenomenon. It would appear that those adolescents who were more resilient to the pandemic could count on resilient parents and that the association between traumatic features of pandemic waves and suicide risk disappeared when depressive symptoms were considered. An important finding emerging from the literature is an indirect effect of preexisting vulnerabilities on suicide risk and NSSI through higher levels of COVID-19-related stress. Therefore, results indicate that the pandemic was perceived as more stressful by adolescents who were already vulnerable.

Results: Studies suggest that adolescents may have been experiencing anticipatory anxiety, with negative expectations about the future, depressive symptoms, negative affect and loneliness, and lower academic adjustment during the pandemic. Therefore, emotional regulation in adolescents would be crucial in explaining the pathways by which suicide risk increases among youths. No doubt, the pandemic restricted and sometimes abolished activities of great importance for emotional growth and made parents and families more vulnerable to conflicts, especially when parents had to face economic difficulties and personal and interpersonal conflicts made worse by collective anxieties.

Discussion: Those who count on individual, family, and community resources could be resilient and emotionally regulated. A lesson learned from the pandemic is that public health policies devoted to youths' mental health are now more than ever needed. Improving services could result in early assessment of conditions that can later become more serious, including mental pain leading to suicide risk.

T31. NITROUS OXIDE REDUCES SUICIDAL IDEATION IN TREATMENT-RESISTANT MAJOR DEPRESSION

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Background: Nitrous oxide (N2O) is a low risk and common gaseous anesthetic and N-methyl D-aspartate receptor antagonist discovered to have rapid anti-depressant properties. The primary objective of this study is to determine if N2O has anti-suicidal effects in subjects with treatment-resistant major depression (TRMD).

Methods: This study is a pooled post-hoc analysis from three double-blind, randomized, placebo-controlled, outpatient crossover N2O trials. Subjects were adults with TRMD defined as having failed at least 2 anti-depressant trials and one or more in the current depressive episode. Suicidal ideation was assessed using the Hamilton Depression Rating Scale (HDRS) suicide item #3 pre-inhalation, and 2 and 24 hours post-inhalation. Subjects received 60-minute inhalations of 50% N2O and placebo (air/oxygen mixture). A clinically meaningful reduction in suicidal ideation was defined as at least a 2-point score reduction on item #3. A fisher's exact test was utilized to assess clinically meaningful reduction in suicidal ideation.

Results: Twenty-four subjects were pooled from three N2O TRMD trials. Those who scored at least a 2 on the HDRS suicide item were included in the analysis; 13 subjects in the N2O arm and 17 subjects in the placebo arm. A significant reduction in suicidal ideation between N2O and placebo was observed at the 24 hour post-inhalation time point (p=0.019), but not at the 2 hour time point (p= 1). Fifty-four percent of the N2O arm demonstrated a significant reduction in suicidal ideation vs 12% of the placebo arm. Reduction in suicidal ideation was highly correlated with reduction in depression in the treatment arm (Spearman's rho 0.763).

Discussion: These preliminary findings suggest a role for N2O as a potential rapid anti-suicidal agent. Limitations of this study, such as small sample and carryover effect, highlight the need to further investigate N2O's effects on suicidal ideation.

T32. TRAJECTORIES AND PREDICTORS OF CHANGE IN EMOTION DYSREGULATION AND DELIBERATE SELF-HARM AMONGST ADOLESCENTS WITH BORDERLINE FEATURES

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Background: Deliberate self-harm (DSH) and emotion dysregulation (ED) peaks in adolescence, and is associated with an increased risk of psychopathology, suicide and lower functioning in adulthood. DBT-A has been established as an effective treatment for reducing DSH, however less is known about changes in emotion dysregulation. This study aimed to identify baseline predictors of treatment response in outcome trajectories of DSH and emotion dysregulation in adolescents presenting with borderline features and repeated deliberate self-harm.

Methods: Response trajectories of DSH and ED were investigated using Latent Class Analysis on RCT data comparing DBT-A and EUC for 77 adolescents treated for deliberate self-harm and borderline traits. Logistic regression analysis was used to examine baseline predictors, including depressive symptoms, DSH duration, age of DSH onset and treatment condition.
Results: Two-class solutions were selected for both indicators, distinguishing between early and late responders in DSH, and responders and non-responders in ED. Higher levels of depression, shorter DSH histories and not receiving DBT-A predicted less favourable response in DSH, while DBT-A was the only predictor of treatment response in ED.
Discussion: To our knowledge, this is the first study finding early DSH response and long-term ED reductions related to DBT-A, suggesting that patients not only reduce problem behaviour, but also improve emotion regulation as they enter adulthood. Timing of treatment response, and the associated benefits of early DSH reduction as shown in this study, can have far-reaching implications for youth that struggle with DSH and their families. In line with previous studies, we found that higher baseline depression predicted less favourable DSH outcomes. As adolescents in treatment for DSH is a heterogeneous population, this could indicate that adolescents with DSH as part of a depressive disorder rather than a more generalized emotion dysregulation pattern might benefit from a different treatment. Adolescence constitutes a critical phase in emotion regulation development, and the association between DBT-A and long-term ED reduction suggests a potential important role of early treatment that targets ED directly. However, emotion regulation is a complex process still under development during adolescence. Therefore, caution is warranted in interpreting long-term changes in emotion regulation as treatment-related. Indeed, it makes more sense to consider therapy with potential to influence and pivot emotion regulation development.

T33. SUB-TYPES OF NON-SUICIDAL SELF INJURY IN YOUTH: LATENT PROFILE ANALYSIS OF A RANDOMIZED CONTROLLED TRIAL

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Background: Psychological treatments targeting emotion dysregulation are effective in reducing non-suicidal self injury (NSSI), however predicting for whom the treatment is effective remains elusive. Understanding the severity and dynamics of emotion dysregulation before treatment may help identify patients at risk of non-response. Our aims were to identify sub-groups in emotion regulation difficulties among adolescents with NSSI and evaluate if the identified sub-groups differed in their response to psychological treatment.
Methods: This study used data from a recently conducted randomized controlled trial evaluating an Internet-delivered Emotion Regulation Individual Therapy for Adolescents (IERITA) with NSSI. The 16-item version of the Difficulties in Emotion Regulation Scale (DERS-16) was administered during 4 weeks before treatment and was used to identify sub-groups using latent profile analysis. The Deliberate Self Harm Inventory - Youth version (DSHI-Y) was administered each week during treatment; the primary outcome was change in self-rated NSSI frequency during treatment. The secondary outcome was the proportion of participants with an absence of NSSI at post-treatment.
Results: Latent profile analysis identified three sub-groups of emotion regulation difficulties with high accuracy: Low mean and low variability (Group 1), High variability (Group 2), and High mean and low variability (Group 3). The sub-groups did not differ in the average number of self-harm episodes at post-treatment (Incidence-rate ratios 1.03 to 1.32, *p* = 0.63 to 0.94);

however, there was a statistically significant difference in the proportion of participants with no NSSI when comparing Groups 1 and 3 (OR = 4.1 [95% CI 1.05 to 15.99], *p* = 0.01).
Discussion: Latent profile analysis is a promising approach to identify sub-groups of emotion dysregulation among treatment-seeking adolescents with NSSI. However, future research is needed to better understand the utility of predicting treatment outcomes as only some of the sub-groups showed a differential treatment response. Clinical implications and future directions are discussed.

T34. ONLINE MEANING-CENTERED GROUPS: TESTING AN UPSTREAM INTERVENTION TO ENHANCE PSYCHOLOGICAL RESILIENCY AND REDUCE SUICIDE RISK IN MIDDLE-AGED AND OLDER ADULTS

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Background: Research is needed investigating theoretically-driven preventive-interventions designed to enhance psychological resiliency and reduce suicide risk among at-risk demographics. We developed and initially tested Meaning-Centered Men's Groups (MCMG; Heisel et al., 2020), a 12-session, upstream, community-based psychological intervention based on Logotherapy, Viktor Frankl's Meaning-Centered psychotherapy, to enhance social connections and reduce suicide risk in men over 55 transitioning to retirement. We successfully pivoted an in-person course of MCMG online at the start of the global pandemic, and have since adapted MCMG for online delivery to: middle-aged and older men in career transition (12 sessions); adults over 60 experiencing pandemic-related social isolation or psychological distress (Online Meaning-Centered Groups or OMG; 8 sessions); and male Veterans and First-Responders (VFR) over 50 transitioning out of a public safety career or retiring from a post-VFR career (12 sessions). This presentation will provide an overview of our meaning-centered groups, identify adaptations for online delivery to specific populations, and share preliminary findings of on-going studies of OMG and MCMG for VFR.
Methods: Voluntary participants were recruited by way of study ads, newsletters, e-mails, and social media postings through aging and mental health, residential care, community and social service, and military and VFR agencies and organizations. Interested participants completed eligibility interviews assessing cognitive and physical functioning, and screens for mental disorders, addictions, and suicide ideation. Eligible participants completed additional assessments of positive and negative psychological factors, social connections and support, and suicide ideation at pre-, mid-, post-group, and follow-up time-points. All assessment and group sessions took place online, using hospital-approved videoconferencing software. Safety protocols were in place.
Results: We have thus far delivered two courses of online MCMG and one course of OMG, and are set to begin a second course of OMG and an initial course of MCMG for VFR in May of 2023. Participant attendance has been strong, with low rates of lateness or missed sessions, and these largely due to illness. Participants have generally reported finding these groups enjoyable, supportive, and promoting of well-being. Pre-post findings will be presented focusing on positive (e.g., social support, life satisfaction, meaning in life, and psychological well-being) and negative outcomes (e.g., loneliness, depression, hopelessness, and suicide ideation), and group process variables (e.g., therapeutic alliance, group satisfaction ratings, and participant qualitative feedback at study exit interviews).

Discussion: Meaning-centered intervention groups appear to hold promise in enhancing emotional support and psychological well-being among middle-aged and older adults facing key life transitions or experiencing psychological distress. These and other findings will be discussed in the context of the growing older adult population and elevated suicide risk among middle-aged and older men in transition, VFR, and socially-isolated older adults in residential and community settings.

T35. EFFECTIVENESS OF SLEEP INTERVENTIONS FOR TREATING SUICIDALITY OVER THE LIFESPAN: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Past research has identified various bio-psycho-social factors that elevate suicide risk. One new risk factor that has emerged is sleep disturbances. Both sleep disorders and sleep disturbances have been linked with elevated depression, suicidal ideation, attempted suicides, and death by suicide. In addition to sleep's potential as a risk factor, it could also be an important therapeutic target. Preliminary evidence suggests that targeting sleep may consequently impact suicidal thoughts and behaviours (STBs). Given this, it is important to explore the relationship between sleep disorders and suicidality, how best to use sleep interventions to target STBs, and what factors may moderate the effectiveness of these interventions. The first aim of this study is to elucidate the effect of sleep interventions on suicide outcomes. The second aim is to try and understand how age as a moderator might impact treatment effectiveness.
Methods: A meta-analysis was conducted by looking at articles that involved a sleep intervention and reported a suicide outcome measure. Article criteria included peer review, English language, and published after 1997. Articles were excluded if they were a commentary, review, meta-analysis, meeting abstract, abstract only, or protocol paper. To address the second aim of this paper, eligible articles were categorized by age group into adolescent, young adult college students, and adults. A comprehensive search was conducted on February 8th, 2022, using PubMed, PsycINFO and Web of Science. Article screening, selection and data extraction were conducted by three reviewers using Covidence, a systematic review software. Analysis was conducted using Comprehensive Meta-Analysis version 3 using a random effects model. Effect sizes of suicide outcomes for different types of sleep interventions and different age groups were calculated.
Results: Twenty-one studies were included for Aim 1, looking at the main effects of sleep interventions on suicide outcomes. Of the 21 studies, 13 used cognitive behavioural therapy (CBT) type treatments, three used pharmacological interventions, and five were variations of circadian rhythm treatments (CRT). 11 of the 21 studies were included for Aim 2 in the age moderation analysis. Of the 11 studies, 3 studies looked at adolescents (15-18 years), 2 studies young adults (18-24), and 6 examined adults (18-65).
Overall, sleep interventions had a small significant effect size on suicide outcomes (stand. mean diff. = -0.38). When each treatment type was examined separately both CBTs and CRTs significantly reduced suicide outcomes with small (-0.37) and medium (-0.74) effect sizes respectively, but PTs did not (-0.18). When looking at Aim 2, it was found that sleep interventions significantly reduced suicidality in adolescents (-0.78) and adults (-0.52) with

medium effect sizes but had insignificant negligible effects in young adult samples (comprised mostly of college students) (-0.15).

Discussion: The results of this meta-analysis add to the literature that sleep disturbances may be a novel target for treating suicidality. CBT and CRT may be more fruitful treatment methods than PT. Given that sleep problems are more easily treated than other chronic risk factors of suicide, are a cross-diagnostic treatment target, can easily be added as an adjunct to regular treatment, and are less stigmatized than mental health disorders, sleep interventions are a promising add-on to treatment for people experiencing STBs. The age analysis suggests that treatment may have similar effectiveness in adolescents and adults, but may not be as effective in young adult college students. This highlights the importance of age as a potential moderator for the effectiveness of sleep interventions on suicide.

T36. FEASIBILITY AND ACCEPTABILITY OF A SUICIDE PREVENTION INPATIENT GROUP INTERVENTION

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Background: Psychiatric treatment for individuals with suicidal crises often requires inpatient hospitalization. Notwithstanding the need to focus on immediate risk mitigation and symptom stabilization, treatment for acutely suicidal patients seldom address suicide-specific thoughts and behaviors. Furthermore, time constraints, a shorthanded workforce, and high patient turnover make it challenging to provide individualized treatment targeting suicide-specific symptoms, ultimately contributing to a greater risk for subsequent suicide attempts post-discharge.

A brief, group-based intervention therapy called the Suicide Prevention Inpatient Group Treatment (SPIGT) was thus developed. This modular intervention includes evidence-based suicide prevention treatment components: safety planning intervention, suicide-specific psychoeducation, and tool kits on personal wellness and reasons for living and hope. It is designed to be autonomous, maximizing learning and engagement through didactic psychoeducation elements and immediately usable coping skills.

Piloted in February 2016 at the Columbia University Irving Medical Center inpatient unit, this investigation evaluates the acceptability and feasibility of the intervention among patients and their clinicians.

Methods: The intervention consists of four fifty-minute group module sessions over two weeks so new patients can join the groups at any point (each session covers one module). Inpatients with some level of suicidality are referred to the group by their clinicians, and the group averages to three-five patients per session.

Anonymous feedback surveys on each module were collected from participating patients at the end of each session to determine acceptability and perceived intervention effectiveness (n=325-446). Additionally, feasibility and acceptability surveys were collected from the clinicians in the unit (n=11) six months after the program's implementation.

Results: Patient and staff evaluations indicate a wide endorsement of the treatment's preliminary acceptability and feasibility. On average, inpatients reported favorably towards the

four modules (M = 4.24; SD = 0.10). Most inpatients also rated the modules as informative (82%), helpful (81%), satisfying (80%), and purposeful (91%). 80% of the clinicians perceived the intervention to be effective (M = 4.02; SD = 0.40), and 94% found it feasible and helpful for the welfare of their patients (M = 4.73; SD = 0.15).
Discussion: The evaluation found the pilot SPIGT intervention to be feasible and acceptable. The milieu of an inpatient group may provide a safe, controlled space to process distressing feelings and learn coping skills. Furthermore, the group intervention can allow professionals with different training backgrounds to autonomously deliver the brief intervention that may address suicidal symptoms more effectively during inpatient stays and post-discharge. Considerations for broader dissemination should account for the individual treatment flow, length of stay, and unit logistics around medication titration that may preclude participation.

T37. REDUCTIONS IN SUICIDALITY AMONG YOUTH RECEIVING EARLY INTERVENTION SERVICES FOR FIRST EPISODE PSYCHOSIS

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Background: In recent years, there has been substantial international investment in services for young people experiencing first episode psychosis. Baseline rates of suicide in this cohort are extremely high; services must address suicide and are very concerned with prevention. Since 2018, the National Institute of Mental Health in the United States has led an effort to fund a nationwide implementation of comprehensive early psychosis services – called Coordinated Specialty Care – and to create an early psychosis learning health system by standardizing assessment, allowing for large scale program evaluation including monitoring of outcomes related to suicide.
Methods: The present study examines data from a regional network of twenty-three early psychosis programs across two states in the US. All programs use a common assessment battery and each participant is assessed at admission and every 6 months for up to two years. Here, we analyze changes in suicidality (ideation, self-harm, and attempts) for participants engaged in treatment, as well as predictors of change. Data were collected between January 2021 to April 2023.
Results: There were 874 participants measured across a maximum of 5 timepoints (Mean=2.3). On admission, 44% of patients endorsed thoughts of suicide, 19% had self-harmed, and 10% had attempted suicide in the previous six months. There were statistically significant reductions on all measures of suicidality over time, with most improvement occurring during the first six months of treatment during which time rates of ideation, self-harm, and attempts all decreased by more than half (with 95% confidence intervals suggesting reductions of no less than 64% on any outcome measure). There was no relationship between suicidality and treatment retention/dropout. Multilevel modeling provided little evidence that improvement differed by site. The full distribution of suicidality scores across time will be presented using figures and tables, including clinical predictors of change which included changes in social and role functioning, gaining or losing employment, and changes in depressive, positive, and trauma symptoms.

Discussion: We documented substantial improvements in suicidality among patients engaged in this regional network of first episode psychosis programs, with relatively uniform improvements across programs. There is a need for additional research on drivers of suicide-related treatment outcomes for participants engaged in services for first episode psychosis.

T38. FEASIBILITY OF DELIVERING ADAPTIVE TREATMENT STRATEGIES FOR SUICIDALITY IN UNIVERSITY COUNSELING CENTERS IN HYBRID FORMAT

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Background: Suicide is the 2nd leading cause of death among university students. Suicidal ideation and suicide-related behaviors are frequent presenting problems at overburdened university counseling centers (UCCs). Studies show that some students respond rapidly to treatment, whereas others require considerably more resources. Evidence-based adaptive treatment strategies (ATSs) are needed to address this heterogeneity in responsivity and complexity. ATSs individualize treatment via decision rules specifying how the type and intensity of an intervention can be sequenced based on response. In the wake of the COVID-19 pandemic, UCCs are now offering a mix of teletherapy and in person services to address the mental health needs of students yet there is a dearth of research to guide clinical decision making in hybrid format. Thus, the current study assessed the feasibility of delivering ATSs in a hybrid format to students presenting to UCCs with suicide risk.
Methods: Treatment seeking students with suicide risk were recruited from UCCs at four universities across the United States. Participants were randomized to one of three treatments delivered via a hybrid model: (1) Collaborative Assessment and Management of Suicidality (CAMS) for 4-8 weeks; (2) Treatment as Usual (TAU) for 4-8 weeks; or (3) Dialectical Behavior Therapy (DBT) for 16 weeks. Sufficient responders to CAMS or TAU discontinued services after 4-8 weeks. Non-responders to CAMS or TAU were re-randomized to one of two higher intensity interventions for an additional 8 weeks of treatment: CAMS or DBT. Feasibility was assessed through recruitment rates, attrition, student and counselor treatment satisfaction, counselor adherence to treatment model (e.g., CAMS, DBT), and telehealth usability.
Results: Across the four participating sites, 68 students were enrolled in the study. 64.15% of participants completed a full course of treatment. These treatment dropout rates are comparable to national data on UCCs indicating that 35% of students end treatment prematurely or do not respond to counselor communication. All clinicians met CAMS adherence standards and 89% met DBT adherence standards (76% of CAMS sessions and 47.8% of DBT sessions were rated as adherent). Students indicated greater than moderate satisfaction with treatment as measured by the Client Satisfaction Questionnaire-8 (CSQ-9; M = 26.62). Counselors reported an average satisfaction rating of 3.74 out of 5 (with 5 being “very satisfied”). Satisfaction did not differ by treatment condition.
Among telehealth sessions, counselors reported technological challenges (e.g., audio/video problems) for 16% of sessions. Counselors reported being able to effectively deliver the assigned treatment for 98.8% of sessions, having no concerns about confidentiality/privacy for 94.7% of sessions, and comfort providing the treatment via teletherapy for 99.2% of sessions.

Furthermore, counselors reported conducting risk management via teletherapy as they would in person in 99.4% of sessions. Overall, counselors and students reported moderate to strong usability of the telehealth system based on the Telehealth Usability Questionnaire (TUQ; counselor M = 6.07; student M = 5.59). Telehealth usability did not differ by treatment condition.

Discussion: Results indicate that suicidal students seeking treatment at UCCs can be successfully recruited and retained into ATSs. Both students and counselors indicated moderate to high levels of satisfaction with treatment, and counselors reported successfully implementing suicide-focused treatments via telehealth. Implications for a subsequent RCT assessing ATSs will be discussed.

T39. COGNITIVE BEHAVIOR THERAPY WITH MINDFULNESS CLASSES: NOVEL APPROACH FOR DISSEMINATING EVIDENCE BASED PSYCHOTHERAPY

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Background: Cognitive Behavior Therapy with Mindfulness (CBTm) is a program developed in Manitoba (www.cbtm.ca) to improve access to therapy and prevent mental disorders among vulnerable groups. This paper summarizes the background, science and implementation across diverse population in Canada

Methods: The presentation will describe the use of quality improvement methodology to develop, implement and expand CBTm.

CBTm is a 7.5 h program (usually delivered in a class format or a self-directed online course).

The sessions follow the structure of CBT session and include modules on mindfulness, relaxation, cognitive restructuring, behavior therapy, health living, safety planning, sleep, and anger management.

Health care providers, community and peer-support workers across a variety of disciplines have been trained to deliver these programs.

CBTm program was originally designed for adults, but has been adapted for elderly, physicians, military, veterans, indigenous groups, people suffering with cancer, public safety personnel, and health care providers.

Results: Over the course of 10 years in Canada, the implementation of CBTm classes and online courses have led to a substantial reduction in waiting times for accessing psychotherapy. Due to its cost-effectiveness and efficiencies, there has been strong support from Manitoba government to make CBTm available for Manitoba residents. Due to the high levels of stress among health care providers and public safety personnel related to the COVID-19 pandemic, CBTm has also been provided as a prevention/early intervention tool for health care providers. Ongoing evaluation of the programs have been occurring and show that the psychoeducation format is acceptable to clients and has a small to medium effect size in reducing distress.

Discussion: CBTm program is an example of an innovative approach in scaling up evidence-based psychological interventions for reducing distress.

T40. USING QUALITATIVE INTERVIEWS WITH SUBSTANCE USE CLINICIANS TO INFORM THE DEVELOPMENT OF AN INTEGRATED SUICIDE INTERVENTION FOR TEENS WHO USE SUBSTANCES

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Background: Suicide is the second leading cause of death among youth aged 10-14 and the leading cause of death for youth aged 14-15. Up to 46% of adolescents who attempt suicide report being under the influence of alcohol or other drugs at the time of the attempt. Despite the relationship between suicide and substance use, there are no evidence-based interventions addressing suicide risk for adolescents in substance use treatment programs. This study aimed to gather information from clinicians to develop an intervention targeting suicidal thoughts and behaviors (STB) among adolescents in outpatient substance use treatment. We conducted qualitative in-depth interviews with clinicians at an outpatient substance use program to understand how they currently address STB and to obtain feedback on the first iteration of the integrated Suicide Intervention for Suicidal Teens (iSITS). We elicited information on feasibility, acceptability, and implementation.

Methods: Participants in this formative study included 5 clinicians working at an outpatient substance use clinic in the northeast U.S. (average years practiced=9.4; 80% female; MAge=42). Clinicians participated in 60-minute in-depth semi-structured interviews over Zoom to explore their experiences working with adolescents with STB and elicit feedback on the first iteration of iSITS. The iSITS intervention involves a brief individual session followed by a family session and a Zoom booster session at three-months. The individual portion includes a decisional balance, enhancing motivation for change, envisioning the future and establishing goals, identifying strategies for staying safe and avoiding substances, and developing a change plan and suicide safety plan. The family session involves discussing parental monitoring and parent-child communication and sharing the change plan and suicide safety plan. The booster session involves reviewing and updating the change plan and suicide safety plan. All interviews were audio-recorded and transcribed. A codebook was developed with both deductive codes from the interview guide and inductive codes from topics participants shared. All transcripts were double-coded and entered into Nvivo12 for analysis.

Results: Interviews revealed that clinicians are addressing STB, but they do not use a consistent evidence-based or integrated framework and three out of five clinicians identified their own anxiety in addressing STB as a barrier to treatment provision. While all clinicians reported engaging in suicide screening, risk assessment, and safety planning, no single validated tool is used across the clinic. Clinicians reported already using components of the intervention including assessing and enhancing motivation for change and goal-setting, but not connecting these elements to suicide. Based on clinician feedback, the next iteration of iSITS enhanced clinician strengths in motivational interviewing and focused on suicide prevention, specifically safety planning. Clinicians felt that additional training around safety planning and the treatment protocol would be helpful.

Discussion: Our findings suggest that clinicians providing adolescent outpatient substance use treatment already have many of the skills to address STB in this population. However, integrated treatments are needed to systematically address STB in adolescents in substance use treatment that build on clinicians' existing skills, boost clinician confidence, and help adolescents better understand the connection between their substance use and STB. Barriers included the need for clinician training in suicide risk assessment and intervention as well as

the need for a universal validated suicide risk assessment tool incorporated in the clinic workflow.

