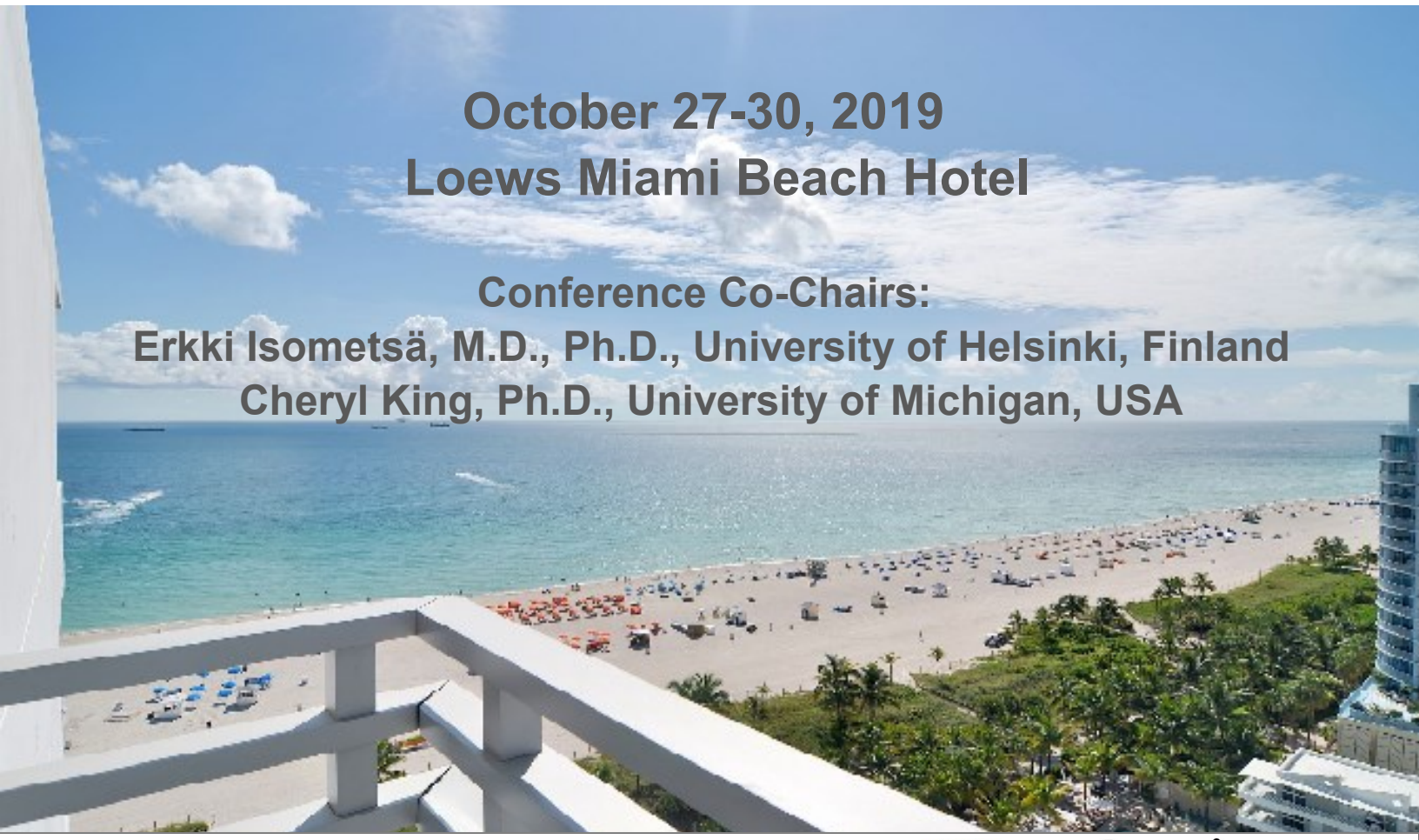
2019

IASR/AFSP

International Summit on Suicide Research

Suicide Prevention Research: A Global Imperative



October 27-30, 2019
Loews Miami Beach Hotel

Conference Co-Chairs:
Erkki Isometsä, M.D., Ph.D., University of Helsinki, Finland
Cheryl King, Ph.D., University of Michigan, USA

IASR International Academy of Suicide Research

American Foundation for Suicide Prevention

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PLENARY AND SPECIAL SESSION

SUNDAY, OCTOBER 27, 2019

2:30 PM – 4:00 PM

1. MORSELLI AWARD PRESENTATION, PLENARY SESSION AND LIVING ROOM DISCUSSION WITH AWARDEES

Chair: Lars Mehlum, National Centre of Suicide Research and Prevention, Institute of Clinical Medicine, University of Oslo

Discussant: John Mann, Columbia University & New York State Psychiatric Institute

Overall Session Details: 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 behaviour and/or suicide prevention. This year the Medal will be awarded to Professor Bob Goldney (Australia) and Professor Yeates Conwell (USA), both having dedicated their entire careers to suicide research and prevention. In this session chaired by IASR President Lars Mehlum, each Morselli Medal recipients will hold a lecture followed by an informal livingroom style conversation with Professor John Mann.

1.1 ARE ANTIDEPRESSANT MEDICATIONS AN EFFECTIVE APPROACH TO REDUCING RISK FOR SUICIDE IN LATER LIFE? LESSONS FROM THE CHINESE OLDER ADULT COLLABORATIONS IN HEALTH (COACH) STUDY

Yeates Conwell, University of Rochester School of Medicine

Individual Abstract: Rates of suicide rise with age in most countries of the world. Although many factors contribute to risk for suicide in later life, affective disorder is prominent among them. Antidepressant medications are commonly prescribed to older adults, most often in primary care practice settings, where ecological studies suggest that they are effective in reducing suicide risk. There is controversy about the effectiveness of these medications, however, raising doubts about their superiority to placebo and psychosocial approaches. This presentation serves to review this controversy in light of recent work we have conducted in China, where depression is rarely treated in older adults and rates of late life suicide are very high. Using a randomized controlled trial design to compare integrated care management of late life depression that included a medication treatment algorithm with care as usual in urban and rural primary care practices, we found robust responses to antidepressant medications. Implications for evaluating the role of medications in treatment of depression in later life, and therefore in reduction of suicide risk, will be discussed.

1.2 DOES EDUCATION CONTRIBUTE TO OR PREVENT SUICIDE?

Robert Goldney, University of Adelaide

Individual Abstract: One of the first to address education, in it's broadest terms, was George Burrows. Almost 200 years ago in 1828 he stated that a "sound education" would reduce suicide. This advice seems sensible and non-controversial. However, a number of 19th century studies, including that of Morselli, as well as more contemporary research, has drawn it into question. At the very least it warrants critical examination, particularly in evaluating some recent innovative programs which often report process rather than outcome data. Several studies suggest we need to explore this further, as clearly our efforts are not yet yielding the desire outcome.

SUNDAY, OCTOBER 27, 2019

4:15 PM – 5:00 PM

2. SUICIDE IN MOOD DISORDERS: IMPORTANCE OF TEMPORAL VARIATION IN RISK

Chair: Christine Moutier, American Foundation for Suicide Prevention

Erkki Isometsä, University of Helsinki and Helsinki University Hospital

Individual Abstract: In psychological autopsy studies, at least half of all suicides are found to have suffered from depressive or bipolar disorders, and representative longitudinal studies estimate lifetime suicide risk for psychiatric patients with mood disorders at 4-8%. However, suicide risk in mood disorders varies markedly by time and setting.

Recognition and treatment of suicide risk among patients with mood disorders is a central task for suicide prevention. However, despite abundant literature, recent studies have questioned utility of conventional risk factors for prediction or risk stratification. In part, the difficulty is inherent to prediction of any rare events, in part due to constraints of research methodology. Very few studies have investigated state-related variations in risk over time. In longitudinal studies of psychiatric mood disorder patients, incidences of suicide attempts up to 120-fold during bipolar mixed states and 60-fold during major depressive episodes compared with euthymic periods have been observed. Their suicide deaths and attempts cluster remarkably strongly into major depressive and mixed illness episodes, and time spent in them is a major determinant of accumulating risk. Future research on suicide risk in mood disorders needs to clarify the causal pathways through which the effects of numerous distal and proximal risk factors are intertwined with the marked impact of mood states. These may involve both modifying risk when high-risk illness states are present, or influencing their duration. Ecological momentary assessment may further open the temporal dynamics of suicidal behavior, and active and passive mobile monitoring be clinically helpful in recognition of high-risk states.

Monday, October 28, 2019

5:15 PM – 6:15 PM

3. OPIOID, SUBSTANCE ABUSE, AND SUICIDE

Chair: Cheryl King, University of Michigan Medical School

3.1 SUICIDE AND UNINTENTIONAL OVERDOSE: SHARED CAUSES, SHARED SOLUTIONS

Amy Bohnert, University of Michigan

Individual Abstract: Mortality due to suicide and unintentional overdose are major, and growing, public health concerns in the United States. Suicide and overdose are both related to pain and opioid use, and the specific nature of these connections span biological, social, and economic models and theories. Consequently, there are several prevention approaches that are promising for simultaneously reducing suicide and overdose risk for individuals, and in the population. This presentation will review potential drivers of suicide and overdose and describe individual-, healthsystem- and community-level interventions that should be prioritized in policy and healthsystem programs due to their ability to address both problems. Additionally, an emerging concern is that efforts to reduce risk of opioid overdose through reduced opioid prescribing are having an unintended impact and increasing risk of suicide for individuals with under-controlled pain. This presentation will describe this controversy and report data on the association of opioid exposure with suicide, prescription opioid overdose, and heroin overdose in national data.

3.2 OPIOID, SUBSTANCE ABUSE AND SUICIDE FROM AN INTERNATIONAL PERSPECTIVE

Guilherme Borges, Instituto Nacional de Psiquiatría Ramon de la Fuente

Individual Abstract: Worldwide suicide is an important cause of death and disability in high, middle, and low-income countries. Recent trends indicate that adolescents and young adults are at particularly high risk. While still at lower rates than men, a sharp increase in suicide has recently been observed among women. One modifiable risk factor for suicide, especially for young people at risk, is alcohol and drug use. Estimates from the Institute of Health Metrics and Evaluation (IHME) indicate that a significant part of the suicide DALYs attributable to mental and substance use disorders come from amphetamine dependence - 2.4% , opioid dependence - 1.9%, and cocaine dependence - 0.9%. The role of other drugs, such as cannabis, in suicide is currently a matter of debate.

Research on the relationship between suicide and substance use (alcohol and illicit drug use) and substance use disorders (alcohol use disorders and drug use disorders) has produced important advances, but some limitations in the current epidemiological knowledge are apparent. First, little is known about the role of alcohol use per se (and acute alcohol intoxication) on suicide (both suicide deaths and suicide attempts), and even less is known about the impact of drug use (and acute drug intoxication) on suicide. Second, dose-response estimates for both alcohol and drug use and suicide are scant for sustained patterns of substance use (absent for some classes of psychoactive substances) and almost non-existent for sporadic alcohol and drug use and substance intoxication. Third, there is no common framework for the impact of substance use and substance use disorders on deaths due to suicide. Fourth, the impact of alcohol and drug use, in combination, has not been addressed and has not been estimated in the literature. One important overarching limitation is that data from less-resourced countries are missing, and most of our current knowledge is based on research in high-income countries. The purpose of the conference is to review the latest evidence of impact

of substance use and substance use disorders on suicide (death by suicide, suicide ideation and suicide attempts) and discuss priorities for international research in these areas.

3.3 SUICIDE AND OPIOID DEATH: WHAT SURVIVORS OF LOSS WANT TO KNOW FROM RESEARCH

Mary Jean Coleman, American Foundation for Suicide Prevention

Individual Abstract: Survivors of suicide and opioid deaths can provide an important perspective in research. In addition to being a source of information, they raise significant questions that researchers can pursue to help prevent these devastating losses. The experience of loss and the perspective about important research questions will be discussed.

Tuesday, October 29, 2019

5:00 PM -6:00 PM

4. GENETICS OF SUICIDE

Chair: Erkki Isometsä, University of Helsinki and Helsinki University Hospital

4.1 SINGLE CELL STUDIES OF THE SUICIDAL BRAIN

Gustavo Turecki, McGill University

Individual Abstract: The epigenomic regulation of a cell constitutes an essential piece of cellular identity and accounts for the multifaceted complexity and heterogeneity of cell types within the mammalian brain. Each discrete cellular population is differentially influenced by extrinsic signals from their local environments and neighbouring cells. Thus, while several studies have investigated transcriptomic alterations underlying the neurobiology of suicide, the use of bulk-tissue homogenates may have masked their ability to determine cell-type specific molecular dysfunctions. In this plenary talk, I will review different methodologies used to investigate the brain at single-cell level, and will present recent studies using single-cell methodologies to investigate suicide.

4.2 HOW GENETICS CAN PROVIDE IMPORTANT INSIGHTS INTO THE BIOLOGICAL BASIS OF SUICIDAL BEHAVIOR AND HOW TO REDUCE IT

Participant: Virginia Willour, University of Iowa

Individual Abstract: Suicide continues to exact a huge toll on mortality worldwide. Despite continuing work to improve the diagnosis and care for patients suffering from severe psychiatric disorders with substantially increased risk for suicidal behavior, rates of attempted and completed suicide have not fallen. In fact, in some cases, such as for adults aged 35-64 in the U.S., they have been rising.

Genetics constitute a substantial component of suicide risk. Epidemiological studies provide strong evidence for a genetic component to suicidal behavior, with a heritability estimate of 30-50%. The identification of biological factors contributing to the risk for suicidal behavior is an active area of investigation. Genetic, epigenetic, and expression studies have

identified multiple promising genetic variants, candidate genes, and biological pathways. Some noteworthy examples include the identification of genetic loci significantly associated with suicide attempts in US soldiers, the SAT1 gene expression changes observed in the postmortem brains of those who died by suicide, and the evidence implicating epigenetics in the risk for suicidal behavior.

New approaches provide important insights. A recent large-scale genome-wide study from the Psychiatric Genomics Consortium provided key evidence supporting the hypothesis that some genetic factors are associated with increased risk of suicidal behavior across multiple disorders. Other ongoing novel approaches include 1) a direct comparison of genome-wide data between subjects who attempted suicide versus those who died by suicide to determine whether there are risk factors that differentiate between the two; 2) a large-scale genomic sequencing study incorporating data from 30,000 people that is aimed at identifying suicide risk factors in bipolar disorder, some of which may also increase risk in multiple disorders, and 3) a systematic assessment of genome-wide genetic variation, an effort that may identify genetic profiles that can be used to predict suicide risk..

.. Genetics has the potential to make an important contribution to decreasing suicidal behavior. As sample sizes grow, genetic studies of suicidal behavior will become even more powerful. The identification of disorder-specific and transdiagnostic risk factors will lead to an improved understanding of the biological mechanisms increasing and decreasing suicide risk, potentially leading to new pharmaceutical targets and the early identification of those at increased risk.

Tuesday, October 29, 2019

6:15 PM -6:45 PM

5. PROGRESS AND PROMISE IN SUICIDE PREVENTION RESEARCH

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

Joshua Gordon, National Institute of Mental Health

Session Description: NIMH prioritizes suicide prevention research that can translate into practice. Consistent with the National Action Alliance for Suicide Prevention's 2025 goal to reduce the suicide rate by 20%, NIMH supports research on interventions that, if fully implemented, that have potential to reduce suicide risk among a significant proportion of individuals. To build the evidence towards that goal, trials are fielded in settings that involve providers who are intended to implement the practices, and interventions are directed to individuals that represent the care population. To conduct these studies, researchers must engage with leaders and providers in these systems who share the goal of quality improvement.

Wednesday, October 30, 2019

8:15 AM -9:15 AM

6. BRAIN FUNCTION, BEHAVIOR, AND DECISION-MAKING

Chair: Lars Mehlum, National Centre of Suicide Research and Prevention, Institute of Clinical Medicine, University of Oslo

6.1 THE COGNITIVE NEUROSCIENCE OF SUICIDAL BEHAVIOR: WHERE ARE WE?

Fabrice Jollant, Paris-Descartes University

Individual Abstract Over the last years, cognitive neuroscience tools and models have been increasingly used to shed light on the intimate mechanisms of suicidal behavior. Research groups around the world have studied suicide attempters, ideators and more rarely relatives with neuropsychological batteries, various types of neuroimaging, and other techniques. Major strengths of these tools are the possibility to measure implicit/non conscious phenomena and collect objective data. Neurocognitive features have been tested this way in relation to suicidal behavior, and links with clinical, psychological, and biological levels of understanding have been probed.

Associations have been found between suicidal behavior and a higher sensitivity to negative social signals (incl. reject, exclusion), risky decision-making (incl. risk, reward and losses valuation, delay discounting), diverse memory deficits (incl. autobiographical memory), and weaker cognitive inhibition. More recently, the neurobiological basis of psychological pain has started to be explored. Pharmacological and structural brain alterations have also been described. Factors contributing to the transition from suicidal ideas to acts are being differentiated. Other neurocognitive processes will continue to be dissected in the close future.

Not surprisingly, scientists in this field have faced the same difficulties researchers in other fields have encountered when studying suicidal behavior (and actually mental health in general), including the problem of definitions; the heterogeneity in suicidal phenotypes; a significant overlap in measures with patient and even healthy controls; the question of intra-individual temporal changes; the effect of distal development-related events, genetic and epigenetic background, gender, age, comorbidities, social networks, and other sources of variations; the difficult estimation of the weight of risk factors and their interaction; and more generally the impossibility to have an exhaustive collection of contributing factors. Additionally, described dysfunctions and deficits are very largely correlational, their predictive values have very rarely been tested, and no evidence exist to date that changes in these deficits will reduce the suicidal risk. Finally, the investigation of the suicidal brain is constrained by our limited knowledge of brain functioning to date and, consequently, how to best measure and model its complex structural and functional architecture in order to identify valid and replicable biomarkers of suicidal risk.

Expectations rely on improved acquisition and analysis techniques, the collection of more data, use of large databases and meta-analyses, repeated daily measures to take into account fluctuations and dynamics, interactions with neurobiologists and mathematicians for new models in parallel to progress in brain knowledge, development of neurocognitive remediation therapies, and creativity. While they have no immediate clinical application, findings from various scientific areas already allow the clinicians and their patients to talk about suicide in a non-judgmental way with a body-anchored perspective.

6.2 DECISION-MAKING AND SUICIDE: A NEURAL COMPUTATION PERSPECTIVE

Alexandre Dombrovski, University of Pittsburgh School of Medicine

Individual Abstract The decision to attempt suicide typically follows a limited consideration of the present crisis, alternative solutions, and deterrents. In retrospect, survivors usually regret their suicide attempts. These observations suggest that, when making decisions in a crisis, people vulnerable to suicide do not optimally integrate their ongoing experience with their prior knowledge. Ostensibly moderate stressors, such as an argument, can trigger a suicidal act, momentarily overshadowing major deterrents, such as hurting one's family. Accordingly, our prior work suggests that elements of the suicide diathesis include abnormal choice processes and impaired reward learning. These findings inform a neurocomputational account of why some people take a narrow and ineffective approach to problems in a suicidal crisis (cf. tunnel vision). I will present new data on expected value signals in the ventromedial prefrontal cortex and its connectivity with cognitive control regions in attempted suicide, and on the relationship of these neural signals with impulsive traits.

Sunday, October 27, 2019

CONCURRENT SYMPOSIA SESSIONS
5:00 PM - 6:30 PM

1. SUICIDE RISK SCREENING AND RISK ASSESSMENT
Chair: Nav Kapur, University of Manchester

Overall Session Abstract: Screening for suicide risk in order to identify the highest risk individuals is a practical intervention that features prominently in suicide prevention efforts internationally. In this symposium we will consider the usefulness of such approaches, whether they can be improved, or whether they should be abandoned altogether. An initial perspective from the UK, which has moved away from actuarial risk assessment for suicide, will draw on national research and policy with suggestions for alternatives to the traditional prediction-based paradigm. We will then hear about a controlled multi-site investigation which aimed to identify the most important acute warning signs prior to a suicide attempt with a view to informing clinical management. This will be followed by description of an innovative new tool - the abbreviated Modular Assessment of Risk for Imminent Suicide (MiniMARIS). This utilises patient and clinician perspectives to develop a more complete understanding of risk. Our discussant will draw the presentations together and distil the key messages before a panel discussion involving all participants.

1.1 RISK ASSESSMENT FOR SUICIDE: IMPROVE WHAT WE HAVE OR TIME TO MOVE ON?
Nav Kapur*[1]

[1]University of Manchester

Individual Abstract: Suicide risk assessment is a cornerstone of mental health practice in many countries. The rationale for such approaches seems compelling: 1) identify people who are at greatest risk and 2) focus scarce resources on these individuals in order to prevent the greatest number of deaths. But what is the evidence for the effectiveness of such strategies?

Drawing on UK and international data this presentation will examine the predictive value of clinical risk assessments and risk assessment scales and models.

The data show that most people who die by suicide are rated as a low risk the last time they were seen, prospective studies of risk assessment scales show limited utility of high risk approaches to assessment, risk scales have very poor positive predictive value and miss many of those who go on to die, and there is no such thing as the 'best scale'. There is huge inconsistency in the application of risk assessment across settings

In terms of clinical practice, simply carrying on with current approaches is unhelpful. We may be able to refine and improve existing assessments but a fundamental paradigm shift away from high risk approaches in mental health may be our best option

1.2 AN EXAMINATION OF A BROAD LIST OF WARNING SIGNS FOR SUICIDE ATTEMPTS: A MULTISITE INVESTIGATION

Courtney Bagge*[1], Andrew Littlefield[2], Kenneth Conner[3]

[1]Universitiy of Michigan Medical Center, [2]Texas Tech University, [3]University of Rochester Medical Center

Individual Abstract: Importance: Near-term risk factors for suicidal behavior, referred to as "warning signs", distinguish periods of acute heightened risk from periods of lower risk. No prior controlled study to date has empirically examined acute within-person changes across a broad set of hypothesized warning signs prior to a suicide attempt, yet they are of key clinical importance. For example, if a clinician determines that a patient is experiencing increased warning signs it may lead to a decision to temporarily increase the patient's level of care to promote safety until such signs have improved or resolved. Objective: The purpose of the current study was to use a controlled methodology to identify the near-term associations of hypothesized behavioral/experiential, cognitive, and affective warning signs for suicide attempts. Design: This study used a case-crossover design to analyze patients who made a recent suicide attempt, with each patient serving as her/his own control.
Setting: Participants were recruited during hospitalization following a recent suicide attempt from five medical centers across the United States including two civilian hospitals and three Veterans Health Administration facilities. Participants: Participants included 349 inpatients ages 18 and older who were admitted within 48 hours of a suicide attempt. Measures: Warning signs were measured by the Timeline Followback for Suicide Attempts Interview and were operationalized as factors that increased in frequency or intensity within an individual during the 6 hours preceding the suicide attempt compared to the corresponding 6 hours on the day before the attempt. Results: A select set of warning signs (suicide-related communications, preparing personal affairs, drinking alcohol, experiencing a negative interpersonal event, and increases in key affective [e.g., "feeling empty"] and cognitive [e.g., "are a burden"] responses) were associated with near-term risk for a suicide attempt, with an 80% classification accuracy of an imminent risk period. These associations did not differ across veterans and civilians. Conclusions/Relevance: The identification of behavioral/experiential, cognitive, and affective warning signs for suicidal behavior can enhance risk recognition efforts by clinicians, patients, their families, and other stakeholders that can serve to inform acute risk management decisions such as whether or not to implement emergency safety measures.

1.3 CLINICIAN AND PATIENT POINT OF VIEW OF IMMINENT SUICIDE RISK

Igor Galynker*[1]

[1]Mount Sinai Beth Israel

Individual Abstract: Background: The Narrative Crisis Model of Suicide (NCM) proposes that individuals with trait vulnerability for suicide (TV), when faced with stressful life events, may perceive themselves as having no future (as a part of a Suicide Narrative [SN]) and thus may develop a pre-suicidal mental state, known as the Suicide Crisis Syndrome (SCS). The abbreviated Modular Assessment of Risk for Imminent Suicide (MiniMARIS) is an instrument consisting of the patient module, the SCS checklist (SCS-C), and the clinician module, the Therapist Response Questionnaire Suicide Form (TRQ-SF). Both modules independently and synergistically predict imminent suicidal behavior. This prospective study has examined the nature of this synergy within the NCM framework.

Method: The MiniMARIS was administered at intake to 451 adult psychiatric outpatients and to 59 clinicians. Also administered were the Modified Sad Person Scale (MSPS), and a battery which measured the NCM components. The TV was assessed using the composite score from the Child Trauma Questionnaire (CTQ), Relationship Scales Questionnaire (RSQ), and the UPPS-P impulsive behavior scale. The SN was assessed with the Suicidal Narrative Inventory (SNI). Suicidal thoughts and behaviors were assessed at 4-8 weeks from the initial assessment, using the Columbia Suicide Severity Rating Scale (CSSRS). Receiver-operating characteristic analysis determined the optimal cutoff points for both TRQ-SF and MSPS. Chi-square analysis was used to examine the association between the combination of TRQ-SF and SCS and short-term suicidal outcomes. Multiple regression analyses were used to assess the relationship of the TRQ-SF scores with SCS, SNI, and TR, as well as with their components.

Results: A high TRQ-SF score was associated with both suicide attempts (□2=5.971, p=0.015) and suicide plans (□2=7.069, p=0.008) occurring within 4-8 weeks, while meeting SCS criteria was only associated with suicide attempts (□2=5.987, p=0.014) within same. Meeting either the SCS criteria or exceeding cut-off on TRQ-SF was associated with short-term suicide plans (□2=11.449, p=0.001) and attempts (□2=11.893, p=0.001), while meeting both conditions did not predict subsequent suicidal outcomes. In binary analysis, the MSPS total score was not predictive of suicide attempts. History of suicide attempts, self-reported intent to die, substance abuse, or high-risk age were also not predictive. In multiple regression analysis of the composite total scores for TV, SNI, and SCS, only SNI was associated with the TRQ-SF total scores (p=0.025), as well as with the TRQ-SF factors of clinician's distress (p=0.001) and [negatively] clinicians' affiliation (p=0.001). In the subsequent multiple regression analysis, five of seven SNI components correlated significantly with the TRQ-SF total scores.

Conclusion: Both the Suicide Crisis Syndrome and clinicians' emotional responses to suicidal patients predict short-term suicidal plans and behaviors through different mechanisms. Clinicians appear to respond emotionally to the Suicidal Narrative rather than to the psychiatric symptoms comprising the SCS. Modular multi-informant and multimodal risk assessment approaches may be superior to traditional single-scale suicide risk assessments in identifying patients at imminent risk for suicide, and these approaches deserve further study for their potential value in risk assessment.

Discussant: Anthony Pisani, University of Rochester

2. SOCIAL CONNECTEDNESS AND SUICIDE PREVENTION: INNOVATIVE METHODS AND STRATEGIES TO ADVANCE TRANSLATION EFFORTS

Chair: Peter Wyman, University of Rochester School of Medicine and Dentistry

Overall Session Abstract: To reduce suicide rates, both the 2001 and 2012 National Strategy for Suicide Prevention identified enhancing "connectedness" as an important direction for research and intervention development. Likewise, the Centers for Disease Control and Prevention (2008) identified "connectedness" as a common thread that weaves together many factors that influence suicide risk with direct relevance to prevention. However, additional work is needed to translate empirical evidence and theoretical models linking social

connections and suicide risk into prevention intervention activities that will have impact in real world settings and across broad population groups.

Connectedness is associated with risk factors for suicide (e.g., depression), suicide ideation, attempts, and deaths across the lifespan and across many cultures. Theories from Durkheim's sociological model of suicide to contemporary theories, such as the Interpersonal Theory of Suicide and the Motivational-Volitional Theory of Suicide, emphasize the role of connectedness as a protective factor when present, and a significant risk factor when absent. A common element of many effective suicide prevention approaches —from caring contacts to collaborative care—is the promotion of social connectedness through creating or reinforcing connections to providers, family members, or peers. Thus, the rationale for targeting social connectedness to prevent suicide is grounded in its empirical and theoretical links to suicide deaths, as well as data suggesting that increasing connectedness may represent a possible mechanism for reducing suicide risk.

In this symposium we bring together four research studies that address different methodological and applied intervention challenges. The common goals center on advancing knowledge of suicide risk and protective processes embedded within social connections and strategies to modify those factors for different population groups.

1. Rulison and colleagues apply an innovative social network analytic approach to clarify processes that influence student-to-student transmission of suicide risk within dynamic friendship networks.
2. King and colleagues utilize data from a multi-center study in pediatric EDs to identify the role of different domains of social connectedness in predicting suicide attempts.
3. Van Orden and colleagues report results from an efficacy trial testing a behavior therapy for older adults designed to increase social engagement and reduce depressive symptoms and suicide ideation.
4. Wyman and colleagues report results from a project to develop and test a suicide prevention program for young Air Force personnel in technical training using a social connectedness framework.

These presentations bring together current research efforts to investigate connectedness as a target for suicide prevention. The studies examine diverse populations across the lifespan and use diverse methodologies—social network analysis, a longitudinal analysis of a high-risk cohort, and randomized trials. Presenters will highlight areas of convergence and divergence across studies to synthesize findings and capitalize on the synergies of diverse programs of research covered in the symposium.

2.1 SOCIAL CONNECTEDNESS AND THREE-MONTH RISK FOR SUICIDE ATTEMPTS AMONG ADOLESCENTEMERGENCY DEPARTMENT PATIENTS

Cheryl King*[1], David Brent[2], Jacqueline Grupp-Phelan[3], Michael Webb[4], Charles Casper[4]

[1]University of Michigan Medical School, [2]UPMC/ Western Psychiatric Institute & Clinic, [3]University of California, San Francisco, [4]University of Utah

Individual Abstract: Introduction: The recognition of adolescent suicide risk is often challenging for clinicians and community gatekeepers due to the heterogeneity of suicide risk factors (King et al., 2013), the tendency of some adolescents to conceal or deny their suicidal thoughts, and the fact that adolescent males are less likely to report suicidal ideation and behavior than females (Kann et al., 2018). Efforts are needed to improve suicide risk recognition and our understanding of modifiable risk factors that could be targeted in suicide prevention efforts. In Emergency Department Screening for Teens at Risk for Suicide (ED-STARS), we examined predictors of adolescent suicide attempts during the 3-months following adolescents' visits to medical emergency departments. We examined domains of social connectedness as well as psychiatric predictors of suicide attempts due to the potential importance of social connectedness as a protective factor (Whitlock et al., 2014). Deterioration in social connectedness has been related to the likelihood of suicidal behavior (Czyz, Liu, & King, 2012; Gunn, Goldstein, & Gager, 2018).

Methods: Adolescents, ages 12 – 17 years, seeking health care at 13 pediatric EDs (Pediatric Emergency Care Applied Research Network) and one Indian Health Service Hospital in the U.S. were consecutively recruited. Among approached patients, 6,654 (62%) completed a suicide risk survey (92 primary questions, 27 follow-up questions) administered in the ED. The primary study outcome was a suicide attempt between baseline and 3-month follow-up, defined as a positive response to either of two questions on an adapted Columbia-Suicide Severity Rating Scale (Posner et al., 2008): "In the past 3 months, have you made a suicide attempt?" "In the past 3 months, have you tried to harm yourself because you were at least partly trying to end your life?" A random subset of participants, enriched to include proportionately more adolescents with higher levels of suicide risk (n = 2,902), was assigned to a 3-month telephone follow-up, and 2,104 participants completed this follow-up (72% retention). Univariate predictors of suicide attempts ($p<0.1$) were candidates for inclusion in multivariable logistic regression models. To account for the oversampling of higher risk groups for follow-up, a weight equal to the inverse of the sampling probability of each of the three risk groups was applied in analyses.

Results: Between enrollment and 3-month follow-up, 104 adolescents (4.9%) made a suicide attempt. A large number of psychiatric and interpersonal predictors of suicide attempts were identified in univariate analyses; however, the final multivariable model for the total sample included only three predictors: past week suicidal ideation, lifetime history of suicidal behavior, and school connectedness. Among adolescents who did not report recent suicidal ideation at the time of their ED visit, the final model included lifetime severity of suicidal thoughts, school connectedness, and past year physical fighting.

Conclusions: Results suggest the importance of school connectedness to our understanding of adolescent suicide attempts. They also indicate that the key risk factors for adolescent suicide attempts differ for subgroups of adolescents defined by the presence or absence of recent suicidal thoughts.

2.2 INCREASING SOCIAL ENGAGEMENT TO REDUCE RISK FOR SUICIDE: A RCT OF ENGAGE PSYCHOTHERAPY FOR OLDER ADULTS

Kim Van Orden*[1], Yeates Conwell[1], Patricia Areán[2]

[1]University of Rochester School of Medicine, [2]University of Washington

Individual Abstract: Background: Older adults have higher rates of suicide than younger individuals in most countries in the world, yet there are few evidence-based strategies for reducing suicide risk in later life. A strong contributor to risk in later life is social disconnection, but evidence for approaches that reliably and effectively increase social connection is limited. The purpose of this study is to evaluate the efficacy of a form of behavior therapy called Engage (Alexopoulos & Areán, 2014) in increasing social engagement and reducing both depressive symptoms and suicide ideation. Engage is designed to help patients re-engage with pleasant, physical, or social activities they may have stopped doing in the context of depression or life stressors. Subjects complete "action plans" that involve setting a goal, brainstorming ways to achieve the goal, and selecting specific actions to implement the solution. For this trial, subjects only selected social activities: in line with the Interpersonal Theory of Suicide (Van Orden et al., 2010), targeting social engagement should change perceptions of social connection linked to suicide risk—believing one is disconnected from others (thwarted belonging) and believing one is a burden on others (perceived burden).

Methods: Participants were 62 adults age 60 or older who reported feeling lonely or like a burden on others, recruited from primary care and an outpatient geriatric psychiatry clinic. Subjects were randomized to 10 weekly sessions of Engage (n=32) or care-as-usual (n=30). Engage therapists were clinical psychologists (n=2) and master's level social workers (n=2). All sessions rated for fidelity monitoring (15% of all sessions) were rated as adherent by an outside Engage expert. Assessment measures included depression severity (QIDS), suicide ideation (Geriatric Suicide Ideation Scale), belonging and perceived burden (Interpersonal Needs Questionnaire), and the social subscale of the Behavioral Activation for Depression Scale (BADS). Subjects were assessed at baseline and end of treatment, with most subjects completing final assessments: 30 (out of 32) for Engage and 27 (out of 30) for CAU. Most subjects completed at least 6 Engage sessions (88%).

Results: In intention to treat analyses, Engage was not associated with greater belonging (p=.41) or lower perceived burden (p=.35) compared to CAU but was associated with greater increases in social activation (BADS). Engage was also associated with a greater decrease in depression symptom severity (QIDS condition by time interaction p=0.002): the average depression score dropped 3.47 points for Engage but only 0.85 points for CAU and suicide ideation dropped 4.8 points for CAU but 9.79 points for Engage.

Discussion: Findings indicate that a behavioral psychotherapy targeting social engagement is effective in reducing depressive symptoms and potentially suicide ideation among socially disconnected older adults. We did not find changes in belonging or perceived burden as hypothesized (i.e., perceptions about connections), but did find a signal for increases in social behaviors, suggesting that participants can change their social behaviors in 10 weeks, resulting in some symptom reduction (depression, suicide ideation) but that it may take more time and/or more sessions to change perceptions of belonging/burden, and therefore to maintain reductions in suicide risk—building or repairing relationships that impact one's feelings of connectedness may take repeated efforts over time. We plan to conduct a follow-up trial in which we provide booster phone sessions over 6 months to determine if belonging and burden change with a greater 'dose' of Engage.

2.3 WINGMAN-CONNECT: UNIVERSAL SUICIDE PREVENTION FOR AIR FORCE TRAINEES

Peter Wyman*[1], Anthony Pisani[2], Bryan Yates[2], Lacy Morgan-DeVelder[2], Karen Schmeelk-Cone[3], Chelsey Hartley[2], Steven Pflanz[4], Alicia Matteson[4]

[1]University of Rochester School of Medicine and Dentistry, [2]University of Rochester, [3]University of Rochester Medical Center, [4]United States Air Force

Individual Abstract: Introduction: Suicide rates for US active military personnel have exceeded non-military population groups (comparable age/gender) and remain elevated (DoD 2019). Military service poses significant relationship challenges – separations, relocations, work demands – that impact families, relationship functioning, and health (IOM, 2013). Social disconnection and relationship disruptions are major precipitants for military suicides (DoD, 2013). However, nearly all military suicide prevention activities use selective or indicated strategies such as identifying suicidal individuals or treatment for high-risk groups. Work is needed to develop and test suicide prevention strategies that proactively strengthen healthy social bonds. This study describes a DoD-funded project to develop and test a universal suicide prevention program for young Air Force enlisted personnel (Wingman-Connect) using a social connectedness framework.

Methods: In Phase 1, topic expert groups informed selection of intervention targets. An active training approach and emphasis on interpersonal coping resources were drawn from Sources of Strength used in US secondary schools (Wyman et al., 2010). We used a data-driven, iterative process to refine training content and structure with 10 cohorts (296 airman-in-training) over 18-months in a large US-AF technical training school in partnership with AF. The completed Wingman-Connect program is delivered to groups of technical training classes (25 – 40 airmen) in four 90-120 min blocks. Exercises build group cohesion, belonging, and shared purpose, and individual skills to grow and sustain healthy relationships. Text messages using participant-generated videos and interactive messages are sent for 5 months after training to reinforce and extend skills.

In Phase 2, Wingman-Connect was tested through a randomized controlled trial with 180 technical training classes randomly assigned to either Wingman-Connect or a stress management training control condition. A total of 1485 airmen-in-training enrolled (82.3% male; 82.2% active duty). Participants completed measures of class cohesion, individual social, behavioral health and functioning at baseline, and again at 1-month follow-up, and 6-month follow-up after transfer to first base. This study reports proximal impact at 1-month follow-up (93% retention).

Results: 1,391 airmen participated in 1-month follow-up prior to technical school graduation (93.7% retention). We used multilevel models to test for effects of Wingman-Connect on 1-month outcomes conditioned on baseline. Results showed that Wingman-Connect increased class cohesion based on airmen reports of class cooperative behaviors and support. Wingman-Connect also increased individual airman relationship quality and social-emotional well-being, including decreased social functional impairment and anger.

Conclusions: Results show that Wingman-Connect was effective in strengthening key building blocks for social connectedness for Airmen during technical training. The focus on training units as a group and emphasizing group skills is congruent with military culture and an innovative approach that may be necessary to transfer intervention skills into unit culture. Findings also underscore need to engage military partners in a careful adaptation process for prevention programs for military settings. Data collection is ongoing to test impact on 6-month outcomes including risk for serious suicidal ideation.

2.4 DISENTANGLING PEER SELECTION AND CONTAGION EFFECTS IN A SUICIDE PREVENTION PROGRAM

Kelly Rulison*[1], Monique McLeary[1], Chelsey Hartley[2], Alberto Valido[3], Gabriel Merrin[4], Trevor Pickering[5], Karen Schmeelk-Cone[6], Thomas Valente[5], Dorothy Espelage[3], Peter Wyman[7]

[1]University of North Carolina at Greensboro, [2]University of Rochester, [3]University of Florida, [4]University of Central Florida, [5]University of Southern California, [6]University of Rochester Medical Center, [7]University of Rochester School of Medicine and Dentistry

Individual Abstract: Introduction: Each year, approximately 1 million adolescents in the US attempt suicide (Kann et al., 2013) Adolescents who report that a friend attempted suicide are 2-3 times more likely to be suicidal themselves (Bearman & Moody, 2004), and the relative risk of dying by suicide after a suicide death in one's social sphere is 2-4 times higher among 15-19 year olds than other age groups (Gould, Wallenstein, & Kleinman, 1990). These findings have been widely interpreted to suggest that adolescents are susceptible to suicide contagion, wherein adolescents are likely to imitate the suicidal behavior of their friends. Determining whether such contagion occurs, however, requires disentangling contagion from adolescents' tendency to select friends with similar behaviors. Disentangling selection and contagion has potentially significant implications for the design and evaluation of preventive interventions.

Method: In an effectiveness trial of a peer-led universal suicide prevention program (RO1MH091452) 40 high schools were randomly assigned to either immediate training (n=20) or two-year wait-list (n=20). All students were invited to complete a baseline survey, followed by surveys 6 months, 12 months, and 18 months post-baseline. At each wave, students named up to 7 closest friends at school and answered questions about whether they had considered or attempted suicide (suicide ideation) in the past 12 months. We recoded this variable to capture new suicidality, which indicated new or increased occurrences (student either did not report suicide ideation at the immediately preceding wave or student increase the number of attempts from the immediately preceding wave to the current wave). Students also answered demographic, attitude, and behavioral questions. After baseline in the immediate training schools, key student peer leaders were selected, trained, and conducted suicide prevention activities over 16 months.

Analytic Plan: We used an innovative analytic approach (stochastic actor-oriented modeling in RSiena) to test whether selection and contagion impacted likelihood of suicidality. In these models, the observed behaviors and network connections are assumed to be the result of an unobserved series of changes that occurs between waves. The modeling task, which is accomplished with the help of simulations, is to determine the weighted combinations of effects that are most likely to produce the observed changes in network structure and behavior.

Results: We focus on the 36 schools where complete peer network data were gathered at each wave. Across waves, a total of 17,378 students were present at these schools. Survey participation rates varied from 70-80% across waves. Initial models provided some evidence of selection: students were more likely to select friends whose suicidality was similar to their own, even after controlling for selection due to gender, race, and grade. These effects were reduced after controlling for selection due to depression. Initial models also provided evidence of contagion: Students whose friends had higher rates of suicidality were more likely to report suicidality. These effects were reduced after controlling for depression.

Conclusion: Our preliminary findings provide support for both selection and contagion with respect to suicidality. Final analyses will include aggregated results across the final models from all 36 schools and will test whether similar selection and contagion processes vary across schools.

3. NEUROCOGNITION AND RISK FOR SUICIDAL BEHAVIOR ACROSS THE LIFESPAN: DEVELOPMENTAL CHANGES IN THE CORRELATES OF SUICIDE ATTEMPT

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

Overall Session Abstract: Substantial evidence has accumulated indicating that neurocognitive deficits play a critical role in risk for suicidal behavior, especially in the transition from suicidal thoughts to self-destructive actions. Most studies, however, have focused on distinct developmental periods in attempting to characterize these neurocognitive risk factors, often using different measures to assess varying aspects of both cognition and risk. This symposium will present data from both a recently completed, multi-site study and companion studies examining neurocognitive risk factors across the lifespan, from childhood (as young as age 6) to old age (up to age 80). Results indicate that some well-established neurocognitive risk factors are more discriminating at specific age periods, while others appear characteristic of suicidal behavior across most of the lifespan. These results provide a basis for developing screening measures that will be effective in a wide variety of assessment and intervention settings.

3.1 EARLY VULNERABILITY IN YOUTH WITH A PARENTAL HISTORY OF SUICIDAL BEHAVIOR: AN EXAMINATION OF NEUROCOGNITIVE FACTORS

Arielle Sheftall*[1], Elisabeth C. Spector[2], Monae L. James[2], Emory E. Bergdoll[2], William M. Bryant[2], Connor H. Bauer[2], Sara E. Armstrong[2], Fatima Vakil[2], Jeffrey Bridge[2]

[1]The Research Institute at Nationwide Children's Hospital/The Ohio State University Medical Center, [2]The Research Institute at Nationwide Children's Hospital

Individual Abstract: Suicide is now the ninth leading cause of death in children 5 to 11 years and in the past decade has accounted for over 400 deaths in this age group. One risk factor known to increase the odds of suicidal behavior in youth is a parental history of suicidal behavior. A parental history is associated with a 4-to-6 fold increased risk of suicidal behavior in their offspring and a younger age of onset for first suicide attempt. Although the familial transmission of suicide is well documented, the specific factors for this elevated risk are unknown. Identifying mechanisms associated with familial risk for suicide prior to suicidal

behavior occurring is imperative for prevention efforts. For this study, we examined risks of suicidal behavior in children, 6-9 years, with (PH+) and without (PH-) a parental history of suicidal behavior with an emphasis on neurocognitive functioning. Data analyses include group comparisons (PH+ vs. PH-) using chi-square or independent t-tests. All analyses were conducted in IBM SPSS version 25.

The sample included 80 youth and biological parents; PH+=32 and PH-=48. Majority of youth identified as Black/African American (n=40) and four were of Hispanic ethnicity. Most of the children were in 2nd grade (32.5%), the average age was 7.4 years, the majority lived with both their biological parents (42.5%), had their biological mother participate in the research study (90%), and 54% of the children were female. Parents and their children completed an interview concerning suicidal behavior, questionnaires about themselves and for parents about themselves and their child, and the children completed the NIH Toolbox Flanker and Dimensional Change Card Sort Tasks via an iPad.

Overall group differences revealed PH+ children had differences on the CBCL (e.g., more internalizing behaviors), in temperament (e.g., lower soothability), family history of bipolar and psychotic disorder, more parental experiences of abuse/neglect during their childhood, and more parental psychopathology (e.g., more anxiety symptomology). However, when examining neurocognitive functioning, no differences were found between the PH+ and PH- children.

For this study, no group differences in neurocognitive functioning were found however, differences were present in the characteristics of both the parents and children when comparing the groups. It is possible that neurocognitive deficits associated with suicidal behavior may not be present at this age, 6-9 years, and develop at a later stage of child development (e.g., middle childhood/early adolescence). Future research following these at-risk youth into middle childhood may help to answer this question. The limitations of this study include: small sample size and data collection via self-reports measures and interviews. Examining risk factors in young children associated with suicidal behavior prior to these behaviors occurring could help inform prevention and intervention efforts and decrease the likelihood of suicidal behavior in these at-risk groups of youth.

3.2 DEVELOPMENTAL EFFECTS ON IMPLICIT ASSOCIATIONS TO SUICIDE: RESULTS FROM A MULTI-SITE STUDY

Jeffrey Bridge*[1], John Keilp[2], Laura Kenneally[3], Jacki Tissue[1], Sean Madden[2], Christopher Adams[2], Hanga Gafalvy[2], Ainsley Burke[2], John Mann[2], Katalin Szanto[3]

[1]The Research Institute at Nationwide Children's Hospital, [2]Columbia University & NYSPI, [3]University of Pittsburgh

Individual Abstract: BACKGROUND: Behavioral markers of acute suicide attempt risk are a guide to underlying biology but may be affected by age. While some studies in younger samples have found that the Implicit Association Test (IAT) using death and suicide-related words identifies or even predicts suicide attempt risk, it is unclear if these effects extend to older adults. Preliminary data from an ongoing, multisite, lifespan study of neurocognitive

factors in suicidal behavior examined whether suicide attempters' rapid self-attributions to suicide can be replicated and extend through adulthood.

OBJECTIVE: To examine demographic effects on the Suicide IAT and their impact on group differences among healthy volunteers, depressed patients with no history of suicidal behavior, and depressed patient with a history of past suicide attempt.

METHODS: Participants were 94 past suicide attempters in a current depressive episode, 89 depressed patients with no suicide attempt history, and 100 healthy volunteers ranging in age from 16 to 80, recruited from medical centers in New York, NY, Pittsburgh, PA and Columbus, OH were compared on IAT performance.

RESULTS: Groups were comparable on most demographic factors, and the majority of participants were female. Suicide attempters were less well educated ($p = .001$), more depressed ($p < .001$), and exhibited lower rumination ($p < .001$) but higher entrapment ($p < .001$). There were no simple group differences on the IAT difference score, however significant age effects were found. ($r= -.46$, $p<.001$). Moreover, a significant group by age interaction was found ($p=.04$), such that past attempters showed a stronger association to death and suicide in adolescence and early adulthood, but not in later adulthood. Age was not associated with depression severity in patients ($r= -.08$, $p=.39$) or with severity of attempt in attempters ($r= .17$, $p=.16$)

CONCLUSIONS: This the first study to demonstrate age effects on the suicide IAT, and developmental limitations on the IAT's ability to discriminate suicide risk. IAT effects diminish by later adulthood, possibly due to relative slowing of self-attributions toward death at older ages. Developmental effects are likely to have a significant impact on the sensitivity of various behavioral tasks to characterize deficits in suicide attempters across the lifespan.

3.3 LIFESPAN DEFICITS IN MENTAL FLEXIBILTY IN DEPRESSED SUICIDE ATTEMPTERS

John Keilp*[1], Laura Kenneally[2], Jacki Tissue[3], Sean Madden[1], Christopher Adams[1], Hanga Galfalvy[4], Ainsley Burke[1], John Mann[1], Katalin Szanto[2]

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

Individual Abstract: Reduced mental flexibility has been associated with suicide attempt, although much of the more recent data has been gathered in older adults. Its contribution to suicide risk across the adult lifespan is unknown.

This study examined currently depressed, past suicide attempters (n=70), depressed patients with no suicide attempt history (n=75), and healthy volunteers (n=69) ranging in age across the adult lifespan, from age 16 to 80. Participants were recruited at three sites in New York, Pittsburgh, and Columbus, Ohio. Participants were compared on a novel Probabilistic Reversal Learning task designed to isolate errors related to changes in contingency (perseverative errors) and intermittent negative feedback (set maintenance errors). Feedback was probabilistic (80%

accurate) for the majority of the task, but was turned off in the period immediately after each contingency switch to determine the likelihood of perseverative responding while establishing a new behavioral set.

Past suicide attempters produced more total errors across the task ($F[2,211]=3.26$, $p=.040$), with differences evident across the age spectrum,. Though reaction times for correct responses were significantly associated with age across all groups ($r = .31$, $p<.001$, with no group by age interaction), error score themselves were not ($r = -.03$, $p=.70$). Both perseverative errors ($F[2,211]=1.87$, $p=.157$) and set-maintenance errors ($F[2,211]=2.04$, $p=.133$) tended to be greater in past attempters during each phase of the task, but differences on these error subtypes did not reach significance across the three groups.

Past suicide attempters exhibited poorer mental flexibility across all conditions of this reversal learning task and across all ages sampled, consistent with a deficit that is evident across full adult lifespan.

3.4 DISSECTING DIFFERENT PATHWAYS TO SUICIDAL BEHAVIOR IN LATE-LIFE DEPRESSION: MEMORY AND EXECUTIVE DEFICITS MAY BE PREDICTORS OF LIFE-THREATENING SUICIDAL BEHAVIOR AND DEMENTIA PRODROME

Katalin Szanto*[1], Hanga Galfalvy[2], Swathi Gujral[1], Alexandre Dombrovski[1]

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

Individual Abstract: Objectives: As suicidal older adults are a heterogeneous group, understanding cognitive profiles of different subgroups of suicide attempters may elucidate different pathways to suicidal behavior and which subgroups of attempters are at the greatest risk for dementia. Heterogeneity may be related to medical seriousness of attempt and age of onset of first suicide attempt, as risk factors associated with early-life suicidal behavior (e.g., impulsivity) are mitigated in late-life.

Methods: Data are presented from two studies:

Study 1: Prospectively assessed suicidal behavior for a median of 5.4 years in 311 depressed participants, breaking down suicidal outcomes by medical lethality. Given the high rates of non-suicide mortality, competing risk models were used. In multi-predictor models, we examined which variables provided additional information to well-established suicide risk factors. Predictors were entered in a forward stepwise selection. Suicidal events of interest included 1) All suicidal behavior (N= 57; i.e., death by suicide, suicide attempts, hospitalizations for suicide-related events) 2) fatal and near-fatal suicidal behavior (i.e., high-lethality attempts (N= 15) and death by suicide (N= 9 out of 15) and 3) low-lethality attempts (N=22). Results: Examining risk for all suicidal behavior, the multi-predictor model included depression severity (HR=1.36 per SD, 95%CI: 1.05-1.76, z=2.32, p=0.020), worst lifetime suicidal ideation (HR=1.09 per SD, 95%CI: 1.06-1.12, z=6.36, p<0.001), and introversion (HR=1.04 per SD, 95%CI: 1.00-1.06, z=2.25, p=0.024). When only fatal and near-fatal attempts were considered, the multi-predictor model included worst life-time suicidal ideation (HR=1.06, 95%CI: 1.02-1.11, z=2.93, p=0.003), being male (HR=4.86, 95%CI: 1.45-16.38, z=2.55, p=0.011), and executive dysfunction (HR=1.56, 95%CI: 1.13-2.16, z=2.72, p=0.007).

When only low-lethality attempts were considered, the multi-predictor model included worst lifetime suicidal ideation (HR=1.09, 95%CI: 1.05=1.13, z=4.18, p<0.001) and medical illness burden (HR=1.84, 95%CI: 1.07-3.15, z=2.21, p=0.027).

Study 2: Examine whether early-onset (EO) (<50 years) and late-onset (LO) (>=50 years) suicide attempters have distinct cognitive profiles. Participants: 56 nondepressed controls, 67 nonsuicidal depressed, 63 ideators, 36 EO, and 56 LO attempters. The Repeatable Battery of Neuropsychological Status (RBANS) and the Trail Making Test from the Delis Kaplan Executive Function System (D-KEFS) were used to characterize cognitive functioning. Linear Regression models were run, regressing scores for individual cognitive measures onto dummy-coded variables for study groups, after adjustment for age, sex, education, depression severity, and lifetime history of anxiety and substance use disorders. Results: Both EO and LO attempters exhibited worse executive functioning (i.e., set-shifting) relative to nonsuicidal depressed older adults (D-KEFS Trail Making Test: df= 262, EO: Beta=-0.14, p=0.04; LO: Beta=-0.17, p=0.01). EO attempters did not differ from other groups on any other cognitive measures. However, LO attempters also exhibited worse attention and processing speed relative to nonsuicidal depressed (RBANS Digit Span: df=264, Beta= -0.15, p=0.04; RBANS Coding: df=263, Beta=-0.16, p=0.02). Further, LO exhibited worse delayed memory relative to EO and non-depressed older adults (RBANS Delayed Memory Index: df=260, LO<EO: Beta=-0.19, p=0.03; LO <nondepressed: Beta= -0.27, p=0.02).

Conclusions: Older medically serious and especially late-onset attempters exhibited memory and executive deficits that may hinder mobilization of mental resources in a crisis.

4. ADVANCING YOUTH SUICIDE PREVENTION THROUGH COMPREHENSIVE COMMUNITY BASED EFFORTS

Chair: Dorian Lamis, Emory University School of Medicine

Overall Session Abstract: Garrett Lee Smith Suicide Prevention grantees are funded by the Substance Abuse and Mental Health Services Administration (SAMHSA) to support youth suicide prevention initiatives through state agencies addressing mental health. Through training, outreach, and implementation of evidence-based practices, several state organizations have made great strides in addressing and preventing suicide among individuals aged 10 to 24. Empirical data support the effectiveness of training, assessment, and interventions to reduce suicide in youth; however, implementation and evaluation of programs represent and understudied area of research. In addition to the advancement in prevention and treatment techniques, there has also been an increased emphasis and call for the dissemination of these approaches. In this symposium, we will discuss our experiences, intervention/prevention approaches, outcomes, and challenges/barriers to effectiveness of programs targeting suicide risk in youth.

4.1 HEALTHY CONNECTIONS FOR YOUTH: OKLAHOMA YOUTH SUICIDE PREVENTION AND EARLY INTERVENTION INITIATIVE

Shelby Rowe*[1]

[1]Oklahoma Department of Mental Health and Substance Abuse Services

Individual Abstract: In 2014, The Oklahoma Department of Mental Health and Substance Abuse Services was awarded a 5-year SAMHSA Garret Lee Smith grant to fund the Oklahoma Youth Suicide Prevention and Early Intervention Initiative. This project has a two-tiered approach, with a primary focus has been youth ages 10-24 in six counties (Oklahoma, Tulsa, Cleveland, Comanche, Pittsburg & Seminole), while also providing training and technical assistance statewide.
Project Goals:

1) Increase suicide prevention capacity and implementation within the six priority counties.

2) Increase suicide prevention capacity and implementation at the state level.

3) Increase the number of youth at risk of suicide who are identified and receive mental health services.

4) Increase the number of effective evidence-based clinical suicide prevention practices implemented within the state.

In this session, we will provide an overview of the successes and challenges we encountered over this 5-year initiative, and discuss how these experiences are shaping the future direction of suicide prevention. We will also outline our strategy for sustaining our youth suicide prevention efforts as this grant funding cycle comes to an end.

4.2 SOUTH CAROLINA YOUTH SUICIDE PREVENTION INITIATIVE (SCYSPI)

Alex Karydi[1], Casey Childers*[2]

[1]SC Department of Mental Health - Office of Suicide Prevention, [2]University of South Carolina School of Medicine

Individual Abstract: Project Summary: DMH, S.C.'s mental health authority, is implementing SCYSPI. The main office is based in Columbia. DMH (the grantee) has been providing grant administration, oversight (include fiscal), and management. YSPI has been actively collaborating with the local DMH clinicians who provide direct services to clients and the directors of the county DMH centers to incorporate a Zero Suicide approach. YSPI will be collaborating with the 17 community mental health centers that serve all 46 counties. There are 43 clinic/satellite offices and 4 acute care hospitals. We are utilizing a statewide infrastructure that DMH has created through Telepsychiatry and school-based mental health counseling program. We are also meeting with school-based program directors and their evaluator to discuss incorporating a suicide prevention, intervention, and postvention standard of care. In January, 2017, Electronic Medical Records will be initiated throughout the DMH system. We will flag our populations when they have completed the Columbia suicide severity rating scale (CSSRS). We are working with the IT department and the Medical Director for DMH to develop protocol and procedure. We are still working on using a text supporting services to identify and ensure follow-up care.

Strategies/Interventions: Since the announcement of the GLC award, we worked with SCDMH on the statewide suicide prevention policy and protocol with leadership buy-in. We embedded the Columbia Screening tool and safety plans within the Electronic Medical Records for SCDMH clinicians while also pursuing the update of the nurses' documentation to include suicide screening at higher frequency, a prompt for safety plan, and a crisis support plan. We have begun training clinical and non-clinical staff in suicide care practices. Our training includes screening and collaborate safety planning, CALM, AMSR, SafeTALK, ASIST, and

Suicide 2 Hope. We also began building a Dialectic Behavioral Therapy program. Trainings replace the current suicide prevention training for SCDMH statewide. SCYSPI has begun working with Department of Social Services and the Department of Juvenile Justice to incorporate LGBT suicide prevention training and has developed the policy and procedure.

Project Goals and Measureable Objectives: SCYSPI proposed four goals in its initial project application and continues work toward pursuing these same goals. Goal 1: To strengthen statewide infrastructure to improve behavioral health services to potentially suicidal YYAs.

Goal 2: To implement evidence-based prevention and intervention strategies to increase screening and access to services for YYAs at risk of suicide, like piloting a Zero Suicide Approach in all DMH centers and clinics, including inpatient hospitals. Goal 3: To develop an interagency response protocol to use when a youth or young adult is determined to be at risk of suicide. Goal 4: To raise awareness and knowledge among YYAs, parents, teachers, and other caring adults about how to respond to depression, other mental health issues, suicidal ideation and attempts. We will share how we and destigmatize suicide care through community partnerships and challenging religious barriers encountered.

4.3 PROJECT SAFETY (SUICIDE ASSESSMENT FOLLOW-UP EDUCATION TEXTING FOR YOUTH AND YOUNG ADULTS)

Harvey Doppelt*[1]

[1]Delaware Division of Prevention and Behavioral Health Services

Individual Abstract: Project SAFETY (Suicide Assessment Follow-up Education Texting for Youth and Young Adults) targets youth and young adults ages 10-24 across the state with the goal of reaching this broad population through implementation of screening in a variety of settings including middle and high schools, university health centers, hospital emergency department, primary care offices (prioritizing Kent and Sussex counties), juvenile detention centers and in the state's 24-7 mobile crisis service. Screening in primary care is a priority for Project SAFETY because data indicates that suicidal individuals often have contact with their primary care physician within a month of attempting suicide. In addition, implementing screening within primary care offices will reach a broad demographic (e.g. race and ethnicity, sexual orientation, etc.) and increase the likelihood of earlier identification of not only suicide risk but substance use and behavioral health problems as well. To broaden its outreach to youth/young adults, Project SAFETY will introduce a Suicide Texting Service which is expected to be user-friendly and is the chosen preferred way of communicating by youth and young adults. Between broad screening and increased outreach more youth in need of assessment and/or treatment will be identified especially in Kent and Sussex Counties. Project SAFETY also will include expanding the staffing of the state's 24-7 crisis service (for children) in Kent and Sussex counties to meet the anticipated increased demand once screening is initiated. Finally, Project SAFETY will provide the SPRC developed Assessing and Managing Suicide Risk (AMSR) training for behavioral health professionals across the state to enhance the assessment and treatment services for suicidal youth. The goals of Project SAFETY align with Delaware's Suicide Prevention Plan (2013-2018) and support recommendations made by the Center for Disease Control and Prevention (CDC) in its report on the 2012 suicide cluster.

4.4 GEORGIA SUICIDE SAFER COMMUNITIES FOR YOUTH PROJECT

Dorian Lamis*[1]

[1]Emory University School of Medicine

Individual Abstract: Project Summary: Georgia Suicide Safer Communities for Youth focuses on youth ages 10 to 24 years living in three Georgia counties (Bartow, Newton and Oconee) with youth suicide death rates higher than the national average of 8.02 for the years from 2011 - 2013. Selected populations of focus include African American youth, youth suicide attempters, and family members of youth who have been identified with suicidal ideation or a suicide attempt. Community assessments have been conducted to assess each county's readiness to take action on the issue of youth suicide prevention. Approximately 1,000 are served annually with services provided to more than 5,000 over the life of the 5-year project.

Strategies/Interventions: Through training, outreach, and implementation of evidence-based practices, the Suicide Safer Communities for Youth project built infrastructure and increased the suicide specific continuum of care that has resulted in reductions in the number and rates of suicide deaths and number and rate of non-fatal suicide attempts among youth ages 10-24 in three targeted counties. A Zero Suicide in Healthcare licensed clinical supervisor was hired in each county to oversee development and integration of the community and clinical suicide prevention efforts. A Zero Suicide in Healthcare certified peer specialist (ZSH-CPS) in Bartow, Newton, and Oconee counties integrated the voice of lived experience into ongoing suicide prevention efforts. Proposed evidence-based practices include Question, Persuade, Refer Gatekeeper Training; Child and Adolescent Needs and Strengths-Mental Health; The Adult Needs and Strengths Assessment; Columbia Suicide Severity Rating Scale; Suicide Safety Plan; Collaborative Assessment and Management of Suicide; Cognitive Behavioral Therapy for Suicide Prevention; and DiDi Hirsch Youth Suicide Attempters Group. The Georgia College and University Suicide Prevention Coalition provided 1) a yearly Suicide Prevention Conference for Colleges and Universities, 2) three additional suicide prevention training opportunities a year and 3) assessment, data collection, tracking and evaluation services for the College Coalition.

Project Goals and Measureable Objectives: The Suicide Safer Communities project is guided by 5 of the 13 goals and objectives of the National Strategy for Suicide Prevention, including: Goal 1: Develop, implement, and monitor effective programs that promote wellness and prevent suicide related behaviors. Goal 2: Provide training to 3,500 community and clinical service providers on prevention of suicide and related behaviors. Goal 3: Promote suicide prevention as a core component of health care services. Goal 4: Promote and implement effective clinical and professional practices for assessing and treating 1,500 youth identified as being at risk for suicidal behaviors. Goal 5: Provide care and support to individuals affected by suicide deaths and attempts to promote healing and implement community strategies to help prevent further suicides. We will discuss our intervention approaches supported by the GLS grant, relevant suicide-related outcomes, and challenges/barriers encountered.

Monday, October 28, 2019

CONCURRENT SYMPOSIA SESSIONS
8:15 AM - 9:45 AM

5. BIG DATA AND SUICIDE RESEARCH - EHR, SOCIAL MEDIA, CRISIS LINES

Chair: Gregory Simon, Kaiser Permanente Washington Health Research Institute

Overall Session Abstract: Big data and advanced analytics have the potential to significantly enhance research and service delivery in suicide prevention. These new resources and tools, however, involve new challenges and new potential risks. Clarifying the appropriate role of these new tools and technologies requires moving beyond global enthusiasm or pessimism to focusing on specific data resources and technical tools.

This symposium will focus on four promising sets of tools and resources:

- Use of health records data to more accurately identify people at risk for suicidal behavior
- Real-time identification of risk using mobile devices
- eHealth and mHealth technologies to improve access to effective interventions
- Use of social media platforms to both identify risk and deliver prevention interventions.