T41. LIFE IS PRECIOUS: A QUASI-EXPERIMENTAL STUDY OF A COMMUNITY-BASED PROGRAM TO PREVENT SUICIDE AMONG LATINA ADOLESCENTS IN NEW YORK CITY

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Background: Suicidality rates (i.e., suicidal thoughts, plans or attempts) among Latina adolescents continue to rise, yet little is known about how to reduce the risk of suicide-related thoughts and behaviors among the largest ethnic group in the United States. Recent efforts have focused on developing, implementing, adapting, and evaluating suicide-prevention interventions in this population. This is key because, despite initiatives to implement evidence-based practices in routine settings for children and adolescents, inequities persist in the quality of mental health care among racial and ethnic minorities, including Latina adolescents. Barriers to accessing mental health services include lack of health insurance, ethnoracial discrimination, limited awareness, and lack of knowledge of available resources, economic constraints, stigma, reliance on informal supports, and alternative cultural views of the problem incompatible with formal mental healthcare use. Culturally tailored interventions are urgently needed that respond to the needs, values, and experiences of Latina adolescents and their parents (e.g., linguistic access, insight into the familism/acculturation bind, gender roles). However, there is a paucity of research on psychosocial interventions that address suicidality specifically among Latina adolescents, despite their higher levels of need. Life is Precious (LIP) is a culturally responsive, community-based, clubhouse-model program offering wellness-support services to supplement outpatient mental health treatment for Latina adolescents experiencing suicidality. This 12-month quasi-experimental study explored the impact of LIP on clinical outcomes among Latina adolescents.
Methods: Forty-three participants were enrolled across six sites: 31 participants at four LIP sites and 12 participants across two Usual Care (UC) sites. Latina adolescents newly enrolled in LIP and receiving outpatient mental health care or newly admitted to outpatient mental health services only were assessed for Suicidal Ideation (Suicidal Ideation Questionnaire; SIQ) and depressive symptoms (Patient Health Questionnaire-9) at 1, 3, 6, 9, and 12 months. We estimated differences in mean scores using longitudinal linear mixed models and adjusted risk ratios (ARRs) of SIQ-25%, SIQ-50%, and PHQ-9 5-point improvements using exact logistic models.
Results: The direction of the estimated impact of LIP was positive [differences (95%CIs): -15.5 (-34.16, 3.15) for SIQ; -1.16 (-4.39, 2.07) for PHQ-9], with small-to-moderate nonsignificant effects (0.19-0.34). LIP participants saw 2-3 times higher prevalence than controls of SIQ-25%, SIQ-50%, and PHQ-9 5-point improvements; ARRs (95%CIs): 1.91 (0.61, 3.45), 3.04 (0.43, 11.33), and 1.97 (0.44, 5.07), respectively. Suicidal behaviors also decreased in LIP.
Discussion: As rates of suicidality among Latina adolescents continue to rise, intervention research dedicated to tackling this alarming phenomenon is extremely limited. Preliminary evidence suggests the importance of considering adjunctive interventions in the treatment of suicidal interventions, but research in this field remains nascent. This study aimed to address

this gap by examining the effect of a culturally responsive adjunctive approach targeting suicidal ideation and behavior among Latina adolescents. The effects of LIP were in a positive direction across clinical outcomes, warranting further research on its effectiveness. Culturally responsive treatment-adjunctive interventions such as LIP may show promise in addressing suicidality among Latina adolescents.

T42. DEVELOPMENT OF BEST PRACTICE GUIDELINES FOR HARNESSING IMPLEMENTATION SCIENCE FOR SUICIDE RESEARCH AND PREVENTION: A DELPHI EXPERT CONSENSUS STUDY

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Background: Suicide research and prevention are complex endeavours. While there are a host of interventions, several practical, methodological, and ethical challenges remain in their implementation in real life settings. A lot can be learned about what works, why, for whom and in what context, by understanding how interventions are implemented. Implementation science has the potential to address these questions. However, lack of real life examples of using implementation science have contributed to its underutilisation. The aim of this study was to use the Delphi expert consensus method to deliberate the relevance of implementation science for suicide prevention and arrive at best practice guidelines for its better utilisation.
Methods: An extensive systematic review and in-depth interviews with stakeholders (leaders, implementation practitioners, lived experience experts) involved in the implementation of complex suicide prevention interventions guided the development of the questionnaire. Experiences and perspectives of stakeholders on challenges, what works, what is needed and learning from the implementation experience were used to frame the items of the questionnaire. This was administered over 3 rounds to a range of experts (suicide researchers, leaders, implementation practitioners, lived experience experts) around the world. Items that reached consensus by at least 80% across both panels were included in the guidelines.
Results: The items that reached consensus included practical considerations related to implementation research, implementation practice (stakeholders, resources, context), intervention design and delivery, lived experience engagement, dissemination and the way forward.
Discussion: This study paves the way for better utilisation of implementation science in suicide research and prevention, which can further be used to inform policy development and address barriers in practice. The guidelines provide a direction to suicide experts around the world in systematically addressing the evidence-practice gap in suicide prevention.

T43. HOW IS IMPLEMENTATION SCIENCE UTILISED AND APPLIED IN COMPLEX SUICIDE PREVENTION INTERVENTIONS: A SYSTEMATIC REVIEW

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Background: Little is known about how complex, multilevel, and multicomponent suicide prevention interventions work in real life settings. Understanding the methods used to systematically adopt, deliver, and sustain these interventions could ensure that they have the best chance of unfolding their full effect. This systematic review aimed to examine the application and extent of utilisation of implementation science in understanding and evaluating complex suicide prevention interventions.
Methods: The review adhered to updated PRISMA guidelines and was prospectively registered with PROSPERO (CRD42021247950). PubMed, CINAHL, PsycINFO, ProQuest, SCOPUS and CENTRAL were searched. All Englishlanguage records (1990–2022) with suicide and/or self-harm as the primary aims or targets of intervention were eligible. A forward citation search and a reference search further bolstered the search strategy. Interventions were considered complex if they consisted of three or more components and were implemented across two or more levels of socio-ecology or levels of prevention.
Results: One hundred thirty-nine records describing 19 complex interventions were identified. In 13 in terventions, use of implementation science approaches, primarily process evaluations, was explicitly stated. However, extent of utilisation of implementation science approaches was found to be inconsistent and incomprehensive. The inclusion criteria, along with a narrow definition of complex interventions may have limited our findings.
Discussion: Understanding the implementation of complex interventions is crucial for unlocking key questions about theory-practice knowledge translation. Inconsistent reporting and inadequate understanding of imple mentation processes can lead to loss of critical, experiential knowledge related to what works to prevent suicide in real world settings.

T44. OPERATIONALIZING THE BLUEPRINT FOR YOUTH SUICIDE PREVENTION: USING PROJECT ECHO TO IMPROVE PEDIATRIC SUICIDE PREVENTION AND CENTER HEALTH EQUITY

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Background: To redress the increasing issue of youth through the lens of health equity, the American Foundation for Suicide Prevention (AFSP) and the American Academy of Pediatrics (AAP) have partnered to launch Project ECHO (Extension for Community Healthcare

Outcomes) initiatives to operationalize the Blueprint for Youth Suicide Prevention in pediatric healthcare, schools, and communities. By working with provider teams, educators, and community members through didactic learning and application, Project ECHO aims to change the culture around youth mental health and suicide prevention.
Methods: Two Project ECHO initiatives (a clinical ECHO and an Ambassador ECHO) launched in January 2023 and concluded in August 2023. Using virtual learning collaborative cohorts of pediatricians, health care professionals, and community members, Project ECHO has three aims: (1) build knowledge and self-efficacy on suicide prevention, (2) bolster peer support and sense of community, and (3) influence practice change. A multi-phase, mixed-methods, equity-focused evaluation plan was conducted to elicit participant perceptions and assess outcomes related to knowledge and self-efficacy for suicide prevention practice with youth.
Results: Preliminary data from the first three of eight sessions across both cohorts (N=35; 80% White; 11.4% Hispanic/Latino) indicate that 89% of participants (n=31) reported gaining knowledge, 74% (n=26) report increased confidence in their ability to apply the concepts, and 94% (n=33) indicated an increased commitment to apply their learning in practice. Qualitative data show emerging themes surrounding relevancy to clinical practice and strategies to incorporate into practice change. As one physician stated, "It was very relevant to what pediatricians are experiencing. There were concrete suggestions as to how things should be handled." Additional data and more complex analyses will also be presented.
Discussion: Findings highlight that (1) pediatricians, healthcare providers, and community members are eager to learn more about suicide prevention strategies and the intersections with health equity, (2) virtual didactic learning collaboratives are an effective strategy for operationalizing best practices, and (3) multi-phase, mixed-methods evaluation provides rich data and feedback that will be used to plan future ECHO cohorts and reach more partners with these initiatives.

T45. BARRIERS AND FACILITATORS TO EVIDENCE-BASED SUICIDE PREVENTION PRACTICES AMONG EMERGENCY MEDICINE, PRIMARY CARE, AND SPECIALTY MENTAL HEALTH CLINICIANS

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Background: Evidence-based practices for suicide screening, assessment and prevention are not routinely used in usual care. We will present data from two studies that aimed to identify clinician factors and barriers and facilitators to evidence-based suicide screening, assessment, and intervention practices among clinicians in emergency medicine, primary care, and specialty mental health settings.
Methods: In Study 1, we are prospectively measuring two organizational constructs – implementation climate and implementation leadership – found to affect implementation of evidence-based practices, clinician's intentions to use different SPI components, and three determinants of intentions: attitudes, norms, and self-efficacy among a sample of 50 mental health and emergency medicine clinicians working in eight emergency departments (EDs) prior

to each ED's implementation of SPI. Data from 25 clinicians from four EDs will be analyzed prior to the conference.
Measures include the Implementation Climate Scale (ICS), an 18-item, validated measure of a strategic climate for EBP implementation and the Implementation Leadership Scale (ILS), a 12-item, psychometrically validated measure that assesses the degree to which a leader is supportive, knowledgeable, and prepared to implement evidence-based practices. We also will collect data regarding structural characteristics of EDs include size, average patient volume, and availability of mental health clinicians. We assess norms, self-efficacy, attitudes, and intentions using standardized stems based on the Theory of Planned Behavior.

In Study 2, we conducted semi-structured, qualitative interviews to understand clinicians' screening and safety planning practices, how they make decisions about escalating to a higher level of care, as well as a number of factors that may facilitate or impede implementation of suicide prevention practices. Twenty-six clinicians and practice leaders from behavioral health and primary care settings participated. Participants included leaders (n = 4) and clinicians from primary care (n = 14; combination of behavioral health and primary care clinicians working in the primary care context) and specialty mental health (n = 8; behavioral health clinicians and case managers).

Interviews were digitally recorded and transcribed with analyses supported by use of an NVivo database. Interview guides and qualitative coding were informed by leading frameworks in implementation science and behavioral science, and an integrated approach to interpreting qualitative results was used. A structured codebook was developed and coders reached and maintained reliability at $\kappa \geq .8$.

Results: For Study 1, we will present a descriptive analysis of clinician- and organizational-level characteristics among ED clinicians who will be implementing SPI. In Study 2, we identified a number of similar themes associated with implementation of suicide prevention practices across settings and clinician types, such as the benefits of inter-professional collaboration and uncertainties about managing suicidality once risk was disclosed. Clinicians also highlighted barriers unique to their settings. For primary care settings, time constraints and competing demands were consistently described as barriers. For specialty mental health settings, difficulties coordinating care with schools and other providers in the community made implementation of suicide prevention practices challenging.
Discussion: Collectively, these results will inform future work developing implementation strategies to improve suicide screening, assessment, and intervention practices across the settings where people at risk for suicide often present.

T46. TRENDS AND FACTORS ASSOCIATED WITH SUICIDAL IDEATION, PLANNING AND ACTION AMONG BASED ON HISTORY OF CANCER

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Background: Evidence suggests that individuals with a history of cancer may have higher risks of death by suicide when compared to the general population. However, it is unclear

whether the risk of suicidal ideation, planning and attempt are similarly elevated among these individuals. It is also unclear whether there is an increasing trend in these suicidal actions among individuals with a history of cancer compared to the general population based on their health status.
Methods: Using the 2015-2019 cross-sectional epidemiological data from the National Survey on Drug Use and Health (NSDUH) in the United States, we analyzed trends in our outcomes of interest: suicidal actions, which included past year suicidal ideation, suicidal plans, and suicidal attempts. We compared individuals with a history of cancer vs. those without a history of cancer who self-rated as being in good health vs. those without a history of cancer who self-rated as being in poor health. Given the association between depression, psychological distress and suicidal actions, we also included past year and lifetime depressive episodes and past year serious psychological distress as outcomes of interest. We used Joinpoint regression for trends analysis, and estimated annual percentage changes (APCs) for outcomes of interest. Multivariate logistic regression estimated the odds of suicidal actions among individuals with cancer vs. those without.
Results: We had 214,506 individuals in our study sample, with 3.5% being individuals with a history of cancer (n = 7,635). While trends were mostly increasing across the population, we found a significant increase in rate of suicidal ideation, planning and attempt among individuals without a history of cancer, while rate was not significant among those with a history of cancer. In our final logistic regression model, compared to individuals without cancer who self-reported good health, individuals with a history of cancer had greater odds of lifetime major depressive episode (aOR = 1.23; 95% CI 1.14, 1.33), past year major depressive episode (aOR = 1.34; 95% 1.21, 1.48), past year serious psychological distress (aOR = 1.25 95% CI 1.14, 1.36) and past year suicidal ideation (aOR = 1.20; 95% CI 1.06, 1.35), but not past year suicidal plans (aOR = 1.20; 95% CI 0.98, 1.46) or suicidal attempt (aOR = 1.32; 95% CI 0.98, 1.75).
Discussion: There is an association between a history of cancer, depression, psychological distress, and suicidal ideation, and individuals with a history of cancer may have a greater odds of having suicidal ideation. It is critical that suicide prevention is mainstreamed in cancer care to mitigate the burden of suicide among individuals with a history of cancer.

T47. CONSIDERING EATING DISORDER AS A FORM OF SELF-DIRECTED VIOLENCE: DATA FROM A NATIONAL SAMPLE OF YOUTH AND YOUNG ADULTS IN THE UNITED STATES

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Background: Self-directed violence (SDV) is typically defined as non-suicidal self-injury, suicidal ideation and suicidal behavior. Eating disorders are self-directed and can result in significant health consequences. Nonetheless, they are not typically conceptualized as a form of self-directed violence.
Methods: This presentation will report baseline data from a national longitudinal study of adolescents and young adults (ages 13-22) in the United States (n=3,750). Participants were recruited online through advertisements on social media and answered questions about their exposure to other people's self-directed violence. Here we examine overlaps in exposure to other people in respondents' lives who are engaging in three different types of SDV (yes/no for each type), as well as those engaging in disordered eating, defined as: making one's self

throw up, over-exercising, laxative use, refusal to eat, binge eating, and/or extreme dieting (any versus none). Next, we examine how these exposures relate to respondent anxiety and depressive symptomatology, as measured by the RCADS-25.
Results: Less than one in twenty young people in this national survey reported no exposure to others engaging in self-directed violence; two in three reported being exposed by other people in their lives to all three types of self-directed violence. As the number of lifetime types of SDV exposures (Range: 0-3) reported by youth increased, so too did the likelihood of current symptoms of anxiety and depression (2 types of SDV exposure: $\beta = 6.4$, p
Discussion: In this national sample of young people 13-22 years of age surveyed from across the US, exposure to other people's SDV and disordered eating was common. Exposure was associated with anxiety and depressive symptomatology for these exposed young people, even when one's own SDV was taken into account. Moreover, exposure to other people's disordered eating was associated with an increased likelihood of poor mental health functioning above and beyond the influence that exposure to other's SDV had on a respondent's mental health. Researchers might consider including eating disorders when assessing self-directed violence, particularly behaviors reflective of non-suicidal self-injury.

T48. EMPLOYMENT CHARACTERISTICS AND SUICIDAL IDEATION AMONG THE WORKING POPULATION AGED 15-65 IN FRANCE: RESULTS: FROM THE 2016 NATIONAL WORKING CONDITIONS SURVEY

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Background: Literature has shown higher rates of suicide among some occupations, such as agricultural workers and some low-skilled occupations. Information is however lacking on the associations between employment characteristics and suicide ideation. This study aimed to assess whether occupation and other employment characteristics were associated with suicide ideation among the French working population.
Methods: Data were from the national Working Conditions survey conducted by the French ministry of labour (DARES) in 2016. This national survey had a two-stage random sampling design, with a selection of households and then workers within each household. The representative sample consisted of 27,610 participants (participation rate: 74%) including 24,118 people aged 15-65 and working at the time of the survey. Among them, 22,420 (93%) responded to the self-administered questionnaire including the two following items about suicidal ideation: 'Within the last 12 months, have you thought about suicide? If yes, what was/were the reason(s): work, couple, family, health, others?" The studied employment characteristics included self-employed/employee status, seniority in the job, full/part-time work, permanent/temporary work contract, occupation, economic activity of the company, public/private sector, and company size. Covariates were gender, age, marital status, social support outside work, and stressful life events. All bivariate and multivariate analyses were performed using weighted logistic regression models. Gender-related interactions with employment characteristics were found in association with suicide ideation, consequently the results were presented for men and women separately.
Results: The study sample included 9,847 men (mean age: 41.9) and 12,573 women (mean age: 42.2). The 12-month prevalence of suicide ideation did not differ between men and women, 5.3% [95%CI: 4.5-6.2] and 5.5% [95%CI: 4.7-6.4] respectively. One third of workers with suicide ideation reported work-related reasons, this proportion was higher among men

(38.6%) than among women (26.9%). A higher prevalence of suicide ideation was found in workers older than 40, living alone, with poor social support outside work, and with stressful life events, in both genders. After adjustment for these covariates, job seniority of 1 year or less and part-time work were associated with a higher prevalence of suicide ideation in women. Occupation and economic activity were also associated with suicide ideation in women. The occupations with the highest prevalence of suicide ideation were: unskilled craft workers, engineering professionals, and foremen. Various detailed economic activities related to agriculture and manufacturing were found to be associated with suicide ideation. The only association found in men was between temporary work contract and suicide ideation. The results were unchanged with multivariate models taking all employment characteristics into account.

Discussion: Our results showed that the 12-month prevalence of suicide ideation varied by occupations and by other employment characteristics in the French working population, especially in women. The strengths of this study included a large nationally representative sample, study of gender differences, study of a large set of detailed employment characteristics, and adjustment for relevant covariates. There were a number of limitations: cross-sectional design, healthy worker effect, potential reporting bias, and unvalidated measure of outcome. More research is needed to confirm our findings and to improve the knowledge of the employment characteristics associated with suicide ideation. This may help to identify preventive strategies.

T49. SUICIDE MORTALITY OF AUSTRALIAN MIGRANTS BETWEEN 2006-2019 – AN INTERSECTIONALITY APPROACH

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Background: Suicide affects individuals and communities globally, with migrant populations particularly susceptible to various challenges and stressors that increase their risk of suicidal ideation and mortality. With over seven million people from culturally and linguistically diverse (CALD) backgrounds in Australia, a significant knowledge gap exists regarding suicide mortality in this group. Using an intersectionality lens, our study aims to develop a comprehensive understanding of the factors contributing to suicide in CALD migrants and to identify specific groups that may require tailored support.

Methods: The National Coronial Information System data was used from 2006-2019 including 36,577 cases. We conducted three sets of suicide mortality analyses (all populations including those aged 15 and above, young people aged 15-24, and the elderly population aged 65 and above) for migrants from six groups: Oceania, Asia, Africa, Middle East, South and Central American, and English-speaking countries with reference to Australian-born. All analyses were stratified by sex. Qualitative data extracted from Police and coroners' reports were used for identifying factors contributing to suicide in the groups identified as high-risk.

Results: At the entire population level, the suicide risk of all CALD migrants groups was lower than that of the Australian-born population; however age intersections revealed variations for younger and older migrant groups. Amongst young male CALD migrants, those from Oceania countries have a 40% higher suicide risk than their Australian-born peers. Elderly CALD migrants (both men and women) from European countries have a 17% higher risk of suicide than their Australian-born counterparts. At the overall population level, the suicide rate of

Oceania migrants was noted as consistently high over the years in both men and women, and for female African migrants, the suicide rate increased by 8% during 2006-2015.
Qualitative analysis reflected intersectional disadvantage of CALD decedents. We found that unemployment was the most cited contributing factor for the working-age population. For young migrants from Oceania, a history of mental health problems and suicidal thoughts known by family members were frequently reported. In contrast, elderly migrants from European backgrounds who died by suicide were found to have experienced chronic health conditions, mental health issues, or chronic pain prior to their death, indicating a possible link between these factors and their suicide.

Discussion: Our study highlights the importance of using intersectionality to understand suicide mortality of Australian migrants. Collaborative research, including migrants with lived experience, is needed to develop tailored and effective prevention strategies.

T50. RISK FACTORS FOR MORTALITY AFTER HOSPITALIZATION FOR SUICIDE ATTEMPT: RESULTS OF 11-YEAR FOLLOW-UP STUDY IN PIEDMONT REGION, ITALY

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Background: Suicide attempters are at high risk of premature death, both for suicide and for non-suicidal causes. In recent years, an increasing trends of suicide attempt rates have been reported in some countries. A number of socio-demographic and clinical risk factors for mortality have been documented in prospective studies. However, most studies were conducted in North-Europe where the rates of suicidal behaviours are particularly high. Due to different prevalence rates and context, studies investigating the phenomenon in South-Europe are needed. The aim of this study is to investigate risk factors and temporal span for mortality in a cohort of cases admitted to hospital for suicide attempt.
Methods: The cohort included 1489 subjects resident in Piedmont Region, North West of Italy, who had been admitted to hospital or emergency department (ED) for suicide attempt between 2010 and 2020. Patients aged 12-74 years were included in the study. The follow-up started from the date of discharge from hospital or ED and ended on 31st December 2020. Kaplan-Meier survival analysis was used to plot temporal patterns of death after ED or hospital discharge for suicide attempt. Cox regression models were used to identify risk factors for death. The final multivariate model included gender, age, area deprivation index, family composition, psychiatric disorders, malignant neoplasms, neurological disorders, diabetes mellitus, cardiovascular diseases, chronic obstructive pulmonary disease, and intracranial injury/scull fracture.
Results: During the observation period 7.3% of patients died. The highest mortality was observed within the first 12 months after suicide attempt but remained elevated for many years afterwards. Through the follow-up, the survival rate was significantly lower for males than females, and for patients diagnosed with schizophrenia and mood disorders than those with no disorders or other disorders. Male gender, older age, high deprivation index of the census area, single parent status, mood disorders, malignant neoplasms and intracranial injuries/scull fracture were independent predictors of death.

Discussion: The mortality risk of suicide attempters is very high, both in the months immediately following the attempt and afterwards. The identification of high-risk groups can help to plan outpatient care following the hospital discharge. Our findings urge the need to design strategies for the assistance and care of these patients at long term in order to reduce unfavourable outcomes.

T51. USE OF HEALTH SERVICES AND FACTORS ASSOCIATED WITH SUICIDAL BEHAVIOR IN PEOPLE TREATED IN EXTRAHOSPITAL EMERGENCY SERVICES IN MALAGA (SPAIN)

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Background: The objective of this study is to describe the use of health services by patients treated in extrahospital emergency services for suicidal behavior and to identify the variables associated with the repetition of such behavior.

Methods: Retrospective observational study based on clinical history information. The study sample consists of people who engage in suicidal behavior and demand attention from the Sanitary Emergencies Center 061 (CES 061) in Malaga (Spain).

Once suicidal behavior demands were identified in CES 061, information was collected.

A bivariate analysis was performed to describe the sample in terms of independent variables using the Student's t-test or the Wilcoxon-Mann-Whitney test for continuous variables depending on their distribution. Subsequently, a multivariate logistic regression was performed to find the factors that influenced the repetition of suicidal behavior by introducing into the model the variables with a p-value ≤0ous.20 from the previ analysis. A significance level of 0.05 was established for all analyses.

Results: The multivariate logistic regression model included age, history of mental pathology, number of suicide attempts in the course of life, contact with a mental health center in the 6 months prior to suicidal behavior, number of visits to emergencies department in the previous 6 months for suicidal behavior, being referred to a mental health center after being evaluated in the emergency department and contact with a mental health center within 6 months of the episode. The model was statistically significant, $\chi2(4) = 148.82$, $p < 0.001$. The model explained 35.8% (Nagelkerke R2) of the variance in reattempted suicide within 6 months and correctly classified 82.8% of cases. Number of suicide attempts in the course of life (adjusted odds ratio = 1.31, CI 1.206-1.425, $p < 0.001$), and increasing number of visits to emergencies department in the previous 6 months (adjusted odds ratio = 1.348, CI 1.002-1.813, $p = 0.048$) were associated with an increased likelihood of reattempting suicide. However, contact with a mental health center within 6 months of emergency care (adjusted odds ratio = 0.391, CI 0.203-0.751, $p <0.001$) and increasing age (adjusted odds ratio = 0.98, CI 0.964-0.996, $p = 0.017$) was associated with a decreased likelihood. History of mental health pathology, contact with a mental health center in 6 months prior to emergency care and being referred to a mental health center after being evaluated in the emergency department were not related with the risk of suicide reattempt within 6 months in the multivariate analysis.

Discussion: Studies based on people with suicidal behavior treated in extra hospital and hospital emergency services allow the development of prevention strategies and improve the care of the population at risk of suicide.

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T52. ASSOCIATIONS OF PSYCHOSOCIAL WORK FACTORS WITH SUICIDE IDEATION AMONG THE NATIONAL FRENCH WORKING POPULATION

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Background: The literature showed associations between occupation and suicide, but explanations are lacking to understand why some occupations may be at higher risk of suicide than others. Psychosocial work factors have been found as risk factors for mental health outcomes, especially depression, and may contribute to explain the differences in suicide risk between occupations. The objectives of the study were to examine the associations between psychosocial work factors and other occupational exposures, and suicide ideation in a nationally representative sample of the working population. An additional objective was to explore the role of multiple exposures.
Methods: The study relied on the data of the 2016 national French Working Conditions survey and a study sample of 20,430 employees aged 15-65, including 8,579 men and 11,851 women. The survey had a two-stage sampling design with random selections of households and workers. Data collection was performed using an interview at home and a self-administered questionnaire. The studied outcome was suicide ideation, i.e. suicide thoughts within the last 12 months. Occupational exposures included 21 psychosocial work factors (most of them were proxies of the Copenhagen Psychosocial Questionnaire and were related to various aspects: demands at work, work organization, interpersonal relations, workplace violence, etc.), 4 factors related to working time/hours (long working hours, night work, shift work, and unsocial work days) and 4 factors related to the physical work environment (biomechanical, physical and chemical exposures). Covariates were the following: age, marital status, social support outside work, stressful life events, occupation and economic activity of the company. The associations between exposures and outcome were studied using weighted logistic regression models adjusted for covariates. Gender differences were explored.
Results: The participation rate to the survey and the response rate to the self-administered questionnaire were both satisfactory (74% and 94% respectively). The 12-month prevalence of suicide ideation was 5.2% among men and 5.7% among women. There was no difference in this prevalence between genders. The prevalence of suicide ideation was higher among workers living alone, those with low social support outside work, and those with stressful life events. The following psychosocial work factors were found to be associated with suicide ideation: quantitative demands, cognitive demands, low influence, low possibilities for development, low meaning of work, role conflict, low sense of community, low job satisfaction, job insecurity, changes at work, temporary employment, and internal violence. Some seldom differences in these associations were observed between men and women. The prevalence of suicide ideation increased with the number of psychosocial work factors.
Discussion: Psychosocial work factors, including multiple exposures to these factors, were found to play a substantial role in suicide ideation. The other occupational exposures (working hours/time and biomechanical, physical and chemical exposures) were not associated with suicide ideation. The study had a number of strengths: large nationally representative sample of the working population, study of gender differences and of various occupational exposures including multiple exposures, and inclusion of pertinent covariates. However, there were also

a number of limitations: cross-sectional study, healthy worker effect, potential recall and reporting bias, and no available validated questionnaires to measure exposures and outcome. More research to confirm our results and more prevention towards the psychosocial work environment are needed.

T53. NON-FATAL INTENTIONAL SELF-HARM WITH FIREARMS: NATIONALLY REPRESENTATIVE DATA FROM THE UNITED STATES

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Background: Firearms were used in 52.8% of all suicides in the United States (US) in 2020 (Centers for Disease Control and Prevention [CDC], 2023). Despite the high lethality of firearm suicide attempts, approximately 11.3% (95% CI [4.5–18]) of these attempts to not result in death according to a large meta-analysis (Cai et al., 2022). Due to the rarity of the event, less is known about this population.
Methods: This study uses nationally representative US data from the Firearm Injury Surveillance Study (FISS; CDC, 2022). The FISS data were collected by the CDC using the National Electronic Injury Surveillance System which catalogues non-fatal injury related emergency department visits. The FISS data includes data on 80,474 non-fatal firearm injuries in the US. Analysis using Stata 18 accounted for the complex sampling structure of the data to produce accurate national estimates. Calculations are then compared to nationally representative estimates of firearm suicide fatalities in the US from the CDC WISQARS to estimate that number of firearm suicide attempts that are survived (CDC, 2023).
Results: Initial analyses estimate that there were 2,222,242 (95% CI [1,468,564, 2,975,920]) non-fatal firearm injuries in the US between 1993 and 2020, including 107,513 (95% CI [51,306, 163,720]) that were categorized as intentional self-harm. This results in an average of 3,982 (95% CI [1,900, 6,064] non-fatal intentional self-harm firearm injuries per. These injuries represent 3% (95% CI [1.85, 4.15]) of all non-fatal firearm injuries. In 2020 alone, there were 5,264 (95% CI [1,686, 8,842] non-fatal intentional self-harm firearm injuries. Between 2001–2020 (2001 being the earliest data available from the CDC WISQARS database), there were an estimated 399,861 firearm suicides in the United States (CDC, 2023). There were approximately 73,848 (95% CI [25,180, 122,516] non-fatal self-harm firearm injuries during the same time. Using these two estimates, approximately 15.6% (95% CI [6.0, 23.5] of attempted suicides using firearms were survived over the past two decades in the United States. Additional planned analysis including time trend data and demographic comparisons will be presented.
Discussion: This analysis using nationally representative data from the US produced an estimate of non-fatal firearm self-injury that is higher than the 11.3% reported in a meta-analysis of the literature (Cai et al., 2022). A strength of this analysis is the use of a large, nationally representative dataset that includes 27 years of data with over 80,000 non-fatal self-harm firearm injuries. Despite this strength, a limitation of the current study is the large confidence intervals for the estimates. This outcome represents a rare outcome (survival), of a rare outcome (firearm attempt) of a rare outcome (suicide attempt), thus making statistical analysis imprecise even with decades of data. The NEISS cautions that estimates are potentially not reliable when the coefficient of variation exceeds 30% (US Consumer Product Safety Commission, 2020). Using the conservative lower-bound estimate, this analysis suggests that nearly 1,900 people per year survive their intentional self-harm firearm injuries in the US,

representing 6% of all firearm suicide attempts in the US. This population and their loved ones may yield important data regarding the experiences of suicidal people and is not well-represented in the literature. Furthermore, the non-zero survival rate of firearm suicide attempts—often involving extensive injury and pain—may be an important discussion point in working with suicidal individuals with firearms.

T54. CLARIFYING THE RELATIONSHIP BETWEEN PAINFUL AND PROVOCATIVE EVENTS AND RISK FOR SUICIDE ATTEMPT IN A SWEDISH NATIONAL SAMPLE

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Background: Several theories of suicidal behavior propose that capability for suicide is acquired across development, in part through exposure to painful and provocative events (PPEs). The majority of studies on the relationship between PPE exposure and risk for suicidal behavior have used a cross-sectional design and examined PPEs in aggregate. The present study tested the longitudinal association between one PPE class – injuries requiring medical attention – and risk for suicide attempt (SA).
Methods: Data were from Swedish population-based registers. All individuals born in Sweden between 1970 and 1990 were included (N = 1,011,725 females and 1,067,709 males). Survival models and co-relative models were used to test the associations between 10 types of injuries (eye injury; fracture; dislocation/sprain/strain; injury to nerves and spinal cord; injury to blood vessels; intracranial injury; crushing injury; internal injury; traumatic injury; and other or unspecified injury) and risk for SA requiring medical attention. Analyses were stratified by sex. Survival models adjusted for year of birth and parental education. Co-relative models tested the association between each injury type and risk for SA in relative pairs of varying genetic relatedness (cousins, half-siblings, full siblings, and monozygotic twins) to account for genetic and environmental factors shared by relatives. Separate hazard ratios (HRs) and 95% confidence intervals (CIs) were estimated for the first year following injury exposure and for more than one year following injury exposure to account for the possibility of a time-varying relationship between injuries and SA.
Results: All 10 injury types were associated with elevated risk for SA. In female individuals, HRs for within one year of the injury ranged from 2.32 to 7.01. Effect sizes were smaller more than one year after an injury. However, all injury types remained significantly associated with SA (HRs = 1.43-2.22), with the exception of traumatic injury (HR = 1.19; 95% CI = 0.74, 1.87). In male individuals, HRs for within one year of the injury ranged from 1.83 to 6.46. Effect sizes were smaller for the period more than one year after an injury but remained statistically significant (HRs = 1.38-2.59). In co-relative models, the pattern of associations varied by injury type. For eye injury, HRs did not substantially decline across relative pairs of increasing genetic relatedness, which is consistent with a possible causal effect of eye injury on risk for SA. For fracture, dislocation/sprain/strain, intracranial injury, and other injury, HRs declined across relative pairs of increasing genetic relatedness but remained significantly greater than 1 in monozygotic twins, suggesting that these associations are partially attributable to familial factors and partially attributable to a causal effect. For the remaining injury types, HRs were not significantly different from 1 in monozygotic twins. This is consistent with confounding by familial factors but may also reflect low statistical power, as injury to nerves,

injury to blood vessels, crushing injury, internal injury, and traumatic injury were rarely experienced (prevalence = 0.1%-0.8%).
Discussion: Injuries requiring medical attention are associated with increased risk for subsequent SA, particularly in the first year following an injury. While genetic and familial environmental factors contribute to these associations, a number of injury types appear to be causally related to SA. A potential causal relationship between injuries and SA is consistent with leading theories of suicide etiology, which suggest that PPE exposure causally increases one's capability for suicide.

T55. IMPACT OF METEOROLOGICAL FACTORS ON SUICIDE RISK IN CANCER PATIENTS: EVIDENCE FROM TWO DATABASES

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Background: With global warming, the association between meteorological conditions and mental health has attracted greater attention. Meteorological factors have a significant impact on suicide risk in the general population, but few studies have investigated this relationship in cancer patients. The present study aimed to identify the effects of meteorological factors on the risk of suicide among cancer patients based on two registers from the United States and China, respectively.
Methods: Cancer patient information and meteorological data were extracted from the Surveillance, Epidemiology, and End Results (SEER) and US Centers for Disease Control and Prevention (CDC) databases from 1979 to 2011. The study included all cancer patients whose cause of death was suicide or self-inflicted injury. A 1:3 case-crossover design was used to explore the association between meteorological factors and suicide risk in cancer patients. Conditional logistic regression models were used to quantify the impact of meteorological factors on suicide risk. Furthermore, we used the Shandong Multi-Center Healthcare Big Data Platform (SMCHBDP) to conduct the independent confirmatory analysis, utilizing the same case-crossover design as above.
Results: Strong evidence of link between suicide risk and a 5°C increase in the monthly average daily temperature was found in cancer patients, with an odds ratio (OR) of 1.08 (95% CI: 1.04 ~ 1.12). The relationships of monthly average daily sunlight and precipitation with suicide risk among cancer patients were negative but not statistically significant. Subgroup analyses showed that male and cancer patients aged ≥ 60 years had significantly higher suicide risks due to high temperatures, with ORs of 1.09 (95% CI: 1.04 ~ 1.13) and 1.14 (95% CI: 1.08 ~ 1.19), respectively. As for stratified analysis by primary sites, monthly average temperature was positively linked with suicide patients with cancer of the lip, oral cavity and pharynx, male and female genital organs. For patients with cancer in respiratory and intrathoracic organs, the OR of monthly average temperature was 0.43 (95% CI: 0.21 ~ 0.97). Similar results were obtained from confirmatory analysis. Monthly average temperature, monthly average daily precipitation, and sunshine duration were found to be positively, negatively, and negatively related to suicide among cancer patients, with ORs of 2.47 (95% CI:1.78 ~ 3.43), 0.84 (95% CI: 0.73 ~ 0.98) and 0.68 (95% CI: 0.53 ~ 0.88), respectively, in Shandong Province, China.

Discussion: The monthly average daily temperature had a significant impact on suicide risk among cancer patients. Male and elderly individuals were more vulnerable to the consequences of temperature increases. The relationships between meteorological factors and suicide risk were also influenced by primary sites of cancer. Therefore, the government should implement psychological interventions for high-risk populations during weather changes.

T56. ASSOCIATION BETWEEN YOUTH WORRY ABOUT CLIMATE CHANGE AND ANXIETY, DEPRESSION, AND SELF-HARM BEHAVIOURS: A LONGITUDINAL POPULATION-BASED STUDY

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Background: Climate change is a pressing global concern with potential implications for mental health. Understanding the association between worry about climate change and mental health is essential for identifying vulnerable sub-populations that require appropriate support. The aim of this study was to examine the relationship between worry about climate change and contemporaneously assessed anxiety, depression, and self-harm at age 23 years. Additionally, the study examined the longitudinal association between internalizing and externalizing symptoms in adolescence and subsequent worry about climate change at age 23.
Methods: We used a Canadian population-based birth cohort (n=1325) to examine associations between 1) climate change worry at age 23-years and concurrent anxiety, depression, and suicidal behaviors using standardized measures, and 2) associations between mental health at age 15 and 17 years - including anxiety, depression, aggression-opposition, inattention-hyperactivity symptoms - and climate change worry at age 23. We adjusted for confounding factors including participants' socioeconomic status (SES), childhood IQ, sex, and parental history of psychopathology. Participant sex and SES were examined as potential moderators of the association between worry about climate change and mental health symptoms.
Results: Most participants were worried about climate change: 190 (14.3%) were extremely worried, 553 (41.7%) were somewhat worried, 383 (28.9%) were very worried, and 199 (15.0%) were not at all worried. After adjustment for confounding factors, worry about climate change was associated with significantly elevated contemporaneous anxiety, depression, and self-harm behaviors. In longitudinal analysis, adolescent anxiety was associated with higher climate change worry at age 23-years while adolescent aggression-opposition was associated with lower climate change worry. Neither participant sex nor SES moderated the association between mental health symptoms and worry about climate change.
Discussion: Worry about climate change is associated with contemporaneous mental health symptoms including self-harm behaviors. However, longitudinal analysis suggests that this is largely explained by prior mental health symptoms, with adolescent anxiety symptoms linked with higher climate change worry and aggression-opposition with lower climate change worry. Future studies should aim to better define the dimensions of climate anxiety and track it alongside mental health symptoms and self-harm behaviors using prospective follow-up studies.

T57. IMPACT OF YOUTH-FRIENDLY INTERNET-BASED INTERVENTION (#CHATSAFE) ON SUICIDAL BEHAVIOUR USING STYLIZED AGENT-BASED SIMULATION MODELING

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Background: Suicide and suicidal thoughts and behaviours in young people are complex phenomena shaped by many factors. Social media communication may play a significant role in suicide and suicidal thoughts and behaviours. Changing exposure to harmful posts about lethal and non-lethal suicidal behaviours and, conversely, to helpful suicide-related posts may change risk of youth suicidal thoughts and behaviours.
Methods: Drawing on research on the importance of social media use in youth suicidal behaviour a stylized Agent-Based Modeling (ABM) was developed to investigate the possible impacts of social media-based intervention, named #chatsafe, on the complex system of suicide and suicidal behaviours among young people. A simulated cohort of 10,000 people aged 15-24 years was used to study suicidal behaviours and communication over social networks including harmful and helpful posts on suicide.
Results: Under different virtual experimental scenarios, the modeling demonstrates that even a medium amount of exposure (say, 40%) to the #chatsafe intervention reduces the number of suicide deaths compared to the status quo, where no effect of the #chatsafe intervention is present. Helpful posts sharing, and reaching out to people in distress significantly reduces the number of suicides among young people.
Discussion: While the #chatsafe intervention introduced into a stylized ABM has many strengths, it is important to consider its limitations. Context specific data is needed to validate and refine the model and to explore its real-world applicability in different populations.

T58. CHARACTERIZATION OF SUICIDAL IDEATION/BEHAVIOURS AND RELATED PHENOTYPES IN MOOD DISORDER

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Background: There are over 800,000 suicide deaths worldwide each year. With over 3,500 suicides and 70,000 suicide attempts each year, it is the ninth leading cause of mortality in Canada. Suicidal thinking (ideation) and behaviour (SIB) is very complex and is likely affected by many risk factors, including genetic factors. Finding genetic factors for SIB may require separating SIB into subtypes to reduce heterogeneity.
Methods: We aim to uncover SIB subgroups based on SIB-related measures by re-contacting participants from our IMPACT pharmacogenetics study registry (N=8000 mood disorder patients who consented to be re-contacted). Participants are assessed through clinical interviews and a series of questionnaires about their history of SIB (Columbia Suicide Severity Rating Scale (CSSRS)) and related phenotypes. We performed cluster analyses (Hierarchical – average and complete linkage methods – and K-means) to identify subgroups of participants

based on these measures. We requested access to the participants' medical records to corroborate our collected SIB data.

Results: We collected data from 77 participants thus far, of which 26 reported a lifetime history of at least one suicide attempt. Twenty-six participants reported having experienced sexual assault personally and 57 reported having experienced combat or war zone personally. We have medical records available for 42 participants and accessible for 20 additional participants. Cluster analyses identified two clusters based on collected data on their personality traits, impulsivity, hopelessness, life stressors, and religiosity. There were high levels of agreement in cluster membership across the cluster analysis methods ($p < 0.001$), with one group having significantly higher levels of impulsivity, depressive symptom severity, anxiety symptom severity, hopelessness, and neuroticism, and lower levels of religiosity and conscientiousness than the other group ($p < 0.01$).

Discussion: Our preliminary data showed two possible subgroups of patients with different characteristics based on personality. We will be discussing these clusters in relation to SIB and life stressors. We will also present the results of the comparison of our collected SIB data to data extracted from medical records. Findings from this study will provide a better understanding of the biology of potential SIB subtypes, which will inform the design of future suicide studies and the development of subtype-specific therapies and prevention strategies.

T59. DIVERSITY, EQUITY, AND INCLUSION (DEI) ELEMENTS FOR TRAINING AND TREATMENT PROGRAMS IN EVIDENCE-BASED PSYCHOTHERAPY FOR SUICIDE PREVENTION

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Background: The United States (US) Department of Veteran Affairs' (VA) Suicide Prevention 2.0 Clinical Telehealth Program, (SP 2.0) launched in April 2021, is the first and only nation-wide virtual initiative providing Evidence-Based Practices (EBP) for Suicide Prevention to US Veterans. Based on the recommendations from the 2019 VA/DoD Clinical Practice Guideline (CPG): Assessment and Management of Patients at Risk for Suicide, the SP 2.0 program offers four treatments and interventions: Cognitive Behavioral Therapy for Suicide Prevention (CBT-SP); Problem Solving Therapy for Suicide Prevention (PST-SP); Dialectical Behavior Therapy (DBT); and the provision of the Safety Planning Intervention (SPI).

Diversity, Equity, and Inclusion (DEI) considerations (e.g., case conceptualizations from multi-cultural perspectives) and tangible implementation steps (e.g., visual representation of diverse demographic backgrounds throughout training materials) are mission-critical for both training and treatment programs throughout suicide prevention. To this end, the SP 2.0 program incorporated expertise from DEI subject matter experts and embedded cultural competence as part of the infrastructure in program development, infusing cultural considerations throughout training and treatment programs for multiple EBPs. This presentation will describe the DEI initiative within the SP2.0 Clinical Telehealth Program.

Methods: DEI subject matter experts (SMEs) worked in partnership with each Suicide Prevention EBP's training program, and provided feedback related to training materials (i.e., didactic power-point slides, training videos, case formulation template) and practices (e.g., workshops, case-based consultation meetings). SMEs participated in training events and actively collaborated in the creation or review/audit of materials. Training program leads worked together with SMEs to implement and integrate recommendations.
Results: Each SP EBP training program implemented DEI SME feedback. Specific examples will be presented related to training components (e.g., checklist to promote awareness of one's own cultural biases, rehearsal of positionality statements, considerations of disability accommodations, video recordings demonstrating cultural discussions in both the therapeutic setting and in the therapist-training context, integration of DEI elements in training power-point slides, provision of theoretical and empirical literature regarding cultural considerations in the context of suicide prevention, etc.).
Discussion: The SP 2.0 Clinical Telehealth initiative established a national, sustainable infrastructure to support the implementation and dissemination of EBPs for suicide prevention. Important to the success of the SP2.0 program is the consistent integration and incorporation of DEI elements in the nation-wide virtual training programs for Cognitive Behavioral Therapy for Suicide Prevention (CBT-SP), Problem Solving Therapy for Suicide Prevention (PST-SP) and Dialectical Behavior Therapy (DBT).

T60. INVESTIGATING LONGITUDINAL ASSOCIATIONS BETWEEN PEER VICTIMIZATION, SUICIDAL IDEATION, AND DNA METHYLATION MEASURES: AN EPIGENETIC POPULATION-BASED STUDY

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Background: Peer victimization and suicidal ideation have been hypothesized to be associated to DNA methylation. However, it is unclear whether DNA methylation markers remain stable through time, and thus whether DNA methylation temporal changes confound previously tested associations between peer victimization, suicidal ideation, and longitudinal DNA methylation measures. There is lack of studies using repeated measures of peer victimization, suicidal ideation, and DNA methylation to enable identifying changes in DNA methylation across time linked to peer victimization or suicidal ideation experiences between time points.
Methods: A subsample of 149 participants from the Quebec Longitudinal Study of Child Development had DNA methylation data at 10 years and 17 years. Peer victimization was measured at 10, 12, 13, 15 and 17 years through the Self-Report Victimization Scale. Suicidal ideation was self-reported using a single item at 12, 13, and 15 years. An EPIC array was performed on DNA samples at both 10 and 17 years from 149 participants.
Results: Epigenetic age estimates correlated to each other at 10 years, but only Horvath 1 and Horvath 2 correlated at 17 years. Epistress did not correlate with any of the epigenetic age estimates. Horvath 1 and Horvath 2 at 10 years correlated with their estimates at 17 years. Lastly, changes in epigenetic indices between 10 and 17 years (difference between residuals) did not associate to peer victimization (10-17y, or 12-15y) or suicidal ideation (12-15y).
Discussion: Methodological considerations need to be taken into account; epigenetic age estimates at 17 years, lack of correlation between epigenetic age estimates at 17 years, and lack of correlation between PedBE and Epistress between 10 and 17 years. Peer victimization and

suicidal ideation did not appear to leave imprints on peripheral DNA methylation in adolescence. Future studies could investigate other epigenetic markers, such as the pace of aging (DunedinPACE) which has been associated to victimization. This study broadens the debate over using DNA methylation measures in adolescence, a period known for its biopsychosocial changes.

T61. UNCOVERING THE HETEROGENEOUS EFFECTS OF DEPRESSION ON SUICIDE RISK CONDITIONED BY LINGUISTIC FEATURES: A DOUBLE MACHINE LEARNING APPROACH

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Background: Depression has been identified as a risk factor for suicide for decades, yet limited evidence has elucidated the underlying pathways linking depression to subsequent suicide risk. Therefore, we aimed to examine the psychological mechanisms that connect depression to suicide risk via linguistic characteristics on Weibo.
Methods: Data were collected from Sina Weibo, a prominent Chinese social platform. Specifically, we sampled 487,251 posts from 3196 users who belong to the depression super-topic community (DSTC) as the depression group, and 357,939 posts from 5167 active users as the control group. We employed the double machine learning method (DML) to estimate the impact of depression on suicide risk, and interpreted the pathways from depression to suicide risk based on SHapley Additive exPlanations (SHAP) values and tree interpreters.
Results: The results indicated that the probability of suicide risk was 18% higher in the depression group compared to people without depression. The SHAP values further revealed that Exclusive (M = 0.029) was the most critical linguistic feature conditioning the relationship between depression and suicide risk. Meanwhile, the three-depth tree interpreter illustrated that the high-risk subgroup of the depression group (N = 1196, CATE = 0.32±0.04, 95%CI [0.20, 0.43]) was the people who reveal higher usage of Exclusive (>0.59) and Health (>-0.10).
Discussion: DML revealed pathways linking depression to suicide risk. Depression contributed to a significant increase in suicide risk compared to the participants without depression. And the further visualized tree interpreter showed cognitive complexity and physical distress enhanced the impact of depression on suicide risk. These findings have invigorated further investigation to elucidate the relationship between depression and suicide. Understanding the underlying mechanisms serves as a basis for future research on suicide prevention and treatment for individuals with depression.

T62. COVID-RELATED STRESS IN ADOLESCENTS: THE ROLE OF CHRONIC STRESS AND SOCIAL SUPPORT AS RISK AND PROTECTIVE FACTORS FOR DEPRESSION AND SUICIDE-RELATED BEHAVIORS.

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Background: The COVID-19 pandemic has contributed to an already ongoing decades-long crisis in mental health among youth. Several studies have examined the impact of the COVID-19 pandemic on youth. Multiple epidemiological national and international studies have demonstrated worsening depression and increase in suicidal thoughts and behaviors and deaths by suicide among youth during the pandemic. While loneliness related to lockdown measures has been associated to worsening mental health, more research is needed to examine the associations between multiple perceived social stressors taking place during the pandemic and depression and suicidal ideation. This study aims to examine social factors associations with depression and suicidal ideation in adolescents during the COVID-19 pandemic.
Methods: A publicly available survey accessible at the Mental Health America website was completed by adolescents ages 11 to 17 during years 2020 and 2021. Participants who completed a PHQ-9 and the question "What are the main things contributing to your mental health problems right now?" were included in this analysis. Response options for the question about main contributors to mental health included: Trauma Survivor, Coronavirus, Relationship Problems, Past Trauma, Loneliness or Isolation, Grief, Financial problems, Racism, and Current Events. The PHQ-9 question "During the past two weeks have had thoughts that you would be better off dead, or of hurting yourself in some way?" was used to assess suicidal ideation. All variables were recoded into dichotomous variables (0= no; 1= yes). Descriptive analysis and logistic regression with depression and suicidal thoughts as outcome variables in two separate analyses were conducted. Variables associated with depression and suicide thoughts with an odds ratio (OR) of 2 or more and 0.5 or less are discussed.
Results: Among adolescents from a national sample (n= 270,153), 72.8% reported having suicidal thoughts in the past 2 weeks, with 30% having thoughts nearly every day, and only 27.1% not having thoughts at all. The majority of the completers were female (66.6%) followed by males (27.6%) and non-binary (5.7%). The majority were White (46%) followed by Hispanic/Latin (18.5%) and Black (10.7%) with the rest belonging to other races. A majority of those who reported household income (36.9%) reported incomes under 60,000$. A minority identified as trauma survivors (12.8%) and LGBTQ (34.2%). The majority (60.3%) reported loneliness and isolation as a main contributing factor to their mental health. Other contributing factors for their mental health during the pandemic were reported by a minority.
Logistic regressions showed that Gender (OR=2.2), Past Trauma (OR=2.3), and Loneliness or Isolation (OR=2.2) were associated with depression as measured by the PHQ-9. Only LGBTQ identification (OR= 2.2) was associated with suicidal thoughts when including all the variables in the regression ($p < 0.001$)

Discussion: The results are consistent with previous studies emphasizing the role of a trauma history and loneliness and isolation on depression, and the associations with suicidal ideation in the LGBTQ community. A limitation of this study was the lack of a validated suicide assessment, as we used only one question to assess suicidal ideation. This large sample allowed us to detect small differences. For example, while participants had not identified household income as a contributing factor, and the OR was less than 2, higher household incomes showed to be protective suggesting a role of other risk factors on mental health during the pandemic. Future research and interventions should consider social isolation as an important determinant of mental health in adolescents.