For each of these potential uses of new data resources and technologies, presentations will describe current state of science and practice, identify key conceptual and technical challenges, describe potential risks and resulting obligations, and propose future directions for both advancing theory and improving delivery of effective prevention services and programs.

5.1 NEXT STEPS IN DEVELOPMENT AND IMPLEMENTATION OF SUICIDE RISK PREDICTION MODELS FOR HEALTHCARE SETTINGS

Gregory Simon*[1]

[1]Kaiser Permanente Washington Health Research Institute

Individual Abstract: Several research groups have now developed and validated models predicting suicide attempt and/or suicide death using data extracted from health system records. While these models have been developed in widely varying healthcare settings using different data inputs and different model development methods, all significantly outperform traditional clinical assessment. The Veterans Health Administration has now implemented population-based outreach programs informed by one of these risk prediction tools, and implementations are planned or underway in large civilian healthcare systems. These implementation efforts, however, have raised several new questions regarding the use of prediction tools to inform clinical decisions. This presentation will use experience with model development and implementation in the NIMH-funded Mental Health Research network to explore five specific issues:

- Distinguishing the goals and tools of prediction from the goals and tools of inference

- Matching the design and methods of model development to specific clinical and operational needs
- Weighing the advantages and disadvantages of more complex model development methods
- Integrating use of prediction tools into clinical workflows of mental health care
- Considering fairness and justice in the implementation of prediction models

5.2 SOCIAL MEDIA, MACHINE LEARNING AND SUICIDAL BEHAVIORS

Becky Inkster*[1]

[1]University of Cambridge, UK; Self-employed

Individual Abstract: Social media is not going away, its growing and transforming (for better, for worse). The numbers remain staggering: for example, Facebook has 2.38 billion monthly active users, 1.56 billion daily active users, and every minute, the company registers around 300,000 status updates and half a million comments (Reference 1). Nearly a quarter of a billion new users came online for the first time in 2017 (Reference 2).

At the same time, we are witnessing a global push to build applications and tools using artificial intelligence, machine learning and algorithms. As put by expert, Cédric Villani, "Artificial intelligence will be everywhere, like electricity." These digital tools have the capacity to be very influential and impact many areas of our lives, perhaps most worryingly our minds, emotions and relationships with others.

This talk will look at some of the latest techniques, digital tools, methodologies, and data sets related to social networking sites in the context of suicidal behaviors. It will also cover pitfalls and cautions of using big data, ethical considerations, while also highlighting the importance of complementary and alternative online socially oriented approaches to support vulnerable individuals. It will be very important for data scientists and other care professionals to enrich their understanding of culture, local language, complex meanings behind self-expression versus censorship etc., and to closely follow changing trends in the next wave of 'the new social'.

Reference 1: https://zephoria.com/top-15-valuable-facebook-statistics/

Reference 2: https://blog.hootsuite.com/social-media-2020/

5.3 TECHNOLOGICAL ADVANCES AND THE FUTURE OF SUICIDE PREVENTION: ETHICAL, LEGAL AND EMPIRICAL CHALLENGES

Lanny Berman*[1], Gregory Carter[2]

[1]Johns Hopkins University School of Medicine, [2]Calvary Mater Newcastle

Individual Abstract: With the rapid shift from traditional industries to an economy based on information technology over the last half century have come dramatic changes in communication, social connectedness, privacy standards, social organizations and therapeutic interventions. In suicide prevention, recent publications have acclaimed new age technological and social media developments and advances in suicide risk assessment, real time individual

monitoring of physiological and psychological variables, GPS tracking in space and time, text analysis from social media postings, digitally delivered psychological interventions, dynamic simulation modelling of health systems, cost effectiveness modelling of interventions and more.

A recent commentary endorsed new technological developments for the potential for saving lives and involving new personnel and strategies into suicide prevention (Reidenberg & Berman, 2017). However, this commentary did not address the empirical challenges, ethical problems and legal questions involved. This presentation highlights the need to better understand the complexities of accuracy, effectiveness, safety, ethics and legality even as implementation occurs at an individual, clinical and population level; in order to achieve that measure of public health impact we all desire (i.e. greater benefit than harm, no less lives saved).

Specifically, this presentation addresses issues related to (a)using Bog Data to establish suicide risk stratification, (b) detecting exposure to modifiable risk factors for suicide in real time via Ecological Momentary Assessment and Language Analysis, (c) multinational digital and social media companies suicide prevention systems, and (d) technology-enhanced and/or delivered digital interventions. Whilst these technological interventions hold great promise, to date they remain in a "proof of concept" stage of development. the state of the science is such that it is imperative that we pay early versus late attention to these issues as these technological applications continue to develop an evidence-base. Doing so will foster their eventual widespread adoption into and impact in everyday clinical care, to the benefit of those suicidal and the public health.

5.4 SUICIDE ISN'T COMPLICATED, IT'S COMPLEX

Jessica Ribeiro*[1]

[1]Florida State University

Individual Abstract: For decades, suicide prevention has been cited as a public health imperative, prompting sweeping calls to action and sharp increases in research. These efforts, unfortunately, have not translated to meaningful declines in the suicide rate, with rates increases by 25% in the last two decades. To understand this perplexing trend, a comprehensive meta-analysis of suicide prediction research was published by Franklin and colleagues in 2017. Results were sobering: 50 years of research had yielded hundreds of studies and thousands of statistical tests designed to advance knowledge of suicide risk, yet our ability to predict suicidal thoughts and behaviors was weak (i.e. near chance levels) and virtually unchanged since the inception of longitudinal suicide research. Even factors commonly cited among the strongest predictors of suicide in the literature (e.g., prior suicidal behavior) provided predictions on par with random guessing.

Recently, however, there has been a sea change in suicide prediction research. By leveraging advances in data science, our ability to predict suicidal thoughts and behaviors has considerably improved, with multiple research groups independently developing accurate machine learning risk algorithms for the prediction of suicide ideation, attempts, and death. Despite having unique data sources, using different input variables, and implementing distinct predictive

modeling frameworks, the resultant algorithms of these efforts demonstrate comparable predictive performance.

One possible explanation for the pattern of findings observed in recent meta-analytic and machine learning prediction efforts is that suicidal thoughts and behaviors are complex and indeterminate phenomena – that is, there may be many different pathways, involving different sets of biopsychosocial factors, that can produce suicidal thoughts and behaviors. Although not yet at the forefront of clinical psychology, the principles of complexity and indeterminacy (i.e. degeneracy) are ubiquitous among many other disciplines, including modern theories in biology, neuroscience, and affective science. This perspective, however, is largely inconsistent with the dominant perspective in the suicide field, which holds that suicidal phenomena are the product of a discrete and determinate set of a small number of biopsychosocial factors combined in fairly rudimentary ways. Despite the intuitive appeal of the dominant perspective, it is not well-supported by the evidence, raising critical – and potentially divisive – questions for the field.

The objective of this talk is to discuss these issues and their implications for suicide science as well as offer one possible perspective to resolve conflicting views.

6. SUICIDE IN OLDER ADULTS: IDENTIFYING RISK GROUP AND TESTING DEDICATED INTERVENTIONS

Chair: Annette Erlangsen, Danish Research Institute for Suicide Prevention

Overall Session Abstract: On a worldwide level, older adults have the highest suicide rate. Senior citizen who die by suicide use determined methods and have often planned the act for months ahead. Interventions should therefore address early stages of suicidal crisis. Prevention of senior suicide is furthermore challenged by the fact that depression is under-diagnosed in older adults and, particularly, older men are less inclined to seek health care advice from their general practitioner.
In this symposium we address central issues related to predictors of suicidal behaviour in older adults in different settings as well as interventions aiming at providing better care for depression.

6.1 RETIREMENT PATHWAYS AND SUICIDAL BEHAVIOUR IN OLDER RURAL DWELLING ADULTS

Kylie Crnek-Georgeson*[1], Leigh Wilson[1]

[1]The University of Sydney

Individual Abstract: Study objectives: Investigate and explore the association between factors relating to retirement, physical and mental well-being, and suicidal behaviour in older rural Australians.

Methods and material: From September 2017 to June 2018, 18 older rural Australian's participated in a qualitative study. Participants (either pre or post

retirement) were recruited through community networks, local newspapers and local radio. A phenomenological approach (to investigate the lived experience of participants) was used to guide data collection. Participants were interviewed face to face, via telephone or through a focus group. Data were coded into key themes and sub-themes using an iterative process of review and discussion by the researchers. The study was approved by the Ethics Committee of Western Sydney University (Protocol Number: H12022).

Results

Eighteen participants (15 males and 3 females, ranging in age from 54 to 82), 8 had lived experience of suicide, 3 had returned to work post retirement. Ten of the 18 participants were forced to retire through redundancy or injury.

Following thematic analysis, four key themes emerged; Identity, Planning, Loss and Resilience. Sub themes included: rurality, work life, gender income, health, lifestyle, friends, choice, finances and transition to retirement and surprise at mental resilience.

All participants expressed feelings of disconnectedness to community and colleagues; reduced access to health services; loss of physical or psychological health. These feelings may place participants' at higher risk of suicidal behaviour. Fifty percent of participants did not retire voluntarily, those who planned for retirement, also experienced similar psychological distress leading to suicidal behaviour, post 6 months retirement.

Male participants discussed increased social isolation and depression leading to anxiety and suicidal behaviours (attempted suicide, suicidal ideation), female participants discussed declining health, lower income, and a decrease in psychological and physical well-being, with increased anxiety relating to finances and declining health. All women (3) and 7 of the men had taken redundancy, with participants commenting on the need for others to plan early, and encouraged an employer/community level of support when planning their transition into retirement.

Conclusion: This research demonstrates the vulnerability of older rural adults who are forced into retirement as well as those who have planned their retirement, and the association between this scenario and psychological and/or physical distress, possibly leading to suicidal behaviours. It is recommended that people who are retiring be provided with an holistic approach to retirement including community supports, strategies for connecting with family and friends and early financial planning in order to avoid a deterioration in either their physical and or psychological health.

6.2 SELF-REPORTED MEASURES PHYSICAL AND MENTAL HEALTH AND SOCIAL WELL-BEING IN ASSOCIATION TO SUICIDAL BEHAVIOR AMONG AUSTRALIAN OLDER ADULTS AGED 65+

Annette Erlangsen*[1], Emily Banks[2], Grace Joshy[2], Alison Calear[2], Philip Batterham[2], Luis Salvador-Carulla[2]

[1]Danish Research Institute for Suicide Prevention, [2]The Australian National University

Individual Abstract: OBJECTIVE: The aim was to examine whether self-reported measures of physical and mental health as well as social interaction were associated with suicidal behavior in a sample of older adult Australians aged 65+.
METHODS AND MATERIAL: The 45 and Up Study included 102,949 older adults 65+, randomly sampled from the general population of New South Wales, Australia, were linked to hospital and death records during 1st January 2006 to 31st December 2015. We studied the association between self-reported measures and suicidal behavior, defined as suicide attempt or death by suicide. Incidence rate ratios (IRR) were estimated using logistic regression analyses adjusted for sex, age group, country of birth, civil status, education, and type of insurance. Data linkage was conducted by CHeRel.

RESULTS: In all, 242 suicidal events (159 suicide attempts and 83 suicide deaths) were observed during the follow-up period of 696,578 person-years. Older adults who indicated to experience a lot of physical limitations, had a 2.3-fold (CI-95%: 1.7-5.6) higher rate of suicidal behavior than those with none. Individuals who evaluated themselves to have 'fair' rather than 'excellent to good' memory or eyesight were found to have 1.5 (CI-95: 1.1-2.0) and 1.7-fold (CI-95: 1.2-2.3) higher rates of suicidal behavior, respectively. In addition, different physical disorders were associated with suicidal behavior. A higher K-10 score, as reported at baseline, was linked to suicidal behavior later (score >30, IRR: 3.8, CI-95%: 2.2-6.4 vs. score <16, IRR: 1.0 [ref category]). Also, a poor quality of life was linked to a higher rate of suicide behavior (IRR: 4.0, CI-95%: 2.2-7.3). In terms of social predictors, spending time with someone more than 5 times on a weekly basis was associated with a lower risk (IRR: 0.6, CI-95%: 0.4-0.9) than less than one time or less. Equally, having a larger number of people upon one can depend was linked to a 60% lower risk (IRR: 0.4, CI-95%: 0.2-0.5).

CONCLUSION: Indicators of a lack of general well-being, physical or mental disorders were linked to higher rates of suicidal behavior. On the other hand, markers of an active social network were found to be associated with lower rates of suicidality.

6.3 SUICIDES IN OLDER ADULTS IN ICELAND FROM 1920 TO 2017; POSSIBLE IMPACT OF SOCIAL AND MACRO-ECONOMIC FACTORS

Hogni Oskarsson*[1], Kristinn Tomasson[2], Sigurður Palsson[3], Helgi Tomasson[4]

[1]Humus Inc., [2]Administration of Occupational Safety and Health in Iceland, [3]National Hospital of Iceland, [4]University of Iceland

Individual Abstract: Iceland has a relatively small population, consequently there are large variations found in the suicide rate between individual years. Thus suicide studies are thus based on 5 or 10 year intervals. There has been a significant rise in the suicide rate over the past 100 years, with a decline starting appr. 30 years ago. The population has increased fourfold since 1911 and has shifted from a homogeneous farming/fishing, mostly poor population bound to their place of birth, to a more heterogeneous, highly educated, consumer-oriented, high-tech culture with global connections.
This study focuses on the elderly population, from 55-80 years. Suicides data are obtained from a Suicide Registry under the auspices of the Bureau of Statistics. There are reliable data to be had on over 1.700 suicides from 1911 onwards which include age, sex and year of death. Population data are obtained as well from the same Bureu.

Our cohort, 55-80 years of age includes 545 individuals with a male/female ratio of 3,5:1. The cohort was analysed in subgroups of ten-year intervals. Our analysis shows that the suicide rate

in both sexes was at its highest between 1920 and 1940, 32.5/100.000 males and 7.4/100.000 females It began to drop after WW II, particularly in the male population, with one mid-century exception. After the turn of the century the male suicide incidence in the elderly group has come closer to the total male incidence. The suicide incidence in the elderly female population has taken a different turn. It began to drop slightly after 1940 but from 1960 onwards it has climbed gradually, reaching 9.4/100.000 from the year 2.000. This is diferent from trends in other Nordic countries where the female suicide rate has been decreasing. The changes are also reflected in the male/female ratio, 4.5/1 in 1920-40 and 1.9/1 from the year 2.000.

These trends will be discussed in terms of the societal changes the population has gone through, taking into account as well six majors economic crises in the study period, with a particular emphasis on the 2008 international crisis.

6.4 IMPACT OF INTEGRATED CARE MANAGEMENT OF DEPRESSION AND HYPERTENSION (HTN) ON SUICIDE RISK IN CHINESE OLDER ADULTS IN RURAL CHINESE PRIMARY CARE: THE CHINESE OLDER ADULT COLLABORATIONS IN HEALTH (COACH) STUDY

Yeates Conwell*[1], Shulin Chen[2], Lydia Li[3], Hillary Bogner[4], Wan Tang[5], Tingjie Zhao[5], Jiang Xue[2]

[1]University of Rochester School of Medicine, [2]Zhejiang University, [3]University of Michigan, [4]University of Pennsylvania, [5]Tulane University

Individual Abstract: Background: Rates of suicide among older adults in rural China are among the highest in the world. Depression and comorbid medical illness are potent risk factors for suicide in later life, and care management approaches that integrate mental and physical health care in primary care settings have shown promise for reducing suicide-related morbidity in Western countries. However, integrated depression care management in primary care has to date not been tested in China.

Aims: Using a randomized controlled trial design, the COACH Study has as its objective to compare primary care-based integrated depression and HTN care management with care as usual (CAU) in treatment of both disorders in Chinese older adults living in rural villages in Zhejiang Province. Specific aims are to determine whether subjects treated with the COACH intervention experience (1) greater reduction in depression symptom severity and (2) higher rates of response and remission of depressive disorders, and (3) higher rates of blood pressure control than those who receive CAU.

Methods: The COACH intervention integrates the care provided by the older person's primary care provider (PCP) with that delivered by an Aging Worker (AW; a lay member of the village's Aging Association), supervised by a psychiatrist consultant. The PCP is trained to use evidence based practice guidelines for treatment of both HTN and depression, and provided with access to mental health consultation. The AW is trained to conduct a systematic assessment of the older person's social context to identify and reduce social and environmental barriers to treatment adherence and response. AWs participate with the PCP in developing multi-disciplinary care plans for their shared patients, reinforce treatment adherence and adoption of healthy behaviors, and emphasize activation and engagement of the older person in activities designed to improve their connectedness to others and to the community. Finally,

PCP, AW, and Psychiatrist Consultant are trained to collaborate in their shared clients' care. Randomization at the village level yielded 1,232 subjects assigned to receive COACH and 1,133 subjects to CAU. Primary outcomes were changes in suicidal ideation, depression symptom severity, and blood pressure control over 12-month follow-up.

Research Findings: Compared with CAU, subjects in COACH practices had significantly greater reductions in depressive symptoms (Cohen's d -0.167; p<.0001), significantly greater likelihood of depression treatment response (OR 44.2; p<.0001) and remission (OR 50.0; p<.0001), and of achieving BP control (OR 4.76; p,.0001). Pending results on changes in suicidal ideation in each group will be reported as well.

Implications: Depression and HTN are common, costly, and destructive conditions among the rapidly growing aged population of rural China. COACH provides additional capacity to existing resources in rural settings, suggesting it would be an effective, scalable approach to management of prevalent comorbid medical and mental health conditions of aging in low- and middle-income countries (LMICs) with restricted access to mental health services, and lower risk for suicide among older adults.

7. BIOLOGY OF SUICIDE

Chair: Yogesh Dwivedi, University of Alabama at Birmingham

Overall Session Abstract: In the United States the rate of suicide has been steadily rising, with suicide being the 10th leading cause of death. It is not only critical to understand the underlying biology of suicide but also to discover novel clinical and biological methods to predict and prevent suicide. This symposium is dedicated to discuss these aspects. Dr. Yogesh Dwivedi from University of Alabama at Birmingham will present a novel molecular tool to identify suicidality. More specifically, he will present his recent data showing that neural-derived exosomes derived from blood cells can be used as non-invasive tool to distinguish suicidality among depressed patients. Dr. Fatemeh Haghighi from Icahn School of Medicine at Mount Sinai will present postmortem data investigating the association of stress with transcriptional regulatory changes in neuronal and glia cells isolated from prefrontal gray matter of suicide victims and non-psychiatric controls. In addition, transcriptional regulatory profiles in the neurovascular unit to assess BBB integrity in postmortem brains of suicide victims will also be discussed. Multiple case-controlled studies have linked antibodies to toxoplasmosis gondii and cytomegalovirus (CMV) to the occurrence of schizophrenia and mood disorders and to risks for suicidal behaviors. Possible mechanisms for these linkages have included increases in inflammatory factors that provoked by these chronic infections. Dr. William Coryell from Iowa College of Medicine will review the available evidence for and against associations between these latent infections and suicidal behaviors and for the role of inflammatory in mediating these relationships. In addition, he will present new data that links toxoplasmosis gondii and CMV antibodies to suicide attempt histories. Dr. Teodor Postolache from University of Maryland have earlier shown that the presence of in schizophrenia patients, both Toxoplasma gondii IgG serointensity and high kynurenine levels was necessary for a link with suicidal behavior, with none of these two variables being sufficient. He will now discuss that two conditions that could result in prolonged inflammation and that have been individually linked to suicidal behavior, i.e. traumatic brain injury and infections, would interact

synergistically in predicting suicidal self-directed violence (SSDV-including nonfatal attempts and death by suicide) and suicide.

7.1 BLOOD-BASED NOVEL "TOOL" TO IDENTIFY SUICIDALITY

Yogesh Dwivedi*[1]

[1]University of Alabama at Birmingham

Individual Abstract: Suicide is the 10th leading cause of death in the US. Thus, there is desperate need for identifying risk factors and for non-invasive, reliable biomarkers that can be used for early detection of suicidality and treatment response. Recently, microRNAs (miRNAs) have emerged as an important class of small non-coding RNAs that suppress the translation and stability of specific target genes. Since miRNAs show a highly regulated expression, they contribute in the development and maintenance of a specific transcriptome and thus have the unique ability to influence physiological and disease phenotypes. Recently, we found that a subset of miRNAs is specifically altered in the brain of suicide subjects regardless of psychopathology. Neural miRNAs are responsive to environmental and pathological changes and can be actively secreted by cells such as exosomes from brain into blood. Using a neural specific surface marker, we successfully isolated neural-derived exosomes from blood plasma and found that these exosomes are enriched with miRNAs that are expressed in brain. Using this novel approach, we examined whether neural-derived exosomal miRNAs that are specific to suicidal behavior are differentially expressed. In a small number of depressed patients with and without suicidality and healthy controls, we found that a subset of miRNAs was altered in depressed patients but another set of miRNAs was specifically associated with suicidality. Our preliminary study is quite exciting and provides a novel avenue to develop neural-derived plasma exosomal miRNAs as ''molecular tool'' to identify suicidality.

7.2 STRESS IN SUICIDE NEUROPATHOLOGY

Fatemeh Haghighi*[1], Tatiana Schnieder[2], Natalia Mendelev[1], Gorazd Rosoklija[2], Iskra Trencevska-Ivanovska[3], Aleksandar Stankov[4], Goran Pavlovski[4], Hanga Galfalvy[2], J. John Mann[2], Andrew Dwork[2]

[1]Icahn School of Medicine at Mount Sinai, [2]Columbia University, [3]Psychiatric Hospital, Skopje, Macedonia, [4]School of Medicine, University "Ss.Cyril and Methodius"

Individual Abstract: In the United States the rate of suicide has been steadily rising, with suicide being the 10th leading cause of death. It is critical to discover novel clinical and biological methods to predict and prevent suicide. Unraveling the molecular pathology of suicide is significantly complicated by the complex etiology of suicide and co-morbid psychopathologies, as well as genetic and environmental risk factors such as stress. According to the stress diathesis model, environmental events such as childhood adversity or chronic stress through repeated exposure to life threatening situations typical in war and active combat contribute to the increased risk of suicidal behavior. Risk factors for suicide can affect the diathesis for suicidal acts or can serve as triggers or precipitants of suicidal acts. Epigenetics is the bridge that connects environment with genetics, by mediating the influence of environmental factors such as stress on regulation of transcription of genes related to the psychopathology of suicide.

Many epigenetic modifications have been identified to date, including post-translational histone tail modifications and DNA methylation marks. DNA methylation is the most stable

and well-studied modification, and it is typically associated with repression of gene expression. As such, DNA methylation patterns have been studied in both postmortem and clinical subjects with suicidal behavior.

As part of our ongoing research in delineating the molecular mechanisms associated with the role of stress in suicide, we present postmortem data investigating the association of stress with transcriptional regulatory changes in neuronal and glia cells isolated from prefrontal gray matter of suicide victims and non-psychiatric controls. Additionally, it has been shown that stress-induced systemic inflammation is also associated with suicidal behavior, and it may contribute to the impairment of the blood brain barrier (BBB). I will present on our investigations of transcriptional regulatory profiles in the neurovascular unit to assess BBB integrity in postmortem brains of suicide victims. It is very probable that in response to physical or psychological stress, cytokines and other molecules secreted by peripheral immune cells, microglia, or both could alter the permeability of the BBB, triggering feedback mechanisms between the central and peripheral immune with adverse consequences. Changes in BBB integrity may be maintained through alterations in epigenetic patterns, specifically stress, and inflammation-induced abnormalities in DNA methylation patterns. We present a model in which central and peripheral immune systems amplify each other`s effects, perhaps impairing cognitive processes that contribute to decline in coping mechanisms or inhibitions –putting an individual at greater suicide risk.

7.3 LATENT INFECTION, INFLAMMATORY MARKERS AND SUICIDAL BEHAVIORS IN DEPRESSIVE DISORDERS

William Coryell*[1], Holly Wilcox[2], Ghanshyam Pandy[3], Faith Dickerson[4], Robert Yolken[5]

[1]University of Iowa College of Medicine, [2]Johns Hopkins Schools of Public Health and Medicine, [3]University of Illinois at Chicago, [4]Sheppard Pratt, [5]Johns Hopkins School of Medicine

Individual Abstract: Multiple case-controlled studies have linked antibodies to toxoplasmosis gondii and cytomegalovirus (CMV) to the occurrence of schizophrenia and mood disorders and to risks for suicidal behaviors. Possible mechanisms for these linkages have included increases in inflammatory factors that provoked by these chronic infections. This presentation will review the available evidence for and against associations between these latent infections and suicidal behaviors and for the role of inflammatory in mediating these relationships. It will also describe new data that links toxoplasmosis gondii and CMV antibodies to suicide attempt histories in a group of 224 patients in major depressive episodes of whom 96 had made multiple suicide attempts. Immunoglobulin levels were additive in their association with suicide attempt status. Inflammatory markers (IL_1b, TNF-alpha, CRP, IL_6 and IL_1ra) did not appear to mediate associations between antibodies to latent infection and suicide attempt status, however. These results add to the evidence that chronic infections with toxoplasma gondii and with CMV increase risks for suicide attempts but the mechanisms that might account for this remain unclear.

7.4 SYNERGISM BETWEEN IMMUNE MEDIATED CONDITIONS IN PREDICTING SUICIDAL BEHAVIOR : A FOCUS ON INFECTION AND TRAUMATIC BRAIN INJURY

Teodor Postolache*[1], Michael Eriksen Benros[2], Olaoluwa Okusaga[3], Claire Hoffmire[4], Christopher Lowry[5], John Stiller[6], Lisa Brenner[7], Annette Erlangsen[8]

[1]University of Maryland School of Medicine, [2]Mental Health Centre Copenhagen, [3]Michael E DeBakey VA Medical Center, Houston, [4]VA Rocky Mountain MIRECC for Suicide Prevention, [5]University of Colorado at Bolder, [6]Maryland State Athletic Commission, Baltimore, [7]VHA Rocky Mountain Mental Illness Research, Education, and Clinical Center, University of Colorado, [8]Danish Research Institute for Suicide Prevention

Individual Abstract: Rising suicide rates in the United States highlight the need for identifying modifiable risk factors of suicidal behavior and considering not only their cumulative presence but also their epidemiological and pathophysiological interactions. Associations between suicidal behavior and immune markers in the blood, cerebrospinal fluid (CSF), and brain tissue postmortem have been supported by several meta-analyses. Furthermore, infections (common triggers of inflammation) have been associated with suicidal self directed violence (SSDV= nonfatal attempts+ death by suicide). Other medical and psychological conditions leading to immune activation have been predictively associated with SSDV, but their interaction received only cursory attention. Moreover, molecular systems involved in regulation of infection and immune response such as the kynurenine pathway, have been associated with SSDV. As an illustration, our first report on Toxoplasma gondii IgG serointensity in patients with mood disorders was followed by other similar findings in recent attempters and a cohort of mothers, and confirmed by a large metaanalysis; however, in our previous work in patients with schizophrenia, the presence of both high antibody titers and high kynurenine levels was necessary for a link with suicidal behavior, with none of these two variables being sufficient. We now are testing the hypothesis that two conditions that could result in prolonged inflammation and that have been individually linked to suicidal behavior, i.e. traumatic brain injury and infections, would interact synergistically in predicting suicidal self directed violence (SSDV- including nonfatal attempts and death by suicide) and suicide. A retrospective cohort design was applied using the national Danish Registers. The dataset was anonymized and the project was approved by the Danish Data Protection Agency. Tests for synergism included: the Relative Excess Risk due to Interaction, the Attributable Proportion (AP) due to interaction, and the Synergy Index. Fully adjusted models were controlled, time-varying, for: (1) period (2) sex (3) age group (4) living status (single, cohabiting/married); (5) socio-economic status (working, unemployed, retried/disability pension, other); (6) the Charlson Comorbidity Index and (7) any psychiatric diagnosis. All measures for synergism were statistically significant. The proportion due to interaction between TBI and infections was 21% of their total combined effect for SSDV and 12% for suicide. The synergism was stronger for suicide after mild rather than severe TBI. A population attributable risk shows that the combined effect of TBI and infection explained an additional 8.3% of SSDV and 4.4% of suicide risk over the additive effect of TBI and infection, with interactions being strongest for suicide in individuals with mild TBI. Thus preventing concussion after infections, or infections after concussion may result in a sizable prevention of untimely death by suicide. Limitations include not adjusting for medications and considering substance abuse (limited coverage) , and limited generalizability to other countries .Future research should identify most vulnerable time-windows, and identify mechanisms implicated in this interactions for future targeting for prevention and risk management. Studying the type the interaction between immune mediated conditions in predicting suicidal behavior and, in animals, its endophenotypes, may lead to novel targets (such as microglia priming), and interventions (such as depriming agents, immune modulators), urgently needed considering the resilience of suicide rates to conventional approaches.

8. COGNITION AND SUICIDE AMONG CHILDREN AND ADOLESCENTS

Chair: Regina Miranda, City University of New York, Hunter College and The Graduate Center
Co-Chair: Ana Ortin, Hunter College & Behavioral Neuroscience Grad. Prog., CUNY

Overall Session Abstract: Child and adolescent suicides have been steadily increasing over the past decade and a half, yet our prediction of youth suicidal behavior with traditional clinical predictors is only slightly better than chance. Furthermore, given that more than half of adolescent suicide deaths are first-time attempts, and that the transition from suicidal ideation to suicide attempts tends to occur within a year of onset of suicide ideation, prevention of youth suicides should focus on understanding suicidal thoughts before the transition to an attempt. Cognitions that give rise to suicidal ideation, along with the nature of suicidal thoughts, themselves, remain understudied among children and adolescents. The present symposium seeks to fill this knowledge gap by examining the utility of cognitive measures of suicide risk in distinguishing children and adolescents at risk of suicidal behavior, to understand how adolescents' conceptualizations of death confer risk for suicidal ideation, and to distinguish adolescent suicide ideation subtypes that may be informative about proximal risk of suicide attempts.

The first presentation by Arielle Sheftall examines differences in decision-making among children, ages 6-9, with and without a maternal history of suicidal behavior. Findings suggest that girls with maternal history of suicidal behavior show poorer decision-making, which may confer risk of later suicidal behavior. The second presentation by Katherine Tezanos examines the association between attitudes about death and suicide ideation in a community sample of adolescents, ages 13-19. Findings suggest that holding the belief that death is a viable escape from pain confers unique risk for SI recurrence, above SI history, and suggests death attitudes as a potential cognitive marker for intervention. The third presentation by Kelly Wilson examines the psychometric properties of the Suicide Stroop test as a behavioral measure of suicide-related cognition designed to aid in the detection and prediction of suicide risk. Results with two adolescent samples indicate that the most common Suicide Stroop scoring approach yields low internal consistency and does not demonstrate concurrent validity, and while an alternative scoring using mean reaction shows good internal consistency reliability, it has low concurrent validity. This study highlights the importance of assessing the psychometric properties of behavioral measures of suicide-related cognitions. The final presentation by Regina Miranda examines the role of persistent suicide ideation in proximal risk of suicide attempts in a sample of adolescents, ages 12-19, recruited from emergency departments and outpatient clinics. Findings suggest that persistent ideation is associated with attentional fixation to suicide-related experiences, shorter time-to-attempt, and more elaborated content of suicide ideation, suggesting the importance of assessing persistent ideation as a specific subtype that might increase risk of future attempts. Christine Cha will discuss these findings from the lens of cognitive models of suicide, with specific application to suicide assessment and intervention with children and adolescents.

8.1 DECISION-MAKING IN YOUTH WITH A PARENTAL HISTORY OF SUICIDAL BEHAVIOR: AN EXAMINATION BY SEX

Arielle Sheftall*[1], Emory E. Bergdoll[2], Connor H. Bauer[2], Elisabeth C. Spector[2], Monae L. James[2], William M. Bryant[2], Sara E. Armstrong[2], Fatima Vakil[2], Jeffrey Bridge[2]

[1]The Research Institute at Nationwide Children's Hospital/The Ohio State University Medical Center, [2]The Research Institute at Nationwide Children's Hospital

Individual Abstract: In children 5 to 11 years old, suicide is the ninth leading cause of death and in the past decade, has accounted for over 400 deaths and over 26,000 cases of non-fatal self-harm behaviors seen in emergency rooms around the nation for this age group. One risk factor known to increase the odds of youth suicidal behavior is a parental history of suicidal behavior. A parental history is associated with a 4-to-6 fold increased risk of suicidal behavior in their offspring and a younger age of onset for first suicide attempt. Identifying mechanisms associated with familial risk for suicide prior to suicidal behavior occurring is imperative for prevention efforts. For this study, we examined risks of suicidal behavior in children, 6-9 years, with (PH+) and without (PH-) a parental history of suicidal behavior. Data analyses included group comparisons (PH+ vs. PH-) using chi-square or independent t-tests. All analyses were conducted in IBM SPSS version 25.