T63. NEURAL CORRELATES OF SUICIDAL IDEATION IN THE SUBGENUAL CINGULATE USING INTRACRANIAL ELECTROENCEPHALOGRAPHY RECORDINGS: CASE REPORT

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Background: Suicidal Ideation (SI) is a predictor of suicide, a leading cause of death worldwide. However, the neurophysiological basis of SI is poorly understood. The subgenual cingulate (SGC) is believed to play a role in SI, however previous functional magnetic resonance imaging studies demonstrate contradictory evidence on the activity in the SGC during SI. In this study we aim to identify neural correlates of SI in the SGC using chronic intracranial electroencephalography (iEEG) recordings from patients with treatment-resistant depression (TRD) undergoing deep brain stimulation.
Methods: The data presented in this case report are collected from a 30-year-old woman with TRD and a history of suicide attempts, enrolled in a clinical trial of deep brain stimulation for TRD. The Visual Analogue Scale Depression (VAS-D), a self-administered Montgomery–Asberg Depression Rating Scale (MADRS), and 8 minutes of iEEG recordings from 2 bipolar channels in each hemisphere of the SGC were collected daily for 441 days. A binary SI metric (0=passive SI; 1=active SI) was calculated using the MADRS suicidality item (0-6 rating). Based on the study teams extensive experience with this patient, SI scores of 4 and lower (mostly 4) were categorized as passive SI and scores of 5 and higher (mostly 5) were categorized as active SI. iEEG analysis was carried out with spectral power computed from iEEG data collected within 20 minutes of each symptom assessment. An ANCOVA was performed to identify neural correlates of suicidality while controlling for depression (VAS-D).
Results: The patient presents with a similar occurrence of active (n=254) and passive (n=187) SI. The ANCOVA analysis, controlling for depression severity, revealed the following associations with greater SI: In the right SGC, neural power is negatively associated with SI in the 1-12hz alpha band (p <0.001), 13-30hz beta band (p<0.001) and 30-120hz gamma (p=0.05) frequency band. In the left SGC, neural power is positively associated (p<0.001) with SI in the delta frequency bands (1-4hz).
Discussion: Although the results are limited to one subject with a narrow range of SI, this study provides a proof-of-concept for identifying neurophysiological biomarkers of SI (independent of depression) using iEEG, a novel approach for the research studying the neurobiological basis of SI, that benefits from high temporal and spatial specificity and repeatability. The findings justify future studies investigating the neurophysiological basis of SI, which is relevant for the development of biomarkers for targeted treatments for SI.

T64. STRESS-ASSOCIATED PURINERGIC RECEPTORS REFLECT FATAL SUICIDALITY IN THE HIPPOCAMPAL-HYPOTHALAMIC-PREFRONTAL COMPONENTS

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Background: Imbalanced purine metabolism is a key neurological basis for suicide and mood disorders (MD), wherein purinergic receptors in stress-sensitive cerebral regions are thought

to be differentially activated. A hippocampal network that links the hypothalamus and prefrontal cortex implements an affective sensation of stress.
Methods: 1 Characterizing and counting P2RX7+ nuclei in the hippocampal formation
2 Recalling microglial functions and morphological profiles in the hippocampus

3 Profiling the expression of purinergic receptors and glia in the hypothalamic nuclei

4 Transcriptional analysis of P2RX7 expression in the prefrontal cortex

Results: We discovered that the hippocampus encoded fatal suicidal ideations in the dentate gyrus (DG) by a considerable amount of the granule cell nuclei with P2X purinoceptor 7 (P2RX7) expression, irrespective of the underlying MD. Compared to controls, patients with MD showed microglial dyshomeostasis throughout the hippocampal formation. Strikingly, P2Y purinoceptor 12 (P2RY12)-expressing microglia with segmented processes were remarkably present in the superficial layers of the medial entorhinal cortex (mEnt) in individuals with fatal suicidality. In the hypothalamic stress-sensitive nuclei, P2RY12+ microglia were more expressed in the supraoptic nucleus in MD and even higher when fatal suicidality was present. In the prefrontal cortex, P2RX7 transcripts sharply dropped in suicidal individuals, possibly removing the prefrontal inhibition of the hippocampus and hypothalamus. Confounder analysis showed that the suicide-specific molecular features faded when the postmortem delay was prolonged.
Discussion: Our findings imply that fatal suicidality presents with unique neuropathological alterations. The DG and mEnt are two crucial areas for deciphering the suicidal consequences. By including brain samples from legal euthanasia donors, suicide-specific biosignatures can be maximally retained. Decoding the bioactive framework through key genes, brain regions and neurological processes involved in suicide neuropathology may provide therapeutic strategies for suicidal individuals who are beyond the reach of mental health care.

T65. EMOTIONS AND LEARNING IN DAILY LIFE AMONG PEOPLE WITH AND WITHOUT SUICIDE ATTEMPT HISTORIES

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Background: Extant models of suicidal crises highlight dysfunctional emotional responses, and impaired decision making as characteristics of an acute suicidal crisis (Calati, Nemeroff, Lopez-castroman, Cohen, and Galynker, 2020). Individuals with suicidal behavior histories report greater negative emotional arousal (Nock, Wedig, Holmberg, and Hooley, 2008; Seidlitz, Conwell, Duberstein, Cox, and Denning, 2001), reactivity (Wilson et al., 2016), and lower parasympathetic reactivity (Forkmann et al., 2016; Tsypes et al., 2018) than their nonsuicidal counterparts. Disadvantageous decision-making due to impaired learning is also associated with suicidal behaviors, and may underlie the transition from suicidal thoughts to action (Joiner et al., 2005; Klonsky and May, 2015; O'Connor and Kirtley, 2018). In the presence of suicidal desire elicited by negative emotions, an insensitivity to potential reward may amplify suicidal thoughts, and precipitate decision-making deficits that lead to suicidal behaviors (O'Connor and Kirtley, 2018). Preliminary laboratory-based data from this research team shows that suicide risk is associated with altered learning rate following a negative emotion induction (Dixon-Gordon et al., 2021). Extending this work, we propose that the

intersection of negative emotions and emotion-dependent decision-making increases suicide risk.
Methods: Participants were recruited via MTurk into two groups: those with past-year suicidal behaviors (n = 15) and those without (n = 29). An existing simple stimulus decision task (Johnson and Bickel, 2002; Wimmer, Li, Gorgolewski, and Poldrack, 2018) was deployed as a daily measure of learning for 7 days, in conjunction with daily self-report measures of emotions and suicidal thoughts.
Results: Preliminary results suggest that, on this task, participants with (vs. without) suicide behavior histories were less accurate. In addition, there was substantial within-person variability in learning, supporting repeated measurement of this construct (ICC = .70). Both daily negative emotion and daily poorer learning was associated with more intense suicidal urges over the week. Furthermore, the link between daily worsening in negative emotion and increased suicidal urges that day was strongest among participants with poorer learning accuracy. Thus, the confluence of worsening emotional state and impaired learning are associated with increased proximal suicide risk.
Discussion: These findings also support the use of the proposed task in daily life as a useful metric of learning in suicidal samples. Under certain contexts, such learning impairments may lead to disadvantageous decisions, including suicidal behaviors. Understanding these contexts will help us to answer the question of when individuals may act on suicidal thoughts (Wilson et al., 2016).

T66. PSYCHOLOGICAL PAIN IN LATE-LIFE DEPRESSION: IT'S HARD TO INHIBIT WHEN IT HURTS

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Background: Psychological pain is strongly linked to suicide attempts independent of depression. However, little is known about the cognitive features associated with psychological pain and suicide attempts. We therefore aimed to investigate the neuropsychological features of patients with late-life depression reporting high level of psychological pain, according to a previous history of suicide attempt.
Methods: Seventy-two outpatients with a late-life depression were included at Montreal and divided into two groups according to the level of psychological pain assessed by a Likert scale. Twenty-nine patients had a history of suicide attempts. Cognitive abilities were assessed using the Trail Making Test, the Stroop test, Iowa Gambling Task (IGT), and Verbal Fluency Test (semantic and phonemic verbal fluency). Univariate and multivariate analyses were performed to determine neuropsychological factors associated with a high level of psychological pain.
Results: High level of psychological pain was associated with higher Stroop interference time scores (p=0.002) and lower MOCA scores (p=0.015), independent of a previous history of suicide attempt. Other cognitive measures did not differ between groups. High level of psychological pain was associated with higher Stroop interference time scores even after controlling for confounding factors (gender, age, level of education, depressive symptomatology, history of suicide attempt, and level of suicidal ideations). A previous history of a suicide attempts was associated with poorer IGT scores (p=0.009), independent of level of psychological pain. This association remained even after controlling for confounding factors

(gender, age, level of education depressive symptomatology, level of suicidal ideations, and level of psychological pain).
Discussion: Psychological pain is a specific clinical entity that should be considered to be more significant than just a symptom of depression. High level of psychological pain appears to be associated with a deficit of cognitive inhibition in late-life depression, whereas decision making appears to be more associated with a history of suicide attempt. This finding could help to target psychotherapeutic treatments and improve screening.

T67. CLINICAL AND ELECTROPHYSIOLOGICAL CORRELATES OF HOPELESSNESS IN THE CONTEXT OF SUICIDE RISK

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Background: Hopelessness, or pessimism about the future, is a key suicide risk factor and a promising proxy for suicide risk. This analysis identified clinical and electrophysiological correlates of hopelessness in a sample of individuals at risk for suicide. Specifically, we focused on whether hopelessness is indicative of the acute crisis state and linked with magnetoencephalography (MEG) oscillatory power and effective connectivity differences. Lastly, as a proof-of- concept in a subsample of individuals at highest suicide risk, we evaluated hopelessness ratings and effective connectivity after an administration of ketamine as a rapid-acting antidepressant.
Methods: Participants were recruited across the continuum of suicide risk and included individuals with suicide crisis in the last two weeks (High Risk, HR, n=14), past suicide attempt but no recent suicidal ideation (SI) (Low Risk, LR, n=37), clinical controls (CC, n=33) and minimal risk (MinR, n=27) to complete clinical ratings and resting state MEG scans. Clinical ratings of hopelessness were evaluated across groups as well as magnetoencephalography (MEG) oscillatory power. Dynamic casual models (DCM) were used to evaluate connectivity within and between the anterior insula (AI) and anterior cingulate cortex (ACC). The subsample of HR individuals who received ketamine (n = 10) were evaluated at Day 1 post-infusion for hopelessness ratings and effective connectivity.
Results: The HR group reported the highest levels of hopelessness ($F(3, 104) = 25.14$, $p < .001$), even when adjusting for SI. MEG results linked hopelessness with reduced activity across all frequency bands in regions linked with the salience network, with no group nor group-by-interaction effects ($pFDR < 0.05$). DCM analyses demonstrated that the HR group had lower intrinsic excitatory connectivity in both the ACC and AI. Results from the HR ketamine pilot demonstrated reductions in hopelessness and increased intrinsic parameters after ketamine administration.
Discussion: Hopelessness may be an important proxy for suicide risk to be used in future risk prediction and intervention efforts, as it is associated with the suicide crisis, does not require the direct reporting of suicidal thoughts and is responsive to rapid-acting intervention. Electrophysiological targets for hopelessness include widespread reductions in salience network activity and intrinsic connectivity in the ACC and AI.

T68. STATE-RELATED DIFFERENCES IN STRESS RESPONSE IN YOUTH WITH BIPOLAR DISORDER AND IMPLICATIONS FOR SUICIDE-RELATED THOUGHTS AND BEHAVIOR

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Background: Bipolar disorder has one of the highest suicide rates among psychiatric conditions. While trait-level risk factors for suicide attempts have been identified in bipolar disorder, state-related risk factors that may contribute to or prevent suicidal thoughts and behaviors have not been established. Suicide-related thoughts and behaviors often emerge during depressive episodes, yet not everyone experiencing depression develops suicide-related thoughts and behaviors. Understanding how the brain differentially responds to depression vis-à-vis the emergence of suicidal thoughts and behaviors may provide a target for early intervention.
Methods: To investigate whether state-related differences in stress response may relate to suicide risk, youth with bipolar disorder type I (N=35, 46% with a history of suicide attempt, 77% female, mean age= 22 years) completed a clinical evaluation of past-week mood symptoms and a modified version of the Montreal Imaging Stress fMRI task. Neural response to the control and stress math conditions, and interactions with depression symptom severity, were compared between youth with bipolar disorder and a history of suicide attempt(s) and those with bipolar disorder without history of suicide attempt. Neural response was also compared between youth with current suicide ideation (N=12), compared to those without (N=23), controlling for history of suicide attempt. Findings were considered significant at cluster-level thresholding pFWE <.05. Associations between neural response to stress—in clusters showing a significant effect of group or group by depression symptom interaction—and impulsivity were explored.
Results: Past week depression symptom severity did not differ between youth with bipolar disorder and a history of suicide attempt compared to those without, nor between youth with or without current suicide ideation. Youth with bipolar disorder and a history of a suicide attempt, but not those without, showed a positive relation between depression symptoms and neural reactivity in the visual cortex during the stress condition (group by depression symptom interaction, pFWE <.001). Individuals with current suicide ideation, compared to those without, had greater activity during the stress condition in the visual motor cortex (pFWE<.05). Subgroups did not differ in—and depression symptoms did not relate to—neural reactivity during the control math condition. Greater reactivity in the visual cortex to the stress condition related to greater total, nonplanning, and motor impulsivity in youth with suicide attempt history (p<.02).
Discussion: Results from this ongoing study suggest differences in the way depression symptoms relate with neural response to mild psychosocial stress in youth with bipolar disorder who are at greater risk for suicide-related thoughts and behaviors.

T69. PREDICTING MOMENTARY SUICIDAL THOUGHTS IN SEXUAL AND GENDER MINORITY YOUTH: DEVELOPING AN INTENSIVE LONGITUDINAL SMARTPHONE STUDY IN A HIGH-STIGMA US STATE

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Background: Developing effective methods to improve prediction of suicide among sexual and gender minority (SGM) youth is a public health priority, especially in places where minority stress (e.g., structural stigma) and associated suicide risk is high.
Methods: An iterative, two-phase approach was used to develop Project SPIRiT (Suicide Prediction In Real-Time), an intensive longitudinal smartphone study of suicide risk targeting SGM youth ages 13-24 in Tennessee, USA. In a first phase, semi-structured interviews were conducted with parents/caregivers of SGM youth (n=16) and SGM youth with histories of suicidal ideation (n=16). Qualitative feedback was analyzed with a six-step thematic analysis approach and integrated to develop the Project SPIRiT protocol. In a second phase, user experience (UX) testing was conducted with 9 SGM youth for a 7-day trial period. Feasibility and acceptability feedback was recorded and used to finalize Project SPIRiT.
Results: Project SPIRiT is a smartphone-based, real-time monitoring study where short surveys are deployed 3x per day for 28 days to assess momentary experiences of minority stress and suicidal ideation among SGM youth in Tennessee. UX testing for a 7-day trial period demonstrated high feasibility (80.4% of surveys were completed, range=42.9%-90.5%). In a post-trial feedback survey and semi-structured interview, UX testers reported no technical difficulties and high acceptability.
Discussion: Project SPIRiT was developed through a rigorous multi-phase approach to improve short-term prediction of suicide risk among SGM youth ages 13-24 in Tennessee. Study recruitment launched in March 2023 with a target goal of enrolling 50+ SGM youth (~4200 surveys).

T70. UTILIZING BUSINESS INTELLIGENCE (BI) TO CREATE DASHBOARDS FOR THE MANAGEMENT OF A POPULATION AT HIGH RISK OF SUICIDE IN MEUHEDET HEALTH SERVICES, ISRAEL

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Background: : Individuals who have attempted suicide are at high risk of subsequent attempts. Therefore, as a result of this risk, ensuring continuity of care for these patients is crucial in promoting treatment and monitoring their condition. Meuhedet Health Services (MHS), the third largest Israeli HMO serving 1.2 M people, developed a computerized daily report six years ago to identify insured individuals who attempted suicide, were treated in the Emergency room (ER), and then discharged or hospitalized. In the last year, MHS decided to upgrade the report to a BI dashboard to improve continuity of care and information transfer between hospitals and the community, and between various care providers in the community.
Methods: To develop the BI dashboard, MHS allocated BI resources and validated information reported from hospitals over a period of 12 years. The registry built for the BI dashboard includes approximately 2,000 insured persons who have made at least one suicide attempt. The details required for the suicide attempt daily report were redefined, and alerts were set up for actions that were not carried out on the chain of care. The dashboard allows for the analysis of patient characteristics, including gender, sector, socio-economic status, geographical location, indication of recent encounters with GP and mental health specialists, as well as cross-referencing with other health registries such as the SMI and diabetes

Results: These dashboard's capabilities and results developed by MHS are a promising tool for managing high-risk suicide patients and improving continuity of care. The results of the dashboard will be presented at the conference.
Discussion: The dashboards allows for the history of every insured person who has made at least one suicide attempt to be viewed, enabling healthcare providers a better understanding of the patient population and improving the transfer of information and monitoring on continuity of care between hospitals and the community.
The dashboards open new opportunities for further research on the characteristics and management of high-risk suicide patients.

T71. FEASIBILITY AND ACCEPTABILITY OF ECOLOGICAL MOMENTARY ASSESSMENT TO ASSESS SUICIDE RISK AMONG ADOLESCENTS WITH MOOD DISORDER: A MIXED METHOD STUDY IN CHINESE CULTURE

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Background: There are concerns that suicidal thoughts and behaviors (STBs) are increasing among adolescents in China. While Ecological Momentary Assessment (EMA) has increasingly been used to investigate STBs worldwide, no such study has been implied in China to the best of our knowledge. This study aimed to evaluate feasibility and acceptability of real-time monitoring (combining smartphone and wearable sensor technology) of suicidality among adolescents with mood disorders (MD) in China.
Methods: This mixed methods study used intensive longitudinal date to assess the feasibility from real-time monitoring suicide risk among 30 high-risk, MD outpatient adolescents who responded to 5 to 8 daily EMA prompts and worn daily Xiaomi smart band 6 (Xiaomi 6) for 28-day EMA period. Meanwhile, semi-structured interviews were conducted to collect the feedback for a subset (n=14) completed the 28-day EMA period to provide information on the acceptability.
Results: Qualitative data confirmed and complemented the quantitative findings. Adherence to EMA surveys (73.1%) and Xiaomi 6 (86.3%) demonstrated the feasibility of this study. There were no association between baseline characteristics and adherence to EMA surveys, except for teacher-student relationship (r =0.427, P =0.021) and sleep problem (r = 0.373, P = 0.043). Participants reported that their overall experience was positive with the EMA protocol (helpful, friends, acceptance, convenient). In addition, the reasons why they were willing to comply with the EMA protocol were: (1) it provided me the possibility of returning to "normal"; (2) it helped me experience the process of the return; (3) it equipped me with an "emotional controller."
Discussion: Results provide preliminary support for the feasibility and acceptability of using smartphones and wearable sensor technology to assess suicide risk in a real-time and real-world setting among adolescents with mood disorders in Chinese contexts. Specific recommendations and procedures are provided for managing safety and maintaining adherence within these study design, and for refinement in future work.

T72. FROM IDENTITY-BASED DISTRESS TO THINKING I AM BETTER OFF BEING DEAD: MINORITY STRESS, POSTTRAUMATIC COGNITIONS, AND SUICIDAL IDEATION

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Background: A main contributor to suicidal thoughts and behaviors (STBs) in individuals with minoritized identities include minority stress (MS), i.e., insidious, traumatic distress caused by repeated exposure to minority stressors such as discrimination, prejudice, and victimization. Integration of the cognitive-behavioral therapy (CBT) model governing posttraumatic stress disorder (PTSD) and empirical findings on PTSD and MS implies minoritized populations may be particularly vulnerable towards developing posttraumatic cognitions (PTCs), which may share bidirectional, causal associations with MS, and generalize to suicidal ideation (SI). To test this potential pathway, structural equation modeling was utilized to examine whether PTCs mediated the association between MS and SI in a sample of diverse, young adults (n = 217).

Methods: Diverse young adults who endorsed at least one minoritized identity (53.9% person of color, 41.0% Hispanic/Latine, 45.6% non-heterosexual, 6.0% non-binary; 2.3% transgender; 27.6% with two or more minoritized identities) were recruited from a university located in the southern U.S. between July 2022 and February 2023. A path model was estimated using robust maximum likelihood with the following latent variables: (1) MS, with four subscales from the Trauma Symptoms of Discrimination Scale (Williams et al., 2018) as indicators; (2) PTC, with three subscales from the Posttraumatic Cognitions Inventory (Foa et al., 1999) as indicators; (3) SI, with indicators of the Depressive Symptom Index-Suicidality Subscale (DSI-SS; Metalsky and Joiner, 1997), Beck Scale for Suicidal Ideation (Beck et al., 1988), and a single-item measure asking participants to rate their intent to die by suicide on a scale of 0 (no intent) to 10 (definite intent) in the past week. Regression analyses were conducted to test construct validity of MS and ensure it reflected distress due to discrimination due to various minoritized identities, including race, ethnicity, gender, and sexual orientation. Series of multigroup confirmatory factor analyses were conducted to test for structural variance of the model to assess its validity across race, ethnicity, and sexual orientation.

Results: Regression analyses confirmed MS was significantly correlated with various measures of discrimination based on diverse minoritized identities. The path model fit well (CFI = .990, TLI = .985, RMSEA = .044) and PTCs fully mediated the association between MS and SI ($b = .14$, $p = .003$). Invariance test results supported scalar invariance across race (chi-square = 10.55, df = 7, $p = .16$), metric invariance across ethnicity (chi-square = 6.80, df = 7, $p = .45$), and residual invariance across sexual orientation (chi-square = 15.27, df = 10, $p = .12$).

Discussion: The current study represents an active integration of MS as it applies to diverse, intersectional identities in the modeling of SI. Results support the hypothesized association between MS and SI via PTCs; implications such as applying interventions targeting PTCs (e.g., application of CBT for PTSD to target PTCs and reduce MS and SI) for suicide prevention efforts in minoritized populations will be discussed.

T73. COMMUNITY SUICIDE PREVENTION IN THE CLIFFS OF GETXO, SPAIN

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Background: It is estimated that 1 in 4 suicides can be prevented. This is especially true in suicide hotspots. These have been defined as specific, usually public, locations that are frequently used as a suicide site, and that provide either the means or the opportunity to commit suicide. Getxo, with more than 76,000 inhabitants, is the fifth largest municipality in the Basque Country. Between 1 and 2 out of every 3 deaths by suicide in the municipality are the result of falls from the cliffs of La Galea. Although there are several international experiences that have shown a reduction in suicide deaths after interventions in hotspots, we do not know of any initiatives that, stemming from the community itself, integrate all levels of suicide prevention.
Methods: Published in 2019, the Suicide Prevention Strategy of the Basque Country includes, as a priority measure, intervention at common suicide hotspots. In 2021 the Getxo ZUrt! (Getxo Alert!) project was launched. Following inter-agency collaboration and the collection and analysis of data, we developed and implemented an action plan in Getxo: 1- Making prevention and help resources visible in the community, increasing knowledge of suicide prevention, intervention and postvention, for neighbours by combating myths about suicide, raising awareness of the multidetermined act of suicide, and informing on said public resources for suicide prevention, intervention and postvention. 2- Restricting access to the means to commit suicide by restricting vehicle access to the site, and erecting signs encouraging the seeking of help, providing a message of hope, and indicating the numbers of hotlines. 3- Training for personnel walking or working near the cliffs. 4- And, through the participation and cooperation of the various emergency services involved, improve the response and rescue capability.
Results: We are presenting the current progress of the project, explaining the measures developed, the results obtained and the challenges for the future.
Discussion: Getxo Zurt! aims to interrupt the suicide process by making prevention and help resources visible in the community, encouraging people to restrict access to the means to commit suicide, and make it possible for another parties to intervene.

T74. IMPACT OF TRAINER MENTORING ON SUICIDE PREVENTION GATEKEEPER TRAINING OUTCOMES

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Background: The United States Coast Guard (USCG) conducted a program evaluation study to examine the impact of trainer mentoring on training fidelity and impact on gatekeeper training (GKT) using LivingWorks Applied Suicide Intervention Skills Training (ASIST) program. Data relevant to workshop participant outcomes will be presented.
Methods: LivingWorks (LW) provided standard ASIST Training for Trainers (T4T) to Coast Guard staff interested in becoming registered trainers. Half of the provisional trainers received mentorship from LW training coaches, half did not. Pre-/post-workshop surveys were administered to all participants. Information is available on participants in workshops conducted by 12 ASIST trainers who have all reached registered trainer status which requires

successfully conducting three workshops post-T4T. Half of the trainers received mentoring. We will assess if mentoring is associated with greater differences in pre-and post-test knowledge and skills acquired by participants.
Results: Participants in the two conditions will be compared on their knowledge of how to intervene with a person experiencing thoughts about suicide, how prepared they feel to intervene, their attitudes about people with thoughts of suicide, and their intentions to intervene. It is anticipated completed surveys from up to 600 USCG participants will be available for analyses.
Discussion: This presentation highlights the impact of adequately training and supporting USCG staff engaged in the important work of recognizing which personnel may be experiencing thoughts of suicide and intervening to help them maintain safety until they are able to address the reasons they are thinking about suicide through appropriate service utilization or further intervention. Suicide prevention intervention training cannot and should not be a "one and done" endeavor. Ongoing support for trainers is an important first step. Ongoing support for the natural helpers created through these trainings is a highly recommended next step.

T75. EXPERIENCES OF SUICIDE SURVIVORS WITH SHARING THEIR STORIES ABOUT SUICIDALITY AND OVERCOMING A CRISIS IN MEDIA

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Background: There have been several studies that showed some beneficial effect of media stories of hope and recovery from suicidal ideation on the audience. Very little is known, however, about how individuals sharing their suicidal experiences of hope and recovery perceive any effects of their storytelling. In this study, we therefore qualitatively assessed how individuals who shared their personal story of overcoming a suicidal crisis in media have experienced this process and which aspects are perceived as being important in sharing a story of coping in the media.
Methods: We conducted n=3 focus groups with n=12 participants with past suicidal ideation or a suicide attempt (n=5), participants bereaved from suicide (n=4), or participants who experienced both (n=3) and who shared their personal story via media. Participants were recruited from the American organisation "Suicide Survivors United", an organisation providing media trainings and guidance for people who would like to share their story of hope and coping in media. Thematic analysis was used to assess the participants' perception and experiences of sharing their story.
Results: Participants shared that the intention to help others was the main motivation to share their story of hope and recovery in the media. Participants noted many positive effects of their storytelling on themselves and the audience, such as improved help-seeking attitudes. The participants offered recommendations for those who want to share their story of hope and recovery, including careful personal preparation and media training before going public. They also discussed media recommendations for talking about suicide in the media.
Discussion: Sharing a personal story of hope and recovery may have a beneficial impact on the audience and also on the storytellers. Support and guidance is crucial in all stages of the

storytelling, particularly to help unexperienced storytellers in going public and using their personal narratives to help prevent suicide.