The sample included 80 youth and their biological parents; PH+=32 and PH-=48. Majority of youth identified as Black/African American (50.0%). Most children were in 2nd grade (32.5%), average age=7.4 years, majority lived with both biological parents (42.5%), had their biological mother participate in the study (90%), and 54% of the children were female. Parents and children completed interviews, questionnaires, and the children completed the Hungry Donkey Game via an iPad.

The Hungry Donkey Game is a child version of the Iowa Gambling Task and measures decision-making. Children are told to select between four different doors to feed apples to the donkey on the screen. Some doors are advantageous (more gains than losses) and some are disadvantageous (more losses than gains). Children are told some doors are better than others. The goal is to collect as many apples as possible by selecting the advantageous doors.

Group comparisons revealed PH+ children had differences on the CBCL (e.g., more internalizing behaviors), in temperament (e.g., lower soothability), family history of bipolar and psychotic disorder, more parental abuse/neglect during their childhood, and more parental psychopathology (e.g., more anxiety symptomology). However, when examining differences on the Hungry Donkey Game variables, none were found between the PH+ and PH- children. When examining group differences by sex, we did find a significant difference for PH+ females. PH+ females were selected more disadvantageous doors compared to females in the PH- group ($t = -2.05$ $p = 0.05$). No differences were found for males.

Overall, no group differences were present in decision-making however, for females, the PH+ group selected more disadvantageous doors leading to more losses compared to the PH- females. In adults, decision-making deficits have been associated with suicide attempts and the use of highly lethal methods. These findings suggest females with a parental history of suicidal behavior may show deficits in decision-making early in childhood and are at higher risk for future suicidal behavior. The limitations of this study include: small sample size and data collection via self-reports measures and interviews. Research following these children into

middle childhood/early adolescence will help determine if poor decision-making predicts first suicide attempt and can be deemed an early vulnerability factor to direct intervention programming towards for at-risk youth.

8.2 HOW ADOLESCENTS CONCEPTUALIZE DEATH: DEATH ATTITUDES AND THEIR ASSOCIATION WITH SUICIDAL IDEATION

Katherine Tezanos*[1], Olivia Pollack[1], Christine Cha[1]

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Individual Abstract: Suicide is an important public health concern and is the second leading cause of death among adolescents (CDC, 2013). Suicidal thoughts and behaviors typically increase in frequency rapidly from late childhood through adolescence (Cash & Bridge, 2009). This trajectory also parallels the crystallization of the cognitive construct of death, as it develops from a vague and other-focused concept in early childhood to a more concrete and self-referential construct by early adolescence (Jenkins & Cavanaugh, 1987). Thus, how adolescents conceptualize death may have important implications for the onset and recurrence of suicidal thoughts and behaviors. Indeed, certain attitudes and beliefs about death (i.e., death attitudes) have been associated with increases in other risk taking behaviors (e.g., substance abuse, risky sexual behaviors), with research indicating that adolescents who view death as something not to be feared engage more frequently in these risky behaviors (Cotter 2003; Haynie et al., 2014). While death attitudes have been examined in relation to risk taking behaviors, they have rarely been studied among suicidal adolescents. To address this, the current study explores the potential association between adolescents' death attitudes and suicidal ideation.

Participants were 74 adolescents (13-19 years; M=15.5; SD=2.3) recruited from the community to participate in a baseline laboratory visit, as well as online follow-up surveys 3- and 6-months later. At baseline, 32 adolescents endorsed experiencing suicidal ideation (SI) in the past year, and 42 reported never experiencing SI. At baseline, participants completed the following measures: the Self Injurious Thoughts and Behaviors Interview (SITBI) to assess history of SI, the Quick Inventory of Depressive Symptoms to assess current depression, and the Death Attitude Profile-Revised (DAP-R) to assess attitudes towards death. The DAP-R featured three subscales: Death Avoidance (i.e., thoughts about death are to be actively avoided), Escape Acceptance (i.e., death is an escape from pain and suffering), and Neutral Acceptance (i.e., death is an inevitable part of life). Participants completed a self-report version of the SITBI 3- and 6- months later to assess for SI recurrence.

At baseline, suicidal (vs. nonsuicidal) adolescents reported higher levels of accepting death as a viable escape from pain and lower levels of avoiding thoughts about death, ts=3.04-4.83, ps<.01, ds=0.73-1.13. Findings remained significant after controlling for depressive symptoms, age, and sexual minority status (ORs =0.69-2.03, CIs=0.45-3.41, ps<.05). There was no difference in degree of viewing death as an inevitable part of life, p=.75, d=0.15. Prospective analyses revealed that Escape Acceptance and Death Avoidance predicted SI recurrence 3- and 6-months later (ORs=3.12-.44, CIs=0.25-5.98, ps<.05). After controlling for baseline covariates and SI history, adolescents with higher scores of Escape Acceptance were more likely to experience 6-month SI recurrence (OR=2.40, CI= 1.78-6.37, p=.04). This finding suggests that holding the belief that death is a viable escape from pain confers unique risk for

SI recurrence above SI history, a known robust predictor. These initial findings point to potential cognitive intervention targets (e.g., delineating and reframing the belief that death provides an escape from pain and suffering). The present investigation also examines whether these lab-based findings replicate in adolescents presenting to an emergency room due to suicidal thoughts or behaviors (current n=90). This will inform whether similar cognitive risk factors and intervention targets apply to a more acute and vulnerable population.

8.3 PSYCHOMETRIC PROPERTIES OF THE SUICIDE STROOP TASK AMONG ADOLESCENTS

Kelly Wilson*[1], Alexander Millner[2], Randy Auerbach[3], Catherine Glenn[4], Jaclyn Kearns[4], Olivia Kirtley[5], Sadia Najmi[6], Rory O'Connor[7], Jeremy Stewart[8], Christine Cha[1]

[1]Teachers College, Columbia University, [2]Harvard University, [3]Columbia University, [4]University of Rochester, [5]KU Leuven, [6]San Diego State University, [7]University of Glasgow, [8]Queen's University

Individual Abstract: Behavioral measures are increasingly used to assess cognitive risk factors for suicidal thoughts and behaviors. The use of such measures among suicidal adolescents may aid in the detection and prediction of suicidal thoughts and behaviors, particularly in settings where they may conceal suicidal intent or lack insight into their own risk states. To date, some measures, such as the Suicide Stroop task, have yielded mixed findings in the literature. An understudied feature of these behavioral measures has been their psychometric properties, which may affect the probability of detecting significant effects and the reproducibility of effects. We examined the psychometric properties of the Suicide Stroop task—specifically internal consistency and concurrent validity—among adolescents recruited from two separate settings: from the community (n=146; M=17.4 years, SD=1.8; 81.6% female), and from a psychiatric inpatient unit (n=177; M=15.6 years, SD=1.3; 73.1% female). Results indicated that the most common Suicide Stroop scoring approach, interference scores, yielded unacceptably low internal consistency (rs=-.09-.32) and failed to demonstrate concurrent validity. In contrast, internal consistency coefficients for mean reaction times (RT) to each stimulus-type were excellent (rs=.93-.95). In the case of mean RTs, we did not find evidence for concurrent validity despite our excellent reliability findings, highlighting that reliability does not guarantee a measure is clinically useful. Findings were consistent across both community and inpatient subsamples. Additional analyses with the broader sample (n=875) included both youth and adults (12-81 years). Findings based on this broader sample revealed that scoring approaches for suicide-related interference demonstrated poor classification accuracy, AUCs=.52-.56, such that scores performed near chance in their ability to classify suicide attempters from non-attempters. These results are discussed in the context of the wider implications for testing and reporting psychometric properties of behavioral measures in mental health research with youth samples, and recommendations for improving the reliability of behavioral tasks such as the Suicide Stroop task are highlighted.

8.4 FORM AND CONTENT OF SUICIDE IDEATION AND PROXIMAL RISK OF ADOLESCENT SUICIDE ATTEMPTS

Regina Miranda*[1], Ana Ortin[2], Jhovelis Manana[2]

[1]City University of New York, Hunter College and The Graduate Center, [2]City University of New York, Hunter College

Individual Abstract: More suicide attempts are made in adolescence than at any other time in life, yet prediction of adolescent suicide attempts is difficult. Recent longitudinal studies suggest that persistence of suicide ideation over time is associated with risk of future suicide attempts. However, there is currently no measure to classify persistent suicide ideation when adolescents present for clinical care, rather than after a longer follow-up period during which the adolescent may attempt suicide before being identified as in need of intervention. The present study sought to address this gap in knowledge by examining characteristics of persistent suicide ideation, classified via a clinical interview, that might be associated with risk of a future suicide attempt.

Ninety-one adolescents (77 female; 62 Hispanic), ages 12-19 (M = 15.1, SD = 2.1), who presented to emergency departments or outpatient clinics in New York City with suicide ideation or an attempt completed a baseline Adolescent Suicide Ideation Interview that assessed the precipitants of, form, and content of their recent suicide ideation or attempt, along with self-report measures assessing attentional fixation on suicide experiences, suicide ideation, and laboratory-based cognitive measures of attentional bias towards and disengagement from suicide-related stimuli (the Suicide Stroop and Suicide Attention Disengagement Task). Based on their initial interview, adolescents' suicide ideation was classified as either persistent (suicide ideation every day for over two weeks) (n = 26) versus brief (one or more instances of ideation separated by more than 24 hours and lasting less then 2 weeks) (n = 67). Seventy-seven adolescents were followed up 3 and 12 months later. Adolescents with persistent SI had 2.5 times higher odds of making a future SA than those with brief suicide ideation at baseline. Furthermore, among adolescents who made a SA at follow up (n = 13), persistent ideators attempted sooner (M = 1.6 months from baseline, SD = 1.28, versus 4.7 months, SD = 2.79) than did brief ideators, $t = 2.53$, $p < .05$. Persistent SI was associated with greater self-reported attentional fixation to suicide experiences (M = 23.33, SD = 4.58) than was brief ideation (M = 14.90, SD = 8.97), $t = 3.12$, $p < .01$. However, there were no differences between persistent and brief ideators in performance on the Suicide Stroop nor on a Suicide Attention Disengagement Task. Persistent ideators also demonstrated more elaborated content of their most recently assessed suicide ideation (M = 3.60, SD = 2.74; vs. M = 2.61, SD = 1.67), including characteristics such as the process of dying, what would happen to their bodies after their attempts, other people's reactions to their attempts, and the effects of their suicide on others, $t = 2.10$, $p < .05$. Findings will be discussed from the perspective of cognitive models of suicide.

Discussant: Christine Cha, Teachers College, Columbia University

Monday, October 28, 2019

CONCURRENT SYMPOSIA SESSIONS

3:30 PM - 5:00 PM

9. NEUROBIOLOGY OF SUICIDE IN BORDERLINE PERSONALITY DISORDER

Chair: Irina Esterlis, Yale University and VA NCPTSD
Co-Chair: Barbara Stanley, College of Physicians & Surgeons, Columbia University

Overall Session Abstract: Borderline Personality Disorder (BPD) is a chronic and disabling psychiatric condition characterized by affective instability, impulsivity, and disruption of interpersonal relationships and self-image. Crucially, BPD ranks among the most robust predictors of both suicide attempt (SA) and death by suicide. Roughly 75% of individuals with BPD will attempt suicide in their lifetimes, most on multiple occasions, and 70-80% of individuals with BPD engage in self-injurious behavior (SIB; e.g. cutting, burning skin). While research has shown that many individuals with BPD experience limited symptom improvement with age, an estimated 10% die by suicide (roughly 50x the rate of the general population), with most deaths occurring before the age of 35. Significantly, even in the absence of a full diagnosis, many of the traits that characterize BPD, including impulsivity, affective instability, high acute pain tolerance, and chronic interpersonal conflict, are independently predictive of suicidal behavior.

Unfortunately, BPD is notoriously resistant to pharmacological treatment; most of the currently available pharmacological agents do not reliably reduce overall BPD symptom severity16. Pharmacological treatment of BPD is further complicated because no medication has been consistently shown to reduce suicidal behavior in BPD, with some evidence pointing to increased suicidal ideation and SIB in BPD with typically prescribed medications. Research facilitating development of targeted treatments for BPD, and suicidal behavior specifically, is desperately needed. Development of novel treatments will require elucidation of the pathophysiology of BPD and the neurobiological substrates of suicidal behavior.

This symposium presents cutting-edge research acquired via multiple neuroimaging modalities with the focus on advancing understanding of the neurobiology of suicidal behavior and suicide-related symptoms in BPD. Drs. Hazlett, Stanley, and Dombrovski will present novel findings obtained using functional magnetic resonance imaging (fMRI) with the potential to inform the neurological underpinning of suicidal behavior in BPD. Specifically, Dr. Hazlett's talk will discuss findings on habituation of amygdala activation to pleasant, unpleasant, and neutral photographic images in individuals with and without a history of suicide attempt. Dr. Stanley will present structural and functional findings implicating the dorsolateral prefrontal cortex and cerebellum in stress response abnormalities exhibited by females with BPD and suicidal behavior. Dr. Dombrovski will discuss neural computations underlying maladaptive social decision-making among high lethality suicide attempters with BPD. Finally, Dr. Davis will present evidence implicating the metabotropic glutamate receptor type 5 (mGluR5) as a potential biomarker for suicide attempt in BPD. Her findings show higher mGluR5 levels in individuals at high risk for suicide, and this is related to the endophenotypes underlying suicidal behavior. Together, these talks provide a survey of novel research on the neurobiology of suicidal behavior in BPD, a uniquely high-risk population, highlighting both recent advances in understanding and areas of priority and potential treatment target for future study.

9.1 AMYGDALA HABITUATION TO UNPLEASANT PICTURES IN BORDERLINE PERSONALITY DISORDER PATIENTS WITH AND WITHOUT A HISTORY OF SUICIDAL BEHAVIOR

Erin Hazlett*[1]

[1]Icahn School of Medicine At Mount Sinai

Individual Abstract: Patients with borderline personality disorder (BPD) are often characterized by emotion dysregulation and recurrent suicidal behavior. The rate of suicide in BPD is 8-10%, 50 times that of the general population. One form of emotion dysregulation is

the inability to habituate to repeated unpleasant emotional stimuli. The amygdala is central to the processing of emotional information and abnormalities in this brain region have been linked to affective impairments in BPD. Our prior work showed that BPD participants exhibited prolonged fMRI BOLD responses in the amygdala to emotional stimuli, indicating longer time to return to baseline, and a failure to down-regulate (habituate) amygdala response with repeated presentations of emotional pictures, suggesting a deficit in regulating emotional arousal (Hazlett et al 2012; Biol Psychiatry). Despite progress in understanding risk factors of suicidal behavior, little is known about the role of emotion dysregulation and its underlying neural circuitry which may confer suicide risk.

The current study employed fMRI to examine amygdala activation in three demographically-matched groups recruited from the community using newspaper and online advertisements: BPD patients with a history of suicidal behavior (n=15), BPD patients with no history of suicidal behaviors (n=18), and healthy controls (n=32) during a task involving an intermixed series of novel and repeated unpleasant (U), neutral (N), and pleasant (P) pictures. All participants were rigorously screened and received structured diagnostic interviews (SCID and SIDP). Healthy controls had no Axis I or personality disorder. All BPD participants met DSM-IV criteria for BPD and were unmedicated at the time of their fMRI scans. Our group achieved an inter-rater reliability 0.81 for diagnosing BPD. Exclusion criteria included any confounding neurological illness (e.g., epilepsy), substance use disorder, current major depression. The amygdala volume was hand-traced on each participant's structural MRI scan blind to diagnosis and co-registered to their fMRI scan.

Amygdala BOLD activation was examined with a mixed-model multivariate analysis of variance (Group [Healthy controls vs. BPD/no suicidal behavior vs. BPD/suicidal behavior] x Picture type [unpleasant, neutral, pleasant] x Time [novel, repeated] x Hemisphere (L, R). Those with BPD and a history of suicidal behavior showed an increased amygdala response to repeated unpleasant pictures compared to those with BPD and no history of suicidal behavior and healthy controls. The groups did not differ on BOLD activation to neutral or pleasant images (Group x Picture type x Time interaction, $p<0.001$, Wilks). Among the BPD patients, greater amygdala activation in response to repeated unpleasant pictures was also associated with greater severity of suicidal behavior ($p<0.01$).

These novel findings indicate that emotion processing and specifically, dysregulation is impaired commensurate with severity of suicidal behavior in BPD and suggest that amygdala activity may be a promising biomarker of suicide risk.

9.2 MULTI-MODAL BRAIN IMAGING STUDY IN FEMALES WITH BORDERLINE PERSONALITY DISORDER AND SUICIDAL THOUGHTS AND BEHAVIOR

Barbara Stanley*[1], Mina Rizk[2], Noam Schneck[2]

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

Individual Abstract: Introduction: Abnormalities of the hypothalamic–pituitary–adrenal (HPA) axis have been noted in borderline personality disorder (BPD) and specific forms of suicidal ideation and behavior. Emotional dysregulation is a hallmark of BPD diagnosis and its improvement is often used to monitor treatment outcome. Identifying the neuroimaging

correlates of HPA axis and emotional dysregulation can help in prediction and prevention of suicide.
Methods: Fifty-sex females with BPD and suicidal behavior, aged 18-65 years, underwent the Trier Social Stress Test (TSST). Salivary cortisol was measured at 6 time-points before and during TSST and area under the curve of cortisol response with respect to baseline (AUCi) was calculated. Structural T1 magnetic resonance imaging (MRI) scans were collected and voxel-based morphometry (VBM) analysis was performed to examine regional gray matter volume (GMV) correlates of AUCi. A subsample (N=33) was administered a cognitive reappraisal functional MRI (fMRI) task and the Difficulties in Emotion Regulation Scale (DERS) pre- and 6 months post-treatment. Voxel-wise analysis was run to explore if any regional brain activation during a negative-pictures cognitive reappraisal (Reappraise NEGATIVE > Look NEGATIVE) can predict post-treatment DERS score controlling for pre-treatment DERS score.

Results: VBM analysis showed that cortisol response to stress (AUCi) (Mean [SD]=0.6 [13.0]) correlated negatively with the GMV of right dorsolateral PFC (dlPFC) (T= 4.31, $p<0.001$, size=912, x,y,z=-42,39,38) and left dlPFC (T=4.32, $p<0.001$, size=1048, x,y,z=30,52,33), while it correlated positively with GMV of right cerebellum (T=3.94, p=0.011, size=474, x,y,z=24,-40,-32). The fMRI analysis yielded that greater activation of the lateral occipital cortex (LOC) during reappraisal at baseline predicted worse treatment response, irrespective of the type of treatment received.

Conclusion: Consistent with literature, smaller dlPFC GMV is associated with greater HPA axis reactivity, supporting the regulatory role of dlPFC over the HPA axis. Larger cerebellar volume in relation to greater cortisol response to stress may be due to its dense concentrations of glucocorticoid receptors and bidirectional connections with paraventricular nucleus of the hypothalamus. Those who were less able to disengage LOC when trying to cognitively control their negative emotions received less benefit from treatment at the follow up timepoint. Visual attention towards negative stimuli, governed by the LOC, may therefore impair the ability to benefit from treatment in BPD. The dlPFC and cerebellum may be biomarkers for stress response abnormalities and LOC for treatment response in BPD suicidal females. Future studies should elucidate on the implication of these regions in different psychiatric populations with suicidality.

9.3 SOCIAL DECISION-MAKING AND HIGH-LETHALITY SUICIDE ATTEMPTS IN BORDERLINE PERSONALITY DISORDER

Alexandre Dombrovski*[1], Polina Vanyukov[2], Katalin Szanto[2], Michael Hallquist[3]

[1]University of Pittsburgh School of Medicine, [2]University of Pittsburgh, [3]Penn State University

Individual Abstract: In BPD, the decision to attempt suicide is often prompted by negative interpersonal experiences. Clinical theory and experimental studies characterize patients as interpersonally hypersensitive, forming extreme opinions of others and misattributing malevolence. Perceived rejection and betrayal trigger aggression and negative emotional responses that can lead to a suicidal crisis. Maladaptive social responses in BPD – ranging from anger to suicide – are typically explained in terms of limbic interference with adaptive cortical processing. However, neural computations that underlie this interference remain unspecified. Our study, grounded in formal learning theory, aims to fill this gap. We view

social triggers as potent Pavlovian conditioned cues that interfere with adaptive learning and decision-making. In this view, reactive aggression and self-destructive responses to social conflict are conditioned responses. Our general hypothesis is that in individuals with BPD and high-lethality suicide attempts, automatic, Pavlovian computations set off by social cues monopolize cortico-striato-thalamic network resources, displacing goal-directed computations that reflect adaptive learning. To assess the interference of the social context with goal-oriented learning during economic exchanges, we will use a modified version of the trust game (Vanyukov et al., CABN, 2019). Here, expectations of reciprocity develop and are violated during repeated interactions between players. The participant plays the role of an investor and is given a virtual $1 at the beginning of each trial. She decides whether to keep or invest $1 with another player (trustee). If $1 is invested, the trustee receives a return of $3. The trustee can then either share the return with the investor, in which case each player receives $1.50, or keep $3, giving nothing to the investor. The Pavlovian influence is experimentally controlled by manipulating the social reputation of the trustee (good, bad, neutral) using scripts. Reputation does not predict the trustee's actual behavior. To control goal-oriented learning, we independently manipulate trustee's behavior (cooperation rate manipulated in blocks of 50/50, 80/20, and 20/80 in a Latin square design). We report preliminary analyses of behavior and decision times (DT) using multi-level modeling in 67 people with BPD (16 high-lethality attempters, 26 low-lethality attempters, 13 non-attempters) and 25 controls. Compared to the other groups, high-lethality suicide attempters were faster to respond to trustees with valenced (good, bad) vs. neutral reputation ($chi2[6] = 16.4$, $p = 0.012$) and following trustee's defection ($chi2[3] = 11.3$, $p = 0.010$). BPD patients as a group displayed less reciprocity ($chi2[6] = 7.8$, $p = 0.0496$), however high-lethality attempters paradoxically differed the least from healthy controls. Our initial reinforcement learning model-augmented imaging analyses confirmed that normative learning from social exchanges was driven by striatal prediction error signals ($p\_corr < .05$). In conclusion, we high-lethality suicide attempters with BPD display behavioral invigoration in response to irrelevant but emotionally salient social reputation information. This behavior is consistent with maladaptive Pavlovian decision biases, a hypothesis that we will test against neural data.

9.4 DYSREGULATION OF MGLUR5 IN BORDERLINE PERSONALITY DISORDER AS A BIOMARKER FOR SUICIDAL BEHAVIOR: PRELIMINARY EVIDENCE FROM AN [18F]FPEB PET STUDY

Margaret Davis*[1], Sophie Holmes[1], Ansel Hillmer[1], Nicole DellaGiogia[1], Sarah DeBonee[1], Nabeel Nablusi[1], David Matuskey[1], Richard Carson[1], Irina Esterlis[2]

[1]Yale University School of Medicine, [2]Yale University and VA NCPTSD

Individual Abstract: Introduction: Borderline Personality Disorder (BPD) is a debilitating psychiatric condition, associated with 75% lifetime suicide attempt and 10% suicide mortality. Despite the seriousness of the disorder, relatively little is known about the pathophysiology of BPD on a molecular level. The metabotropic glutamate receptor type 5 (mGluR5) has been implicated in the pathophysiology of both BPD and suicidal behavior given its role in emotion regulation, social and cognitive functioning, and pain processing. For example, recent postmortem and epigenetic work has linked genes that encode for mGluR5 and related scaffolding proteins (responsible for anchoring the receptor to the cell wall) to suicide attempt and mortality respectively. This study examined the relationship between mGluR5 availability, BPD, and suicidal behavior in vivo.

Methods: Twenty-one individuals with MDD, 10 of whom had comorbid BPD, and 21 age-, sex-, and smoking-matched healthy comparison controls (HC) participated in an [18F]FPEB

PET scan and comprehensive clinical assessment. Volume of distribution (VT: ratio of parent radioligand concentration in tissue relative to that in blood) in grey matter regions was the outcome measure.

Results: We observed significantly greater mGluR5 VT in individuals with BPD compared to both MDD only and HC participants across brain regions implicated in the neurobiology of BPD [(amygdala; 32% higher, p<.001), dorsolateral PFC (dlPFC; 24% higher, p=.015); and orbitofrontal cortex (OFC; 29% higher, p=.002)]. In the BPD group higher mGluR5 VT was also associated with history of suicide attempt across regions of interest (28-33% higher, p's=.002-.046). Finally, we examined the relationship between fronto-limbic mGluR5 availability and endophenotypes linked to suicidal behavior in BPD. We observed a positive correlation between mGlur5 availability and impulsivity (r's=.77-.84; p's<.005) in the dlPFC, OFC, and amygdala in BPD.

Discussion/Conclusion: This is the first in vivo investigation implicating mGluR5 dysregulation in BPD. Importantly, higher mGluR5 availability was associated with history of suicide attempt in individuals with BPD. Larger studies are warranted; however, our findings suggest mGluR5 may be a critical treatment target for BPD, and suicidal behavior in this disorder.

10. COGNITIVE AND INTERPERSONAL PROCESSES OF RISK FOR SUICIDE IN ADOLESCENCE AND EMERGING ADULTHOOD

Chair: Jennifer Wolff, Alpert Medical School, Brown University
Co-Chair: Richard Liu, Alpert Medical School, Brown University
Discussant: Anthony Spirito, Alpert Medical School, Brown University

Overall Session Abstract: As the second leading cause of death in 10- to 24-year-olds, suicide is a particular concern for youth and young adults. The onset of suicidal behavior increases markedly during this period of development. Paralleling these findings, hospital encounters for child and adolescent suicidal ideation and behaviors has doubled over the last 10 years. Within this context, and given the current want of evidence-based psychosocial treatments for adolescent suicidal behavior, elucidating the processes of risk for this outcome remains a high priority.

Greater understanding of intrapersonal and interpersonal processes of risk is important insofar as it may advance our ability to inform future prevention and intervention strategies with at-risk youth and emerging adults (e.g., identify modifiable processes that may serve as promising targets for clinical intervention). With the significant maturation in prefrontal cortical functioning that occurs during this period of development, aberrant cognitive processes involving negative self-reflection (e.g., self-critical tendencies and other pathogenic self-schemata) may be of particular relevance to risk during this age. Also important during this developmental period are social dynamics, especially within family and peer relationships. With the increasing prominence of online social networks in shaping the day-to-day interpersonal experiences of adolescents and young adults, better understanding of interpersonal risk within the context of social media is needed.

The purpose of this symposium is to characterize these cognitive and interpersonal processes of risk for suicide in youth and young adults. In the first talk, Dr. Burke will present data from an ecological momentary study delineating the temporal dynamics of self-criticism and self-punishment cognitions in relation to self-harm. Dr. Burke's study provides an attempt to disambiguate the relative roles of state and trait cognitive processes as they relate to prospective risk. In the second talk, Dr. Thompson will present data collected from adolescents on a psychiatric inpatient unit. Specifically, she will present findings on the interaction of aberrant cognitive processes and social problems as they relate to suicidal thoughts and behaviors. In the third talk, Dr. Bettis will share her data examining transactional processes between adolescents and their parents as it relates to risk for suicidal ideation and depression. Specifically, data will be presented on the intergenerational transmission of depression, parent and teen emotion regulation, and suicidal thoughts and behaviors in the family. In the fourth talk, Dr. Nesi will present qualitative and quantitative data on the relationship between social media use and suicide risk among psychiatrically hospitalized adolescents. Finally, our discussant Dr. Spirito will describe how these factors tie together in identifying risk and how they may inform the development of future intervention strategies.

10.1 EXPLORATION OF YOUTH SELF REPORT (YSR) SYNDROME SCALES FOR PREDICTING SUICIDAL THOUGHTS AND BEHAVIORS AMONG PSYCHIATRICALLY HOSPITALIZED ADOLESCENTS

Elizabeth Thompson*[1], Richard Liu[2], Jennifer Wolff[2]

[1]Rhode Island Hospital, [2]Alpert Medical School, Brown University

Individual Abstract: Individuals with psychosis-spectrum symptoms have a markedly high risk for suicidal thoughts and behaviors (STB). Among individuals at clinical high risk for psychosis (e.g., experiencing subthreshold psychosis symptoms), co-morbid depression and related symptoms, as well as social difficulties (e.g., isolation, distance, mistrust), have been linked to increased STB. It is unclear if STB in the psychosis-risk population is accounted for by co-occurring psychopathology (e.g., depression) or due to unique experiences specific to the psychosis spectrum (e.g., hallucinations, disorganized thoughts and behaviors). Exploration into how social difficulties may impact the association between psychosis-spectrum symptoms and STB is also warranted, given the additive risk found between these factors in literature. This study explored the link between potential psychosis-spectrum symptoms and STB, accounting for depressive symptoms and social difficulties.

Adolescents (n = 709) admitted to a psychiatric unit for acute safety concerns completed the ASEBA Youth Self Report (YSR) and the Suicidal Ideation Questionnaire-Jr (SIQ) at intake. The YSR measures a broad range of behavioral and emotional symptoms, including thought problems (e.g., hallucinations, strange thoughts, odd and persistent behaviors), social problems (e.g., loneliness, rejection, difficult and awkward behaviors), and withdrawn/depressed symptoms (e.g., isolating and depressed thoughts and behaviors). The SIQ was used to measure current suicidal ideation. Participants were also asked whether they had a suicide attempt within the prior 7 days. Regressions were used to explore YSR subscales in relation to the SIQ and suicide attempts.

Regression results demonstrated that scores on the YSR thought problems (TP) and social problems (SP) scales statistically predicted suicidal ideation, beyond the effects of withdrawn/depressed (W/D) scores (TP f2 = 0.08, SP f2 = 0.01, W/D f2 = 0.08). An independent regression was used to test the interaction of thought problem and social problem scores in predicting SIQ scores. There was an overall effect of the three variables (social and thought problems, and the interaction) accounting for almost 34% of the variance in SIQ scores ($F(3, 705) = 118.99$, $p < .001$). Results indicated that social problems moderated the effect of thought problems on suicidal ideation. For those who perceived low levels of social problems (1 SD+ below the mean), thought problems were significantly associated with suicidal ideation, with a small effect size (f2 = 0.09). For those who perceived medium (within 1 SD of the mean) or high (1 SD+ above the mean) levels of social problems, thought problems had a moderate effect on suicidal ideation (f2 = 0.18 and f2 = 0.16). Independent logistic regressions were used to explore the association between YSR subscales and suicide attempt (yes/no) within the past 7 days (n = 148). Clinically significant T-scores (> 65) on the thought and social problems scales were significant statistical predictors of recent suicide attempt: TP OR = 2.22 (95% CI = 1.12, 4.41; p = .022), SP OR = 2.38 (95% CI = 1.19, 4.75; p = .014).

Findings support the notion that thought and social problems, as measured by the YSR, may be clinically meaningful risk factors for suicidal ideation, beyond the effects of depressive symptoms. Individuals reporting elevated thought and social problems may be at particularly high risk for suicidal ideation and the YSR subscales may be clinically useful for identifying these youth. Further discussion of relations between individual YSR symptoms, particularly psychosis-spectrum symptoms, and suicidal ideation will provide insight into specific experiences linked to suicide risk.

10.2 SOCIAL MEDIA AND SUICIDE RISK: QUALITATIVE ANALYSIS OF SOCIAL MEDIA CONTENT AND IN-DEPTH INTERVIEWS WITH PSYCHIATRICALLY HOSPITALIZED ADOLESCENTS

Jacqueline Nesi*[1], Kate Guthrie[2], Jennifer Wolff[3], Anthony Spirito[4]

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Individual Abstract: Adolescents' peer experiences play a critical role in the development, maintenance, and exacerbation of suicidal thoughts and behaviors. Social media sites now represent a primary context in which these peer experiences occur, yet suicide research has not kept pace with this rapidly shifting social landscape. This lack of research is problematic, given that social media represents a distinct interpersonal environment that may transform peer interactions in fundamental ways—for example, by allowing interactions to be more public, permanently accessible, and available at all times. Such novel peer interactions may create unique risk and protective factors for adolescent suicide. This is particularly true for adolescent girls, for whom interpersonal factors may be especially relevant to the development of suicidality. Formative research, incorporating novel methodologies and emerging from adolescent girls' own personal experiences, is needed to better understand these processes.

Qualitative data can provide rich insights into the ways in which social media contributes unique risk or protective factors for adolescent suicide. The current study explores two primary questions: 1) How do adolescent girls with suicidal thoughts and behaviors experience social support, interpersonal stress, and peer influence within the social media environment? 2) How do social media-based peer experiences affect suicidal thoughts and behaviors?

Data will be presented from in-depth qualitative interviews and social media data, gathered from 25 female-identified adolescents, ages 12-17, recruited from a psychiatric inpatient facility. Interviews were recorded and transcribed. In addition, social media data, including posts, photos, and comments, were downloaded directly from participants' Facebook and Instagram pages.

Results from content analyses will be presented, representing data from interview transcripts and social media. All data were analyzed using codes derived from the interview agenda and research questions; inductive and deductive approaches were used to identify themes. The following themes will be discussed: 1) Suicide-related online content as a means of validation, but also as a trigger for negative mood, 2) Contributions of public and quantifiable (i.e., number of "likes") peer feedback to unique pressures and threats to self-image, 3) Importance of social media for peer support and connection, 4) Time and investment in social media, and motivation to change media use habits, 5) Amplification of peer stressors due to frequent availability and permanent accessibility of content.

Results suggest that social media represents a fundamental feature of contemporary adolescents' social lives, with unique implications for youth with suicidal thoughts and behaviors. Social media provided a context through which nearly all of the participants' peer interactions were filtered, reflecting the need for researchers and clinicians to take social media use into consideration when working with adolescents. Findings provide initial insight into potential assessment and intervention strategies targeting social media use in suicidal youth, and future directions for research will be discussed.

10.3 APPLICATION OF THE ACTOR-PARTNER INTERDEPENDENCE MODEL IN EMOTION REGULATION, DEPRESSION, AND SUICIDAL THOUGHTS AND SELF-INJURIOUS BEHAVIORS

Alexandra Bettis*[1], Jennifer Wolff[1], Erik Hood[2], Sarah Thomas[1], Christie Rizzo[2], Richard Liu[1]

[1]Alpert Medical School of Brown University, [2]Northeastern University

Individual Abstract: Objective: The family environment is an important context for the development and maintenance of depressive symptoms within families, and may contribute to the occurrence of suicidal thoughts and self-injurious behaviors (STSBs) in adolescents (Daches et al., 2018; Hawton et al., 2012). Poor emotion regulation (ER) influences how people experience and engage with others, which is particularly relevant for a parent/adolescent relationship (Sanders et al., 2015; Silk et al., 2006). However, no research to date has examined whether there are transactional links in families whereby poor ER among adolescents links to parental depression and vice versa. Further, no studies have examined how these transactional links are associated with adolescent risk for STSBs. The present study evaluates whether parent

and adolescent reports of difficulties with regulating emotion are linked with their own (actor effects) and each other's (partner effects) depressive symptoms and STSBs.
Method: Seventy-six adolescents (Mage = 14.70, SD = 1.53; 71% female) and a parent/guardian (Mage = 44.30, SD = 6.79; 80% female) were recruited from adolescent inpatient and partial hospitalization programs. Participants completed self-report assessments of ER difficulties (DERS, Gratz & Roemer, 2004), depressive symptoms (BDI-II, Beck, Steer, & Brown, 1996; CDI-2, Kovacs, 2010), and adolescent STSBs (SIQ Jr. Reynolds & Mazza, 1999; C-SSRS, Posner et al., 2011; SITBI, Nock et al., 2007). The Actor-Partner Interdependence Model (APIM; Kenny, Kashy, & Cook, 2006) was used to examine the unique influence of adolescent and parent emotion regulation on their own depression ("actor effect") and on the depression of the other member of the dyad ("partner effect"). APIM analyses will also be conducted to examine these associations among difficulties in ER and STSBs. This method assesses and accounts for the interdependence of parent and adolescent characteristics and experiences.

Results: Bivariate correlations show significant positive associations among adolescent depression and difficulties in ER ($r = .61$) and parent depression and difficulties in ER ($r = .58$). APIM results are reported by the partial correlation (r), which provides the effect size for individual actor and partner effects. APIM results revealed expected actor effects for both parent and adolescent facets of ER ($r = .64$, $p < .001$ and $r = .56$, $p < .001$, respectively). Further, positive partner effects were observed, such that greater parent-reported difficulty in accessing effective ER strategies was associated with greater adolescent depression ($r = .31$, $p = .027$). Similarly, adolescent-reported difficulty accessing effective ER strategies evidenced a non-significant trending association ($r = .31$, $p = .056$) with parent depressive symptoms. Additional analyses with a larger sample will be conducted to test actor and partner effects for difficulties in ER and STSBs.

Conclusions: Overall, findings suggest that the transmission of depression within families may involve mutual transactions of risk whereby parent factors are linked with adolescent symptoms and adolescent factors are linked with parent symptoms. We will also explore how these relationships are similar (or different) with regard to STSBs. By using the dyad as the unit of analysis, future research can account for unique individual contributions from multiple members of an interaction and provide a more complete understanding of factors linked to family depression as well as risk for STSBs. This may have important implications for how to intervene at the family-level to prevent depression and STSBs in adolescents at highest risk.

10.4 THE RELATIONSHIP BETWEEN STATE AND TRAIT SELF-CRITICAL AND SELF-PUNISHMENT COGNITIONS AND NONSUICIDAL SELF-INJURY

Taylor Burke*[1], Kathryn Fox[2], Marin Kautz[3], David Siegel[4], Lauren Alloy[3]

[1]Brown University, [2]Harvard University, [3]Temple University, [4]Rutgers University

Individual Abstract: The Self-Punishment Hypothesis suggests that those who are self-critical may engage in nonsuicidal self-injury (NSSI) as a means of punishing themselves. Although significant evidence suggests that trait self-criticism is cross-sectionally associated with NSSI, little research has examined key components of this hypothesis. In the current investigation, we sought to examine whether trait and state self-critical and self-punishment cognitions differentiate those with and without a history of NSSI. We further explored whether trait levels of these cognitive factors prospectively predict short-term risk for NSSI urges. Participants (N

= 123; M = 19.85 years; SD = 1.75) were university students with a history of repetitive NSSI (n = 64) and controls with no history of NSSI (n = 59). At baseline, participants completed measures assessing history of NSSI behavior and urges as well as trait measures of self-criticism and feeling "deserving of pain and punishment." After completion of baseline procedures, participants subsequently participated in a ten-day ecological momentary assessment protocol in which self-critical and self-punishment cognitions and urges to engage in NSSI were assessed in real-time three times daily. State self-critical and self-punishment cognitions were assessed by calculating a mean of the maximum 30 responses. Results suggested that both trait and state measures of self-critical (Cohen's ds = .87 and .60, respectively) and self-punishment cognitions (ds = .87, .45) were significantly higher among those with a history of repetitive NSSI. Among those participants with a history of repetitive NSSI, trait self-punishment but not trait self-critical cognitions, significantly predicted number of NSSI urges experienced over the EMA period, after controlling for prior month frequency of NSSI urges ($B = 0.30$, $p < .001$). Although self-critical and self-punishment cognitions were both highly correlated with NSSI history, only trait self-punishment cognitions prospectively predicted NSSI urges, suggesting that it may be a more specific and short-term risk factor for NSSI. Both self-critical and self-punishment cognitive styles may be modifiable treatment targets for those at risk for self-injury. Future research directions and clinical implications will be discussed.

11. LEVERAGING TECHNOLOGY TO PREVENT YOUTH SUICIDE: LESSONS FROM FOUR PILOT INTERVENTION DEVELOPMENT STUDIES

Chair: Ewa Czyz, University of Michigan

Overall Session Abstract: The increasing rate of suicide among youth calls for the development of promising intervention approaches with a broad reach. There are reasons to believe that integrating technology in context of suicide prevention interventions has potential to make an impact. For example, Mobile Health (mHealth) and web-based interventions are promising in terms of their expending reach, particularly as access to cell phones and internet continues to increase across socioeconomic strata of society. Recent estimates show that 95% of teens ages 13-17 have a mobile phone (Pew Research Center, 2018). Building on the benefit of broad reach and accessibility, additional advantages of using technology to deliver or enhance treatment protocols include continued engagement, increased dosage of therapeutic content, maximizing fidelity to intervention content, and the ability to deliver personally-tailored content (Erhardt, & Dorian, 2013; Luxton et al., 2014). Such interventions can also be highly tailored and personalized, increasing acceptability and effectiveness (Ondersma et al., 2005). Despite these potential benefits, the application of technology in context of interventions for youth at risk for suicide is understudied. This symposium's presenters will focus on the potential benefits and challenges of interventions for adolescents at risk or suicide that incorporate different technology modalities (mobile applications, text messaging, web-based platform).

The first presenter will describe the development and testing of a novel mHealth intervention tool to extend care after psychiatric hospital discharge for suicidal adolescents who drink alcohol, and their parents. The presenter will share findings from in-depth qualitative interviews with adolescents and parents used to inform the development of the mHealth tool, as well as results from the open trial on its usability, feasibility, and acceptability.

The second presenter will discuss the process of developing a safety planning phone application (Brite) to reduce the risk of suicidal behavior in adolescents with high suicidal ideation or a

recent suicide attempt, during the transition from inpatient treatment to outpatient care. Brite was developed to augment protective factors and increase access to coping behaviors following discharge from an inpatient unit. The presenter will present findings from a pilot study assessing feasibility, implementation, satisfaction, and outcomes of the phone application.

The third presenter will describe a 3-component intervention for adolescents who are psychiatrically hospitalized due to suicide risk, which includes an in-person safety planning intervention, post-discharge telephone booster, and daily text message-based boosters delivered after discharge. The presentation will focus on the iterative process of developing the text-based boosters by presenting feasibility and acceptability data as well as on the integration of these text boosters with the other two intervention components in context of an ongoing pilot trial.

The fourth presenter will discuss findings from an open trial of the Safety Planning Assistant delivered in a pediatric emergency department. The Safety Planning Assistant is a web-based modularized tool to assist clinicians in providing high-quality safety plans to adolescents at elevated suicide risk and their caregivers. The intervention contains two modules, one to develop the safety plan with the assistance of a clinician and another for parents, to provide psychoeducational material regarding safety plans, monitoring suicide risk, seeking mental health services, and reducing youth access to lethal means. Results of the open trial will be presented.

11.1 DEVELOPMENT AND PRELIMINARY TESTING OF AN MHEALTH TOOL TO EXTEND CARE AFTER PSYCHIATRIC HOSPITAL DISCHARGE FOR SUICIDAL ADOLESCENTS WHO DRINK ALCOHOL

Kimberly O'Brien*[1], Adeline Wyman Battalen[2], Christina Sellers[2], Anthony Spirito[3], Shirley Yen[4], Eleni Maneta[2], Colleen Ryan[5], Jordan Braciszewski[6]

[1]Education Development Center, [2]Boston Children's Hospital, [3]Alpert Medical School, Brown University, [4]Beth Israel Deaconess Medical Center, [5]Children's Specialized Hospital,, [6]Henry Ford Health System

Individual Abstract: Background: Mobile health (mHealth) tools that supplement inpatient psychiatric care have the potential to maintain and enhance intervention effects following hospitalization. The integrated Alcohol and Suicide Intervention for Suicidal Teens (iASIST) is one empirically supported intervention which has the capacity to be augmented with technology for continuation of care. The purpose of this study was to 1) conduct qualitative interviews to gather feedback to develop a complementary mHealth tool for iASIST to extend care after discharge, and 2) assess the usability, feasibility, and acceptability of the tool in an open trial.

Method: We first conducted qualitative interviews with eight adolescents and their parents to gather feedback to develop the complementary mHealth tool. All interviews were audio-recorded and transcribed for analysis. Deductive codes were derived from interview questions and inductive codes from topics raised in the interviews to identify overarching themes to inform development. Next, we conducted an open trial of iASIST, including use of the newly developed mHealth tool for three months post-discharge, with nine psychiatrically hospitalized adolescents and their parents. We assessed usability, feasibility, and acceptability by examining use patterns and analyzing usability survey data.

Results: Participants identified a need for an mHealth tool in the form of a smartphone app to deliver a booster of iASIST content to adolescents and parents during the post-hospitalization period. Adolescents wanted the mHealth booster to provide support in meeting alcohol- and mood-related goals, while parents desired general resources as well as tips for conversations with their adolescent about mood and alcohol use. In the open trial, adolescents logged in an average of 5.7 times (range=1-20) and used an average of 5.2 features (range=3-7). The most frequently used feature was mood and alcohol tracking (M=5.2), followed by messages (M=2.8), forum (M=2.7 times), support (M=1.8), strategies (M=1.7), and change plan (M=1.4). Parents logged in an average of 14.7 times (range=1-57) and used an average 4.6 features (range=2-7). The most frequently visited feature was the forum (M=2.8), followed by communication (M=2.7), messages (M=2.4), change plan (M=2.2), tracking (M=1.8), support (M=1.7), and library (M=1.1). With respect to usability, all adolescents felt that the app was easy to use, and all but two felt the content was relevant and useful. They felt the reading level (M=3.25), length of messages (M=3.25), frequency of messages (M=2.75), quantity of messages (M=2.75), and length of services (M=2.63) were acceptable. All but one parent felt that the app was easy to use and the content was relevant and useful. They felt that the reading level (M=3.5), length of messages (M=3.5), quantity of messages (M=3.25), and frequency of messages (M=3.00) were acceptable. The average rating for length of service (M=4.00) indicated parents would prefer to use the app for a longer period of time. Despite minimal engagement, all but one adolescent and one parent reported that they believed others would use the app and all adolescents and parents reported they felt they could use the app whenever and wherever they wanted.

Conclusion: Study findings suggest a larger randomized controlled trial may be warranted to test the effectiveness of iASIST; however, the low use rate of the mHealth tool points to the need for further exploration of barriers to post-discharge use. Smartphone apps that supplement inpatient psychiatric treatment may help to maintain and enhance intervention effects following hospitalization, but only if engagement is optimized such that it supports continuity of care.

11.2 DEVELOPMENT OF A SAFETY PLAN PHONE APP: LESSONS LEARNED FROM A CLINICAL TRIAL

Candice Biernesser*[1], Jamie Zelazny[1], Kristin Wolfe[2], Tina Goldstein[3], Betsy Kennard[2], David Brent[4]

[1]University of Pittsburgh, [2]University of Texas Southwestern Medical Center At Dallas, [3]University of Pittsburgh Medical Center, Western Psychiatric Institute & Clinic, [4]University of Pittsburgh/Western Psychiatric Institute

Individual Abstract: For suicidal patients, the transition from a more intensive level of care to outpatient treatment is the highest risk period for suicidal behavior in both adult and adolescent populations. In a recent pilot study, we developed a safety planning phone application (Brite) to augment protective factors and increase access to coping behaviors in adolescents following discharge from an inpatient unit. Pilot data demonstrated promising outcomes in acceptability and feasibility. In this presentation, we will discuss the process of app development, the ethical and practical considerations of app development, and provide examples of how to the technology can be used in patient care.

11.3 FEASIBILITY AND ACCEPTABILITY OF AUGMENTING SAFETY PLANNING WITH TEXT-BASED SUPPORT AMONG PSYCHIATRICALLY HOSPITALIZED ADOLESCENTS

Ewa Czyz*[1], Nathaniel Healy[1], Cheryl King[2], Maureen Walton[1]

[1]University of Michigan, [2]University of Michigan Medical School

Individual Abstract: There is a critical need for developing promising interventions for psychiatrically hospitalized adolescents, many of whom are at high risk for experiencing repeated suicide attempts, persisting suicidal ideation, emergency department visits, and rehospitalizations after discharge. One potential strategy for increasing the impact of interventions delivered during hospitalization is via technology such as text messaging. Text messaging is ubiquitous among adolescents, and it has been successfully used to support a wide range of physical, behavioral, and mental health outcomes in other populations.

This presentation will report on the development of a 3-component brief intervention (in-person safety plan delivered during hospitalization, post-discharge booster phone call, and post-discharge text message-based boosters) intended to encourage healthy coping and safety plan use following discharge from hospitalization. In particular, the presentation will discuss the development, as well as present acceptability data, of the text-based boosters. Text message boosters were developed using a 2-phase approach. Eligible adolescents (ages 13-17) who were psychiatrically hospitalized due to last-week suicidal ideation and/or last-month suicide attempt participated in one of two phases: Phase 1 focused on iteratively developing the content of text messages, guided by feedback from adolescents (n=25; 76% female) obtained during hospitalization; Phase 2 focused on refining messages using real-time feedback obtained from adolescents (n=11; 73%) after discharge supplemented with an end-of-study interview. In Phase 2, adolescents received two text message boosters each day for 1 month and rated these messages daily. Results from Phase 1 and Phase 2 indicate initial acceptability of text-based follow-up support. For example, on a scale of 1-5, with higher ratings indicating more acceptability, we found that (1) adolescents expressed: teens would be interested in receiving support text messages after discharge (Phase 1 M=4.33 [SD=0.48]; Phase 2 M=4.09 [SD=1.30]) and (2) text messages were helpful (Phase 1 M=4.67 [SD=0.57]; Phase 2 M=4.36 [SD=0.67]). In addition, Phase 2 data suggests that adolescents generally liked messages that were interactive, included coping tips, and incorporated inspirational/hopeful content.

Finally, the presentation will also focus on describing the approach taken to integrate the text-based boosters with the additional two intervention components. The 3-component intervention pilot will begin prior to the Summit.

11.4 THE SAFETY PLANNING ASSISTANT: A WEB-BASED TOOL TO SUPPORT SUICIDE SAFETY PLANNING AMONG ADOLESCENTS

Ryan Hill*[1], Julie Kaplow[1]

[1]Baylor College of Medicine

Individual Abstract: The Suicide Prevention Resource Center and the Joint Commission recommend safety planning as a standard of care for individuals identified as at-risk for suicide-related behaviors (The Joint Commission, 2016; Suicide Prevention Resource Center, 2018). Safety planning is a brief intervention to help individuals with suicidal thoughts and urges them to develop a set of action steps to reduce the likelihood of engaging in suicidal behavior during

a crisis (Stanley & Brown, 2012). To date, however, safety planning with adolescents has not yet been examined empirically.

Safety planning with adolescents requires coordination with caregivers, who are responsible for acquiring mental health services and taking steps to ensure a safe home environment. Additionally, adolescents often struggle with identifying appropriate distracting activities and sources of social support, and may require greater opportunities to practice or rehearse safety plan use in order to apply the skills effectively.

The Safety Planning Assistant is a web-based modularized tool to assist clinicians in providing high-quality safety plans to adolescents and their caregivers. The first module assists adolescents in developing a safety plan with the assistance of a clinician. This module introduces the purpose and process of safety planning and provides assistance to ensure that youth identify appropriate activities and social supports. The second module provides psychoeducational material to parents/caregivers, including information about the purpose and use of safety plans, monitoring suicide risk, seeking mental health services, and reducing youth access to lethal means.

Youth presenting to a pediatric emergency department with elevated suicide risk will be invited to complete the Safety Planning Assistant. Youth and parents complete pre- and post-intervention assessments of intent to use safety planning and provide feedback on the intervention. Participants also return for a 1-month follow-up assessment to examine rates of safety plan use, means safety behaviors, and treatment linkage. Results of the open trial will be presented.

12. ASSESSMENT OF IMMINENT SUICIDE RISK IN PATIENTS DENYING SUICIDAL IDEATION AND INTENT

Chair: Igor Galynker, Mount Sinai Beth Israel

Overall Session Abstract: At present, the centerpiece of the assessment for imminent post-discharge risk is the patient's self-report of their current suicidal ideation (SI) and intent. However, these staples of risk assessment are limited in predictive value because the patients may hide their suicidal intent, may not be aware of it, or the explicit SI may appear only 15 minutes prior to suicide. Indeed, according to the recent Center for Disease Control (CDC) report, only a quarter disclosed suicide intent prior to ending their lives. Recent research aimed to circumvent this problem by designing methods to assess imminent risk, which do not rely on patients' self-report SI. These include multi-modal assessments identifying suicide-specific clinical syndromes, and analyzing clinicians' emotional responses to suicidal patients. This symposium will describe new approaches to the assessment of imminent suicide risk designed to circumvent the pitfall inherent to the self-report of SI and intent.

The first speaker will open the symposium by focusing on the non-disclosure of suicidal ideation and intent, highlighting the frequency and pervasiveness of the problem among suicidal individuals admitted to an inpatient psychiatric unit in Trondheim, Norway. The next speaker will present the findings for the predictive validity of the Suicidal Crisis Inventory, an assessment of high suicide-risk state assessed among psychiatric inpatients and outpatients in New York. The third speaker will discuss the use of the Modular Assessment of Risk for Imminent Suicide (MARIS) approach that involves both clinician and patient information for identifying individuals at high risk for suicide that do not inquire for suicidal ideation and

behaviors. The final presenter will conclude the symposium by presenting the use of the modular assessment for the assessment of suicidal children and adolescents in Israel. Together this panel will provide a thorough, evidence-based description of innovative approaches to the assessment of imminent risk, which do not rely on patients' report of suicidal ideation or intent. Understanding how to integrate multi-informant approaches into a unified modular assessment could be important for outlining future research and preventing suicide.

12.1 THERAPIST EMOTIONAL REPONSE AND PATIENTS' NON-DISCLOSURE OF SUICIDAL IDEATION

Terje Torgersen*[1]

[1]St. Olavs Hospital, Department of Mental Health

Individual Abstract: Patients admitted to psychiatric departments with suicidal thoughts or behaviors have high rates of post discharge suicides (Chung et al., 2017). Identifying patients that are experiencing suicidal ideation (SI) therefore remains a central component of clinician's suicide risk assessments. However, some patients may withhold information on suicidal ideation from their clinicians, leaving the risk assessment of future suicidal behavior less reliable.

A recent study indicated that the emotional response of the therapist when meeting the patient can provide meaningful information for the assessment of imminent risk of suicidal behavior (Yaseen, Galynker, Cohen, & Briggs, 2017). In the present study, we aim to investigate whether therapist emotional response is associated with patients' self-reported concealment of suicidal ideation. The study was performed at a psychiatric inpatient unit in Trondheim, Norway. Therapist emotional response was measured by the Therapist Response Questionnaire-Short Form (TRQ-SF; Yaseen et al. 2017) and reported by the clinician after the initial meeting with the patient. Patients' self-report on withholding suicidal ideation was measured at discharge on a VAS scale (0 "not at all"- 100 "very much so"). The patients where asked if they, during admission, had experienced suicidal ideation or thoughts of self-injury without communicating this to the hospital staff. The sample (n=149) was 53 percent women with a mean age of 38.45 (SD 15.13). Bivariate analysis by Spearman rank order correlation demonstrate a significant association (rho=.187, n=149, $p<.05$) between therapist emotional response after initial meeting with the patient and patients' self-reported concealment of suicidal ideation at discharge. Results from the study indicate an association between the emotional response of the therapist when meeting high- risk psychiatric inpatients within 24 hours of admittance, and patients self- reported concealment of SI at discharge. Therapist emotional response may provide meaningful information when assessing patients with a potentially elevated risk of suicide that are not otherwise identified through the explicit communication of the presence or absence of SI.

12.2 ASSESSMENT OF NEAR-TERM RISK FOR SUICIDE ATTEMPTS USING THE SUICIDE CRISIS INVENTORY

Shira Barzilay*[1]

[1]Schneider Children's Medical Center

Individual Abstract: The Suicide Crisis Inventory (SCI), was designed to measure several components of the Suicide Crisis Syndrome (SCS; Galynker et al., 2017; Yaseen et al., 2010;

Yaseen, Gilmer, Modi, Cohen, & Galynker, 2012; Yaseen et al., 2014; Yaseen et al., 2018), an acute suicide-specific diagnosable condition of cognitive and affective dysregulation theorized to precede near-term suicide attempts. Prior work found the SCI predictive of future suicidal behaviors in high-risk psychiatric inpatients during the crucial weeks following their hospital discharge. The current work aimed to extend the validation of SCI in diverse patient populations of psychiatric inpatients and outpatients, and to determine if the SCI has predictive validity for near-term suicidal attempts vs. suicidal ideation.
Methods: 867 participants completed a self-report assessment of the SCI, 383 were inpatient and 484 were outpatient participants. Of those 591 (68.2%) were re-assessed for suicidal outcomes at 1-month follow up. We analyzed the internal structure using confirmatory factor analysis, and convergent and discriminant validity using global psychopathology scale Brief Symptom Inventory (BSI). We assessed predictive validity as well as incremental prediction validity over suicidal ideation and behaviors as measured by the Columbia Suicide Severity Rating Scale (CSSRS).

Results: The SCI had excellent internal consistency (Cronbach's 0.977). Confirmatory Factor Analysis (CFA) for five factors (entrapment, panic-dissociation, ruminative flooding, emotional pain, and fear of dying) demonstrating good fit. The SCI demonstrated moderate or stronger associations only with depression and anxiety, indicated non-redundancy with these related factors and independence from other dimensions of psychiatric distress. SCI scores specifically predicted suicide attempts rather than suicidal ideation and plan at follow-up with Area Under Curve (AUC) of 0.733 and Odds Ratio =8.62 ($p<0.001$) at optimal cut-off point. SCI incremental predictive validity over and beyond suicidal ideation and attempts history reported at baseline was supported for predicting suicide attempts specifically ($\beta= .012$, S.E = 0.006; $p=0.046$).

Conclusions: The Suicide Crisis state as assessed by the SCI identifies acute symptoms that are predictive of imminent suicide attempts over the traditional self-report risk factors. The SCI appears to be a valid tool for the assessment of pre-suicidal state associated with near-term suicide attempts and a valuable addition to risk assessment methodology.

12.3 BEYOND SELF-REPORT: A MULTI-INFORMANT PREDICTION OF SHORT-TERM SUICIDAL OUTCOMES

Igor Galynker*[1]

[1]Mount Sinai Beth Israel

Individual Abstract: Multi-informant assessments could be superior to assessments from a single source because they may be accessing different aspects of suicide risk. In this context, we examined predictive validity for near-term suicidal behavior of the multi-informant combination of patients' meeting the Suicide Crisis Syndrome criteria (SCS-C) and the Therapist Response Questionnaire Suicide Form (TRQ-SF) and interpreted out findings according to the Narrative-Crisis Model of suicide (NCM).

The SCS-C, which does not include suicidal ideation (SI) or intent, was filled out based on a battery of scales administered to 451 adult psychiatric outpatients at intake. The TRQ-SF was filled out by 59 clinicians immediately following the intake. Suicidal behaviors were assessed at 4-8 weeks from the initial assessment using the Columbia Suicide Severity Rating Scale (CSSRS). The Modified Sad Person Scale (MSPS) total scores and individual items, SI for the

past week measured by the Beck Scale for Suicide (BSS), and past month and lifetime SI measured by CSSRS at the intake were used as standard suicidal risk factors. The Suicide Narrative Inventory (SNI) was used to assess the Narrative aspect of the Narrative-Crisis Receiver Operator Characteristic (ROC) analysis, Chi-square independence tests, binary logistic, and multi-variable logistic regression were used.

In bivariate analyses, a high TRQ-SF total score was associated with both suicide attempts (□2=5.971, p=0.015) and suicide plans (□2=7.069, p=0.008), while meeting proposed SCS DSM criteria was only associated with suicide attempts (□2=5.987, p=0.014). Meeting either SCS criteria or high TRQ-SF scores, but not both, was associated with short-term suicide plans (□2=11.449, p=0.001) and attempts (□2=11.893, p=0.001). Within the TRQ-SF scale, affiliation and distress, but not hopefulness, were predictive of suicide attempts and plans (all $p<0.05$). In multivariable analyses, meeting either TRQ-SF or SCS improved the models in predicting both suicide attempt and plans when compared with traditional risk factors. Neither the TRQ-SF, nor its components scores were related to the SCS-C status but were related to the SNI scores and subscores reflective of Suicidal Narrative (Rho=0.125-0.237).

The Suicide Crisis Syndrome diagnosis and clinicians' emotional response to suicidal patients appear to predict short-term suicidal plans and behaviors through different mechanisms, where the latter reflect the Suicidal Narrative component of the NCM. Modular multi-informant risk assessment approaches, not relying on patient self-report, may be superior to traditional suicide risk assessments in identifying patients at imminent risk for suicide and warrant further study.

12.4 PILOT STUDY OF THE MULTIMODAL SUICIDE RISK ASSESSMENT FOR SUICIDAL YOUTH IN EMERGENCY DEPARTMENTS

Alan Apter*[1], Liat Haruvi-Katalan[1], Mira Levis Frenk[1]

[1]Schneiders Childrens Medical Center of Israel

Individual Abstract: There is an alarming increase in youth visits to the emergency department who are presenting with suicidal ideation/behaviors. However, risk assessments currently lack evidence-based practices and comprehensive methodology, and adolescents often conceal their suicidal intent. This underscore the urgent need for innovative short-term suicide risk assessment to direct appropriate treatment following emergency department visit. To address this problem, we pilot tested a suicide risk assessment battery, composed of multi-dimensional, multi-informant (i.e., clinician and patient) measures, which do not rely on self-report of suicidal ideation.

The talk will describe the need for indirect measures of risk for suicidal behavior among adolescents, and the methodology and preliminary feasibility results of the pilot study validating the suicide risk assessment instrument among youth. Sample included adolescents presenting with suicide-related complains to emergency department of a large general children medical center in Israel. Two suicide-risk assessment instruments predictive of post-discharge suicidal outcomes in adult populations were adapted and tested: a) The Youth Modular Assessment of Risk for Imminent Suicide (Y-MARIS). b) Suicide Crisis Syndrome Checklist (SCS). Suicidal outcomes were assessed one and six months post-discharge. Our preliminary findings show that using the Y-MARIS and SCS instruments is feasible in the pediatric emergency department setting. Further research validating the proposed comprehensive risk

assessment battery in a large sample of adolescents may have the potential of demonstrating clinical utility in identifying youth at high risk for suicidal behaviors post discharge.

Tuesday, October 29, 2019

CONCURRENT SYMPOSIA SESSIONS

8:15 AM - 9:45 AM

13. PSYCHOLOGICAL AND PHYSICAL PAIN (INCLUDING THE ROLE OF OPIOID SYSTEMS)

Chair: Philippe Courtet, University of Montpellier

Overall Session Abstract: Death by suicide has become a global epidemic. Every 40 seconds someone in the world dies of suicide. Intolerable pain is often reported in suicide notes. Indeed, the frequency of life events preceding a suicidal act is high and is the source of psychological or social pain. Moreover, people with chronic pain are a high-risk group for suicide. This session will address the role of psychological and physical pain in the suicidal process, their risk factors, and discuss investigations regarding their neurobiological underpinnings and the role of the opioid system at the time of the "opioid" crisis.

The first speaker (Ph Courtet) will give an overview on the clinical, cognitive and neuroanatomical aspects of social pain. The neural circuits involved in the suicidal behavior being targeted by the inflammatory system and interoceptive pathways, perspectives are offered by examining the inflammatory response to social stress in suicidal patients, as well as their interoceptive deficits. Furthermore, a growing amount of evidence favors the involvement of the opioidergic system in suicidal behavior leading to look at the potential interest in mu-opioidergic agonists to treat suicidal ideation.

Individuals with chronic pain commonly have significant concomitant psychiatric and medical disorders placing them at higher risk for suicide, and individuals who suffer from both pain and a substance use disorder are particularly vulnerable. Then, M Cheatle will review the current literature on the epidemiology of suicidal ideation in the pain and substance use disorder populations and discuss assessing suicide risk in this population and identifying modifiable mediators of pain, substance use disorder and suicide.

Whether or not are disturbed threshold, tolerance and endurance for physical pain in suicidal patients remains an open question. The third presenter (O Kirtley) will present results of two different projects; a laboratory study investigating repeated-measures of pain threshold and tolerance in self harm and a comprehensive review of psychological factors associated with suicidal behaviour and chronic pain. She will discuss the methodological issues in order to investigate further these relevant psychological factors (mental defeat, future orientation, mental imagery, psychological flexibility) in individuals with chronic pain and at risk for suicide.