T76. A COMMUNITY BASED APPROACH TO SUICIDE PREVENTION

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Background: Suicide is a the top 3 leading causes of death for adolescents ages 10-18, accounting for 22% more deaths than car crashes. Youth suicide rates have increased substantially in the past decade; from 2009-2018 there was an estimated 60% increase in suicide death for people ages 14-18. Furthermore, the COVID-19 pandemic elevated adolescent ED visits for suicidal ideation and attempt. In recent years adolescent suicide has become a significant public health problem prompting the Surgeon General to release a "national call to action" focused on preventing youth suicide.
Youth suicide is complex and consists of a multitude of risk and protective factors. From a public health standpoint, leveraging upstream prevention strategies that focus on building protective factors and mitigating risk factors is key for widescale prevention efforts. For adolescents, recognizing the need for a community approach to suicide prevention, meaning not just providing suicide prevention in schools, but out in the community for parents is essential.

Researchers at the University of Washington in collaboration with a rural school district in WA State, created a comprehensive suicide prevention training called Asking IS Caring (AIC). AIC is a peer-delivered, suicide prevention training for parents, that includes a specific focus on restricting lethal means.

The following study aimed to evaluate the AIC program. Our specific aims were:

1. How satisfied were participants with the AIC training?
2. Did AIC increase participants competency of suicide prevention?
3. Did AIC increase participants self-efficacy in intervening with someone who may be at risk?
4. Did AIC lead to changes in participant's medication and firearm storage practices?

Methods: AIC was delivered by two parent trainers in a rural community in WA state from 2022-2023. Participants were given a pre, post, and 4 week follow up survey. Surveys included questions on demographics, suicide statistics, confidence to intervene with someone at risk, training satisfaction, and questions regarding medication and firearm storage practices.
Descriptive statistics were employed to characterize sample demographics and satisfaction with the training. T-tests were utilized to determine changes in knowledge, confidence to intervene, and storage practices from pre to post and follow up.

Results: There was a total of 117 AIC participants. A majority of the sample identified as female (81%), white (84%), and non-Hispanic (87%). (99%) of participants reported being satisfied with the training (n=115). Overall, there was a 51% increase in suicide related knowledge competency and a 49% increase in participants saying they would be confident to intervene with someone at risk of suicide from pre to post. From pre to follow up there was an 88% increase in people who reported locking their medications and an 18% increase in those reporting locking their firearms.

Discussion: Preliminary results indicate participants were satisfied with the AIC training, significantly improved their knowledge of suicide prevention and comfort level in intervening with someone at risk of suicide and improved safe storage practices. Results indicate AIC is promising for equipping parents with the needed tools for preventing suicide, including the use of safe storage practices. Future directions include adapting AIC for teachers and students so that there is a common, interconnected training across the community for increased prevention efforts. Additionally, AIC will be adapted and implemented in other communities across WA state. AIC has the potential to help communities combat the adolescent suicide crisis.

T77. MOVING KNOWLEDGE TO ACTION TO PREVENT YOUTH SUICIDE: DEVELOPMENT AND EVALUATION OF A STANDARDIZED SUICIDAL IDEATION RESPONSE PROTOCOL FOR SCHOOLS

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Background: Suicide is a leading cause of death for Canadian children and youth. Yet, little is known about how to mobilize research knowledge into action for effective youth suicide prevention, particularly within school settings. In this presentation, we will discuss one such mobilization project, called the Alberta School-Based Suicidal Ideation Response Protocol ("SI Protocol"). The SI Protocol was developed in 2018 by a multi-sector, community-based working group, and consists of standardized processes and steps for school staff to use if they are concerned a student is at-risk of suicide. Standardized protocols are important as they can reduce the rate of false positives (i.e., over-response to disclosures that do not indicate an immediate crisis) and false negatives (i.e., under-response for students in need of immediate attention), as well as related issues around linkage to timely and effective health services. Yet, very few school-specific approaches to suicide risk identification, assessment, and referral are available. In this presentation, we will thus describe (1) how research was moved into action to develop the SI Protocol and (2) evaluation findings to date, including lessons learned during implementation of the SI Protocol over the past 5 years and referral patterns following protocol use.

Methods: Research on this project uses a community-based participatory approach, and is conducted through a community-university partnership model. To evaluate the implementation and initial outcomes of the SI Protocol, we conducted surveys with 93 school staff on their use of the protocol in spring 2020 (retrospective pre/post). The survey asked questions about perceived preparedness to respond, as well as barriers and facilitators to protocol implementation. We also collected post-protocol referral data from 3 school divisions in the 2020/21 and 2021/22 school years (with 2022/23 data collection ongoing). These data indicate the outcome of SI Protocol use (i.e., urgent – refer to emergency department (ED)/urgent care; non-urgent – refer to community mental health, non-urgent – refer to school mental health (SMH)) for 504 students to date.

Results: The protocol was first implemented in fall 2019, and has since been used by schools in over 30 divisions in the province of Alberta, Canada. Of the 93 survey participants, 70% (n=65) had used the protocol at least 1 time. Compared to before use, participants reported that post-SI Protocol use, they felt significantly more prepared to 1) ask questions about suicidal ideation (d=1.28), 2) respond to disclosures of suicidal thoughts (d=1.13), 3) identify suicide indicators (d=0.99), 4) support a student to seek help (d=1.07), 5) make appropriate referrals

(d=0.89), and 6) communicate information to health providers (d=1.29). In addition, compared to participants who did not adopt the protocol (n=28), participants who adopted (n=65) were also significantly more likely to feel well/very well prepared to do these 6 tasks. Open-ended data indicate that the protocol was widely perceived as useful, as it was a standardized step-by-step guide that helped school staff stay calm in a stressful situation, though areas for improvements were also noted. Finally, of the 504 total referrals, 37% resulted in a recommendation to community mental health, 44% to SMH services, and 19% to the ED/urgent care.

Discussion: Findings to date on the SI Protocol are promising, and exemplify how research evidence can be moved into action through community-driven approaches. In our presentation, we will use the Knowledge To Action (KTA) framework (Graham et al., 2009), which describes core steps in moving research knowledge into action, to summarize key learnings to date.

T78. INDIVIDUAL AND CONTEXTUAL LEVEL CORRELATES OF SUICIDE IN RURAL AMERICA

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Background: Suicide rates in rural America are nearly 50% higher than those of metropolitan areas. Although multiple individual and community level factors such as social isolation and loneliness, lack of economic opportunities, easy access to lethal means, and limited access to mental health services appear relevant, few studies have examined the potential underpinnings of heightened rural suicide risk. A major limitation of the research literature is the lack of multi-level models that simultaneously examine both individual and community level factors associated with rural suicide, the current study aims to examine how both individual and community level factors are related to rural suicides overall and by suicide method.

Methods: A retrospective population-based case-control design was used to analyze rural suicides in the United States. Rural suicide decedents aged ≥ 10 years were identified from Compressed Mortality Files (CMF) from 2007 to 2019 based on residence in a county classified as nonmetropolitan by the Rural Urban Continuum Codes (RUCC). Controls were respondents to the American Community Survey (ACS), matched to the suicide cases on year, age, and county of death. Individual variables included sex, age, race, ethnicity, and marital status. County level variables from multiple sources included contextual (e.g., health service availability, area deprivation) and collective (e.g., social capital, veteran percentage) factors. Methods were classified as no suicide death (reference), firearm suicide, hanging/strangulation suicide, and other suicide. An overall random-effects, multi-level logistic regression model was used to compare cases and controls, nested within counties. A random-effects, multi-level, multinomial model was used to analyze method of suicide.

Results: A total of 102,191 suicide decedents were identified with a comparison group of over 12 million individuals. Suicide by firearm was the most common method, followed by hanging/strangulation. In the overall model, suicide death was less likely for minority racial/ethnic individuals compared to non-Hispanic white individuals, younger and older individuals compared to middle aged individuals, and married compared to single individuals.

Widowed or divorced individuals were more likely to die by suicide than those who were single. More suicides occurred in areas with higher percentages of veterans, overdose rates, and people without health insurance. Fewer suicides occurred in areas with high social capital and high percentages of farming and mining industries. When examined by method, minority groups in rural areas (Hispanic [OR =1.20, 95% CI 1.13-1.27], Native American [OR=1.64, 95% CI 1.53-1.75], and Asian [OR=1.20, 95% CI 1.08-1.34] subgroups) were more likely to die by hanging/suffocation than non-Hispanic white individuals. Widowed individuals were more likely to die by firearms than single individuals [OR=1.45, 95% CI 1.39-1.5] and less likely to die by hanging [OR=0.61, 95% CI .56-.67]. Higher social capital was associated with fewer suicides across all methods, while more social fragmentation was associated with higher suicides by hanging and other methods.
Discussion: Suicide is a major public health problem in rural areas. Means restriction is relevant across all rural counties, with reductions in access to firearms likely having a greater impact on older, non-Hispanic white males than on minority populations. Improving social capital and connectedness in rural communities may also be a key component of successful suicide prevention efforts.

T79. PREVENTING PREADOLESCENT SUICIDE THROUGH EDUCATION AND COMMUNITY CARE

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Background: This study sought to understand the major contributor to suicidal ideation and suicide attempts in preadolescent children - as described by mental health professionals in Washington state. The aim of this research was to determine a need for a possible school-based suicide prevention curriculum for kindergarten through sixth grade students in Washington state.
Methods: This qualitative study focused on interviews, accessed by exponential non-discriminative snowball sampling. Through the use of personal, one-on-one interviews, each interviewee (a professional in the medical/mental health field) answered questions about how a student presented with suicidal ideation at their facility. Participants included mental health therapists in public and private practice, emergency room personnel, school psychiatrists, and nurses in preadolescent psychiatric care. This single phase, phenomenological study resulted in four themes and two conclusions from which the researcher was able to offer two proposed solutions.
Results: The interview questions, which solicited reflections from each participant, yielded four themes. Those four themes were family issues, mental health issues, social issues, and issues with self-esteem. More specifically, the results showed a need for a caring adult, the presence of mental illness, the child was experiencing social troubles, or the child was struggling with low self-esteem.
Conclusion One: There is a need for consistent curriculum in schools across the state of Washington. Participants in t his study suggested teaching students coping skills to help them identify and express their feelings and opportunities to access ongoing therapy.

Throughout the interview process, participants reiterated the need for schools to teach children words for their feelings and to provide opportunities for children to practice verbally expressing their feelings within a fun, positive environment. Each interviewee mentioned the importance

of providing consistent social and emotional learning opportunities for every student at the elementary school level.

Conclusion Two: Communities need to be doing more to provide for families who may be underserved and struggling. A focus on mental health treatment would feed into other areas that are needed. The more communities can help an individual's mental health, the better prepared they are to ask for resources like government provided food stamps, free or affordable school lunches, medical and dental care, housing assistance, etc.

This study should benefit students, faculty, families, and communities.

Discussion: This study offers insight into the life experiences of children who present with suicidal ideation, attempt, or threat. Previously, most research showed that these children had issues with family of origin, social awareness, and mental illness. In this study, self-esteem was repeatedly reported as a major contributor to suicidal ideation. Other studies have shown that adolescents (e.g. 16-year-olds) who are hospitalized with suicidal ideation/attempt/threat have reported that they started thinking about suicide when they were in elementary school. This study offers the idea that if a suicide prevention curriculum (focused on social and emotional learning) can be brought to students in the classroom, they have a better chance of carrying positive mental health habits with them into junior high and high school and we have a better opportunity to prevent preadolescent and adolescent suicide.

T80. AN EVALUATION OF THE COUNSELING ON ACCESS TO LETHAL MEANS (CALM) TRAINING FOR HEALTH SERVICE PROFESSIONAL STUDENTS

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Background: Suicide is one of the leading public health problems in the United States. According to the Centers for Disease Control and Prevention (CDC, 2022), one method to reduce suicide is through taking steps to ensure safe and secure storage of the most lethal means. Health professionals could serve as an important intervention point in which firearm access is assessed alongside risk for suicide. However, current literature suggests that few health professionals consistently assess for access to lethal means for individuals at risk for suicide or who have recently attempted suicide (Betz et al., 2013; Boggs et al., 2022). One training to help professionals learn how to assess lethal means safety is the Counseling on Access to Lethal Means (CALM) program. CALM training comprises epidemiological data on suicide and the important role of method in determining the outcome of a suicide attempt, as well as interactive training such as reviews of case vignettes and role play exercises.

Methods: We administered an adapted version of CALM that included content focused on North Carolina; to a pilot sample of health professions students (N=13) at a southeastern university. We also compared pre-training and post-training scores in knowledge about suicide and lethal means as well as confidence, comfort, and likelihood in addressing lethal means with clients. Attitudes toward firearms and gun control were assessed as correlates of change in primary outcomes.

Results: Scores on confidence ($t(12)=10.23$, $p<.001$, [4.24, 6.53], $d=2.84$), comfort ($t(12)=6.88$, $p<.001$, [1.74, 3.34], $d=1.91$), and likelihood ($t(12)=4.10$, $p<0.001$, [1.73, 5.66], $d=1.14$) all increased from pre- to post-training. Additionally, participants scored significantly better on the suicide risk and lethal means knowledge quiz pre- to post-training ($t(12)=4.13$,

p=0.001, [1.31, 4.23], d=1.14). Pearson correlations of attitudes towards gun control (i.e., gun control laws for concealed and open carry) and changes in likelihood in addressing lethal means were negatively correlated. Greater changes in scores on the likelihood in speaking about lethal means was associated with supporting gun control policy (r=-0.62; p=0.02).
Discussion: This pilot study highlighted the need to train health professionals early in their careers on addressing access to lethal means and that trainings such as CALM can make professionals more comfortable in engaging in conversations around lethal means safety. Additionally, future CALM trainings and evaluations can explore whether training impacts vary by gun control attitudes.

T81. SUICIDE RISK ASSESSMENT AND INTERVENTION TRAINING FOR DOCTORAL PSYCHOLOGY STUDENTS IN QUEBEC, CANADA

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Background: In the Canadian province of Quebec, suicide results in a high number of hospitalizations and deaths. Despite its prevalence, assessing and intervening with someone considering suicide remains a complex clinical process, and psychologists often lack sufficient training. A 2003 American study revealed that only half of doctoral psychology students received training in this area (Dexter-Mazza and Freeman, 2003). It is not known whether psychology students in Quebec receive training about suicide, and it is not a requirement to obtain a psychologist's license. Therefore, this project aimed to describe the current state of training on suicide risk assessment and management received by graduate students in psychology in all Quebec universities. Specifically, the objectives were to identify the content of training offered to graduate psychology students in programs recognized by the Ordre des Psychologues du Québec (OPQ) and identify any challenges in implementing such training.
Methods: Representatives (e.g., program or clinic directors) from OPQ-recognized psychology programs completed a 30-minute semi-structured interview. The interview included questions about current and optimal training practices related to logistics (e.g., duration), teaching methods (e.g., role-plays), and the targeted competencies (e.g., understanding the law and professional obligations surrounding suicide), which were also rated on a 5-point scale for perceived importance. Other questions were related to resources available to students, to program directors' perspective about psychologists' role in suicide prevention, and to perceived challenges in providing standardized training.
Results: Preliminary data indicate that training for psychology students across Quebec universities is variable, but thus far, all programs have mandated training for all students since 2018–2022. Training content and modality across universities varies greatly from 1.5-hour online modules and 3-hour workshops to a 9-hour training delivered within a clinical course. Program representatives described various roles of psychologists, from gatekeepers (e.g., school and organizational psychologists) to central in suicide prevention due to the prevalence of contact with individuals with suicidal concerns (e.g., clinical psychologists). Representatives noted a discrepancy between competencies that are most important and those that are covered in training. For example, although 'understanding the law and professional obligations surrounding suicide' was perceived as the most important competency across programs, it was not covered in any training. In terms of challenges in offering more comprehensive training,

representatives reported lack of resources, competing interests, and lack of perceived topic relevance to their clienteles (e.g., such as in organizational psychology).
Discussion: Mandatory training in suicide risk assessment and management is very recent for many programs, with the latest being mandated for students only since 2022. The role of psychologists according to program representatives may influence the training offered to students and its perceived importance; however, preliminary results suggest that there is discrepancy between the competencies covered in trainings and their perceived importance.

T82. REAL-TIME RELATIONS BETWEEN SOCIAL REJECTION, MEANING IN LIFE, AND SUICIDAL IDEATION SEVERITY AMONG AT-RISK SEXUAL MINORITY AND HETEROSEXUAL YOUNG ADULTS: A MODERATED MEDIATION MODEL

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Background: Suicide is a leading cause of death among young adults 18-24. Traditional longitudinal research (i.e., with assessment windows of months, years, etc.) has documented a strong relation between social rejection and suicidal ideation (SI) severity. However, few studies have examined mechanisms underlying this relation in real time, or whether this relation may be stronger for particular groups. Understanding this association in real time has significant implications for personalizing interventions. Existing experimental research suggests that meaning in life (MIL) may mediate the relation between social rejection and SI. Theoretical work posits that social relationships enabled humanity's ancestors to survive and reproduce. Consequently, a "need to belong" was passed on to subsequent generations through natural selection. When this need is thwarted, individuals will experience temporary decrements in meaning in life as they question their sense of purpose and self-worth, which may then lead to suicidal thoughts and/or behaviors. Additionally, research with lesbian, gay, bisexual, queer/question (i.e., LGBQ) individuals has demonstrated that they may experience greater negative cognitive-affective consequences following social rejection, relative to heterosexual peers, due to minority stress. Thus, it is possible that relative to their heterosexual peers, LGBQ individuals may experience greater decrements in MIL following social rejection, and thus greater SI severity. However, this model has not yet been tested. Using ecological momentary assessment (EMA), the aim of this study was to test a moderated mediation model among young adults with past month SI. Specifically, social rejection was hypothesized to predict decrements in MIL, which would subsequently predict SI severity. This relation was also predicted to be stronger among LGBQ (versus heterosexual) young adults.
Methods: The sample consisted of 49 young adults (Mage = 19.73, SD = 1.63, range = 18-24 years; 71.0% female, 45.0% White; 53.0% heterosexual). Sexual identity (i.e., heterosexual versus LGBQ) was assessed at baseline. Social rejection severity, MIL, and SI severity were assessed using EMA over the following 28 days. Dynamic structural equation modeling in Mplus version 8.8 was used to assess relations at the within-person level among study variables.
Results: Social rejection severity predicted suicidal ideation severity (b = 0.022, 95% credibility interval [CI]: 0.010, 0.040) in real time. Moreover, social rejection severity predicted decrements in MIL (b = -0.123, 95% CI: -0.201, -0.038), though this relation was not moderated by sexual identity (b = -0.029, 95% CI: -0.156, 0.093). Decrements in MIL predicted

SI severity (b = -0.02, 95% CI: -0.028, -0.005) and mediated the relation between social rejection and SI severity (b = 0.004, 95% CI: 0.001, 0.007).
Discussion: Meaning in life may be an important mechanism underlying the relation between social rejection and SI severity. Interventions aimed at bolstering MIL, particularly in the context of social rejection, may be beneficial to sexual minority and heterosexual young adults at risk for suicide.

T83. DATA AND RESEARCH-INFORMED SUICIDE PREVENTION IN THE UNITED STATES

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Background: Suicide is the 12th leading cause of death in the United States. It is the fourth leading cause of death for adolescents ages 15-19 globally. In 2020, an estimated 3.2 million people planned a suicide; 1.2 million people attempted suicide, and there were 45,979 people who died by suicide in the United States. More than half of the suicides involved firearms and there were almost twice as many deaths by suicide than by homicide.
In the United States, suicide increased 35% from 1999 to 2018 before declining 5% through 2020. Despite the overall recent decline, rates continued to increase among females aged 10-24 and among males aged 10-44 and 75 and over. In the U.S. military, in CY 2021, 519 Service members died by suicide with young, enlisted male Service members found to be at highest risk. Additionally, in CY2020, 202 dependents of military Service members died by suicide, including 133 spouses and 69 other dependents.

The 2012 National Strategy for Suicide Prevention guides suicide prevention actions in the United States. This session, presented by the leaders for suicide prevention across four government agencies, will provide an overview of data surveillance and evaluation efforts to improve suicide prevention programs in civilian and military communities.

Methods: The Centers for Disease Control and Prevention is responsible for national surveillance of suicide deaths in the United States. The Defense Suicide Prevention Office is responsible for surveillance of military suicide deaths. The Department of Veterans Affairs is responsible for reporting on suicide deaths among Veterans. The Substance Abuse and Mental Health Services Administration conducts surveillance on behavioral risk factors. This session will describe the interface between these surveillance systems to provide a complete picture of suicide and suicidal behavior in the United States. It will describe mechanisms in place to share data and conduct research across the federal government. Additionally, this session will lay out the interface between federal and state level surveillance systems.
In addition to data surveillance, federal agencies collect evaluation data on suicide prevention programs funded by grants and other mechanisms. This session will outline the various sources for evaluation data across the federal agencies and how these data are being used to improve suicide prevention activities.

Results: This session will highlight the results of effectively using surveillance and evaluation data across four federal agencies and leveraging these results to inform programs. It will highlight the public health approach in action as data are used to determine which programs get funded.

Discussion: While suicide prevention activities are widespread, there are few that have a strong evaluation component. Further, it is challenging to use surveillance data to demonstrate effectiveness of programs. This session will describe these challenges and demonstrate the United States' approach to using data to inform suicide prevention efforts.

T84. PROCESS AND CHALLENGES INHERENT IN PERFORMING RESEARCH PRIORITIZATION

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Background: Section 736 of the National Defense Authorization Act for Fiscal Year 2019 directed the Secretary of Defense to submit a “Strategic Medical Research Plan” to the congressional defense committees. Research and Engineering (R and E) Directorate’s Psychological Health Center of Excellence provides support to and was tasked by the Defense Health Agency (DHA) to develop an overarching investment strategy for all psychological health research covered by the Defense Health Program and a Strategic Research Program (SRP) for psychological health.
Methods: Work on the PH SRP started in September 2021 by initially defining and scoping the requirement. Representatives from the R and E PH team and from across the DoD (including senior leaders, subject matter experts, line and unit leaders, as well as medical and non-medical providers, and subject matter experts from other key stakeholder US federal agencies) clarified and defined the PH SRP requirement. The schedule for the iterative process of drafting the SRP included biweekly meetings and discussions. The SRP development process included the following major steps to guide research: analysis of the capability requirements and identified gaps with their relative importance ranking; analysis of the recently completed and ongoing science and technology (S and T) activities to determine the research landscape and alignment with capability requirements; identification of high-priority capability requirements that account for both high importance and low S and T coverage; identification of high-level pathways for S and T activities that could fulfill the high-priority capability requirements, and formation of the PH SRP through development and integration of S and T Paths and the associated Capabilities. This strategic research plan may be used to guide concentrated research efforts that expedite the development of focused priority areas.
Results: Seventy-seven documents addressing medical research in support of Department of Defense operations, warfighter brain health, and combat casualty care were reviewed. This review focused on pinpointing gaps referenced in these documents as priority targets needed to advance PH support for service members. Gaps were extracted from six DoD initial capability documents (ICDs), published between 2013 and 2022, as well as eight other authoritative PH documents, which included federal laws, DoD instructions, executive orders, and other strategic documents. Thirty PH capability gaps were identified and organized under four capability areas: Assess, Protect, Sustain and Optimize. Mapping the capability gaps to the identified capabilities found thirteen capabilities remaining with active requirements. A prioritization process followed, with active participation by representatives from operational military services. Concurrently, a research landscape identified 1200+ studies which were mapped to the identified capabilities.

Discussion: The DoD's comprehensive approach to the research review related service members' psychological health and readiness produced the Psychological Health Strategic Research Plan for Defense Health Program funded research. This Strategy and Action Plan outlines the DoD's direction to optimally address the psychological health needs of our service members, their families, line leaders/commanders, and their communities at large. This SRP has the potential to focus future research activities to yield more deliberate, prioritized, and rapid development of end-to-end solutions. Systematic research efforts that follow offer the opportunity to yield results that focus on key areas of military community PH needs. Success in this endeavor will require a unified effort and support from across the Department of Defense.