Borderline personality disorder (BPD) patients are at particularly elevated risk of suicide, and they present commonly non-suicidal self-injurious (NSSI) behavior, aiming at regulating emotions. The fourth presenter (U Baumgaertner) will address the detailed mechanisms of the

relationship between pain and emotional regulation in BPD patients engaging in NSSI. From experimental laboratory studies using both subjective and objective measures, he will propose that specific features are involved in the stress regulatory effect of NSSI in BPD patients (e.g. "sharpness" component of mechanical pain, pain perception, seeing blood).

It can be hoped that the study of the mechanisms of social and physical pain, their interaction, their psychological and biological underpinnings, will improve the understanding of the crucial role of pain in suicidal behaviour and lead to new avenues of prevention.

13.1 PAIN AND INTEROCEPTION IN SUICIDE

Philippe Courtet*[1], Emilie Olié[2]

[1]University of Montpellier, [2]Lapeyronie Hospital, CHU Montpellier; University UM1, Montpellier ; INSERM U1061, Montpellier

Individual Abstract: Intolerable pain is often reported in suicide notes. Moreover, the frequency of life events preceding a suicidal act is high, especially interpersonal difficulties. Such adversity is the source of psychological or social pain. Using Ecological Momentary Assessment in suicide attempters it has been shown that being alone increased suicidal ideation while being with close others significantly reduced this risk. At a neuroanatomical level, suicidal vulnerability is associated with dysfunctional insula activation during social exclusion, a region involved in social and physical pain processing. Social pain elicited by social exclusion or devaluation shares common neurobiological patterns with physical pain. Despite the complexity of its definition, higher psychological pain levels are associated with suicidal ideation and acts, and we reported a different modulatory effect of decision-making. Altogether, it may be suggested that a suicidal act is a means to escape intolerable suffering despite negative long-term consequences (i.e. death). The neural circuits involved in the suicidal behavior are also targeted by the inflammatory system and interoceptive pathways. We will discuss the perspectives offered by examining the inflammatory response to social stress in suicidal patients, as well as their interoceptive deficits.

Analgesics are usually used to get relief from pain but are also frequently involved in suicidal overdoses. It has been shown that opioid analgesics are associated with an increased risk of suicide. We reported higher consumption of opioid analgesics in suicidal patients in comparison to patients with history of depression but no suicidal act and healthy controls, whereas non-suicidal patients were those reporting higher presence of pain in comparison to healthy controls. Then, it may suggest that opioids are being used by suicidal patients to get relief from psychological/social pain rather than from physical pain. Involvement of opioidergic system in suicidal process opens new therapeutic strategies. Recently, data from studies investigating buprenorphine, ketamine or tianeptine revealed a potential interest in mu opioidergic agonists in treating suicidal ideation. Otherwise, psychological interventions increasing psychological pain tolerance, such as acceptance and commitment therapy (ACT) and psychosocial strategies aiming at fostering social connection (French experimental program VIGILANS) may be useful in suicide prevention.

The approach of the suicidal issue by the angle of pain and social disconnection offers new advances to improve clinical assessment, to identify new biological pathways involved in suicidal risk, and to propose innovative therapeutic and preventive actions.

13.2 PAIN, SUBSTANCE USE DISORDERS AND SUICIDE: EPIDEMIOLOGY, RISK ASSESSMENT AND MITIGATION

Martin Cheatle*[1]

[1]Perelman School of Medicine University of Pennsylvania

Individual Abstract: Death by suicide has become a global epidemic. Every 40 seconds someone in the world dies of suicide. An estimated 804,000 suicide deaths occurred worldwide in 2012. Individuals with chronic pain commonly have significant concomitant psychiatric and medical disorders placing them at higher risk for suicide. One recent systematic review revealed that the risk of successful suicide was doubled in patients with chronic pain as compared to non-pain controls. Individuals with substance use disorders are also highly susceptible to engaging in suicidal ideation and behavior. Patients with an alcohol use disorder are 10 times more likely to engage in suicidal behavior and individuals with a injection drug use disorder are 14 times more likely to commit suicide as compared to the general population. The individual who suffers from both pain and a substance use disorder are particularly vulnerable to ending their life by suicide. This presentation will review the current literature on the epidemiology of suicidal ideation in the pain and substance use disorder populations and discuss assessing suicide risk in this population and identifying modifiable mediators of pain, substance use disorder and suicide.

13.3 A TALE OF TWO PAINS: PAIN TOLERANCE AND SELF-HARM, CHRONIC PAIN AND SUICIDE

Olivia Kirtley*[1]

[1]KU Leuven

Individual Abstract: Background: Evidence suggests that individuals who engage in non-suicidal self-injury have an increased threshold, tolerance and endurance for physical pain. Some research has suggested this is a stable phenomenon that arises even in neutral contexts, however, other research indicates that this alteration in pain response is potentiated by negative affect. Furthermore, whilst many studies have investigated differences in pain threshold, tolerance and endurance between individuals with and without a history of non-suicidal self-injury, there have been few studies on whether pain response is also altered in individuals who ideate about (suicidal or non-suicidal) self-harm. Therefore, we know little about whether or not altered pain response in this population is a cause or a consequence of engaging in self-harm.

Pain response in individuals who self-harm is not the only context in which the relationship between pain, self-harm (and related behaviours) has arisen and recent work has broadened our focus to individuals with chronic pain. People with chronic pain are a high-risk group for suicide, however, the psychosocial factors that may play a role in this relationship have been largely overlooked. Strikingly, research on suicide and chronic pain only incorporates a small number of factors associated with suicidal thoughts and behaviours from the suicide research field.

In the current presentation, the results of two different projects investigating these two different, but related, research lines are presented.

Methods: In order to investigate the role of affect in pain response, we conducted a (N=106) repeated-measures laboratory study of pain threshold and tolerance with individuals with no history of self-harm thoughts or behaviours, those with a history of self-harm thoughts, and individuals who have engaged in self-harm behaviours. Pain was induced using a pressure algometer device and pain threshold and tolerance were assessed following the neutral and negative affect conditions of the Maastricht Acute Stress Test (MAST).

To address our research question regarding novel, transdiagnostic psychological factors associated with suicidal ideation and behaviours in individuals with chronic pain, we conducted a comprehensive review of under- and un-explored psychological factors associated with suicidal ideation and behaviour, and chronic pain.

Results: We found no significant differences in pain threshold or tolerance between individuals with no history of self-harm, those with thoughts of self-harm, and those who had engaged in self-harm behaviours. There were also no significant differences in pain threshold or tolerance as a function of affect (neutral vs. negative).

The review identified mental defeat/defeat, future orientation, mental imagery and psychological flexibility as key factors that should be explored in future research investigating suicide in individuals with chronic pain. These factors are associated with suicide and chronic pain independently, however are notable in their overlap.

Conclusions: Results of our laboratory study on the role of affect in pain threshold and tolerance in individuals who self-harm are inconsistent with previous research. There may be methodological explanations for these findings that should be addressed in future work, however, this also highlights the methodological challenges of conducting research of this kind.

Research on chronic pain and suicide has suffered from a lack of cross-pollination. Focusing on factors with transdiagnostic relevance for both suicide and chronic pain is key to moving forward and to achieving a better understanding why some individuals with chronic pain end their own lives, whereas others do not.

13.4 ALTERED PAIN PROCESSING IN PEOPLE WITH SELF-HARMING BEHAVIOR AND BPD

Ulf Baumgaertner*[1], Christian Schmahl[2], Gabriele Ende[2]

[1]Center For Biomedicine and Medical Technology Mannheim (CBTM), Heidelberg University, [2]Central Institute of Mental Health, Mannheim

Individual Abstract: Non-suicidal self-injurious (NSSI) behavior is common among borderline personality disorder patients. Among different methods, cutting is the most frequently applied procedure of NSSI, typically employed in order to reduce inner tension in states of negative affect.

Two issues will be the main focus of this presentation:

1) What is known about pain processing of BPD patients engaging in NSSI compared to healthy controls in general?

2) What is the main component within the act of NSSI that reduces aversive inner tension (leading to stress reduction)?

With respect to question (1), responses to painful (nociceptive) stimuli in BPD will be reviewed for different modalities (heat, mechanical, chemical) by means of subjective ratings and other measures like evoked potential amplitudes to laser stimuli as more objective parameters. Very recent data not only demonstrated reduced pain intensity ratings in general, but a preferential loss of the "sharpness" component of mechanical pain.

Neuroimaging data demonstrate reduced amygdala activity in BPD as well as an increased top-down inhibition of nociceptive input by increased activity of the dorsolateral prefrontal cortex. Recent studies focusing on the role of NSSI in stress regulation (question 2) used an experimental setup in the laboratory where the reduction of aversive stress was observed following a tissue-injuring pain stimulus (incision of the skin) compared to a non-injuring stimulus of similar pain intensity in a new surrogate model of incisional pain. The results indicate that the pain perception seems to be the major factor of stress relief in BPD rather than the injury. The role of other factors like seeing blood or the perspective (self-application of the stimulus vs. application by the experimenter) will also be reported from current pilot studies. Further, the potential role of the opioid system will be discussed. Since NSSI is not exclusively performed in BPD patients, it appears likely, that some of the findings may be generalized to NSSI in other patient groups as well.

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14. UNDERSTANDING SUICIDAL RISK IN ADOLESCENTS WHO ARE PEER VICTIMIZED AND CYBER-VICTIMIZED BY THEIR PEERS: EVIDENCE FROM LARGE SCALE STUDIES

Chair: Marie-Claude Geoffroy, McGill University

Overall Session Abstract: A growing number of studies show that the suicide rate is rising in adolescents and young adults, especially among females. Similarly, the number of youths admitted to a hospital for thoughts of suicide or suicide attempts show a steady upward trend over recent years. This recent escalation has raised the question of whether bullying-victimization and cybervictimization in particular is playing a role. Peer victimization is harm caused by peers acting outside the norms of appropriate conduct. It includes (but is not limited to) bullying, which is characterized by an imbalance of power between the perpetrator and the victim. Peer victimization has been associated with suicidal behaviors across the life-course, but questions regarding the nature of its association remained unanswered. The proposed symposium aims to elucidate the possible contribution of bullying-victimization and cybervictimization to suicidal risk across the life-course, while accounting for a series of confounders by design or analytic strategy. Four authors will present findings derived from well-known longitudinal cohorts such as the Quebec Longitudinal Study of Children Development, National Child Development Survey, the Twins Early Development Study, as well as systematic review,

More specifically, the first presentation by Dr. John will present a systematic review of studies looking at associations between cyberbullying and self-harm and suicidal behaviours in youth. The second presentation by Dr. Geoffroy will report on longitudinal associations between

bullying-victimization and cybervictimization on suicidal ideations, suicide attempts and suicide mortality over the life-course. The third presentation by Mrs Perret will present preliminary results on whether peer victimization interacts with a genetic predisposition for depression to increase depression and suicidal ideations later in adolescence. Finally, the last presentation by Dr Baldwin will discuss the results of a new study applying the co-twin control design to strengthen causal inference about the relationship between bullying and suicidal ideation and suicide attempt.

The research projects to be presented in the current context of scientific knowledge could lead to further discussions about the association of bullying-victimization and cybervictimization and suicidal behaviours and on who is more at risk.

14.1 SELF-HARM AND CYBERBULLYING: A SYSTEMATIC REVIEW OF THE INFLUENCE OF CYBERBULLYING INVOLVEMENT ON SELF-HARM AND SUICIDE IN CHILDREN AND YOUNG PEOPLE

Ann John*[1], Alexander Glenndenning[1], Amanda Marchant[1], Paul Montgomery[2], Anne Stewart[2], Keith Lloyd[1], Keith Hawton[2]

[1]Swansea University Medical School, [2]University of Oxford

Individual Abstract: Background: Given rising concerns relating to the changing nature of Internet use in children and young people (CYP), apparent increases in prevalence of self-harm and the rapid expansion of research in this field, we have reviewed the evidence examining the association between cyberbullying involvement (victimisation and/or perpetration) and self-harm/suicidal behaviours in CYP.

Methods: An electronic literature search was conducted for all studies published between 01/01/1996 and 03/02/2017 plus and updated search of imagery of self-harm to 13/2/2019 across research databases, topic-specific websites and meta-search engines including Medline, Cochrane and PsychInfo. Articles were included if: the study examined any association between cyberbullying involvement and self-harm or suicidal behaviours and reports empirical data in a sample under 25 years of age.

Quality of included papers was assessed and data extracted.. Meta-analyses of data were conducted.

Findings: Thirty-one eligible articles from 24 independent studies were included covering a unique population of 155,471 CYP. Twenty independent studies identified significant associations (negative influences) between cybervictimisation and self-harm/suicidal behaviours or between perpetrating cyberbullying and suicidal behaviours. Three articles found no significant associations. Five meta-analyses quantified these associations. An additional updated review of use of self-harm imagery will be presented and a cohort of 10,000 school children with linked self-harm health data to survey data on internet use and cyberbullying.

Interpretations: Victims of cyberbullying are at a greater risk of both self-harm and suicidal behaviours and, although to a lesser extent, perpetrators of cyberbullying are at risk of suicidal behaviours when compared to those with no involvement with cyberbullying. Policymakers and schools should prioritise the inclusion of cyberbullying involvement in programmes that

prevent traditional bullying. It is important that these programmes address the needs and behaviours of both victims and perpetrators.

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14.2 LIFE-COURSE ASSOCIATIONS OF CHILDHOOD VICTIMIZATION AND SERIOUS SUICIDAL IDEATION, SUICIDE ATTEMPT AND MORTALITY

Marie-Claude Geoffroy*[1], Gustavo Turecki[1], Léa Perret[1], Louise Arseneault[2]

[1]McGill University, [2]Kings College London

Individual Abstract: Background: Over the past few years, a series of bullying-related suicides have drawn public attention to the possible connection between peer victimization and suicide, but such assumption has been rarely tested with prospectively collected data. We aimed to document concurrent and longitudinal associations of peer victimization and cybervictimization with serious suicidal ideation and suicide attempt and mortality in the general population.

Methods: We used data from the Québec longitudinal study of child development (QLSCD) in Canada (Quebec) and the National Child Development Study (NCDS) in the UK. In QLSCD, peer victimization was assessed with child reports at 13, 15 and 17 years with 7 items covering a range of behaviours from verbal (such as teasing, calling names) to cyberbullying. In the NCDS, bullying-victimization was assessed with mother reports at 7 and 11 years. Suicidal behaviours investigated were serious suicidal ideation and suicide attempt at 13, 15 and 17 years in the QLSCD and suicide mortality by 55 years identified from linked national death certificates in the NCDS. To examine association between peer victimization and suicidal risk logistic regressions were adjusted for a series of confounders including prior mental health status.

Results: In the QLSCD, peer victimization was associated with increased risk of thinking about suicide and attempting suicide during adolescence in longitudinal analyses. To illustrate, adolescents who experienced peer victimization at 13 years (all forms of victimization combined) were at increased risk of suicidal ideation (OR=2.27, 95% CI-1.25-4.12) and suicide attempt (OR: 3.05-95% CI 1.36-6.82) at 15 years in models adjusting for baseline suicidality, mental health problems, and other confounders. Magnitude of associations were greater for cyberbullying than for face-to-face victimization in concurrent analyses (e.g. fully adjusted OR at 15 years was 4.20 (3.27,5.41) for cybervictimization and 2.16 (1.67,2.81) for face-to-face victimization) but cyberbullying was not predictive of greater suicidal ideation/suicide attempt in a 2-year follow-up period. Children who have been victimized where are increased risk of suicide mortality in adulthood in the NCSD. One third of individuals who died by suicide were frequently victimized by their peers in their childhood.

Conclusion: Being victimized by peers is a risk factor for both adolescent and adult suicidality. The associations were not explained by prior childhood mental health status and other confounding factors. As peer victimization is common, prevention (e.g. school-based interventions) and psychotherapeutic interventions (e.g. cognitive behavioural therapy) for suicidal risk may include components to help bully-victims.

14.3 POLYGENIC INTERACTIONS WITH PEER VICTIMIZATION IN THE DEVELOPMENT OF DEPRESSION AND SERIOUS SUICIDAL IDEATION

Léa Perret*[1], Isabelle Ouellet-Morin[2], Geneviève Morneau-Vaillancourt[3], Stéphane Paquin[2], Stéphanie Langevin[2], Jean-Philippe Gouin[4], Sylvana Côté[2], Gustavo Turecki[5], Michel Boivin[3], Marie-Claude Geoffroy[5]

[1]McGill University, Department of Psychiatry, [2]Université de Montréal, [3]Université Laval, [4]Concordia University, [5]McGill University

Individual Abstract: Background: There is a strong body of literature that demonstrates the link between peer victimization, depression and suicidal behaviours (i.e. suicidal ideation/suicide attempt). However, not all victimized adolescents will exhibit higher rates of depression and suicidal ideation. It has been suggested that the extent to which peer victimization leads to depression and suicidal ideations depends on the degree of genetic vulnerability. To date, research on gene x environment interaction (GxE) in depression or suicidal ideations has focused on single candidate genes (e.g. 5-HTTLPR), an approach that has some limitations. Alternatively, GxE may be more reliably examined through the use of polygenic risk scores (PRS), which accounts simultaneously for multiple genetic risk variants linked to complex psychopathologies, such as depression and suicidal ideations.
Objectives: We aim to test whether the association between peer victimization, depressive symptoms and suicidal ideations in adolescence is moderated by a PRS derived for depressive symptoms.

Methods: The Quebec Longitudinal Study of Child Development (QLSCD) provides information about prospectively collected peer victimization in childhood and self-reported depressive symptoms and suicidal ideations in adolescence. A total of 992 participants were successfully genotyped in 2017 using the Infinium PsychArray-24 BeadChip at the Génome Québec laboratory in Montreal, Canada. PRS were calculated based on the publicly available results of discovery Genome-Wide Association Studies on depressive symptoms (Okbay et al 2016 Nature Genetics). The main and joint effects of childhood peer victimization and PRS on depressive symptoms and suicidal ideation were tested using linear (for depressive symptoms as Z-score) and logistics (for suicidal ideation) regressions in 726 participants with complete data. All analyses are adjusted for sex. Both childhood victimization and PRS were standardised to ease interpretation.

Results: The depressive symptoms PRS and peer victimization were both independently associated with depressive symptoms ($p<.001$, $p<.01$, respectively). Furthermore, we found no evidence for an interaction, suggesting that the contribution of PRS on depressive symptoms did not vary according to peer victimization. PRS was not associated with suicidal ideation.

Discussion: The absence of interaction between PRS depressive symptoms and peer victimization may point to an environmentally-mediated effect of peer victimization on depression and suicidal ideations that is not exacerbated by genetic predisposition. However, more research is needed as our statistical power is limited to detect interaction effects. More generally, these findings fall in line with a recent meta-analysis showing that childhood maltreatment and PRS for major depressive disorder did not interact in predicting major depression.

14.4 BULLYING VICTIMISATION AND SUICIDALITY IN YOUNG PEOPLE: A CO-TWIN CONTROL STUDY

Jessie Baldwin*[1], Jean-Baptiste Pingault[1]

[1]University College London

Individual Abstract: Background: Suicide is a leading cause of death in young people. Evidence suggests that adolescents exposed to bullying victimisation have a greater risk of suicidal ideation and suicide attempt. However, it is not known whether bullying victimisation causes suicidal ideation and suicide attempt, or whether these associations are explained by pre-existing genetic and environmental vulnerabilities.

Aim: To examine whether bullying victimisation predicts suicidal ideation and suicide attempt, using the co-twin control design to strengthen causal inference.

Methods: Participants were 7,000 British twins born in 1994-1996 and followed across development to age 21 as part of the Twins Early Development Study (TEDS). Bullying victimisation was assessed at age 12 using the self-report version of the Multi-Dimensional Peer Victimisation scale. Suicidal ideation and suicide attempt in adolescence were assessed through a self-report questionnaire at age 21.

Results: In phenotypic analyses, children with greater exposure to bullying victimisation at age 12 had higher risk of suicidal ideation (OR=1.28, 95% CI=1.21-1.36) and suicide attempt (OR=1.47, CI=1.32-1.62) in adolescence. Among genetically identical monozygotic twins who grew up in the same family environment, children with greater exposure to bullying did not show greater risk of suicide attempt than their co-twin (OR=1.26, CI=0.94-1.68) or suicidal ideation (OR=1.00, CI=0.84-1.19).

Discussion: These findings suggest that bullied children show greater risk for suicidal ideation and suicide attempts due to pre-existing familial vulnerabilities (e.g., genetic risk, disadvantaged family environments) rather than the experience of victimisation. As such, interventions to prevent suicidality in bullied children should aim to address pre-existing vulnerabilities.

15. REGISTER-BASED STUDIES, SUICIDE, AND RELATED FORMS OF MORTALITY

Chair: Annette Erlangsen, Danish Research Institute for Suicide Prevention

Overall Session Abstract: Registries or administrative databases have over recent decades been increasingly explored as a data source. The advantages of register data are several, including complete coverage of population under study, no loss to follow-up and little intrusion for participants. In a growing number of countries, register data from different databases can be linked using a unique marker, such as an id number. In some cases, register data may be supplemented with clinical databases or questionnaire data.

This symposium is dedicated to presenting the gains in understanding suicidal behavior using register data. The presentations offer an overview of predictors and stressors associated with suicidal behavior, such as bereavement by suicide, somatic disorders, or being a refugee.

15.1 PHYSICAL DISORDERS AND SUICIDE: MAXIMIZING THE USE OF REGISTRIES TO PREVENT SUICIDE

Annette Erlangsen*[1]

[1]Danish Research Institute for Suicide Prevention

Individual Abstract: OBJECTIVE: The aim is to generate an overview of those physical disorders that have been linked to an excess suicide mortality in register-based studies and to identify directions both in terms of suicide prevention and methodological approaches.
METHODS AND MATERIAL: Administrative databases, such as clinical and hospital registries as well as cause of death registries, exist in many countries and have been used extensively to study the association between physical disorders and death by suicide. As a data source, registers offer advantages in terms of external validity and minimal loss to follow-up. However, lack of clinically relevant details might limit the ability to identify high risk group. Over recent decades several high-quality studies, adjusting for relevant confounders have emerged.

RESULTS: Different causal mechanisms might link physical disorders to suicide: 1) distress at time of diagnosis, 2) prognosis of disorder, 3) psychiatric comorbidity, 4) unwillingness to depend on help from others, i.e. perceived burdensomeness, 5) physical pain, and 6) neurobiologically changes. Research findings show that people with cancer have a 12-fold higher risk of suicide during the first week after diagnosis, which averages to a 3-fold higher risk during the first year. People diagnosed with Huntington's disease and amyotrophic lateral sclerosis (ALS) were found to have a 4-fold higher rate of suicide. It has been suggested that the elevated suicide rates noted among people with diabetes, multiple sclerosis, and epilepsy may partially be mediated through co-existing depression. A dose-response relation between severity, i.e. number of hospitalizations, and suicide has been shown for stroke and traumatic brain injury. Recent register-based studies address potential confounders and delineate sub-groups and times where interventions and screening might be indicated. While more detailed data would be beneficial, our current challenges lie in designing and testing interventions to reduce suicides among people with physical disorders.

CONCLUSION: Using nationwide data registries, recent research has outlined high risk group and critical periods among people with physical disorders. Yet, more insights and greater methodological rigor are needed. The elevated risk of suicide at the time of diagnosis has been confirmed for several stigmatizing disorders; emphasizing the need for psychosocial support. Debilitating disorders, such as Huntington's disorder and ALS, have also been linked to excess suicide mortality, which suggests that on-going support and screening for depression or suicidality might be indicated. User-involving interventions offering psychoeducation and negotiating acceptable living conditions might assist people with chronic disorders to mitigate critical situations and secure agreeable living conditions.

15.2 RISK OF SUICIDE IN INTERNATIONAL MIGRANTS AND REFUGEES

Ellenor Mittendorfer-Rutz*[1]

[1]Karolinska Institutet, Department of Clinical Neuroscience

Individual Abstract: Several European countries have experienced one of the most dramatic demographic changes due to increasing global migration and have become multicultural societies in the new millennium. Moreover, many European countries, among them Sweden,

have seen historically high numbers of refugees seeking asylum in the preceding years. Despite the reported increased risk for mental disorders in refugees, studies on their risk of suicidal behaviour are very limited. Large scale, sufficiently powered register studies on this association are entirely lacking to date.

The presentation will provide findings of a number of register-based studies from Sweden, investigating 1) pathways to suicidal behaviour (suicide attempt and suicide), 2) patterns and determinants of health care before and after a suicide attempt and 3) determinants of a poor prognosis following a suicide attempt in immigrant subgroups compared to the host population. Immigrant subgroups are defined as refugees and other first generation immigrants from different countries. Findings from analyses regarding period effects and differences in relation to specific countries of birth as well as type of underlying mental disorder will be shown. Moreover, results from register studies on refugees with residence permit (precondition of being involved in the registers), will be contrasted with findings from a field study investigating suicide rates of unaccompanied minors seeking asylum in Sweden.

The basis for the different studies are registers held by different Swedish authorities. The information in the registers is linked individually. The study populations comprise individuals 1) registered in Sweden at 31.12.1994, 1999, 2004 or 2009 and then 10-64 years old; and 2) with suicide attempt 2004-2012 and 10 -64 years of age in Sweden (n= 49 223). For all individuals, retrospective and prospective data are linked. The field study builds on data of suicide cases in 2017, collected by Non-governmental organisations and validated with records from the National Board of Forensic Medicine.

Advantages and disadvantages of using registers for suicidological studies in the field of migration research will be discussed.

15.3 SUICIDE MORTALITY AMONG YOUTH IN THE U.S. MEDICAID PROGRAM

Cynthia Fontanella*[1], Jeffrey Bridge[2], Danielle Steelesmith[1], Lynn Warner[3], John Campo[4]

[1]The Ohio State University, [2]The Research Institute at Nationwide Children's Hospital, [3]The University of Albany, [4]West Virginia University

Individual Abstract: Background: Suicide among young people is a major public health problem in the U.S. To inform interventions that could substantially reduce deaths by suicide, the National Action Alliance for Suicide Prevention's Research Prioritization Task Force has recommended that "boundaried populations" be an immediate research focus. The Medicaid program is one potentially important boundaried setting for youth suicide prevention efforts. In any given year more than 36 million children (38%) are enrolled in Medicaid and they experience more suicide risk factors, including mental illness, than the general population. Despite the broad reach of the program, no studies have examined suicide among youth enrolled in Medicaid. The specific aims for this project are threefold: 1) to compare rates of suicide among Medicaid beneficiaries ages 10 to 18 in the United States with Non-Medicaid beneficiaries , both overall and stratified by demographic characteristics; 2) to compare clinical profiles and health and mental health service patterns of suicide decedents and a matched comparison group of non-decedents over a 6 month time period; 3) to examine the association

between minimal standards of care and risk of suicide for a cohort of psychiatrically hospitalized youth.
Methods: To achieve study objectives a case control design was used for objective 2 and a longitudinal retrospective design was used for objective 3. For the case control study, the sample included 910 suicide decedents and 6,346 match controls from 16 U.S. states during the period from 2009-2013. Healthcare use in the emergency room, inpatient hospital, and outpatient setting was measured using Medicaid data during the 30 and 180 day time periods before suicide and matched index date for controls. For the retrospective cohort study the sample included all youths (aged 10-18) from 33 US states who were admitted to a psychiatric hospital between 2009-2013. To assess the association between mental health follow-up and suicide within 6 months after discharge, logistic regression analyses was performed.

Results: Objective 1: A substantial proportion (39%) of the total number of deaths by suicide (N=4,045) in youth occurred among those enrolled in Medicaid. The overall suicide rate did not significantly differ between groups. However, compared with the non-Medicaid group, the suicide rate in the Medicaid group was significantly higher among youth aged 10 to 14 years, females, and those who died by hanging. Objective 2: Less than half of suicide decedents had a mental disorder (41.3%). Healthcare use was more common across all healthcare settings for individuals who died by suicide. Almost half (45%) had a health care visit in the 30 days before suicide and 75% with 180 days. Those who died by suicide averaged 9.7 visits during the 6 months prior to death. Objective 3: The odds of suicide were 76% lower for youths who had a mental health visit within 30 days of discharge.

Discussion: This project provides important data about rates of suicide in Medicaid populations compared to non-Medicaid populations, clinical profile and health services utilization patterns of suicide decedents compared to controls, and the effect of meeting quality of care standards on suicide and can inform decision makers on targeting of suicide prevention activities.

15.4 REGISTRY-BASED STUDIES OF SUICIDE BEREAVEMENT: A REVIEW OF FINDINGS AND FUTURE DIRECTIONS FOR RESEARCH

James Bolton*[1], Rae Spiwak[1], Jitender Sareen[1]

[1]University of Manitoba

Individual Abstract: Background: Bereavement is an event experienced by most people, and associated with considerable morbidity and even an increased risk of mortality. When compared to other causes of death, sudden and violent deaths have been associated with a different, and more difficult, grieving process. However, suicide bereavement has been vastly understudied when compared to the well-developed literature base of general bereavement. Much of the existing work on suicide bereavement has suffered from methodological limitations, including selection bias and loss to follow-up. Registry data sources have many advantages that address these challenges, as well as linkages to diverse datasets that allow examination of numerous health and social consequences of bereavement. The objective of this presentation was to review the main findings of register-based studies of suicide bereavement, to examine the strengths and limitations of these data sources, and to discuss future directions of population-based studies of suicide bereavement.

Methods: This presentation features a review of population-based administrative data studies examining suicide bereavement. Outcomes of interest include mental disorders, physical

disorders, self-harm, mortality, and social factors. Studies were categorized according to the relationship of the bereaved to the decedent, and included spouses, parents, children, and siblings.

Results: Register-based studies consistently demonstrate the suicide death of a close relative as an experience associated with considerable negative mental health and social consequences. Suicide-bereaved individuals show an increased risk of suicide, self-harm, and all-cause mortality. Common health outcomes include increased rates of depression and anxiety disorders among all relative types following the death. Offspring bereaved by parent suicide are at increased risk of hospitalization for drug disorders and psychosis, have a 2-fold increased risk of suicide, and have been shown to be more likely to engage in violent crime. Risk factors for suicide among bereaved offspring include low levels of social support and low socioeconomic status. Spousal bereavement is associated with a range of physical health consequences including sleep disorders, liver cirrhosis, and spinal disc herniation. Parents bereaved by offspring suicide are more likely than non-bereaved parents to separate or divorce. Whether bereaved by the death of a sibling or of a parent, the age of the child at time of loss influences mental disorder outcomes. Children that lose a parent to suicide are additionally at increased risk of subsequent marital separation later in life, potentially suggesting persisting effects of suicide bereavement on attachment. Bereaved persons with pre-existing mental disorders represent a distinct subgroup with elevated risk of suicide and mental disorder recurrence following the death of a close family member.

Discussion: Health and social registries are powerful tools that have greatly increased our understanding of suicide bereavement. People bereaved by suicide are a group with increased burden of mental and physical disorder, self-harm, and mortality risk. Despite these consistent findings, the needs of bereaved family members tend to be poorly recognized and managed. Future studies should explore linkage opportunities with clinical and other data sources to continue to expand knowledge on bereavement. Priority areas include examining effects on non-familial relationships, other health outcomes

such as complicated grief and quality of life, response to treatment, and effects of stigma.

16. TOWARD REAL TIME MONITORING OF SUICIDAL RISK: BEYOND SELF-REPORT

Chair: Tina Goldstein, University of Pittsburgh Medical Center, Western Psychiatric Institute & Clinic

Overall Session Abstract: In this session we will present results of new studies involving the use of innovative technology to collect and analyze data for the identification of suicidal risk. While this symposium focuses broadly across the lifespan, we also offer specialized focus on adolescents who are especially vulnerable to suicide. Although distal risk factors for suicidal behavior have been identified, imminent risk factors remain largely unknown and predicting which patients will attempt suicide and when they will attempt continues to be challenging for mental health clinicians. We continue to rely heavily on patient self-report, which may not be sufficient to predict suicidal risk because patients may understate their suicidal intent, either to avoid more restrictive treatment, or to carry out their suicidal plans. The ability to develop direct, objective assessment methods to augment self-report has the potential to greatly impact

clinical assessment and treatment. The use of technology is promising in this pursuit. However, technology-based methods of identifying and monitoring suicidal risk face complex ethical challenges and must be acceptable to suicidal individuals. Our ultimate goal is the development of ethical and acceptable means of identifying and monitoring suicidal risk through the novel use of technology.

We will first present findings from a study of a large electronic health record data set that used natural language processing and machine learning to develop an algorithm that was able successfully identify patients at risk for suicidal behavior. Next, the OurDataHelps platform will be discussed along with results from a recent study. This platform allows for the collection of data from individuals who voluntarily sign up and authorize access to their digital lives. The data collected includes social media data (e.g., Facebook, Twitter, Instagram, Reddit, Tumblr), wearable (e.g., Fitbit, Jawbone), and other technology (e.g., Strava, Runkeeper). Users are also asked to complete a questionnaire inquiring about demographic information, mental health problems, and past suicide attempts. Results will be discussed from a study that used natural language processing to identify suicidal risk in social media data from a sample of community volunteers who have "donated" their own social media data or data from of their family members who died by suicide. As we move toward testing these methods in a clinical population, we conducted a mixed-methods study with acutely suicidal teens and their parents to explore the context of suicidal teens' online experiences as well as the perceptions of teens and parents toward monitoring of social media. Finally, we will end with a discussion of a number of ethical issues that have arisen as we implement new and innovative technological methods with suicidal teens. We will suggest procedures to consider that can help mitigate risk.

16.1 NATURAL LANGUAGE PROCESSING OF ELECTRONIC HEALTH RECORDS

Neal Ryan*[1], David Brent[2], Fuchiang (Rich) Tsui[3], Victor Ruiz[3], Lingyun Shi[3]

[1]Professor, University of Pittsburgh, [2]University of Pittsburgh/Western Psychiatric Institute, [3]Children's Hospital of Philadelphia

Individual Abstract: We have a strong goal of better understanding the social environment of our patients, hypothesizing that this will have robust effects on their clinical course and that it is not adequately captured in the more structured clinical data in the electronic medical record (EMR) but will be captured in the free text portions of the record. We are studying the use of this data to predict suicide in individuals who have received medical treatment. Development of a strong predictor of suicide and suicide attempt in the near future would allow preventive interventions at the time of medical evaluation.

This talk will review our current methods of social sentence classification and feature extraction using contemporary approaches including cTAKES, support vector machines (SVM), and convolutional deep neural networks (CNN). These social construct features will be combined with features from structured EMR data to predict suicide and suicide attempts over, e.g. the next 90 days. After optimizing this system in one large health system, we will model transferability (generalizability) to another health care system.

Findings from our work will be presented and compared to other prediction approaches.

16.2 NATURAL LANGUAGE PROCESSING OF SOCIAL MEDIA AS SCREENING FOR SUICIDE RISK

Anthony Wood*[1]

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Individual Abstract: Suicide is among the 10 most common causes of death, as assessed by the World Health Organization. Suicide deaths have increased by 20% in the past 20 years. For every death by suicide, an estimated 138 people's lives are meaningfully affected. The pervasiveness of social media—and the near-ubiquity of mobile devices used to access social media networks—offers new types of data for understanding the behavior of those who (attempt to) take their own lives and suggests new possibilities for preventive intervention. In this session, we will introduce you to "OurDataHelps.org", an innovative platform for the passive collection of digital data. This platform allows for the collection of data from individuals who voluntarily sign up and authorize access to their digital lives. The data collected includes social media data (eg, Facebook, Twitter, Instagram, Reddit, Tumblr), wearable (eg, Fitbit, Jawbone, Garmin), and other technology (eg, Strava, Runkeeper). Users are also asked to complete a questionnaire inquiring about demographic information, mental health problems, and past suicide attempts. A recent study by Coppersmith et al combined data from "OurDataHelps.org" with a second data source derived from public posts discussing suicide attempts on social media. The combined dataset included 418 users with a history of suicide attempt and 6 months of social media posts prior to the attempt and an equal number of demographically matched controls without history of suicide attempt. An average of 473 posts per user or a total of 197,615 posts from users who would go on to make a suicide attempt were compared with the same number of posts from demographically matched controls. Quantifiable signals were found to be present in the language used on social media that machine learning algorithms were able to use to separate users who would go on to attempt suicide from those who would not with relatively high precision (70-85% true positive rate). These machine learning algorithms were found to depend on a wide range of subtle clues, rather than a few indicative phrases. The algorithm's ability to distinguish users who would go on to attempt suicide leads us to consider how a prospective monitoring tool incorporating the algorithm might fit into a clinical application.

16.3 PERCEPTIONS TOWARD AUTOMATED MONITORING OF SUICIDAL ADOLESCENTS' SOCIAL MEDIA CONTENT

Candice Biernesser*[1], Jamie Zelazny[1], David Brent[2]

[1]University of Pittsburgh, [2]University of Pittsburgh/Western Psychiatric Institute

Individual Abstract: Background: Suicide has recently risen to the 2nd leading cause of death among youth ages 10-24. This upward trend in adolescent suicide has occurred with the mass use of smartphones. This is alarming to adolescents' suicidal risk, because heavy use of social networking sites places youth at 6 times greater risk of suicidal thought. Due to this heightened risk, there is a growing demand for healthcare professionals to begin collection of a "digital phenotype," which would add to routine information collected at health care visits to include personal data received from adolescents' smartphones, e.g. social media and text message content. This formative qualitative study aimed to inform the development of an automated social media monitoring intervention, which will detect and communicate risk statements derived from suicidal adolescent's digital media to their mental health providers.

Methods: Fifteen adolescent patients (ages 13-18) from the Services for Teens At-Risk Center's intensive outpatient program participated in focus groups and twelve parents participated in interviews, all of which were preceded by brief surveys. These forms of data collection investigated adolescents' social media use and interactions and perceptions toward automated monitoring. Focus groups and interviews were analyzed using a thematic analysis approach and triangulated with descriptive survey data collected prior to the focus group.

Results: Surveys depicted an atmosphere of frequent digital media use with 93% of adolescents reporting using the internet several times per day or almost constantly. Social media predominated time spent online with over 2/3 of adolescents reporting using social media for 2+ hours per day. Adolescents and parents reported facilitators toward automated monitoring, including a desire for protection in teens' online environments, citing examples of cyberbullying and negative online interactions that resulted in heightened depressive and suicidal thinking. Barriers included concerns privacy both among adolescents and parents, while adolescents additionally feared monitoring would inhibit their ability to express themselves freely and authentically. Both adolescents and parents noted being at least somewhat open to discussing distressing social media use with therapists. Methods of monitoring that are most likely to be acceptable to youth and parents were explored and summarized.

Conclusion: Automated monitoring of risk statements detected through social media content presents a promising avenue to offer protection to suicidal youth; however, for this method to be successful careful attention must be paid to privacy concerns and adolescents' desire for freedom of expression.

16.4 ETHICAL CONSIDERATIONS FOR RESEARCH USING INNOVATIVE TECHNOLOGY TO DETECT SUICIDAL RISK

Jamie Zelazny*[1], David Brent[2], Candice Biernesser[1], Lisa Parker[1]

[1]University of Pittsburgh, [2]University of Pittsburgh/Western Psychiatric Institute

Individual Abstract: The use of new and innovative technology offers exciting potential to detect risk factors for negative mental health outcomes, including suicidal behavior. Novel application of research methodologies such as natural language processing provides an opportunity to develop algorithms for suicidal risk through electronic health records, social media data and passive cell phone data. However, it is imperative that as researchers, we consider both the risks and the benefits as we delve deeper into the health records and "digital lives" of our participants. The issues of privacy and consent are becoming more challenging. Additionally, there are added considerations when research involves a vulnerable population, such as suicidal youth.

In the first study we present, electronic health records from a large academic medical center were analyzed using natural language processing to develop an algorithm to detect suicidal risk. De-identified data was provided to the researchers by a certified honest broker. No human interaction occurred so informed consent was not required. Still, ethical issues arise when we consider the ultimate goal for this type of research: to provide alerts to clinicians about the likelihood of imminent suicidal risk and decision support to guide clinicians as to the recommended acuity of response and level of care. Similar technology is being widely used across health care systems to develop risk scores for countless physical health conditions.

However, in areas related to mental health and substance use disorders, concerns about privacy and stigma are heightened. Recently, concerns were raised about the use of algorithms to assign risk scores to identify patients at risk of opioid addiction or overdose. Patient advocates fear that, without their knowledge, patients could be "blacklisted" from receiving care they need. In the case of suicide risk algorithms, false positives could lead to recommendations for higher levels of care than required. It is imperative to conceptualize the use of risk algorithms as augmenting and not replacing current methods used by clinicians to assess for suicidal risk.

For studies collecting social media and passive cell phone data from teens, our practice is to obtain informed consent from participants and their parents. But is parental permission always required? Do parents have a right to decide what information their teen shares or should the autonomy of adolescents be respected? In cases of minimal risk research, child assent may be sufficient and waiving parental permission may be justified, especially since many parents do not accompany their children to the clinic. But since parents are likely to have a financial interest in their teens' phones, should they have a larger voice about research involving those phones, especially if an app is being downloaded requiring additional data use that could potentially result in financial risk for the parent? How should information posted by social media "friends" who have not consented to participate in research be managed? How should photographs be handled? Should any information be reported back to parents or therapists? This illustrates the complex privacy issues that arise when teens' social media data are collected for research purposes. These issues will be further discussed, along with suggestions to mitigate risk.

Tuesday, October 29, 2019

CONCURRENT SYMPOSIA SESSIONS

10:00 AM - 11:30 AM

17. SUICIDE PREVENTION RESEARCH WE WANT TO SEE USED: IMPLEMENTING EVIDENCE- BASED PRACTICES WITH STAKEHOLDERS

Chair: Jane Pearson, National Institute of Mental Health

Co-Chair: Joshua Gordon, National Institute of Mental Health

Overall Session Abstract: NIMH has prioritized research that can translate into practice. Consistent with the National Action Alliance for Suicide Prevention's 2025 goal to reduce the suicide rate by 20%, the studies described in this symposium reflect interventions, if fully implemented, that have potential to reduce suicide risk among a significant proportion of individuals. To build the evidence towards that goal, trials are fielded in settings that involve providers who are intended to implement the practices, and interventions are directed to individuals the represent the care population with few exclusion criteria. To conduct these studies, researchers must engage with leaders and providers in these systems who share the goal of quality improvement. For this symposium, NIMH has asked three grantees who are evaluating suicide prevention practices to address the following issues, asking each to: 1) describe how they engaged with stakeholders in the settings where the interventions are being

tested; 2) share some preliminary data; 3) describe approaches to tracking practice improvement; and 4) share their ideas regarding future uptake and sustainability of evidence-base practices, including practice and policy challenges and solutions.

The first presentation in this symposium will provide an overview of an evaluation of the National Zero Suicide Model across six healthcare systems serving more than 9 million patients. Health system stakeholders locally choose the interventions and settings for suicide prevention practice improvements. Embedded researchers and leaders chart the interventions and use the electronic health records to develop fidelity and suicide outcome metrics. This presentation will include identification of the challenges of building suicide prevention practices in healthcare systems and will measure large-scale implementation.

The second presentation will focus on means safety counseling in emergency departments. In the ED-AID (Assisting in Informing Decisions in Emergency Departments) study, a multi-disciplinary team developed and tested a web-based decision aid to augment lethal means counseling and encourage safer storage of home firearms and medications. Provider, patient and community stakeholders participated in the development and testing process. Messaging suggestions from firearm retailers, suicide attempt survivors, and healthcare providers were considered. Findings from the pilot randomized controlled trial that examined decision aid acceptability and feasibility for a future large-scale trial will be described. Longer-term implementation questions regarding feasibility of patient-facing tablets and decision aid integration into provider work-flow will be addressed.

The third presentation will describe how safety planning is being tested among individuals recently released from jail or prison. The SPIRIT study is the first RCT of an intervention to reduce suicide risk after jail release. Pretrial jail detainees at risk for suicide were randomized to either the Standard of Care (SoC) or SoC plus Stanley and Brown's Safety Planning Intervention (SPI) with telephone follow-up. Effectiveness and cost-effectiveness outcomes are tracked for 12 months post-release. SPIRIT findings, along with additional implementation research in the justice system, will serve as the basis for a presentation describing facilitators and barriers of implementation of evidence-based mental health practices that include suicide prevention.

17.1 CHALLENGES AND SOLUTIONS IN ZERO SUICIDE IMPLEMENTATION

Brian Ahmedani*[1], Bobbi Jo Yarborough[2], Karen Coleman[3], Stacy Sterling[4], Jennifer Boggs[5], Arne Beck[5], Michael Schoenbaum[6], Julie Goldstein-Grumet[7], Rinad Beidas[8], Gregory Simon[9]

[1]Henry Ford Health System, [2]Kaiser Permanente Northwest, [3]Kaiser Permanente Southern California, [4]Kaiser Permanente Northern California, [5]Kaiser Permanente Colorado, [6]NIMH, [7]Education Development Center, [8]University of Pennsylvania, [9]Kaiser Permanente Washington

Individual Abstract: Background: Suicide prevention is a major public health priority. As outlined in the 2012 US National Strategy on Suicide Prevention, healthcare is a promising environment where suicide prevention efforts may achieve meaningful reductions in suicide

rates. Over 90% of individuals make healthcare visits in the year before they attempt suicide, and health providers see patients an average of 17 times during that period which may offer opportunities to intervene. There remains a need for health systems to have providers and infrastructure in place for prevention, accurate identification, and treatment. Based on growing research evidence of interventions, the National Zero Suicide Model (NZSM) was launched providing tools to support health systems with clinical implementation. The approach involves local implementation of a series of evidence-based interventions categorized within clinical/quality areas, including: 1) Identification of those at-risk, 2) Engagement and care management, 3) Effective treatment, and 4) Care transition. More evidence is needed to examine implementation approaches and evaluate real-world implementation fidelity and suicide outcomes.

Study Overview: This study evaluates NZSM implementation across 6 Mental Health Research Network-affiliated learning healthcare systems in 6 US states serving more than 9 million patients per year. Selection and implementation of specific NZSM strategies are led by delivery system leaders. The study leverages engagement between health system stakeholders and embedded researchers to develop real-world metrics to measure the various implementation approaches within and across sites. Using a hybrid stepped-wedge interrupted time series design, these metrics are used to evaluate implementation fidelity as well as suicide attempt and death outcomes. Suicide risk assessment approaches ranged from 50% to 98% following positive screens, while health care visits within 7 days of an emergency room or inpatient stay for self-harm ranged from 0% to 74% across health systems at baseline. Baseline rates of self-harm incidence ranged from less than 10/100,000 to more than 30/100,000. Measurement of screening, safety planning, and treatment approaches rely on overcoming challenges in implementation approaches, coding, and documentation.

Discussion: The participating systems are all at different stages of implementation and the NZSM provides a menu of evidence-based interventions allowing each local system to choose different approaches. This leads to real-world local variation in prioritization of interventions, patient population demographics, system resources and staffing models, and documentation of activities. The project captures approaches to overcoming clinical implementation challenges, while testing various measurement approaches to those challenges. This provides real-world practice and policy solutions to inform wide-spread roll-out and sustainability of the NZSM model as well as generalizable metrics to evaluate continuous quality, performance, and outcomes.

17.2 MEANS SAFETY COUNSELING IN EMERGENCY DEPARTMENTS

Marian Betz

Individual Abstract: Means Safety Counseling in Emergency Departments

17.3 SUICIDE PREVENTION AT THE TIME OF PRETRIAL JAIL DETENTION AS A WAY TO REDUCE POPULATION-LEVEL SUICIDE RATES IN THE UNITED STATES

Jennifer Johnson*[1], Barbara Stanley[2], Gregory Brown[3], Ivan Miller[4], Shannon Wiltsey-Stirman[5], Danis Russell[6], Holly Fitting[7], Louis Cerbo[8], Julie Rexroth[9], Lauren Weinstock[10]

[1]Michigan State University, [2]College of Physicians & Surgeons, Columbia University, [3]Perelman School of Medicine University of Pennsylvania, [4]Butler Hospital and Brown University, [5]Stanford University, [6]Genesee Health System, [7]Care New England, [8]Rhode Island Department of Corrections, [9]Genesee County Jail, [10]Brown University

Individual Abstract: Nearly 11 million people per year are arrested and held in pretrial jail detention, typically for only a few days. About 2/3 of have mental health disorders, and nearly 3/4 have substance use disorders. They are often arrested at moments of crisis. There is high suicide mortality following jail release. Our investigation using the National Violent Death Registry indicated that roughly 10% of all suicides in the U.S. with known circumstances occur following a recent criminal or legal stressor (e.g., arrest and jail detention). If the effect sizes found in other populations hold for recently released jail detainees, implementation of brief suicide prevention interventions in jails could result in a 5%-9% reduction in all U.S. suicides.

SPIRIT (U01 MH106660), is the first RCT of an intervention to reduce suicide risk after jail release. Pretrial jail detainees (n=800) at risk for suicide were randomized to either the Standard of Care (SoC) or SoC plus Stanley and Brown's Safety Planning Intervention (SPI) with telephone follow-up. Effectiveness and cost-effectiveness outcomes are tracked for 12 months post-release. This presentation includes findings from SPIRIT and from our justice mental health implementation studies that are relevant to scale-up and sustainment of SPIRIT.

Standard care. The number of at-risk individuals moving through pretrial jail detention presents a public health opportunity and a logistical challenge. The median length of stay is < 1 week. Individuals are often psychotic, manic, or intoxicated/high when admitted. For example, 45% of the SPIRIT sample has lifetime psychosis, 39% lifetime mania/hypomania, and 84% lifetime major depression. Jails do their best to screen and triage with limited time and limited resources. A midsize county jail might admit 13,000 people per year and have one full-time social worker and 1 day a week of a psychiatrist.

Stakeholders. In SPIRIT, jail and community mental health stakeholders were engaged through: (1) including them as Co-Is on the study team; (2) including outcomes of relevance to policy change in their systems (e.g., cost-effectiveness); (3) testing an intervention which is brief, flexible, low-cost, and can be provided by a broad range of clinicians in and in a crisis-oriented setting; (4) conducting a real-world effectiveness study with limited exclusion criteria using community providers in routine practice.

Implementation. External policies that affect suicide prevention include: (1) county and state legislatures that set budgets for jails and community mental health centers, and (2) recent national initiatives to reduce incarceration rates and improve mental health and substance abuse resources. For example, the national Stepping Up Initiative provides steps for counties to reduce the number of individuals with mental illness in jail.

In terms of challenges within facilities, our team examined facilitators and barriers of implementation of evidence-based mental health practices in justice populations (n = 71 justice providers, n = 181 patients, n = 500+ documents). Results indicated that justice providers are open to feedback, enthusiastic about evidence-based mental health practices, and committed to

help their clients. However, training and supervision by study staff comprised 72% of the cost of the mental health intervention. Therefore, a primary implementation task is to find scalable training and supervision models. Jails can sometimes afford a one or two-day training, but not ongoing consultation. Unfortunately, single workshops often have little effect on provider competence. Implementation efforts may benefit from examining scalable training models, such as those that provide centralized national support.

18. SURVIVORSHIP

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

Overall Session Abstract: This symposium examines aspects of the grief experienced by people who have lost a loved one to suicide. Such individuals are more likely to experience prolonged and more severe grief. Factors such as the suddenness of the loss, shame and stigma make the grief process more difficult. Often the expression of the name of the deceased aloud to others is difficult for years. Dr. Kevin Malone will describe how families have used art to express their feelings about their loss. He will report on a study involving over 100 families. Dr. Katherine Shear is an expert in prolonged grief disorder and will describe this disorder and talk about its course and management. Given the high rate of this disorder in survivors of suicide, meaning individuals who have lost a loved one to suicide, this work is of great importance. Dr. Julie Cerel will discuss the impact of suicide on families and some of her seminal work has been on the impact of suicide on children in families.

18.1 LEARNING FROM SURVIVORS: HOW SURVIVORS CAN IMPACT COMMUNITIES THROUGH A SCIENCE-ARTS LIVED LIVES PROJECT

Kevin Malone*[1], Mc Guinness Seamus[2], Sheridan Anne[3], Corry Colette[4], Jefferies Janis[5]

[1]University College Dublin, [2]Galway Mayo Institute of Technology, [3]Health Service Executive, Donegal, [4]National Suicide Research Foundation, Cork, [5]Goldsmiths College, London

Individual Abstract: Suicide rates increased in many countries over the past 2 decades, and many communities are at increased risk. In the USA, suicide death, which accounted for 30k deaths per annum in 2002, accounts for over 47k deaths in 2017. White males comprise 69% of the 2017 fatalities, and of these, 22 veterans a day take their own lives. In Ireland, youth suicide rates remain the 4th highest in the expanded EU, and youth suicide is also the leading cause of youth peer bereavement. Stigma severely impacts understanding, which in turn inhibits education and research activity, and delays the development and evaluation of interventions around suicide. This study reports on how survivors have created a positive impact following a suicide loss through participation in, and contributions to, a 10-year inter-disciplinary Science-Arts Community intervention research project called Lived Lives.

Lived Lives is a decade-long science-arts post-vention community intervention, exploring suicide and its impacts on surviving family, friends and communities. 104 suicide-bereaved research families were interviewed by a scientist (KMM) and artist (SMcG), mostly in their homes, and around the kitchen table, about their loved one lost to suicide. They were invited by the artist to donate material belongings, stories and images pertaining to their loved ones lost to suicide, to the Lived Lives project. The Lived Lives artworks and subsequent mediated Lived Lives (private) exhibitions with families were created by the artist from these donations. They include at least 4 artworks pertaining to lived lost lives, including: a series of portrait

tapestries ("Lost Portrait Gallery"); a collective installation of belongings ("Archive Rooms"); over 200 signed consent forms from all family research participants ("Informed Consent"); and a textile collective installation of in excess of 92 white shirt fragments as a metaphor for lived lives lost ("21g"). It also includes pivotal video-footage of the families' engagements with the Artworks, becoming part of Lived Lives. [A 5th work - "Making Stigma Visible", will be introduced by the artist by video at the session]. Following consent and approval from the Lived Lives research families to "go public", the scientist-artist mediated project has since been installed in many community settings in Ireland and internationally. The mediated Lived Lives exhibition is a collaborative blend of mixed methods enquiry, from an individual as well as collective community perspective. Restoring identity to the lived lives lost to suicide is empowering and challenges stigma, fostering condolence, catharsis and mourning, promoting engagement, active participation, intervention and understanding. Lived Lives has engaged over 2,000 participants (25% under 18s), including first responders, school students, medical students, suicide-bereaved families, marginalized at-risk communities such as Travellers and LGBT, senior policy makers, mental health service facilities and users, including those with suicidal feelings. (Bereavement support is available at all events). Feedback and evaluation are compelling, and have indicated positive individual and community impacts, and it does not appear to cause harm. It is uniquely incorporated into the Donegal Implementation Plan for Ireland's National Suicide Prevention Strategy 2015-2019 (Connecting for Life). The Lived Lives project has informed individuals, communities and policymakers about possible postvention intervention impacts following survivor families' contributions, which may reduce stigma and despair and foster hope. It is funded through consecutive Science & Society Awards from the Wellcome Trust.

18.2 EXPOSURE TO SUICIDE: PERSONAL AND OCCUPATIONAL CONTEXTS

Julie Cerel*[1]

[1]University of Kentucky

Individual Abstract: It has been a long-held notion that each suicide only effects six people. Anyone impacted by suicide knows this is far from reality and that each suicide impacts families, schools, workplaces and whole communities. Recent research, using a variety of different methodologies has shown that over half the American population personally knows someone who has died by suicide. Dr. Cerel will describe how suicide effects an entire continuum of people left behind. She will describe work showing how suicide exposure in the workplace effects a wide variety of workers- from members of the military to first responders, mental health clinicians and crisis workers.

18.3 TREATMENT OF PROLONGED GRIEF DISORDER WITH CGT - RANDOMIZED TRIALS AND BEYOND

M. Katherine Shear*[1]

[1]Center for Complicated Grief, Columbia University School of Social Work

Individual Abstract: When someone close dies, it changes our relationship with them and it also changes the world we live in. This is especially true when a person dies by suicide. Bereavement is not just one loss. Over time we adapt to the changes - our relationship to the person who died, changes in ourselves and the world around us. Grief is the natural universal

response to loss yet everyone grieves in their own way. Each close relationship is unique and the changes it brings are complex, multifaceted and variable over time. Grief is usually transformed and integrated as a bereaved person adapts to the loss; however, certain kinds of thoughts, feelings and behaviors can be impediments to adaptation. The result is persistent impairing grief that is sometimes called complicated grief. This presentation will discuss grief and adaptation to loss after suicide and describe the ICD-11 diagnosis of prolonged grief disorder (the syndrome of complicated grief). Our approach to treatment of this condition will be outlined, highlighting how this treatment applies to suicide bereavement.

19. TARGETING BRAIN CIRCUITRY FUNCTION TO REDUCE SUICIDE RISK

Chair: Hilary Blumberg, Yale School of Medicine

Overall Session Abstract: In this symposium, multimodal neuroimaging evidence will be presented that supports key roles for the fronto-subcortical brain systems subserving emotion regulation and cognitive control in the development and ongoing risk for suicide thoughts and behaviors (STBs). Each talk will provide novel evidence for brain predictors of beneficial responses and/or salutary brain changes in these systems associated with a range of biopsychosocial and/or pharmacological interventions that reduce STBs. Hilary Blumberg, MD (Yale School of Medicine) will provide a developmental perspective on the alterations in structural and functional trajectories in these brain systems that may contribute to the emergence of risk for STBs that often occurs during adolescence and young adulthood in individuals with bipolar disorder (BD) and major depressive disorder (MDD). She will present multimodal magnetic resonance imaging (MRI) data on brain circuitry features common to STBs across the disorders and that are associated with future suicide attempts. She will also initiate discussion of brain changes with interventions, focusing on psychobehavioral intervention approaches that provide top-down and bottom-up strategies to improve emotion regulation and reduce STBs. Anthony Ruocco, PhD (University of Toronto) will continue the discussion of psychobehavioral interventions to reduce risk of self-harm, presenting research on dialectical behavior therapy (DBT). He will present neuroimaging data on changes in the brain circuitry subserving emotion regulation and cognitive control implicated in risk for self-harm, with a focus on the identification of neuroimaging predictors of improvements in self-harm following DBT. This will include preliminary findings that patients with BPD who achieved the greatest reductions in self-harm have lower levels of activation in the dorsolateral prefrontal cortex (DLPFC) prior to beginning treatment. After treatment, they also show the greatest increases in activity within the DLFC, a region that is involved in behavioral control. Finally, Danella Hafeman, MD, PhD (University of Pittsburgh), will present findings from longitudinal study of adolescents supporting salutary effects of lithium in reducing suicide ideation and future suicide attempts, and associated neuroimaging findings.

19.1 BRAIN CIRCUITRY IN THE DEVELOPMENT OF SUICIDAL THOUGHTS AND BEHAVIORS

Anjali Sankar[1], Lejla Colic[1], Siyan Fan[1], Elizabeth Lippard[2], Hilary Blumberg*[1]

[1]Yale School of Medicine, [2]University of Texas Austin

Individual Abstract: Adolescence is a critical period in the development of suicide thoughts and behaviors (STBs), as it is a time when STBs often first emerge. It is also a time when mood disorders, the diagnoses associated with the highest suicide risk, often emerge. This highlights the need for improved understanding of the neurobiological basis of the development of STBs

in adolescents with mood disorders. In this talk, data will be presented on brain circuitry structure, function and connectivity features associated with STBs from high resolution structural magnetic resonance imaging (MRI), functional MRI and diffusion tensor imaging performed in adolescents and adults with bipolar disorder (BD), major depressive disorder (MDD) and in healthy comparison adolescents and adults. Results presented will include similarities and differences in the brain circuitry features associated with STBs in BD and MDD, as well as brain circuitry features associated with specific behavioral domains that cut across diagnoses. Results will also be presented from analyses of longitudinal data providing preliminary evidence for potential brain predictors of future STBs. The results highlight the role of STBs in the brain circuitry that subserves emotional regulation. Preliminary data on top-down and bottom-up strategies to improve emotion regulation and reduce STBs will be discussed.

19.2 DIALECTICAL BEHAVIOR THERAPY AND CHANGES IN BRAIN FUNCTION: IMPLICATIONS FOR TREATING SELF-HARM

Anthony Ruocco*[1]

[1]Uniiversity of Toronto

Individual Abstract: Dialectical behavior therapy (DBT) is a treatment that is effective for reducing self-harm in individuals with borderline personality disorder (BPD). However, DBT is effective for only a subset of people who complete the treatment, and it is not yet know what factors predict a more favorable treatment response. The purpose of this presentation is first to review neuroimaging research investigating the effects of DBT on brain functioning in individuals with BPD. Second, the results of a preliminary study designed to identify neuroimaging predictors of improvements in self-harm following DBT are presented. Overall, neuroimaging studies of DBT reveal changes in the functioning of brain regions involved in cognitive control and emotion regulation, consistent with a primary goal of DBT to improve behavioral control. Building on these findings, a preliminary study on neuroimaging predictors of self-harm in DBT shows that patients with BPD who achieved the greatest reductions in self-harm have lower levels of activation in the dorsolateral prefrontal cortex (DLPFC) prior to beginning treatment. After treatment, they also show the greatest increases in activity within the DLFC, a region that is involved in behavioral control. Implications of these findings for identifying self-harming individuals at the greatest risk for treatment non-response and exploring additional treatment options will be discussed.

19.3 BIOSIGNATURES OF SUICIDAL PHENOTYPES

Maria Oquendo[1], Hanga Galfalvy[2], Tse-Hwei Choo[3], Jeffrey Miller[4], Elizabeth Sublette[5], John Mann[4], Barbara Stanley[6], Danella Hafeman*[7]

[1]University of Pennsylvania, [2]Columbia University College of Physicians and Surgeons, [3]Mental Health Data Science, New York State Psychiatric Institute, [4]Columbia University & New York State Psychiatric Institute, [5]Columbia University, [6]College of Physicians & Surgeons, Columbia University, [7]University of Pittsburgh School of Medicine

Individual Abstract: Several teams have been working on identifying descriptive subtypes of suicidal ideation. We have described a neurobiological model in which we identify two suicidal subtypes based on the pattern of the suicidal ideation (SI) that they express. One subtype is more likely to have suffered childhood trauma and to exhibit impulsive aggression, difficulty harnessing relevant neural areas when regulating emotion, and a pronounced cortisol

response to a psychosocial stressor. This subtype experiences large fluctuations in SI, typically in response to an external stressor. The other subtype experiences sustained SI and is characterized by low levels of childhood abuse, excellent cognitive control and low serotonergic tone in the dorsal raphe nucleus (DRN) as measured by PET and a radioligand binding to the 5-HT1a receptor. In this study, we examine the relationship between baseline cognitive control [as measured by the Stroop and Continuous Performance Tasks (CPT)] and DRN 5HT1A binding potential, and predict a positive association. We also test the relationship between baseline cognitive control (Stroop and CPT) and high mean SI, but low SI variability, as measured by Ecological Momentary Assessment (EMA), at baseline and during the 2 year follow up. We hypothesize that higher baseline 5HT1A BPF in DRN as measured by PET, indicating low serotonergic function, will be negatively associated with SI variability as measured by EMA, during follow-up. We further hypothesize that higher baseline 5HT1A BPF in DRN, will predict better performance on the Stroop or CPT; predicts less variable (more sustained) SI both at baseline and during a 2 year follow-up. The tests of the relationship between baseline assessment and SI patterns as measured by the Scale for Suicidal Ideation will be conducted as well. If the existence of these patterns is confirmed, prediction of SI may be refined as the specific predictors for each of the subtypes is investigated and parsed out.

Affiliations:

1. Perelman School of Medicine, University of Pennsylvania
2. Vagelos College of Physicians and Surgeons, Columbia University

20. RAPID ACTING INTERVENTIONS FOR SUICIDE RISK

Chair: Elizabeth Ballard, NIMH

Discussant: Matthew Rudorfer, Division of Services and Intervention Research, National Institute of Mental Health

Overall Session Abstract: Suicidal thoughts and behavior are a psychiatric emergency. Each day, patients present to emergency departments, inpatient units, therapist offices and outpatient clinics reporting active suicidal thoughts with intent to act. Clinicians are then tasked with assessing and treating these individuals in active crisis, often with few resources at their disposal. While there are a growing number of interventions which have been associated with reduced risk for suicide attempt in the longer term (months to years), including psychotherapies and medications, there are few treatments which can be initiated with rapid effects on suicidal thoughts and behaviors. Fortunately, there is an emerging area of research related to rapid acting interventions which has exciting implications for both treatment of the suicidal patient as well as neurobiological research into the suicidal crisis. The focus of this panel will be four such novel interventions; transcranial magnetic stimulation (TMS), magnetic seizure therapy (MST), NDMA receptor antagonist ketamine and chronotherapeutics. Speakers will present data on efficacy, speed of onset, patient selection, follow-up or augmenting interventions and potential biomarkers associated with response that may point to mechanisms of action.
As chair, Dr. Ballard will provide an overview of the need for rapid acting interventions for suicide risk. She will discuss the relatively short nature of the suicidal crisis and the utility of interventions which can be initiated quickly after an emergency department visit or during a brief psychiatric inpatient stay.