T85. UNITED STATES DEPARTMENT OF DEFENSE STANDARDIZED SUICIDE FATALITY ANALYSIS (DOD STANDS): OVERVIEW OF METHODOLOGY AND LESSONS LEARNED FROM THE AIR FORCE

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Background: Suicide prevention is an urgent priority for the United States Department of Defense (DoD). Researchers at the Suicide Care, Prevention, and Research Initiative at the Uniformed Services University partnered with the Defense Suicide Prevention Office to develop a standardized, public health theory-guided methodology to review military suicide deaths. This project, referred to as the DoD Standardized Suicide Fatality Analysis (DoD StandS), is responsive to recommendations to: (1) increase the timeliness and usefulness of suicide surveillance systems, (2) improve the ability to collect, analyze, and use this information for action, (3) focus on trajectories to suicide in order to identify potential opportunities for intervention, and (4) examine the interaction between person and environment. The ultimate goal of DoD StandS is to provide actionable recommendations for military suicide prevention, intervention, and postvention.
Methods: Suicide is the culmination of complex interactions between biological, social, economic, cultural, and psychological factors operating at individual, relational, community, and societal levels. A comprehensive review and analysis of each military suicide allows for the systematic examination of these factors and identification of lessons learned and actionable recommendations to best advance suicide prevention programmatic efforts. The DoD StandS methodology involves: (1) Development of an evidence-informed, standardized data dictionary and electronic data capturing system; (2) Receipt and organization of source documents for each military suicide decedent (e.g., personnel and medical records, investigative reports); (3) Review of source documents and data extraction; (4) Preparation of executive case summaries and timelines; (5) Multidisciplinary subject matter expert review to identify potentially contributing factors in accordance with the Centers for Disease Control and Prevention Social Ecological Model and generate recommendations; and (6) Preparation of final reports to include descriptive summary statistics and actionable recommendations.
Results: To date, the DoD StandS methodology has been pilot-tested, refined, and applied to the review of all Calendar Year 2020 Total Force Department of the Air Force (DAF) suicide deaths, including Active, National Guard, and Reserve components. Reviews of additional Calendar Year Air Force suicides are ongoing. Lessons learned conducting reviews with the Air Force include: (1) Limited information available, especially for National Guard and Reserve members, (2) Challenges associated with documentation, (3) Importance of consensus

building among multidisciplinary subject matter experts, and (4) Presenting multiple recommendations for suicide prevention, intervention, and postvention to military leadership.
Discussion: The DoD began targeted suicide surveillance in 2008 and released the first DoD Suicide Event Report (DoDSER) in 2009. Although this surveillance system has continuously improved since inception, it does not provide information about individual trajectories toward suicide nor allow for systematic, multidisciplinary review of each decedent's life and death using a public health framework. DoD StandS provides a complementary methodology to examine each Service member's suicide, identify potentially contributing factors, generate lessons learned and missed opportunities, and put forth actionable recommendations for suicide prevention, intervention, and postvention. Collectively, the information provided by the DoDSER, the newly established DoD Annual Suicide Report, and DoD StandS reports can be used to guide suicide prevention programing within the Services.

T86. FACTORS FOR SUICIDAL IDEATION AMONG OLDER ADULTS IN CARE HOMES IN CHANGSHA, CHINA: A NETWORK PERSPECTIVE

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Background: Late-life suicide is a growing public and mental health problem, resulting in significant mortality and family turmoil. Previous research has identified many risk factors for suicidality in older adults, but the understanding of the complex interactions between factors was not enough. The main objective of this study was to analyze the psychological network structure of suicidal ideation and putative risk factors among older adults in care homes.**Methods:** We conducted a cross-sectional study to investigate the mental health status of the residents in care homes in Changsha, China, from January 2018 to January 2019. A total of 814 residents aged 60 years and above were investigated (36.9% female, M = 81.2 years, SD = 8.1). Data on socio-demographics, physical illness, pain intensity, the ability to self-care, number of friends, relationship with caring nurses and other elderly residents, engagement with group activities, satisfaction with care homes, loneliness, quality of life, depressive symptoms (PHQ-8), anxiety (GAD-7), and suicide ideation were collected. This study had ethical approval from the institutional review board of Central South University. Network analysis was used to explore the interplays between risk factors of suicide ideation.
Results: The 12-month prevalence of suicide ideation among the elderly sample in care homes was 10.57%. In the estimated psychological network, the node with the highest strength was depressive symptoms, followed by suicide ideation, anxiety, loneliness, and the ability to self-care. Suicide ideation has the highest expected influence value, followed by depressive symptoms, anxiety, engagement with group activities, and physical disease. Quality of life, loneliness, and depressive symptoms had higher centralities of closeness and betweenness. Suicidal ideation was positively connected to depressive symptoms, anxiety, and loneliness. Besides, engagement with group activities and satisfaction with care homes was negatively associated with depressive symptoms. Relationship with caring nurses was negatively associated with anxiety and loneliness. The results of the stability analysis indicated that the network was accurately estimated.**Discussion:** The results of our study indicate that several psychosocial factors have complex interrelationships that influence suicidal ideation in older adults in care homes. While addressing depressive symptoms remains a crucial aspect of

suicide prevention, it is also important to consider other factors, such as anxiety, loneliness, and quality of life. A comprehensive approach to suicide prevention should consider the complex interplay of these factors.

T87. ADVERSE CHILDHOOD EXPERIENCES AND SUICIDAL THOUGHTS AMONG SEXUAL MINORITY WOMEN

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Background: Suicidality (e.g., thoughts and behaviors) is among the leading health disparities impacting sexual minority women (SMW; e.g., lesbian, bisexual). SMW are three times as likely to report suicidal thoughts and twice as likely to report suicide attempts as heterosexual women. Both adverse childhood experiences (ACEs) and sexual minority stress have been shown to increase risk of suicide. Although SMW more frequently report having experienced every category of ACEs, and a greater total number of ACEs, it remains unclear how minority stress interacts with ACEs to potentially compound risk of suicidality among SMW. The objective of this study was to improve understanding of associations between ACEs and suicidal thoughts among SMW. We hypothesized that ACEs would be significantly associated with suicidality and that minority stress would mediate this association. Using baseline data from adult SMW (N = 60) in the Empowering Queer Identities in Psychotherapy trial, we examined differences in suicidality using two measures of ACEs exposure (four or more vs three or less; number of types of ACEs). We also examined the potential mediating role of minority stressors (i.e., discrimination and internalized homophobia) in the relationship between ACEs and suicidality.
Methods: We used descriptive statistics to examine all measures and screen for potential outliers. We then examined bivariate associations between ACEs and suicidality and bivariate associations of ACEs with suicidality and minority stressors. We tested a zero-inflated Poisson regression model to examine the association between ACEs and suicidal thoughts.
Results: More than half (58.3%) of the sample identified as white and 43.3% identified as transgender or gender diverse. The majority (85%) identified as plurisexual (e.g., bisexual, pansexual, queer). Although most participants (60.7%) had completed a 4-year college degree, more than a third (37.5%) reported incomes of less than $19,000/year. All participants endorsed experiencing at least one ACE and the majority (66.8%) reported experiencing four or more ACEs. Controlling for age, sexual identity, income, educational level, race/ethnicity, and alcohol use, the zero-inflated Poisson regression model showed that for each unit increase of ACEs the expected log count of the suicidal thoughts increased by 0.78 (p-value < 0.05). ACEs and suicidal thoughts were not significantly associated with discrimination or internalized homophobia.
Discussion: Findings from the study highlight the strong and significant relationship between ACEs and suicidal thoughts. Contrary to our hypotheses, minority stress did not mediate this relationship, emphasizing the importance of examining additional risk factors and mechanisms that may contribute to higher rates of suicidal thoughts in this population.

T88. SUICIDE PREVENTION AMONG ENGLISH LANGUAGE LEARNERS: PILOT IMPLEMENTATION OF A UNIVERSAL SCHOOL-BASED SUICIDE PREVENTION PROGRAM

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Background: Youth's mental health worsened between 2009 and 2019, 1 in 3 high school students experienced "persistent feelings of sadness or hopelessness".1 In 2021, the U.S. Surgeon General announced the "devastating" effects of the pandemic on youth's mental health.2 Considering that ninety-five percent of youth spend most of their day in school and receive support at the academic, social and ecological levels, schools offer a great opportunity to "prevent and reduce the negative impact of violence and other trauma and improve mental health". 3,4
Baltimore City's Latino population has increased over 75% since 2010, 5 substantially changing the demographics of schools in new immigrant destination neighborhoods. However, there is a lack of school-based suicide prevention programs adapted for newcomers, many of whom have experienced multiple traumatic events. 6

Youth Aware of Mental Health (YAM) is an evidence-based universal mental health promotion program administered in schools that has shown to be effective among high school students ages 14 to 16 years old decreasing incidence of suicide attempts and severe suicidal thoughts and behaviors over one year, 7,8 and reduction of mental health stigma and promotion of help-seeking behaviors. 9 YAM involves promoting mental health literacy, and practical problem-solving and coping skills to manage acute stressors. 7-9

We piloted YAM in Baltimore City, Maryland high schools among Latino English Language Learners (ELL) students. Study's feasibility and acceptability data demonstrate the potential for culturally adapted universal suicide prevention programs addressing the needs of Latino immigrant youth.

Methods: Participants were recruited at a public school with over 60% of ELL population. School leadership supported the project. One ELL teacher was trained as a YAM helper, one school social worker provided crisis response. YAM facilitator was a bicultural public health professional. 38 students were recruited, 26 returned consent forms and 18 completed assent and baseline (7 male, 11 female).
Procedure

YAM facilitator had two meetings with school personnel. There were three in-person information sessions with students, one with parents/guardians. One in-person session to collect consents and one to administer baseline. The domains covered by the baseline included depressive symptoms, anxiety, suicidal thoughts and behaviors, and whether students received any mental health support.

Results: YAM sessions took place during lunchtime between April 17 and May 12, 2023 through four days. Lunch was provided.
Two students who completed baseline were referred to social worker due to a report of suicidal attempt and ideation in the past 12 months.

Sessions were facilitated primarily in Spanish, students reported understanding the YAM materials in English. YAM helper stated at the completion of the pilot "students were very engaged, two students have a very 'spotty' school attendance, and yet they have been attending

these sessions regularly" and students had positive feedback about YAM "I know that having someone to talk to is very important, I now say words of encouragement so people see that there is more about life than how they are feeling".

Students lived in non-traditional family structures e.g. multifamily households; some students lived with guardians other than their parents such as older siblings). ELL students do not follow the traditional academic pathways, a number of students recruited (n=7) were older than 18.

Discussion: This study was feasible and acceptable, received positive feedback from participants and engagement from school personnel. More is needed to understand the impact of this promising intervention to prevent suicidal thoughts and behaviors among immigrant youth.

T89. NLP-BASED SUICIDE DEATH PREDICTION MODELS AND HOW THEY PERFORM IN AFRICAN AMERICAN AND WHITE POPULATIONS

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Background: Suicide is a leading cause of death in the world. In the US, studies show that suicide rates for white and black continue to increase in the recent years. Although the rate among whites is still higher, the increase for black is at a higher pace. This is mainly attributed to disparities that the black population is a victim of in terms of mental care access and stigma. Additionally, socioeconomical status and the continuous experience of racial trauma and discrimination are strong factors for the increased rate.

Suicide death predictive models from medical records have been developed as a tool to identify main contributing factors such as mental health history, current symptoms, and demographics. Such models have been mainly focused on structured and meta data. Other studies discussed the value in using free text in the clinical notes to capture risk factors nuances that are strongly related to suicide but not documented in the structured data such as feeling of hopelessness and isolation. As a result, some researchers started exploring the use of Natural Language Processing (NLP) on the medicate notes to identify language patterns and signals that are correlated with suicide.

Methods: In this study we randomly selected a sample of 249 patients that died by suicide from Johns Hopkins Medical Institutes from 2012-2020. The sample contains (137 white, 103 black, and the rest are Hispanic, Asian, Native American and other unknown races). The control group was selected from individuals who died from accidental, natural, or undetermined causes of death. It was matched against age, sex, and race with: 136 white, 105 black, and the rest from the above races). For each patient we collected all of their medical notes from different departments resulting in 13718 and 34154 notes for the suicide and control group, respectively.

We created our NLP pipeline that clean and normalize the text such as lower casing; cleaning format that is the result of exporting templates; removing duplicate notes because of copy-forward and mentions of persons' names; and excluding notes on the date of death to avoid any potential bias picked by the model.

We develop multiple logistic regression models that use: i) Full text note using TF-IDF ngrams model (LR-N) that is finetuned using L2 regularizer; ii) Keywords-based (LR-KW) model that uses a suicide-related terminology list (57 terms) that we compiled with JHU mental health experts and includes terminologies from literature review. LR-KW uses the terms with a context of 8 words before and after each terms. This is motivated to pick sentences that are highly related to suicide vs. full note. We also experimented with other ensemble model (N-KW-ENS) that use the combination of LR-N and LR-KW.

We are aware of other state-of-the-art deep NLP methods, but our choices are due to limitations in resources: computational and data size.

Results: We understand the limitation regarding our dataset size and the bias in the sample. Thus, we report the average performance of our NLP models on 3 folds cross validation on the white and black populations. We report using the following metrics: precision (P), recall/sensitivity (R), and F1-score (F1). LR-N yields .61 P, .58 R, and .58 F1 on white (W) as opposed to .68 P, .53 R, and .6 F1 for black (B). LR-KW yields .45 P, .37 R, and .41 F1 on W, and .47 P, .39 R, and .43 F1 on B. N-KW-ENS yields .59 P, .71 R, .64 F1 on W, and .65 P, .76 R. and .70 F1 on B.

Discussion: We note that our models perform better on B, especially when we use ensemble model that uses our terms. When analyzing the data, we note that the frequency of the terms in B is higher than W, which is attributed to the higher use of Emergency Department by B. These results highlight the importance of good documentation related to suicide that is not systemized in many departments.

T90. ASSOCIATION BETWEEN PHYSICAL MULTIMORBIDITY AND SUICIDAL IDEATION IN YOUNG ADULTS WITH OBESITY

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Background: In suicide research, there is a recent interest in the potential impact of multimorbidity (the co-occurrence of two or more chronic conditions) on suicidal ideation. Furthermore, obesity has been considered as an entrance point of multimorbidity given its impact on physical and mental health. Despite a possible relation between obesity, multimorbidity and suicide-related risk, limited evidence exists on their effect on suicidal ideation. Hence the purpose of the present study was to explore the co-occurring effect of multimorbidity and obesity on suicidal ideation.

Methods: Cross-sectional study based on two cycles (2005 and 2015-2016) of an administrative database - the Canadian Community Health Survey. Inclusion criteria included being young adult (18 – 30 years olds), from Quebec (French-speaking province in Canada), with obesity (Body Mass Index ≥ 30 kg/m²). Suicidal ideation was defined through a self-reported questionnaire evaluating suicidal thoughts in the past year. Multimorbidity was calculated through the accumulation of two or more chronic conditions from a list of 11 physical chronic conditions. Covariates included the following demographics: age, sex, education and health behaviors (tobacco consumption and physical activity). Two models of logistic regressions were performed. Model 1 was adjusted to age, sex and education while Model 2 was adjusted to all the covariates, including health behaviors.

Results: The 2005 weighted sample included 394 participants, dominantly male (53.0%), non-student (74.1%), and aged between 25 and 29 years old (53.8%). Similarly, the majority of the 295 participants in the 2015-2016 weighted sample were non-student (73.2%), and between the age of 25 and 29 (59.7%) but with slightly more female (51.2%). The prevalence of physical multimorbidity was 15% in 2005, and 18% in 2015-2016. Adjusted logistic regressions showed a replicated significant association between physical multimorbidity and suicidal ideation in both cycles (2005: OR 3.56, 95% [CI 1.84-6.88]; 2015–2016: OR 3.21, 95% CI [1.44-7.12]). However, the associations remained similar in the second model, but no health behaviors were found to have a significant effect on this association.
Discussion: Among young adults with obesity, physical multimorbidity was associated with suicidal ideation. Therefore, future obesity-related interventions for young adults should seriously consider the management of physical illness as a suicidal prevention strategy . Also, longitudinal associations should also be considered.

T91. PRENATAL EMOTION DYSREGULATION, BUT NOT DEPRESSION, PREDICTED INCREASED ODDS OF ENDORSING POSTPARTUM SUICIDE IDEATION

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Background: Suicide is a leading cause of maternal mortality during the first year after childbirth (Petersen et al., 2019). Understanding the prevalence and patterns of self-injurious thoughts and behaviors (SITBs) during the perinatal period can enhance detection and prevention. Among non-perinatal populations, widely studied risk factors have included a history of SITBs, depression, and emotion dysregulation. These factors warrant further study among perinatal samples. Research on emotion dysregulation is far more limited than that on depression, despite evidence that more than 30% of pregnant people who attempt suicide do not have depression diagnoses (Zhong et al., 2016). We aimed to explore the odds of endorsing suicidal ideation (SI) from the 3rd trimester of pregnancy to 16 weeks postpartum and whether these odds were influenced by depression, emotion dysregulation, and lifetime history of SITBs.
Methods: Data were collected from 92 pregnant women recruited and enrolled to achieve a uniform distribution on a measure of emotion dysregulation. During 3rd trimester, participants completed self-report measures on depression, emotion dysregulation, and lifetime history of SITBs. Lifetime history of SITBs included any experiences with self-injurious thoughts or behaviors across levels of suicide intent (i.e., zero suicide intent, ambivalent intent, non-zero intent). Then, participants answered daily questions about their SI during 3rd trimester, 6 weeks postpartum, and 16 weeks postpartum. During each wave, participants were coded as endorsing SI if, at any point, they answered “yes” to the following questions: (1) “Did you wish that you were dead or could go to sleep and not wake up?” and (2) “Did you have any thoughts about killing yourself or of suicide?” A series of generalized linear regression models were used to test time, prenatal depression, prenatal emotion dysregulation, and SITB history as predictors of endorsing SI.
Results: Across levels of intent, 50% of participants endorsed a lifetime history of SITBs (thoughts or behaviors), and 18.5% endorsed experiencing only self-injurious thoughts. Three participants (3.2%) endorsed SI during 3rd trimester, 8 (8.6%) at 6 weeks postpartum, and 18 (19.5%) at 16 weeks postpartum. Results from a generalized linear regression model indicated

that time significantly predicted SI (OR = 1.10, 95% CI [1.05, 1.17], $p < .001$). The odds of endorsing SI increased by 10.2% each week after controlling for emotion dysregulation, depression, and SITB history. Also, prenatal depression (p = .47) and SITB history (p = .98) did not predict SI endorsement at 16 weeks postpartum, but prenatal emotion dysregulation did (OR = 1.02, 95% CI [1.01, 1.05], p = .03). Every 1-unit increase in emotion dysregulation predicted a 2.7% increase in the odds of endorsing SI at 16 weeks postpartum.
Discussion: In summary, we found that the probability of endorsing SI increased across the perinatal period, which is consistent with suicide being most likely to occur during later postpartum months (Mangla et al., 2019). Also, we found that prenatal emotion dysregulation, but not depression or SITB history, predicted SI at 16 weeks postpartum. Together, these findings underscore the importance of investigating proximal (versus distal) and transdiagnostic (versus single-diagnostic) risk factors for postpartum SI. This presentation will discuss future directions for assessing and preventing SITBs among pregnant and postpartum people.

T92. A LONGITUDINAL EXAMINATION OF SUICIDAL BEHAVIOURS AMONG INDIVIDUALS WITH MENTAL DISORDERS IN THE CANADIAN ARMED FORCES

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Background: A high percentage of Canadian Armed Forces (CAF) members and veterans will be diagnosed with a mental disorder, and many also experience suicidal behaviours.
Methods: This study examined demographic characteristics, potentially protective factors, and distal and proximal risk factors that may be related to suicidal behaviour (ideation, plans and attempts) over a 16-year period among CAF members and veterans who met criteria for a mental disorder at baseline. This study utilized data from the 2018 CAF Members and Veterans Mental Health Follow-up Survey (n = 2,941) with respondents from the 2002 Canadian Community Health Survey: Canadian Forces Supplement. Logistic regression analyses were conducted using subsamples with a lifetime diagnosis of a) major depressive episode, b) posttraumatic stress disorder, and c) any anxiety disorder (generalized, social phobia, panic) assessed with a structured diagnostic interview in 2002.
Results: Demographic characteristics at baseline associated with increased likelihood of suicidal behaviour among most subsamples included age, environmental command, and rank. Risk factors at baseline and/or between 2002 and 2018 included prior suicidal behaviour, comorbid mental disorders, child maltreatment, self-medication and avoidant coping, greater work stress, greater number of and exposure to recent traumatic experiences, persistence or recurrence of mental disorder, current comorbid disorder, current alcohol use disorder, having released from service, and greater number of recent deployment-related experiences, were linked to increased likelihood of suicidal behaviour among most subsamples. Protective factors against suicidal behaviour at baseline and/or between 2002 and 2018 included problem-solving coping and social support.
Discussion: Findings identify characteristics of those with mental disorders who may be at greatest risk for developing suicidal behaviour and who are in need of further interventions. Social support and problem-solving coping may be integrated into these interventions.

T93. EMPLOYMENT FACTORS ASSOCIATED WITH SUICIDAL IDEATION AMONG THE NATIONAL FRENCH WORKING POPULATION: RESULTS FROM THE SUMER STUDY

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Background: The literature reported associations between occupation and suicide, but the literature is more seldom on employment factors other than occupation and on suicidal ideation. This underscores the need for further research on this topic for preventive purposes. The objective of the study was to explore the associations of employment factors with suicidal ideation in a nationally representative sample of the French working population.

Methods: Data were from the cross-sectional SUMER survey conducted in 2016-17 by the French minister of labour (DARES), including 25,628 randomly selected employees, 14,498 men and 11,130 women. Data were collected using a questionnaire and a self-administered questionnaire, through a network of occupational physicians. The outcome was suicidal ideation, and the item was "Over the last 2 weeks, how often have you been bothered (…) by thoughts that you would be better off dead or of hurting yourself" (PHQ-9, using the following dichotomization: not at all versus several days or more). The employment factors were seniority, permanent/temporary work contract, full/part time work, occupation, economic activity of the company, public/private sector, and company size. Covariates were gender, age and marital status. The study sample was described and differences between genders were tested using the Rao–Scott Chi-2 test. In bivariate analysis, the associations between each employment factor and suicidal ideation were tested using the same test and weighted logistic regression models. In multivariate analysis, all employment factors were examined simultaneously using weighted logistic regression models with adjustment for covariates. Interactions with gender were tested.

Results: The rates of participation to the survey and of response to the self-administered questionnaire were both satisfactory (88.3% and 86.6% respectively). The 2-week prevalence of suicidal ideation was 3.6% (95% CI: 3.2%-4.1%), without gender difference. The prevalence of suicidal ideation increased with age and among employees living alone (among men only). The employment factors associated with suicide ideation were seniority and occupation. The prevalence of suicide ideation increased with seniority and among employees working as clerks/service workers and blue collar workers. Significant gender-related interactions were found with occupation in association with suicidal ideation. The highest prevalence of suicidal ideation was observed among clerks for both genders, among unskilled workers for women, and among skilled workers for men. A more detailed classification of occupation suggested that the prevalence of suicide ideation was the highest among some low-skilled occupations. Some economic activities appeared to be associated with suicidal ideation with gender differences: agriculture among women and construction among men. These results were mostly the same in the bivariate and multivariate analyses.

Discussion: The prevalence of suicidal ideation increased with age and seniority, and was higher among male employees living alone, and among employees working as blue collar workers and clerks/service workers. The study had several strengths: large nationally representative sample of employees, use of various detailed employment factors, validated measure of outcome, tests of differences/interactions between genders, and use of multivariate analysis. The limitations were: cross-sectional design, healthy worker effect, and reporting bias. Our study provided more information about the employment factors associated with

suicidal ideation in the national French working population of employees that may be useful for prevention.

T94. THE ORIGINS AND EVOLUTION OF THE FIELD OF MASCULINITY AND SUICIDE: A BIBLIOMETRIC AND CONTENT ANALYSIS OF THE RESEARCH FIELD.

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Background: In most countries, men complete suicide at twice the rate of women; masculinity plays an important role in placing men at a greater risk of suicide. This study identifies and describes trends in the topics discussed within the masculinity and suicide literature and explores changes over time.
Methods: We retrieved publications relating to masculinity and suicide from eight electronic databases and described origins in the field of research by reference to the first decade of publications. We then explored the subsequent evolution of the field by analysis of the content of article titles/abstracts for all years since the topic first emerged, and then separately by three epochs.
Results: We included 452 publications (1954-2021); research output has grown substantially in the last five years. Early publications framed suicide in the context of severe mental illness, masculinity as a risk factor, and suicidality as being aggressive and masculine. We observed some differences in themes over time: Epoch 1 focused on sex differences in suicidality, a common theme in epochs 2 was relationship to work and its effect on men's mental health and suicidality, and epoch 3 had a focus on help-seeking in suicidality.
Discussion: The research field of masculinity and suicide is growing strongly, as evidenced by recent increase in publication volume. The structure, content and direction of the masculinity and suicide research are still evolving. Researchers must work with policymakers and practitioners to ensure that emerging findings are translated for use in programs designed to address suicide in boys and men.

T95. SUICIDE REVIEWS IN THE CANADIAN ARMED FORCES

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Background: The final presentation of the symposia is by LCol Andrea Tuka MD FRCPC and it will provide an overview of the suicide death-related review process in the Canadian Armed Forces CAF). The CAF monitors suicide and mental illness rates and trends in its population to enhance understanding of underlying issues and to mitigate risk factors. There are three pillars for suicide prevention in the CAF: 1. Excellence in health care; 2. Effective leadership; 3. Engaged and aware members.
Methods: Beginning in 2010, each suspected suicide of a Regular Force CAF member has been investigated through a Medical Professional Technical Suicide Review (MPTSR). The

MPTSR is an in-depth medical review conducted by a two-person team composed of a primary care physician and a mental health clinician. These clinicians interview family, friends, colleagues, the chain of command, and health care providers to better understand the circumstances surrounding the death, in addition to a detailed review of the medical file of the deceased.MPTSRs are also a part of the postvention effort as the review process provides reflection and support for the impacted family members, friends, colleagues, and clinicians.
Results: Lessons learned from MPTSRs are used to improve CAF Health Services and the CAF suicide prevention program. Also, the MPTSRs provides information and data for the yearly published Report on Suicide Mortality in the Canadian Armed Forces.
Discussion: The MPTSR process has been continuosly refined to collect relevant data and information related to suicide deaths. As a next step to further understand suicide risk factors and improve suicide prevention strategies, the CAF strive to develop processes to systematically capture and review suicide attempts.
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T96. REAL TIME ASSESSMENT OF EMOTION REGULATION AND SUICIDAL IDEATION AMONG INDIVIDUALS WITH FIRST-EPISODE PSYCHOSIS

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Background: Individuals early in the course of psychotic disorders are at increased risk for suicide with approximately 20% to 40% reporting suicidal ideation and up to 10% attempting suicide during the first few year of illness. Although a number of risk factors have been identified, very little is known about the mechanisms that lead to suicidal thoughts in this population. The current, ongoing study examines emotion regulation as a mechanism for suicidal ideation among individuals with first-episode psychosis (FEP) using the Extended Process Model as a guiding framework. According to this model, emotion regulation involves three dynamic stages: 1) identification of the need to regulate an emotion, 2) the selection of a strategy, and 3) the implementation of the strategy. We hypothesized that suicidal ideation would be associated with a lower threshold for regulating emotions (identification), greater use of maladaptive strategies (selection), and ineffective emotion regulation (implementation).
Methods: Analyses included twenty individuals with FEP who completed 28 days of ecological momentary assessment; prompts were sent 4 random times per day and the specific schedule was personalized to align with each participant's sleep schedule. Four items were used to assess suicidal ideation: life is not worth living, there are more reasons to die than live, wish to die, and thoughts about taking one's life. Eight items were used to assess various emotion regulation strategies (avoidance, distraction, rumination, acceptance, reappraisal, expressive suppression, physiological intervention, social support). Additional items were used to assess negative affect and psychotic symptoms. General linear mixed models were used to test our hypotheses.
Results: Identification Stage Results: Greater negative affect ($B= 0.134$, $p<0.0001$) and lower regulation effort ($B=-0.030$, $p=0.0001$) were associated with suicidal ideation. Additionally,

negative affect interacted with emotion regulation to predict suicidal ideation. Specifically, individuals with high severity suicidal ideation had lower emotion regulation effort at levels of high negative affect compared to those with no or low severity ideation (B=0.0058, SE=0.00165, t=3.52, p=0.0004). Additionally, a higher threshold for regulating emotions was associated with the presence of suicidal ideation during EMA (r =0.459, p =0.042).

Selection Stage Results: Greater use of maladaptive (B=0.055, SE= 0.011, p<0.0001) and decreased use of adaptive (B=-0.049, SE= 0.014, p=0.0005) strategies were associated with suicidal ideation. Further examination of all eight emotion regulation strategies suggested that only rumination (B=0.16, p<0.0001) and acceptance (B=-0.14, p<0.0001) were associated with suicidal ideation.

Implementation Stage Results: Ineffective emotion regulation, defined as worsening or no change in negative affect following an emotion regulation attempt, was significantly associated with suicidal ideation (B=0.078, SE= 0.022, p=0.0006).**Discussion:** These findings provide preliminary evidence that specific emotion regulation abnormalities might contribute to suicidal ideation among individuals with FEP. As data collection for this study is ongoing, future directions will include 1) replication of these analyses with the full sample (target= 62), 2) prospective, time lagged models, and 3) moderation analyses to examine whether psychotic symptoms and emotion regulation processes interact to predict suicidal ideation. If these preliminary findings are supported with the full sample and in time-lagged models, they will suggest specific treatment targets for reducing suicide risk among individuals with FEP.

T97. CORRELATES OF DELIBERATE SELF-HARM IN YOUTH WITH AUTISM AND INTELLECTUAL DISABILITIES

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Background: Suicide is a major public health problem with a disproportionally high impact as a cause of death in children, adolescents, and young adults. Autism and intellectual disability (ID) affect approximately 1 to 2% and 2 to 3% of the population, respectively, and have been associated with heightened risk of deliberate self-harm (DSH) and suicide, but available research is limited. This study aims to determine the prevalence of DSH and identify associated risk factors in young people with autism and intellectual disability.
Methods: A retrospective longitudinal cohort analysis was conducted using Ohio Medicaid claims data for youth ages 5 to 25 years diagnosed with autism or ID between January 1, 2010 and December 31, 2020 and continuously enrolled in Medicaid for at least 6 months (n=45,048). Youth were followed from first date of Medicaid eligibility until DSH, death, loss of Medicaid enrollment, or December 31, 2020. Cox proportional analysis examined associations between demographic and clinical variables and time to DSH.

Results: Autism only was present in 34.3% of the sample, ID only in 30.6%, and comorbid autism and ID in 35.1%. Sample youth were predominantly male (73.4%), young (aged 5-9 years at study inclusion: 71.1%), and non-Hispanic White (68.1%). Over half of sample youth had an internalizing (74.8%) or externalizing problem (62.1%) during the study period. One or more DSH events were recorded for 2.6% of youth with an autism diagnosis and 2.7% of those with ID. Results of multivariable analysis are presented in the format HR [95% CI] below. For youth diagnosed with autism, increased risk of DSH was associated with older age relative to 5-9 years (10-14 years: 1.71 [1.45-2.01], 15-19 years: 1.68 [1.32-2.14], 20-25 years: 3.34 [2.12-5.27]), history of abuse/neglect (2.63 [2.21-3.13]), and presence of comorbid externalizing (2.01 [1.59-2.54]), internalizing (4.53 [3.11-6.61]), substance use (2.51 [2.09-3.02]), or thought problems (2.98 [2.52-3.53]). Among youth with ID, elevated risk of DSH was associated with older age (vs. 5-9 years: 10-14 years: 1.59 [1.35-1.87], 15-19 years: 1.55 [1.22-1.96], 20-25 years: 3.72 [2.42-5.71]), history of abuse/neglect (2.28 [1.91-2.72]), comorbid autism (1.24 [1.07-1.45]), and externalizing (2.48 [1.96-3.14]), internalizing (4.01 [2.74-5.86]), substance use (2.76 [2.31-3.31]), or thought problems (3.30 [2.78-3.90]). Regardless of index diagnosis, risk of DSH was significantly lower in males and those eligible for Medicaid due to disability rather than poverty.
Discussion: Risk factors for DSH in youth with autism and/or ID are consistent with those in neurotypical youth such as increasing age, trauma history, comorbid psychopathology, substance use, and female sex. The combination of autism and ID was associated with a heightened risk of DSH relative to ID alone, but not relative to autism alone.

T98. EXAMINING SUICIDE-RELATED OUTCOMES AMONG U.S. MILITARY VETERANS WITH HIV AND HIV-NEGATIVE VETERANS AT -RISK FOR HIV

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Background: Both U.S. military veterans and people with human immunodeficiency virus (HIV) are more likely to die by suicide compared to the general population; yet little is known about suicide-related outcomes among military veterans with HIV. Moreover, it is also not known if suicide outcomes and other preventive injuries (e.g., overdose death) are only elevated after HIV acquisition. Therefore, examining suicide attempts (fatal and non-fatal) and overdose death among both military veterans with HIV (VWH) and HIV-negative veterans at higher risk for HIV acquisition (VHRHA) can lead to a better understanding of the association between HIV infection and risk of suicide attempt.
Methods: Utilizing longitudinal, electronic health data of a nationally representative cohort of 5 million military veterans within the United States (U.S.) Department of Veterans Affairs (VA) health care system, veterans with HIV (VWH) were identified by ICD-9/10 codes that denoted HIV infection. HIV-negative veterans at higher risk for HIV acquisition (VHRHA) were identified utilizing criteria defined by the U.S. Centers for Disease Control and

Prevention (CDC) as having a higher risk for HIV-acquisition (e.g., multiple sexually transmitted infections, exposure to HIV, and high-risk sexual behavior). Differences in sociodemographic factors, mental health disorders (e.g., depression, anxiety, substance use disorders), suicidal behavior, and mortality outcomes were quantified and examined across the three exposure groups: 1) VWH (n=21,017); 2) VHRHA (n=85,639); and 3) HIV-negative veterans not at higher risk for HIV acquisition (n=4,796,748). Proportional hazards regression analyses, accounting for competing risk of other deaths, were conducted to examine associations between group membership and suicide-related outcomes (fatal and non-fatal) as well as unintentional injury and overdose death.
Results: When compared to HIV-negative veterans without a higher risk for HIV acquisition, VWH had a higher proportion of mood disorders (39% vs 22%), anxiety (15% vs 12%), and substance use disorders (SUD, 47% vs 24%). Among VHRHA, these members had higher levels of mood disorders (40% vs 22%), anxiety (22% vs 12%), and SUDs (41% vs 24%) when compared to HIV-negative veterans without a higher risk for HIV acquisition. When controlling for sociodemographic and neuropsychiatric factors, both VWH and VHRHA were at increased risk for all-cause mortality (VWH 1.47 [1.42-1.52]; VHRHA 1.12 [1.10-1.14]), any suicide attempt (fatal or non-fatal) (VWH 1.39 [1.24-1.55]; VHRHA 1.18 [1.11-1.26]), drug overdose death (VWH 1.55 [1.29-1.86]; VHRHA 1.38 [1.23-1.55]), and unintentional injury death (VWH 1.32 [1.14-1.52]; VHRHA 1.19 [1.11-1.29]).
Discussion: VWH and VHRHA have higher prevalence of mood disorder, anxiety, and SUD diagnoses than HIV-negative veterans without a documented higher risk for HIV acquisition. Furthermore, VWH and VHRHA had increased risk for all-cause mortality, any suicide attempt, drug overdose death, and unintentional injury death, independent of sociodemographic and neuropsychiatric factors. Findings highlight the need to implement innovative treatment strategies to address both HIV- and mental health-related comorbidity and premature mortality among VWH and VHRHA, as well as provide a benchmark for research among non-veterans.

T99. HOW OLDER ADULTS (DO NOT) MAKE SENSE OF THEIR SUICIDE ATTEMPT? OLDER ADULT WOMEN AND MEN'S EXPERIENCES OF SUICIDALITY IN SWEDEN: A PHENOMENOLOGICAL PERSPECTIVE

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Background: Quantitative studies have identified some of the challenging experiences associated with late life suicide in high-income countries. However, most older adults who experience these challenges do not die by suicide. Older adult women experience these challenges more often than older adult men but their suicide mortality is lower. By inquiring about the meaning and significance of these challenges qualitative studies can enrich our understanding of why some adversities may be suicidogenic for some adults and not others.
Methods: The aim of this study was to explore how older adults make sense of their suicide attempts in a clinical sample of persons who made a suicide attempt at age 70 or above. A purposive sample of persons in treatment at the Older Adult Psychiatric outpatient clinic at Sahlgrenska University Hospital (n=9) was recruited. The participants were between 72-92 years of age, five men and four women. All had a suicide attempt within the past 3-36 months. We used interpretative phenomenological analysis (IPA) as method for identifying, analyzing and reporting patterns within data.

Results: A consistent theme for the participants was that age-related losses rendered previous coping strategies unavailable. All participants had described a quick, impulsive suicidal act and several respondents were not able to comprehend or make sense of their suicide attempt. For those not being able to make sense of their attempt it was a struggle to describe the path to recovery. However, all participants were eager to share their experiences, and to better understand why they engaged in suicidal behaviour.
Discussion: Findings may inform the design of future research, suggesting that intervention studies should put a greater emphasis at increasing older adults' comprehension of their suicidal process, which could contribute to the development of personalized coping strategies in order to prevent new episodes of suicidal behavior.

T100. "YOU CAN BE YOURSELF HERE:" PERSPECTIVES OF QUEER YOUTH PREVIOUSLY HOSPITALIZED FOR SUICIDE ATTEMPTS

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[1]Bryn Mawr College, [2]Fordham University Graduate School of Social Service**Background:** Suicide is the second leading cause of death among youth ages 10-24 (CDC, 2020) and lesbian, gay, bisexual, transgender, and queer (LGBTQ) youth are disproportionately at risk. LGBTQ youth are more than four times as likely to attempt suicide than their non-LGBTQ counterparts (Johns et al., 2019; Johns et al., 2020), with rates continuing to rise. Given that a prior suicide attempt is one of the most robust predictors of death by suicide (e.g., CDC, 2013; Brendel, 2013) and the most common reason for admission to inpatient psychiatric units (e.g., Plemmons, 2018), it is critical to understand the ways in which inpatient psychiatric care facilitates stabilization and recovery following a suicide attempt from perspectives of LGBTQ youth themselves.
Methods: During the first phase of a larger intervention development study, semi-structured interviews were conducted with 15 youth who had been psychiatrically hospitalized for a suicide attempt within the past six months. Participants were asked about their experiences of inpatient psychiatric care following a suicide attempt. Because most youth (60%, n=9) identified as members of the LGBTQ community, qualitative secondary analysis (QSA; Heaton (2004)) was used to explore experiences of LGBTQ youth specifically (n=9). Data were analyzed using a combination of deductive and inductive applied thematic analysis (Guest et al., 2011).
Results: Participants (n=9) ranged in age from 12-17 years old (M=14.5, SD=1.7). The sample was predominantly nonbinary/gender non-conforming (55.6% nonbinary/gender non-conforming (22.2% gay/lesbian cisgender; 22.2%) and white (55.6% white, 11.1% American Indian/Alaska Native; 11.1% multiracial, and 22.2% Hispanic/Latinx). Qualitative analyses produced several salient themes pertaining to inpatient psychiatric staff behavior, care standards, and therapeutic processes that facilitate stabilization and recovery following a suicide attempt. Specifically, observable demonstrations of respect by staff related to gender identity and sexual orientation influenced decision-making processes related to a) whether youth disclosed this information to unit staff b) whether youth disclosed this information or 'come out' to other people (e.g., family members). Youth who were already 'out' to family members and experiencing dismissive invalidation as a result expressed a desire for more parent/caregiver guidance consistent with LGBTQ affirming care as a standard component of treatment provided by unit staff. Youth who had not disclosed information about their gender identity or sexual orientation to parents/caregivers or staff cited a perceived lack of safety, fears of rejection, and inducing disappointment as primary reasons. Youth who were able to

acknowledge these parts of their identities considered this process an integral and foundational component of their mental health treatment and attempt recovery trajectories.
Discussion: Findings highlight the importance of providing LGBTQ affirming care during inpatient psychiatric stays for youth recovering from a suicide attempt. With the marked proliferation of anti-LGBTQ legislation in most states across the country, it is critical for health care organizations to institutionalize and codify LGBTQ affirming care as the only acceptable standard of care for youth in inpatient psychiatric settings, as well as other settings in which care is provided.

T101. RISK FOR SUICIDAL BEHAVIOR FOLLOWING PSYCHIATRIC HOSPITALIZATION AMONG SEXUAL AND GENDER MINORITY YOUNG ADULTS

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Background: The months following inpatient psychiatric hospitalization are a period of high risk for suicidal behavior. Sexual and gender minority (SGM) individuals have elevated risk for suicidal behavior, but no prior research has examined whether SGM inpatients have disproportionate risk for suicidal behavior following discharge from psychiatric hospitalization. We examined whether SGM patients have elevated risk for suicidal behavior following discharge from psychiatric hospitalization as compared to heterosexual and cisgender patients using longitudinal data on suicidal behavior following hospitalization, and we examined whether differences in risk across groups were accounted for by demographic characteristics and known clinical predictors of suicidal behavior.
Methods: 160 inpatients voluntarily enrolled during psychiatric hospitalization, including 56 sexual minority (SM) and 15 gender minority (GM) patients. The sample included patients experiencing a range of psychiatric symptoms and disorders. Patients completed a battery of clinical interview and self-report measures at the time of hospitalization. In addition, onset and/or recurrence of suicidal behavior following discharge from psychiatric hospitalization were assessed at both follow-up visits and through electronic health records over time.
Results: During the follow-up period, 33 suicidal behavior events occurred (21% of patients). SM (HR=2.02; CI=1.02–4.00; log-rank p =0.04) and GM (HR=4.27; CI=1.75–10.40; log-rank $p<0.001$) patients had significantly higher risk for SB compared to their heterosexual and cisgender counterparts, respectively, in bivariable analyses. Risk between sexual minority and heterosexual patients was not different after controlling for demographic characteristics and clinical predictors of suicidal behavior. Gender minority patients exhibited elevated risk during the 100 days following discharge even after controlling for demographic and clinical characteristics (HR=6.90; CI=2.41–19.78; log-rank $p<0.001$).
Discussion: GM individuals within this sample of psychiatric inpatients had higher risk for suicidal behavior following discharge. While SM patients' risk was accounted for by clinical characteristics, GM patients' risk for suicidal behavior was not accounted for by their acute psychiatric state upon admission. Future studies with larger subsamples of GM individuals are needed, and inpatient providers must attend to the unique needs of SGM individuals to ensure they receive affirming services.

T102. BELONGINGNESS AND BURDENSOMENESS THROUGH THE EYES OF LATINX AND BLACK YOUTH: A QUALITATIVE STUDY EXPLORING THE CONSTRUCTS OF THE INTERPERSONAL THEORY OF SUICIDE.

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Background: Guided by the Interpersonal Theory of Suicide (IPTS), this study is aimed at understanding the applicability of the constructs of belongingness and burdensomeness and their relevance to suicide risk and mental health among ethnocultural minoritized youth.
Methods: A qualitative exploratory study was conducted using five focus groups with 29 self-identified Latinx and Black adolescents aged 13-17 years to explore the meaning they ascribed to belongingness and burdensomeness. Views of social media related to these constructs were also explored. Template analysis was used to analyze the data.
Results: Themes highlighted dimensions such as caring, self-worth, and liability, congruent with the IPTS dimensions of belongingness and burdensomeness. Notably, new themes emerged reflecting the distinctive experiences of these populations, such as the importance of being true to themselves, the burden of not belonging to families, and cultural aspects of liability, highlighting dimensions not found in the existing IPTS theoretical constructs.
Discussion: Consideration of the diverse experiences of ethnocultural minoritized youth can strengthen theoretical constructs, clinical practice and aid in developing intervention strategies to increase protective factors and decrease risk factors for suicide behaviors relevant to such youth.

T103. OPEN BOARD

T104. SHAME AS A MEDIATOR OF THE RELATIONSHIP BETWEEN CHILDHOOD ADVERSITY AND ENDORSED INTRA- AND INTERPERSONAL FUNCTIONS OF NSSI

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Background: Adverse environments that induce an individual's shame significantly contribute to depressive symptoms and self-injurious behaviors, impeding emotional expression and regulation. Despite childhood adversity being recognized as a risk factor for nonsuicidal self-injury (NSSI), the role of shame in the association between distal negative environmental factors and NSSI functions that lead individuals to initiate and persist in self-injurious behaviors remains unexplored. This study aimed to investigate the impact of shame on the association between childhood adversity and inter- and intrapersonal functions of NSSI.
Methods: One hundred and ninety-seven individuals who reported NSSI episodes in the past year (n = 197) betweenaged 19 and 29 years, reporting a history of NSSI in the past year, of age participated in the study. For all participants, Adverse childhood adversity was assessed using the Adverse Childhood Experiences International Questionnaire ***experiences (ACE-IQ), shame using the Test of Self-Conscious Affect – Version 3 short form*** (TOSCA-3S),

depressive symptoms using the Patient Health Questionnaire-9*** (PHQ-9), and function of NSSI using the Inventory of Statements About Self-injury*** (ISAS) were assessed. The mediation analysis of shame and depressive symptoms between adverse childhood experiences and NSSI functions is performed using PROCESS. The mediation analysis of shame and depressive symptoms on the relation between self-blame and suicidal ideation is performed using PROCESS. The outcome variable was ISAS function (intra/inter) individually. The predictor variable was adverse childhood experiences; the . The mediator variables were shame and depressive symptoms. The outcome variables were intra- and interpersonal functions of NSSI.

Results: Shame and depressive symptoms were found to partially mediated the relationship between adverse childhood experiences adversity and the function of NSSI both of iIntrapersonal- and iInterpersonal functions of NSSI. since the direct effect of adverse childhood experiences on the function of NSSI was still statistically significant after controlling for shame and depressive symptoms. The indirect effects of shame on intra- and /interpersonal functions were both statistically significant. ($\beta = .342$, $p < .001$; $\beta = .203$, $p < .001$, respectively). The indirect effects of shame and depressive symptoms on intra- and /interpersonal functions was were found to be also significant ($\beta = .316$, $p < .001$; $\beta = .214$, $p < .001$, respectively). After controlling for shame and depressive symptoms, the direct effect of childhood adversity on the intra- and interpersonal functions was still statistically significant ($\beta = .513$, $p < .001$; $\beta = .514$, $p < .001$, respectively). The direct effect still statistically significant ($\beta = .513$, $p < .001$).

Discussion: Shame and depressive symptoms partially mediated the relationship between childhood adversity and both intra- and interpersonal functions of NSSI. The indirect effects of shame on intra- and interpersonal functions were both statistically significant ($\beta = .342$, $p < .001$; $\beta = .203$, $p < .001$, respectively). The indirect effects of shame and depressive symptoms on intra- and interpersonal functions were also significant ($\beta = .316$, $p < .001$; $\beta = .214$, $p < .001$, respectively). After controlling for shame and depressive symptoms, the direct effect of childhood adversity on the intra- and interpersonal functions was still statistically significant ($\beta = .513$, $p < .001$; $\beta = .514$, $p < .001$, respectively).

T105. EXPERIENCES WITH PARENTAL SUICIDE ATTEMPT

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Background: To experience a parental suicide attempt is traumatic. To grow up with a suicidal parent is associated with several long term consequences. The risk of mental health problems, drug misuse and own suicidal behavior is elevated in this group. The generational transmission and risk factors have been thoroughly documented, however research about the lived experiences of these children are scarce. The aim of this study was to explore these experiences and how this affected them in adult life.

Methods: The participants were eight adults that experienced a parental suicide attempt. They were recruited through the Next of Kin Centre in Oslo and semi structured interviews were conducted. The questions included their reflections about their own situation and how the suicide attempt affected the family. The interviews were transcribed and analyzed using thematic analyses. The study was approved by the Personal Protection Agency at Oslo University Hospital.

Results: The main themes were that the children were protective and that they focused much on their parents situation instead of their own needs. They felt great responsibility for the parent and tasks at home. There was a lack of professional follow up and openness about the parents suicide attempt. To experience caring persons and to cope in other arenas (e.g. sports) were seen as positive for their situation.
Discussion: The results from this study is important to provide sufficient follow up for patients after a suicide attempt and to include the next of kin. Previous research has shown that adequate follow up after suicide attempt is lacking, however an admission to hospital or contact with health care services is a golden opportunity to ensure tailored measures.

T106. INTRODUCING SAFEKEEPING PLANS, AN ADDITIONAL RESOURCE FOR PARENTS/CARERS AROUND SAFETY PLANNING FOR SUICIDE PREVENTION FOR CHILDREN AND YOUNG PEOPLE.

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Background: This research is introducing the Safekeeping plan© which enhances safety planning for children and young people (CYP). Safety planning aims to provide CYP with a range of tools and techniques to cope with suicidal thoughts and behaviours. To support implementation of the Safety Planning for CYP, an additional tool, a Safekeeping Plan©, has been developed by the author's. The Safekeeping Plan© was developed after a systematic scoping review which highlighted an additional resource was needed for parents/carers (P/C) of suicidal young people. The systematic scoping review also highlighted that P/C often felt they were not involved in the CYP safety plan. The Safekeeping Plan© is a brief intervention for P/C which is complementary to safety planning. It uses the evidence already known, to enhance the role, knowledge, understanding and support for P/C around a suicide crisis and how to manage this. The Safekeeping Plan© is being routinely used in NHS Lothian Child and Adolescent Mental Health Services (CAMHS), for healthcare professionals (HCP) to complete with each CYP's P/C.
The research is being undertaken as part of a PhD and is gaining the perspective of HCP and stakeholders.

Methods: This study is in two phases, first to determine Health care Professionals' (HCP) experiences and whether the Safekeeping plan is acceptable and feasible for use within CAMHS across a range of departments and different geographical locations and demographics. The second phase of the study will ask Corporate parents their perspectives of the Safekeeping Plan©. This will include the benefits and challenges of the design, delivery and development of the Safekeeping Plan© including issues such as use of language within it, implementation in a wider context(s) and any other general considerations.
Both phases of the study will be qualitative, using individual in-depth semi-structured interviews, and then analysis using Reflective Thematic analysis. A purposive sample of HCPs interviewed were recruited from NHS Lothian CAMHS and have experience of implementing the Safekeeping plan as part of their clinical work. The Corporate Parents were recruited from City Edinburgh Council and the Cora Foundation.

Results: The results are still being analyzed but the initial feedback from HCP is very positive. NHS Lothian CAMHS implemented the Safekeeping Plan as part of their suicide prevention strategy just before the pandemic and has now been using the Safekeeping Plan for 2 years.

There have been modifications to the original Safekeeping Plan to make the language more accessible. The design now reflects the CYP safety plan and has taken into consideration issues such as neurodiversity and limitations of literacy of parents/carers.
The initial feedback from corporate parents is they can see the benefit of this brief intervention particularly for care experienced young people.

Discussion: The additional resource within the framework of suicide prevention and safety planning for children and young people (CYP) of involving the parent/carer has many benefits, but mostly importantly about enhancing the knowledge and understanding of a suicide crisis for P/C. The Safekeeping Plan is separate to that of the safety plan for the CYP, so can be completed with the parent/carer even if the CYP is unwilling to share/complete their own safety plan. Parents/carers often say that they feel left out of the process of safety planning. The Safekeeping Plan is an accessible, easy to follow and can be completed within a short time frame. There is a requirement that training is received on the Safekeeping Plan before being implemented.

T107. SOCIO-COGNITIVE BEHAVIORAL THERAPY FOR SUICIDAL BEHAVIORS: UNDERSTANDING LGBTQ+ LATINX YOUTH AND PROVIDING AFFIRMATIVE CARE

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Background: The Latinx/Hispanic (L/H) population is the largest minoritized group in the United States (US) but its access to mental health care is much worse than the access of non-Hispanic Whites. Evidence Based Treatments (EBTs) for L/H youth with suicidal thoughts and behaviors (STB) are limited, even though some new efforts to address this population have emerged. Cognitive behavioral therapy is an EBT for depressed youth. However, EBTs relevant to minoritized, ethnic youth with STB, including L/H and LGBTQ+ teens, are scarce. A Socio-Cognitive-Behavioral Therapy protocol for Suicidal Behaviors (SCBT-SB) with L/H adolescents, which provides an affirmative approach, was compared to treatment-as-usual (TAU) in a pilot randomized clinical trial (RCT). Intent-to-treat between-group analyses found a medium effect for the SCBT-SB condition compared to TAU at the twelve-month follow-up for depressive and internalizing symptoms, and a large effect on suicide attempts (SA). The objectives of this study are: 1) to examine differences in psychosocial factors between LGBTQ+ youth and cisgender heterosexual youth in the context of a clinical RCT study for high-risk suicidal L/H youth; and 2) to illustrate the fit of SCBT-SB approach to previous result (objective one).
Methods: An ongoing hybrid efficacy/effectiveness RCT study is in place to test the treatment effect of the SCBT-SB versus TAU on suicidal ideation (SI), SA, and depressive symptoms (DS) in a large clinical sample of L/H adolescents treated in the community by mental health counselors. Participants are being recruited from inpatient and partial psychiatric hospital programs in the Northeast US. Primary inclusion criteria are identified as L/H, active SI or had a suicidal crisis that ended in higher level of care, and fluent in English or Spanish. The primary exclusion criteria are severe psychotic symptoms, cognitive impairment, and severe substance use. Independent sample t test analyses were done to evaluate differences between LGBTQ+ youth versus cisgender heterosexual youth at baseline in family, psychosocial, and cultural variables.

Results: The majority self-identified as cisgender females (66 %; n = 100), and 22% identified as Trans, non-binary, gender fluid, or not sure. Over half identified with a diverse sexual orientation (non-heterosexual). More than half of the families are second generation immigrants. LGBTQ+ youth showed higher level of DS ($t = -2.8$; $p = .01$), and SI ($t = -2.9$; $p < .01$) compared to their peers. While no significant differences were observed in many family, psychosocial, and cultural variables, LGBTQ+ youth identified less with their L/H identity ($t = 2.6$; $p = .01$) and with spirituality ($t = 3.1$; $p < .01$) in comparison to their counterparts. Also, even though not at a significant level, a tendency was found in which LGBTQ+ youth perceived higher criticism from their caregivers than their counterparts ($t = -1.8$; $p = .06$). In terms of treatment, an affirmative and culturally centered approach (SCBT-SB) has been successfully implemented.
Discussion: LGBTQ+ L/H youth may need to distance themselves from more conservative ideas that threat or oppose to their sexual and gender identity. Acculturation and enculturation processes in the family may help to explain these phenomena. Cultural background, family values, and youth's sexual or gender identity create unique clinical challenges that need to be understood and address. Affirming a teen's identity, or emerging identities while validating and understanding caregivers' struggles can provide a space of convergence. This research program addresses the gap of providing EBT and quality care for L/H youth with STB, including those with diverse sexual and gender identities.

T108. TO EXPLORE THE EXPERIENCES OF THE INDIGENOUS IRISH TRAVELLER WOMEN WHEN PRESENTING TO EMERGENCY DEPARTMENTS WITH SUICIDAL IDEATION IN THE REPUBLIC OF IRELAND.

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Background: Self-harm and suicide are major public health concerns with certain ethnic minority groups being more vulnerable to suicidal behaviour. Preventing suicidal behaviours and suicide for people attending healthcare services has been the main focus of national policies and research. Given that health care professionals have been placed as an intervention point for preventing deaths by suicide, emergency departments (ED) have been viewed as an important environment to stabilise suicidal crisis and initiate appropriate follow up care. Considering that those reaching EDs for suicidal ideation are at increased risk of subsequent self-harm hospital presentation, there is a lack of evidence on whether the same high risk of self-harm exists for women from minority ethnic groups such as Irish Traveller women presenting to ED's with suicidal ideation. The aim of this research is to explore the experiences of women from the Traveller indigenous community attending Irish EDs for suicidal or self-harm thoughts.
Methods: A qualitative research design will be used to answer the study's research objectives, using Interpretative Phenomenological Analysis via in-depth interviews with Irish Traveller women presenting with self-harm or suicidal ideation to participating hospitals in Ireland. Based on the database of the National Clinical Programme for Self-Harm and Suicide-related Ideation covering 25 emergency departments operating 24/7, services with a high proportion

of female Irish Travellers for 2018-2021 were selected for recruiting participants for subsequent interviews.
Results: Work in progress.
Discussion: Given the lack of ethnicity information on the risk of self-harm in Ireland at a national level, the current study will shed light on the profile and experiences of the female indigenous population of Irish Travellers and help develop further clinical interventions at the ED level for this population. Findings will help understand the appropriate suicide interventions needed for this minority group of women and recommend further policy for suicide prevention.

T109. EFFECTIVENESS OF THE DBT INTENSIVE TRAINING TO IMPROVE CONCERNS AND SELF-EFFICACY IN MANAGING SUICIDAL BEHAVIOR AND BURNOUT IN SPANISH-SPEAKING THERAPISTS

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Background: A major threat to the ability of mental health professionals to intervene effectively in suicide cases is receiving inadequate training in assessment and management of suicide risk. Furthermore, research has shown that burnout can have a direct impact in mental health professionals´ work quality. Dialectical Behavior Therapy (DBT) Intensive Training TM includes within its curriculum specific training on assessment and management of suicide risk. Recent research has found that receiving DBT intensive training may reduce therapist burnout, however the effect of the DBT training on the attitudes towards treating suicidal behavior has not yet been investigated. The aim of the study was to assess the impact of the DBT intensive training on the level of burnout as well as the self-efficacy and concerns associated with the treatment of patients with suicidal behavior in Spanish-speaking mental health professionals.
Methods: Participants were 57 mental health workers (mean age of 36.93 years old, SD = 9.5) from Spain (26.3%) and Latin America (73.7%) who had received part 1 and 2 of an official DBT Intensive training. Self-efficacy (Efficacy in Assessing and Managing Suicide Risk scale) and concerns (Concerns about Treating Suicidal Clients scale) about treating suicidal clients as well as perceived burnout (Copenhagen Burnout Inventory) were measured in part 1 (beginning) and 2 (after 9 months of implementing DBT) of the training.
Results: Controlling by country of practice and years of experience, findings indicated a statistically significant increase in self-efficacy in treating patients with suicidal behavior and a statistically significant decrease in concerns about the lack of training and competence in treating patients with suicidal behavior. A trend toward improvement was also obtained in the level of burnout and the other concerns about treating patients with suicidal behavior. Furthermore, total level of burnout at part 1 was negatively associated with self-efficacy in assessing and managing suicide risk at part 1 and 2 of the training.
Discussion: The DBT intensive training could be an adequate training model to increase self-efficacy in managing suicide risk and reduce concerns regarding the lack of training and competence in treating suicidal behavior in Spanish-speaking mental health professionals. Further research is needed to answer this question.

T110. BUILDING CAPACITY FOR UNIVERSAL SCREENING ACROSS OUTPATIENT SECONDARY CARE SETTINGS IN A PEDIATRIC ACADEMIC MEDICAL CENTER: A PLAN, DO, STUDY, ACT ADVENTURE

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Background: To address challenges with detection of suicide risk, pediatric hospital systems are increasingly engaging in universal screening for suicide across outpatient settings. At Lurie Children's, universal screening for suicide is being rolled out across clinics that may or may not have embedded behavioral health support. Taking on universal screening may be daunting for outpatient clinicians and staff, especially if screening results in the need for the assessment of positive screens and safety planning. With the recognition that many providers had concerns about their ability to adequately address suicide assessment and safety planning with their patients, our team created a training series to increase provider confidence and knowledge. This talk will present the process of implementation and training efforts that resulted in plan-do-study-act (PDSA) cycle used in outpatient adolescent medicine settings.
Methods: The division of adolescent and young adult medicine was selected as a pilot site to collect data on the needs of pediatric medical providers when engaging in suicide prevention efforts. The PDSA Cycle is a widely accepted healthcare improvement method which provides a structure for iterative testing of changes to a system. The aim for this PDSA cycle was to better understand barriers and facilitators to successful implementation.
Results: Plan: A multidisciplinary team met weekly to adapt the NIMH pathway to our outpatient care workflow. A training series was developed to introduce this workflow to providers, nursing, medical assistants, social work, and patient service representatives. Surveys were administered to all invited participants to assess concerns, barriers to implementation, and perceived training needs.

Do: The first training gave background and rationale for universal screening and introduced participants to the workflow and ASQ. The second training focused on risk assessment and brief intervention using the Brief Suicide Safety Assessment. Informed by identified concerns about limited behavioral health resources and insufficient prior training in risk management, this training covered best practices for monitoring, restriction of lethal means and safety planning with the Stanley-Brown. These were highlighted as effective brief interventions that can be conducted onsite by providers upon identification of risk. The final training consisted of three large group vignette activities and a simulation lab activity where participants were grouped into small multidisciplinary teams and assigned roles to complete the workflow, determine disposition, create a safety plan based on risk and protective factors from the vignettes, and role-play a conversation about lethal means restriction and follow-up with parents.

Study: Universal screening rolled out gradually across all clinics and providers in the division. The team is currently in month 7 of 12, collecting data on reach, adoption, and positivity rates. We implemented weekly drop-in consultation meetings as well as mandatory debriefings in all incidents of imminent risk to identify unanticipated issues and opportunities for improvement.

Act: Universal suicide screening will be disseminated across outpatient clinics. Feedback surveys will be administered to patients and families to identify opportunities for improvement and interviews will be conducted based on survey responses.

Discussion: Other ambulatory care specialty sites, as well as the hospital's clinically integrated network of primary care providers, are currently in the planning stage of this rollout. Future directions of this work include a PDSA cycle with primary care clinics throughout the hospital.

T111. PREVALENCE OF SUICIDAL THOUGHTS AND BEHAVIORS IN UNIVERSITY STUDENTS IN SPAIN: A COMPARISON OF PREVALENCE BETWEEN 2014 AND 2022

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Background: In recent years, an increase in suicidal thoughts and behaviors (STB) has been reported among young people, including comparative studies during COVID-19. Based on two repeated cross-sectional surveys carried out in 2014-15 and in spring 2022 among first-year students in Spain, the objectives of this study are to: a) estimate the prevalence of lifetime and 12-month suicidal ideation (SI), plan (SP) and attempt (SA) in 2022; and b) compare 12-month prevalence between 2014-15 and 2022. We also identify sociodemographic factors associated with SI and SP in 2022 and compare the change of SI and SP for these factors.

Methods: Repeated cross-sectional studies of Spanish first-year university students via an online survey in the academic years 2014-15 (October 2014-October 2015) and 2021-22 (spring 2022). Same STB assessments and similar recruitment strategies were used in both studies. The online survey included screening items from the Columbia-Suicide Severity Rating Scale (C-SSRS) to assess lifetime and 12-month STB, as well as sociodemographic variables: gender, age, nationality, university center, academic field, sexual orientation and parent's studies. The PROMES-U study, with data collected in spring 2022, is a multicenter study of first-year students from 5 universities from 4 Autonomous Regions of Spain (i.e., Aragon, Balearic Islands, Catalonia and Valencian Community). The comparison sample comes from a similar multicenter study of students from 5 universities from 5 Autonomous Regions of Spain (Andalusia, Balearic Islands, Basque Country, Catalonia and Valencian Community). Descriptive analyses were performed for each sample and differences using chi-square test. Lifetime and 12-month prevalence and differences in SI, SP and SA between 2014-15 and 2022 were estimated through logistic regression models, bivariate and adjusting for

sociodemographic variables and interaction effects. Post-stratification weights were used in both samples to restore the population distribution in the participating universities.
Results: A total of 730 first-year university students (57% female; mean age 19.7 years) completed the PROMES-U online survey (2022). Lifetime prevalence of SI was 51.1%, SP, 29.4%, and SA, 8.9%. Twelve-month prevalence of SI was 27% (20.7% male and 31.8% female); of SP, 14.4% (12% in male and 16.2% in female) and of SA, 1.8% (2% in male and 1.7% in female), with statistically significant differences by gender for SI and SP. University center, academic field and non-heterosexual orientation were significant for 12-month SI and SP. Female gender was associated with 12-month SI and having parents with low educational attainment, with 12-month SP. Prevalence rates in the PROMES-U (2022) sample were compared with the 2014-15 sample (n=2,118; 55.4% female and mean age 18.8 years). No significant differences in sociodemographic characteristics were found between samples, except for age. Between 2014-15 and 2022, after adjusting for sociodemographic variables, differences were found for 12-month SI (14% vs. 27%) and SP (5.4% vs. 14.4%). Compared to 2014-15, in 2022 a much higher prevalence of 12-month SI was found for those reporting non-heterosexual orientation (p=0.029). Also significant was the increase in 12-month SI and SP among those having parents with low education.
Discussion: Our results indicate an increase in the prevalence of STB in the university population in Spain in 2022 compared with 2014-15. It is necessary to increase the implementation of mental health prevention interventions in this population. Limitations include: convenience samples of universities and small sample size and low number of events, precluding specific analyses for 12-month SA.
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T112. PREVENTING YOUTH SUICIDE USING VIRTUAL HUMAN: HOW A MULTIDISCIPLINARY TEAM INFORMED DESIGN DECISIONS

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Background: Suicide is a leading cause of death for youth in North America (CDC, 2022; Children First Canada, 2022). Autistic youth are 6 times more likely to attempt suicide, and twice as likely to die by suicide, as compared to their non-autistic peers (Hirvikoski et al., 2016). In addition, non-binary youth (youth who identify outside of the boy/girl gender binary) are more likely to experience suicidal ideation and attempts as compared to gender-conforming youth (Horwitz et al., 2020). Additionally, there is greater gender diversity among autistic youth (Warrier et al., 2020).
Although non-binary autistic youth are a priority population, there are currently no interventions designed for them. One relevant intervention from neurotypical populations (people who learn and think in similar ways to most of their peers) is gatekeeper training, which prepares adults to ask youth about suicidal thoughts and behaviours, and then refer youth to targeted supports (Robinson et al., 2013). Moreover, feasible gatekeeper training with opportunities for skills practice is needed, as skills practice is key to behaviour change, but not a component of most existing trainings, likely due to the high resource burden of most skills practice approaches.

To address these needs, our team is building a novel approach: virtual human training. Virtual humans are realistic, computer-generated human beings that can understand and respond with speech and physical responses. By using virtual humans, adults can practice having difficult conversations with diverse youth about suicide in a safe environment. Thus, there is no risk if mistakes are made during practice conversations, and adults do not have to experience the social anxiety of being observed during practice. Moreover, the technology allows for adults to receive immediate feedback to develop their skills. In this presentation, we will report on our process of developing VIRTual hUman prevention (VIRTUE) training, focusing specifically on lessons learned when co-creating with a multidisciplinary team of researchers, clinicians, software engineers, community members, and youth.

Methods: As guided by principles in co-creation (Voorberg et al., 2015), we will describe how we 1) identified and built our multidisciplinary team (researchers, community members, youth advisory), 2) defined and shared knowledge, experience, and skills, 3) co-created by listening to all voices. This presentation will focus specifically on how we made key design decisions during co-creation.

Results: We built a multidisciplinary team consisting of a) researchers in psychology, social work, education, engineering, b) clinicians who have experience working with non-binary and/or autistic youth, c) community members from various non-profit organizations, and d) a youth advisory. All members had opportunities to define for themselves the knowledge, experience, and skills they brought to the project. The project lead then led the process of co-creation based on each member's unique assets. This led to key design decisions surrounding what avatar to use and environment the avatar should be in, the voice of the avatar, rules for how the avatar should respond (verbal and non-verbal) based on what the user says to the avatar, and feedback that should be given to the user to help refine skills for talking to autistic non-binary youth.

Discussion: By using key strategies during co-development, we learned how to successfully create a multidisciplinary team that brought rich diversity to the project in terms of knowledge, experience, and skills. Listening to all voices resulted in a unique training designed to help adults learn how to talk to autistic non-binary youth about suicide.

T113. CALMA M-HEALTH APP AS AN ADJUNCT TO THERAPY TO REDUCE SUICIDAL AND NON-SUICIDAL SELF-INJURIOUS BEHAVIORS IN ADOLESCENTS WHO ARE TREATED IN PUBLIC HOSPITALS IN ARGENTINA: PRELIMINARY RESULTS

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Background: Suicidal and non-suicidal self-injurious behaviors are among the leading causes of death and injury in adolescents and youth worldwide. Mobile app development could help people at risk and provide resources to deliver evidence-based interventions. There is no specific application for adolescents and young people available in Spanish. Our group developed CALMA, the first interactive mobile application with the user in Spanish, which

provides tools based on Dialectical Behavioral Therapy to manage a crisis of suicidal or non-suicidal self-directed violence with the aim of preventing suicide in adolescents and youth.
Methods: To test the effectiveness, safety and level of engagement of the CALMA app in people aged 10 to 19 who are treated in mental health services of two public hospitals, we are conducting a parallel-group, two-arm randomized controlled trial.
ClinicalTrials.gov NCT05453370.

Results: Participants are being assessed face-to-face and via video call at four timepoints: day-0 (baseline), day-30, day-60, and day-90. A total of 29 participants per group will be included. Change in the frequency of suicidal and non-suicidal self-injurious behaviors will be compared between groups, as well as the level of emotional dysregulation, level of app engagement and time of psychiatric admission during the follow-up period. Preliminary data will be shown at the 2023 International Summit on Suicide Research. The RCT is in the recruitment stage.
Discussion: This study is particularly relevant to young people given their widespread use of mobile technology, while there are currently no available smartphone app-based self-guided psychological strategies in Spanish that attempt to reduce suicidal behavior in adolescents who are assisted in the public health sector from low and middle-income countries in Latin America.

T114. SUICIDE PREVENTION AT SCHOOLS: LESSONS FROM PORTUGAL

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Background: Suicidal behavior in adolescents is a complex, multifaceted phenomenon, and one of the leading potentially preventable causes of death. School Health intervention has a new paradigm that aims to contribute to obtaining health gains through the creation of healthpromoting school environments (DGS, 2015). The Mais Contigo Program is a longitudinal research project based on a multilevel network intervention aimed at promoting mental health and well-being and preventing suicidal behaviors. Students participate in social skills training sessions on the stigma of mental disorders, adolescence, self-esteem, problem-solving skills, and wellbeing. It involves all the school community (parents and tutors/guardians, education agents, and students) and health professionals of the reference area.
Methods: This is a quasi-experimental study, with a control group assessed before and after the intervention, during the academic year. The intervention consists of 7 sessions in the classroom, addressing self-concept, problem solving, depression, and well-being. Data collection was carried out through a questionnaire, completed in the classroom, from 88 schools/colleges across the country, with authorization from parents/guardians and the Directorate-General for Education and is composed of several measurement instruments with the Portuguese version, such as the WHO-Five Well-Being Index (WHO, 1998), the Beck Depression Inventory (BDI-II, Beck and Steer, 1987), Piers-Harris Children's Self-Concept Scale 2 (Piers and Hertzberg, 2002) and The Toulousiana Coping Scale (Esparbés et al., 1993).
Results: 51.5% were boys, the mean age was 15.50 with a standard deviation of 1.33 years. There was an improvement in the global averages of the 4 variables after the intervention

(Coping before 149,75, after 150,19), there was a statistically significant difference for Well-being (before 16,72, after 17,14), Self-concept (before 39,46, after 40,08) and Depressive symptomatology (before 14,31, after 12,67).
Discussion: The improvement observed in the global averages of the dimensions studied with statistical significance demonstrates the effectiveness of the Mais Contigo Program.

T115. EXAMINING THE RELATIONSHIP BETWEEN INTERSECTIONAL MICROAGGRESSIONS AND SUICIDE IDEATION IN BLACK WOMEN

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Background: For Black women in the U.S., heterosexism, sexism, and racism are pervasive, intertwined, and major contributors to disproportionate health inequities including suicide risk (Williams et al., 2019). With roots in Black Feminist theory, "intersectionality" describes the additive and interlocking systems of oppression and structural inequalities that Black women face (Crenshaw, 1991). Scholars have emphasized the need to incorporate culturally relevant and intersectional experiences into psychological research for Black women's suicide risk (Vance et al., 2023). The current study examines relations between gendered-racial microaggressions (GRMS), LGBT-POC microaggressions (LGBT-POCMS), depression, and suicide ideation (SI) among heterosexual and sexual minority Black women. The aims of the current study were to 1) assess and describe Black women's experiences of GRMS, depression, and SI, 2) assess for differences in SI by age and sexual orientation, and 3) examine the relationship between GRMS, LGBT-POCMS, and SI in LGBTQ+ Black women.
Methods: Participants included 294 African/Black American women, categorized into four groups based on their minoritized identities. These four identity groups consisted of 1) Heterosexual Younger Black Women (HYBW), 2) Heterosexual Older Black Women (HOBW), 3) LGBTQ+ Younger Black Women (QYBW), 4) LGBTQ+ Older Black Women (QOBW). Participants completed self-report measures including a measure of depression, SI, GRMS, LGBT-POCMS. Bivariate correlations were conducted to assess relationships between study variables. One-way ANOVAs were conducted to assess significant differences in GRMS, depression, and SI between the four identity groups. Chi-square analyses were conducted to calculate odds ratios and assess for differences in the prevalence of SI between heterosexual and LGBTQ+ Black women. Binary logistic regression analyses were performed to explore the effect of GRMS and LGBT-POCMS on SI in LGBTQ+ Black women.
Results: In the current sample, 40.5% of Black women reported having current SI at the time data were collected. 56.3% of younger Black women and 49.7% of older Black women reported current SI. Alarmingly, LGBTQ+ Black women were almost 2x more likely to report current thoughts of suicide. Group differences in depression symptoms ($p = .004$) and post-hoc analyses revealed that QYBW endorsed significantly higher symptoms of depression compared to HYBW (Mean Difference= -3.41, SE= 1.01, $p=.005$, 95% CI= -6.03, -0.79) and HOBW (Mean Difference= -3.04, SE= 0.96, $p =.010$, 95% CI= -5.53, -0.54). Results also indicated that an increased frequency of LGBT-POCMS was associated with increased likelihood of SI ($B = .176$, SE = .074, Wald = 5.57, $p = .02$), but the frequency of GRMS was not associated with SI in LGBTQ+ Black women.
Discussion: Findings of the current study suggest suicide risk is higher in younger and LGBTQ+ Black women as younger LGBTQ+ Black women reported higher average symptoms of depression and LGBTQ+ Black women were almost 2x more likely to report

current SI. Additionally, LGBT-POCMS may be a better predictor of SI than GRMS for LGBTQ+ Black women. These results are novel as this is one of very few studies to examine the relationship between intersectional microaggressions and suicide ideation in Black women. For research, clinical practice, and policies aimed at developing suicide prevention strategies for LGBTQ+ Black women, mitigating the impact of intersectional experiences of discrimination on psychological distress may be important. Perspectives of minority stress and intersectionality should be included in prevention and intervention strategies to address the unique stressors that LGBTQ+ Black women face.

T116. ASSOCIATING FACTORS OF SUICIDE AND REPETITION FOLLOWING SELF-HARM: A SYSTEMATIC REVIEW AND META-ANALYSIS OF LONGITUDINAL STUDIES

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Background: Longitudinal evidence for sociodemographic and clinic factors deviating risk for suicide and repetition following SH (self-harm) varied greatly.
Methods: A comprehensive search of PubMed, Web of Science, EMBASE, and PsycINFO was conducted to include longitudinal studies focusing on examining associating factors for suicide and repetition following SH according to PRISMA guidelines with registration in PROSPERO (CRD42021248695). The search was performed on April 5th, 2022.
Results: The present meta-analysis synthesized data from 62 studies published from Jan. 1st, 2010. The associating factors of SH repetition included female gender (RR, 95%CI: 1.11, 1.04-1.18, I2=82.8%), the elderly (compared with adolescents and young adults, RR, 95%CI: 0.67, 0.52-0.87, I2=86.3%), multiple episodes of SH (RR, 95%CI: 1.97, 1.51-2.57, I2=94.3%), diagnosis (RR, 95%CI: 1.60, 1.27-2.02, I2=92.7%) and treatment (RR, 95%CI: 1.59, 1.40-1.80, I2=93.3%) of psychiatric disorder. Male gender (RR, 95%CI: 2.03, 1.80-2.28, I2=83.8%), middle-aged adults (compared with adolescents and young adults, RR, 95%CI: 2.40, 1.87-3.08, I2=74.4%), the elderly (compared with adolescents and young adults, RR, 95%CI: 4.38, 2.98-6.44, I2=76.8%), physical illness (RR, 95%CI: 1.95, 1.56-2.43, I2=0), multiple episodes of SH (RR, 95%CI: 2.02, 1.58-2.58, I2=87.4%), diagnosis (RR, 95%CI: 2.13, 1.67-2.71, I2=90.9%) and treatment (RR, 95%CI: 1.36, 1.16-1.58, I2=58.6%) of psychiatric disorder were associated with increased risk of suicide following SH.
Discussion: Due to the substantial heterogeneity for clinic factors of suicide and repetition following SH, these results need to be interpreted with caution. Clinics should pay more attention to the cases with SH repetition, especially with poor physical and psychiatric conditions.

T117. THE ASSOCIATIONS BETWEEN DNA METHYLATION AND DEPRESSION: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background: Growing evidence suggests that epigenetic modification is vital in biological processes of depression. Findings from studies exploring the associations between DNA methylation and depression have been inconsistent.
Methods: A systematical search of EMBASE, PubMed, Web of Science, and PsycINFO databases was conducted to include studies focusing on the associations between DNA methylation and depression (up to November 1st 2021) according to PRISMA guidelines with registration in PROSPERO (CRD42021288664).
Results: A total of 47 studies met inclusion criteria and 31 studies were included in the meta-analysis. This meta-analysis found that genes hypermethylation, including BDNF (OR: 1.15, 95%CI: 1.01-1.32, I2=90%), and NR3C1 (OR: 1.43, 95%CI: 1.09-1.87, I2=88%) were associated with increased risk of depression. Significant associations of SLC6A4 hypermethylation with depression were only found in the subgroups of using original data (OR: 1.09, 95%CI: 1.01-1.19, I2=52%). BDNF hypermethylation could increase the risk of depression only in the Asian population (OR: 1.18, 95%CI: 1.01-1.40, I2=91%), and significant associations of NR3C1 hypermethylation with depression were found in the groups for depressive symptoms (OR: 1.34, 95%CI: 1.08-1.67, I2=85%), but not for depressive disorder (OR: 1.89, 95%CI: 0.54-6.55, I2=94%).
Discussion: It is noted that DNA hypermethylation, namely BDNF and NR3C1, is associated with increased risk of depression. The findings in this study could provide some material evidence for preventing and diagnosing of depression. More studies are needed to explore the factors that might influence the estimates owing to the contextual heterogeneity of the pooling of included studies.