Dr. Croarkin will discuss recent and planned innovations in TMS dosing and biomarker work that is relevant to rapid diagnostic and treatment paradigms for suicidality, including outcome data on suicidal ideation (SI) from a recent trial with adolescents. Preliminary data suggest that left dorsolateral prefrontal cortex may have promise as a biomarker to assess suicidality in adolescents.

Dr. Daskalakis will present data demonstrating reduced SI in depressed patients who received open-label magnetic seizure therapy (MST). Results also suggest that MST was not associated with any clinically meaningful impairment in memory and also produced neuroplasticity in the frontal cortex, likely through long-term potentiation (LTP)-like mechanisms.

As a presenter, Dr. Ballard will discuss recent meta-analytic findings of ketamine as a potential rapid-acting intervention for SI within minutes to hours. She will discuss potential classes of SI responders to ketamine as well as gamma power in the anterior insula on magnetoencephalography (MEG) as a potential biomarker of SI response.

Dr. Benedetti will present on the rapid (1 day latency) effects of combined chronotherapeutics (sleep deprivation, light therapy, sleep phase advance) and lithium, on SI in bipolar depression. Novel results suggest that rapid restoring of structural and functional cortico-limbic connectomics and synaptic homeostasis, and monoaminergic potentiation, are key mechanisms of action.

Dr. Rudorfer will serve as discussant for the panel to summarize key findings and avenues for future research.

20.1 RAPID EFFECTS AND POTENTIAL BIOMARKERS OF SUICIDE IDEATION RESPONSE TO KETAMINE

Elizabeth Ballard*[1]

[1]NIMH

Individual Abstract: Rapid-acting interventions, such as NMDA receptor antagonist ketamine, suggests both exciting clinical promise as well as new avenues for research into the neurobiology of suicide. From a clinical perspective, ketamine may reduce suicidal ideation (SI) within hours and may facilitate the short-term reduction of suicide risk. From a research perspective, evaluating the effects of ketamine in suicidal individuals using an experimental medicine approach can assist in elucidating the neural underpinnings of the reduction of SI. This presentation will focus on the potential rapid acting effects of ketamine on SI, specifically its efficacy, course and potential biomarkers of SI response. First, a meta-analysis (n = 167) of the published literature will be presented demonstrating ketamine has an impact on SI within one day. These SI results are independent of its antidepressant effect and can last up to one week. Second, results of a growth mixture model across five ketamine trials (n = 128) will be presented, identifying three classes of SI responders to ketamine; responders, non-responders and remitters. For responders and remitters, the maximal amount of improvement was achieved at one day after ketamine administration. Additionally, chronic SI and history of self-injury were associated with classification in the non-responder group. Lastly, a potential biomarker of SI will be presented using magnetoencephalography (MEG) (n = 35) data, suggesting that gamma power in the anterior insula is associated with SI response to ketamine. Implications of the findings both for understanding potential mechanisms of ketamine's impact on suicidal thoughts as well as illuminating the neurobiology of suicidal thoughts will be reviewed.

20.2 MONITORING AND MODULATING SUICIDALITY WITH TMS

Paul Croarkin*[1]

[1]Mayo Clinic

Individual Abstract: This presentation will review recent and planned studies focused on transcranial stimulation (TMS) biomarker and intervention development for suicidality. The persenter will review efforts across the lifespan with emphasis on recent projects in adolescents. Recently a large study pooling data from prior trials suggests that bilateral rTMS improves suicidal ideation in adult. One recent study utilized transcranial magnetic stimulation biomarkers to assess measures of cortical inhibition and excitability in healthy control adolescents (n=20), depressed adolescents without any history of suicidal behavior ("Depressed", n=37), and depressed adolescents with lifetime history of suicidal behavior ("Depressed+SB", n=17). Another study examined changes in suicidal ideation with adolescents (n=19) undergoing 6 weeks of open-label, 10 Hz rTMS applied to the left dorsolateral prefrontal cortex for treatment resistant depression. Group main effects were significant for long-interval intracortical inhibition (LICI) at interstimulus intervals (ISIs) of 100 ms and 150 ms, but not 200 ms. Depressed+SB adolescents demonstrated impaired LICI compared to healthy control and Depressed adolescents, while healthy control and depressed participants did not differ in LICI. There were positive linear relationships between lifetime suicidal behavior severity and LICI paradigm at 100-ms and 150-ms ISIs. In a post hoc receiver operating characteristic analysis, LICI significantly discriminated Depressed from Depressed+SB youth in 100-ms and 150-ms paradigms. Suicidality as assessed by the C-SSRS improved from baseline to posttreatment ($p = 0.02$). Suicidality as assessed by item 13 of the CDRS-R demonstrated improvement from baseline to posttreatment ($p = 0.004$). These preliminary data suggest that LICI may have promise as a biomarker to assess suicidality in adolescents. Interventional, high frequency rTMS may address suicidality in adolescents. Interpretation of the present findings must be placed in the context of the limitations of an open trial of high frequency rTMS and a relatively small sample size. Future work will develop LICI as a point of care biomarker for adolescents and examine innovative dosing patterns of therapeutic TMS for suicidality.

20.3 MAGNETIC SEIZURE THERAPY FOR SUICIDALITY IN TREATMENT RESISTANT DEPRESSION

Zafiris Daskalakis[1], Daphne Voineskos*[1]

[1]CAMH

Individual Abstract: Data on 86 patients with unipolar treatment resistant depression (TRD) who received magnetic seizure therapy (MST) in an open-label fashion at CAMH. MST was applied over the prefrontal cortex and symptom ratings were evaluated and reported here for patients who completed an adequate course of MST and separately for those who completed the trial per-protocol. The 86 unipolar TRD patients were treated with high frequency MST (i.e., 100 Hz) (N=24), medium frequency MST (i.e., 60 or 50 Hz) (N=26) or low frequency MST (i.e, 25 Hz MST) (N=36) using 100% stimulator output. Patients were treated 2-3 times per week until they achieved depressive symptom remission or received a maximum of 24 sessions. An adequate course of MST produced a significant reduction in the 24-item Hamilton Rating Scale for Depression (HRSD-24). MST produced a significant reduction in the Scale for Suicidal Ideation (SSI). Moderate frequency (50 and 60 Hz) MST produced the greatest rates of remission of suicidal symptoms (55.2%). Most measures of cognitive performance were preserved but retrograde autobiographical memory was significantly worse whereas

performance on the brief visuospatial memory task were significantly improved. Our results suggest that MST is effective for SI in patients with TRD. Our results also suggest that MST is not associated with any clinically meaningful impairment in memory. MST also produced neuroplasticity in the frontal cortex, likely through long-term potentiation (LTP)-like mechanisms. The largest reduction in suicidality was demonstrated in patients showing concomitant decreases in cortical inhibition-a mechanism linked to enhanced LTP-like plasticity.

20.4 CHRONOTHERAPEUTICS TO HEAL DEPRESSION AND PREVENT SUICIDE

Francesco Benedetti*[1]

[1]University Vita-Salute San Raffaele

Individual Abstract: Chronotherapeutic antidepressant interventions that directly target the biological clock, such as the combined administration of sleep deprivation and light therapy, cause immediate changes of cortical excitability and neural responses to stimuli. This effect is paralleled by an immediate decrease of depression and suicidality thus being able to provide an immediate therapeutic effects for the patients. We used these techniques as first-choice interventions in everyday clinical practice for >20 years, showing that the worse and life-threatening cognitive symptoms, such as suicidal ideation and planning, are the first to disappear in responders, and also show a persistent amelioration in patients who fail to achieve a final response to treatment.

In the last 5 years, we used structural and functional multimodal imaging (fMRI connectivity during emotional tasks, grey matter voxel based morphometry and thickness, diffusion tensor imaging to explore white matter structure) before and after treatment, combined with the study of functional polymorphisms in monoaminergic and clock pathways, to study the relationship between depression and suicide in Bipolar Disorder.

We showed that:

(1) suicide in Bipolar Disorder associates with:

- worse severity of adverse childhood experiences;

- abnormal top-down cortico-limbic connectivity during emotional processing;

- reduced grey matter volumes in orbitofrontal cortex

(2) cortico-limbic connectivity associates with core depressive psychopathology, and suicidal ideation

(3) gene polymorphisms influencing serotonergic transmission:

- moderate the relationship between early stress and adult suicide;

- bias cortico-limbic connectivity during emotional processing;

- moderate the effect of connectivity in mediating the relationship between early stess and adult suicidality.

Finally, we showed that:

- effective chronotherapeutics acts on functional and structural connectivity and enhances the effective top-down cortical control on subcortical limbic structures, proportional to the therapeutic effect;

- lithium, the mainstay treatment for bipolar disorder and suicide, counteracts the detrimental effects of the illness on grey and white matter structures.

These findings suggest that treatments targeting the chronobiology of depression can provide a mean to achieve the yet unmet need of rapidly healing depression and preventing suicide in patients with bipolar depression.

Tuesday, October 29, 2019

CONCURRENT SYMPOSIA SESSIONS

3:15 PM - 4:45 PM

21. TARGETED INTERVENTIONS FOR SUICIDAL ADOLESCENTS

Chair: Cheryl King, Department of Psychiatry, University of Michigan Medical School

Overall Session Abstract: Suicide is the second leading cause of death among adolescents and young adults worldwide, and suicide attempts and self-injury are far too common in this age group. The lack of empirically supported prevention and intervention strategies has been one limiting step in our ability to address this substantial public health problem. Recent initiatives, however, have addressing this gap. This presentation will feature five speakers who are working with their research groups to develop and validate effective suicide prevention strategies for youth and young adults.

Dr. Asarnow will describe the Safe Alternatives for Teens and Youth (SAFETY) Program, which is an outpatient-based, child and family-centered cognitive-behavioral treatment for high risk youth who present with a suicide attempt or nonsuicidal self-harm. Results from an open trial and randomized controlled trial will be presented as well as new research and community dissemination initiatives. Dr. McCauley will provide a review of several promising suicide prevention interventions with a particular focus on the Collaborative Adolescent Research on Emotion and Suicide (CARES) multi-site , randomized clinical trial, which evaluated the efficacy of Dialectical Behavioral Therapy (DBT). Dr. McCauley will also share initial experiences with a pre-specified care pathway for youth who present with suicide risk in inpatient, consultation-liaison, and outpatient clinical settings. This involves a model of care in which youth who report suicide risk are engaged in a Collaborative Assessment and Management of Suicidality (CAMS) evaluation to identify the drivers of suicidal ideation and their specific intervention needs. Dr. King will described the Youth-Nominated Support Team (YST) intervention, which was developed for adolescents who are psychiatrically hospitalized with acute suicide risk. She will describe results of both the initial RCT and the secondary analysis of associated 11-14-year mortality outcomes. Dr. Witt's presentation will focus on new intervention models that incorporate digital formats and strive to reach those who are unable to access more formal treatments. She will describe the South Perth General Practitioners (GP) project; the SafeTALK and Reframe IT (STAR) Project, which is comprised of a suicide awareness workshop for all students, screening for suicide risk, and the Reframe IT online CBT

platform; and the #chatsafe Project. Her presentation will include information about evidence-informed guidelines to foster safe and helpful peer interactions on social media.

21.1 THE YOUTH-NOMINATED SUPPORT TEAM INTERVENTION FOR SUICIDAL ADOLESCENTS

Cheryl King*[1], Anne Kramer[2], Nicole Klaus[3], Alejandra Arango[2], Danielle Busby[2], Ewa Czyz[2], Cynthia Ewell Foster[2], Brenda Gillespie[4]

[1]University of Michigan Medical School, [2]University of Michigan, [3] University of Kansas, [4]Consulting for Statistics, University of Michigan

Individual Abstract: Background and Objectives: The prevalence of suicide among adolescents is rising, yet little is known about effective interventions to reduce the morbidity and mortality associated with adolescent suicide risk. The objectives of this presentation are to describe the Youth-Nominated Support Team (YST) intervention for suicidal adolescents, results from a randomized clinical trial (RCT) examining its initial effectiveness, and results from a secondary analysis of associated 12-year mortality outcomes.

Intervention: YST is a psycho-educational, social support intervention in which adolescents nominate up to four "caring adults" from family, school, and community settings to serve as support persons for them following hospitalization. With parental permission, these adults attend a psycho-education session to learn about the youth's problem list and treatment plan, suicide warning signs, communicating with adolescents, and how to be helpful in supporting treatment adherence and positive behavioral choices. The support adults receive weekly, supportive telephone calls from YST staff for 3 months.

Methods: The initial RCT enrolled 448 adolescents (ages 13 to 17) who presented with suicidal ideation (frequent or with suicidal plan) and/or a recent suicide attempt from two psychiatric hospitals (2002-2005). In the YST condition, a mean of 3.4 support adults participated with each adolescent. The secondary analysis of 11-14-year mortality outcomes made use of National Death Index (NDI) data for deaths (suicide, drug overdose, and other premature causes of death) through 2016; staff who matched identifying data to NDI records were blind to intervention group.

Results: In the initial RCT, YST was associated with a significant, positive main effect for the primary outcome, suicidal ideation. Adolescents in the YST plus Treatment as Usual (TAU) group, relative to adolescents in the TAU group, reported a greater reduction in the severity of suicidal thoughts at 6-week follow-up, although this difference was not maintained. YST was also associated with greater treatment utilization during the 12-month period following psychiatric hospitalization. NDI records were reviewed for all 448 YST Study participants (72% female; Mean age (SD) 15.6 years, (1.3); 83% Caucasian). There were 13 deaths in the TAU group and two deaths in the YST group (hazard ratio: 6.62, [95% CI: 1.49 to 29.35], < 0.01). No patients were withdrawn from YST due to adverse effects.

Conclusions: YST was associated with modest initial effects on suicidal ideation and treatment adherence in addition to reduced mortality over time. These results are in need of replication.

In addition, further examination of potential YST mechanisms of action is recommended. Results suggest, however, that YST may positively alter the trajectories of at risk adolescents over time.

21.2 SUICIDE PREVENTION CARE: TREATMENT FOR YOUTHS AFTER A SUICIDE ATTEMPT OR REPEATED SELF-HARM

Joan Asarnow*[1]

[1]David Geffen School of Medicine at UCLA

Individual Abstract: Despite extensive scientific advances, suicide and suicide attempts continue to occur at unacceptable rates. Suicide is the second leading cause of death globally among youths ages 15-29. In contrast to other leading causes of death which are declining, recent statistics indicate that youth suicide rates have been increasing.

A history of prior suicide attempts or self-harm is the most reliable predictor of future fatal and nonfatal suicide attempts. Suicide attempts and repeated self-harm are also signs that a youth is experiencing distress, dysfunction, and/or mental health problems.

This presentation focuses on treatment strategies for the very high-risk group of youths who present with a suicide attempt or nonsuicidal self-harm. We describe the Safe Alternatives for Teens and Youth (SAFETY) Program, a 12-week outpatient child and family-centered cognitive-behavioral treatment, informed by dialectical-behavior therapy, and designed to promote safety following a suicide attempt or repeated episodes of self-harm. Outcomes are presented from an initial open trial and randomized controlled trial. We present a care process model and report on new research and dissemination initiatives that aim to strengthen care across diverse health systems and community settings. Implications for future efforts to improve suicide prevention care are discussed.

21.3 DEVELOPING EFFECTIVE, MULTIMODAL INTERVENTIONS FOR YOUNG PEOPLE AT RISK OF SUICIDE ACROSS PRIMARY CARE, SCHOOL SETTINGS, AND ACROSS ONLINE PLATFORMS.

Katrina Witt*[1], Jo Robinson[2], Michelle Lamblin[2], Karolina Krysinska[2], Sadhbh Byrne[2], India Bellairs-Walsh[2], Alexandra Boland[2], Nicole Hill[2], Pinar Thorn[2]

[1]Orygen, the National Centre for Excellence in Youth Mental Health, The University of Melbourne, [2]Orygen

Individual Abstract: Suicide is the leading cause of death for Australians between 15-44 years, peaking in young people between 15-25. Most OECD countries have national suicide prevention strategies which identify young people as particularly at risk and recommend developing interventions across a range of settings. More recently, strategies have called for interventions to be offered in digital formats to reach the 'missing middle' (those who are not able to access appropriate public-funded mental health support). To address these gaps, we are currently undertaking a number of studies to investigate how young people interact with different services across these settings, and how these services can be redesigned to better meet the needs of young people at-risk of self-harm or suicidal behaviour. This presentation will focus on three projects we have implemented across these settings: (1) The South Perth GP Project; (2) the SafeTALK and Reframe IT (STAR) Project, and; (3) the #chatsafe Project.

Given that primary care is often the first point of contact for young people, in the South Perth GP Project we focused on General Practitioners (GPs) as they can act as gatekeepers to mental health services and therefore provide an early opportunity to assess for risk in young people. We investigated the perspectives of GPs and young people presenting to primary care for suicidal thoughts or behaviours to develop best-practice treatment recommendations for these settings. GPs highlighted a number of systems-level pressures to their 'gatekeeping' role given the constraints of working in an under-resourced, time-poor, and disjointed health care service. In particular, GPs reported a lack of knowledge around appropriate referral pathways, and how to communicate effectively with young people in distress. Young people also reported difficulties in communicating with GPs as a major barrier to accessing help from primary care services. As a result of these findings, we are now developing and evaluating a suite of interventions to address help in overcoming these barriers.

We have also previously found that the development and evaluation of interventions in educational settings is limited. The STAR Project, a multimodal intervention combining universal, selective, and indicated approaches, consists of (1) safeTALK, a three-hour suicide awareness workshop for all students; (2) screening for current suicide risk; and (3) the Reframe IT online cognitive behavioural therapy platform for at-risk students. We found safeTALK increased students' knowledge, confidence, and willingness to help others experiencing suicidal thoughts or behaviours, with no evidence of increased suicidal thoughts or distress in participants. Screening identified 45% of participants as potentially at risk. The RCT of Reframe IT found that, compared to the control group, the intervention group showed an improvement in suicidal ideation, depression, and hopelessness.

Finally, within the digital sphere, whilst much work has focused on the development of one-way (i.e., developer-driven) digital applications and websites to support at-risk young people, our work with young people has found that they actively use social media to seek, explore, and also produce suicide-related content. This poses both risks and potential benefits. To this end, we recently developed the #chatsafe guidelines; a comprehensive set of evidence-informed guidelines to foster safe and helpful interaction among peers on social media. To maximise the accessibility and uptake of the #chatsafe guidelines, we are also currently working on implementing the guidelines through a large-scale social media campaign co-designed with young people.

21.4 PROMISING THERAPEUTIC INTERVENTIONS TO REDUCE YOUTH SUICIDE RISK

Elizabeth McCauley*[1], Molly Adrian[1]

[1]University of Washington School of Medicine

Individual Abstract: Suicide is the second cause of death in 10-24 year-olds in the US. For every completed suicide, there are an estimated 8-25 attempts, with self-injury even more common. Adolescent females are more likely to engage in suicidal and self-harming behaviors while suicide death is more common among adolescent males. Efforts to address this significant public health problem have been thwarted by the lack of well-established, empirically supported treatments for decreasing suicide attempts and nonsuicidal self-injuries in adolescents with elevated suicide-risk. Recent studies1,2,3 have, however, reported promising on approaches to reduction of suicide and self-harm behaviors in these high-risk youths.

This presentation will provide a critical review of these promising suicide interventions with a focus on findings and lessons learned from our Collaborative Adolescent Research on Emotions and Suicide (CARES) study.4 CARES was a multisite, NIMH- funded randomized clinical trial evaluating the efficacy of Dialectical Behavior Therapy (DBT) versus Supportive Therapy (ST) in reducing suicidal and self-harming behaviors in a high-risk sample of severely suicidal, emotionally dysregulated youths, with histories of repetitive self-harm. 173 participants were randomized to 6 months of DBT or ST. Each condition included both individual and group therapy in an effort to match treatment exposure. Significant advantages were found for dialectical behavior therapy on all primary outcomes at post-treatment: suicide attempts, non-suicidal self-injury, and overall self-harm. While rates of self-harm continued to decline through the12-month follow-up, the advantage for dialectical behavior therapy declined as well. These findings indicate positive response to treatment while also underscoring that for some youth, suicidal ideation and behaviors are very persistent. This underscores the importance of viewing risk as continuing over time and incorporating preventive monitoring and booster intervention work, as needed.

Finally, we will review our initial experiences following a specified care pathway across our inpatient, C/L and outpatient clinical settings for youth presenting with suicidality in the context of other emotional disorders such as depression and/or anxiety. Given the escalating problem of youth suicide, we are evaluating a model of care in which all youth reporting suicidality as part of their initial clinical concerns, are immediately engaged in a Collaborative Assessment and Management of Suicidality (CAMS) evaluation. Use of this CAMS approach allows us to identify the drivers of the SI as well as helping to inform broader intervention needs. While initial intervention targets reduction of suicidality youth can then engage in focused depression and/or anxiety interventions (BA, CBT, with exposure) while those with persistent suicidality and history of prior attempts are engaged in an intensive DBT treatment program.

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22. THE MULTIPLE ASSETS OF BRAIN IMAGING IN SUICIDE RESEARCH

Chair: Fabrice Jollant, Paris-Descartes University

Overall Session Abstract: Suicidal behaviors refer to a range of acts often resulting from the complex interaction between an individual and his/her own social environment. The way individuals perceive life events (notably loss, rejection, isolation), experience them (as painful and hopeless), and respond to them (which includes decision-making capacities) are keys to understanding the suicidal process and the possibility of a suicidal act. Over the last years, the exciting field of cognitive neuroscience has developed in suicidology and allows exploring these different steps and others. One major tool of this research branch has been neuroimaging, which includes pharmacological, structural or functional approaches. The aim of this international symposium will be to gather four experts in the field in order to present different scientific strategies and novel findings emerging from the neuroimaging studies of suicidal behavior.

Lianne SCHMAAL (University of Melbourne, AUSTRALIA) will present the ENIGMA-Suicidal Thoughts and Behaviors (STB) global initiative, a worldwide collaboration that was recently initiated to study the neurobiological and transdiagnostic mechanisms underlying suicidal thought and behaviors. This consortium pools existing neuroimaging, clinical and psychosocial data from over 25,000 individuals from 60 datasets collected in 17 different countries worldwide. Preliminary MRI findings from the STB group will be presented.

Fabrice JOLLANT (Paris-Descartes University, FRANCE) will focus on one major dimension of the suicidal process and an obvious therapeutic target: psychological pain. He will show recent MRI results on the neural basis of mental pain in depression and how it may be related to transcriptomics. This study identified particular serotonergic and nociceptin genes, through the study of their peripheral expression, as potential modulators of mental pain-related brain region activity.

Gerd WAGNER (Jena University, GERMANY) will synthesize literature on the brain correlates of suicidal ideation. Then, he will describe novel explorations of suicidal ideation by means of resting-state MRI and graph-connectivity analyses. In this perspective, suicidal ideation can be understood as resulting from acute deficient connectomics.

Finally, J. John MANN (Columbia University, USA) will describe how PET studies reveal neurotransmitter system deficits that contribute to the elements of the diathesis for suicidal behavior including mood regulation, decision making, response to stress and learning. He will also report on the capacity of PET scanning to both predict the possibility of suicide attempts and their lethality. New findings will include the use of PET to study abnormalities in neurotransmitter systems that are related to their neuroanatomy and therefore only discoverable by brain imaging.

22.1 A GLOBAL ALLIANCE TO UNLOCK BRAIN MECHANISMS INFLUENCING SUICIDAL BEHAVIORS THROUGH THE ENIGMA SUICIDAL THOUGHTS AND BEHAVIORS CONSORTIUM

Lianne Schmaal*[1], Laura van Velzen[1], Miguel Renteria[2], Neda Jahanshad[3], ENIGMA STB Working Group

[1]Centre for Youth Mental Health, The University of Melbourne, [2]QIMR Berghofer Medical Research Institute, [3]Imaging Genetics Center, Mark & Mary Stevens Neuroimaging & Informatics Institute, Keck School of Medicine, University of Southern California,

Individual Abstract: Suicide is the tenth leading cause of death for all ages and the second leading cause of death among young people with mental disorders in the US. One million

people around the world commit suicide annually and there are at least 20 suicide attempts for every completed suicide. Better prevention strategies are urgently needed. Neurobiological alterations associated with a history of suicidal behaviors may predict future risk and provide targets for interventions. However, inquiry into the neurobiology of suicidal behaviors is hindered by a low base rate of occurrence and the heterogeneous nature of mental disorders and suicidal thoughts and behaviors, therefore requiring large, inclusive samples from around the world to understand the underlying mechanisms. We have recently established a worldwide collaboration to study the neurobiological and transdiagnostic mechanisms underlying suicidal ideation and attempts in people with mental disorders. Research to date has been performed in small samples (typically N<50) of suicidal ideators and attempters and mostly examined neural markers of suicidal behaviors within a single mental illness. Within the ENIGMA-Suicidal Thoughts and Behaviors (STB) consortium we have pooled existing neuroimaging, clinical, psychosocial and demographic data from >10,000 individuals with and without mental health disorders from over 40 research institutions from 15 countries worldwide. This presentation will give an overview of opportunities and challenges of large-scale data sharing, including data harmonisation across different measurements, confounding effects of e.g. scan site and medication use and stages of brain development and aging. In addition, preliminary findings of brain alterations, based on structural MRI and diffusion tensor imaging (DTI) in this large combined sample, that are uniquely associated with suicidal ideation versus a history of suicide attempt, and how these patterns of brain alterations are shared or unique across mental disorders and how they vary with age, sex, severity and stage of mental illness.

22.2 THE NEURAL AND MOLECULAR BASIS OF MENTAL PAIN IN MAJOR DEPRESSIVE EPISODE

Fabrice Jollant*[1], Fabricio Perreira[2], Laura Fiori[3], Pierre-Eric Lutz[4], Raoul Belzeaux[5], Stéphane Richard-Devantoy[3], Gustavo Turecki[3]

[1]Paris-Descartes University, [2]CHU Nîmes, [3]McGill University, [4]CNRS, Strasbourg, [5]AP-HM, Marseille

Individual Abstract: Introduction: Psychological pain increases the risk of suicidal ideas and acts, and represents a potential therapeutic target of the suicidal crisis. However, the mechanisms of mental pain remain unclear. Here, we assessed the peripheral transcriptomic and central neural correlates of mental pain during a depressive episode.

Methods: 172 adult un-medicated depressed patients were recruited. Whole blood was extracted for RNA quantification at baseline (T0) and after 8 weeks (T8) of an antidepressant treatment. Ninety-nine genes of the cortisol, immune, opioid, serotonergic, and kynurenine systems were a priori selected, and 41 were sufficiently expressed to be analyzed. At both T0 and T8, mental pain was measured with a visual analog scale and the mean value over the last 14 days was used for analyses. A subset of 38 patients was additionally scanned with Magnetic Resonance Imaging at T0. Resting-state sequences of 4 networks (default-mode, basal ganglia, central executive, salience) were examined.

Results: Mean psychological pain scores significant decrease between T0 and T8. At conservative p-corrected levels, T0 mental pain was significantly correlated with 11 brain clusters encompassing the prefrontal and parietal cortices, the striatum, and the cerebellum. There was no direct association between peripheral gene expression and mean mental pain at any time points or in terms of temporal changes. However, expressions of 5HTR2B, 5HTR3A, TPH1, and OPRL1 were correlated with several of the identified brain clusters.

Discussion: Our study suggests that the serotonergic and nociceptin systems are associated with the activity of a cortico-subcortical brain network underlying the perception of mental pain during depression.

22.3 NEURAL CORRELATES OF SUICIDAL IDEATIONS: FOCUS ON ABNORMAL NETWORK CONNECTIVITY

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Individual Abstract: Given the growing public health problem with suicide worldwide, it is important to predict and prevent the occurrence of suicidal behavior (SB). Unfortunately, clinicians are often unable to accurately predict SB due to a lack of valid diagnostic instruments. Within the ideation-to-action framework (Klonsky et al., 2015), suicidal ideations (SI) are considered the first step on the pathway to suicide. However, most individuals with SI do not attempt to commit suicide. Several risk factors for suicide have been found to predict the occurrence of SIs, but not SB. Therefore, it is important to understand the transition from SI to potentially lethal attempts. One approach is to use functional neuroimaging techniques to study those patterns of brain activation that are related to SI. By obtaining knowledge about the neural foundation of SI, we might be able to differentiate neural states associated with ideation and those associated with SB, which may increase our knowledge about the ideation-to-action transition. In particular, analyses of the resting-state functional connectivity using resting-state functional Magnetic Resonance Imaging (rs-fMRI) has been proven to be a powerful means to identify dysfunctional network architecture, providing potentially valuable information for understanding the pathophysiology of SI and SB. The growing fMRI literature on SI provides an important opportunity to use the knowledge about specific brain markers in risk prediction algorithms to prevent suicide. Therefore, to elucidate abnormal patterns of functional connectivity associated with SI, we first conducted an exhaustive literature review on studies using rs-fMRI to investigate neural correlates of SI. We focused on studies that investigated disrupted system-level pathologic networks using graph theoretical analysis. Second, we addressed this particular issue by using multicenter resting-state functional brain imaging datasets. We used graph theoretical analysis to identify potential changes in network organization and its topologic properties. Additionally, we used a network-based statistic approach to examine abnormal functional connectivity pattern associated with SI. Based on the previous literature and the results of our multicenter study, there is evidence to support the notion that specific global topological network properties differentiate participants with and without SI. Furthermore, abnormal functional connectivity in a network comprising frontal, limbic and striatal regions has been shown to be associated with SI. These findings provide valuable information for understanding the neural correlates of SI.

22.4 PET IMAGING FINDINGS ENHANCE UNDERSTANDING OF PATHOGENESIS OF SUICIDAL BEHAVIOR AND RISK PREDICTION

John Mann*[1], Maria Oquendo[2], Kevin Ochsner[3], Todd Ogden[1], Francesca Zanderigo[1], Jeffrey Miller[1], Noam Schneck[1], M. Elizabeth Sublette[3]

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Individual Abstract: PET imaging allows examination of specific neurotransmitter system components and as such can help understand the pathogeneis of suicidal behavior and provide potential predictors of suicidal behavior. Most PET studies have examined the serotonin system in suicidal patients and psychiatric comparison groups. 5-HT1A autoreceptor binding predicts probability and lethality of suicide attempts in major depressive disorder. Other studies have examined serotonin transporter binding and findings are more equivocal. However instead of employing standard region of interest or voxel level approaches, we re-examined binding using an approach that respects the anatomical organization of the serotonin system. This approach identifies abnormalities that have been previously unsuspected. Results will be presented and contextualized in terms of the stress diathesis model of suicidal behavior. A second approach involves linking PET findings to stress responses in the brain that have independently been linked to suicide risk.Such responses include HPA axis excessive response and brain responses to negative pictures or memories. It seems that the serotonin system is tightly coupled with these other emotional and cognitive functions and the common relationship to suicidal behavior.

23. DEVELOPMENTAL ORIGINS OF SUICIDE: PERINATAL, CHILDHOOD, AND PUBERTAL FACTORS ASSOCIATED WITH SUICIDE RISK OVER THE LIFESPAN

Chair: Massimiliano Orri, McGill University

Overall Session Abstract: Background. Suicidal behavior is a complex and multifactorial phenomenon with both proximal (e.g., unemployment, relationship difficulties, mental disorders) and distal (e.g., childhood adversities) risk factors. A large body of suicidology research has focused on proximal factors, as they may precipitate subsequent suicidal behaviors. While recognizing the importance of those risk factors, there is increasing evidence that early-life and childhood factors may influence risk of suicidal behavior over the lifespan. This line of research contributes to the growing literature studying the developmental origins of adult health and disease (DOHaD) hypothesis, which suggests that the roots of adult behavioral and mental health problems can be traced back to risk factors in-utero and early childhood.

Objective. In this symposium, we will present research investigating the developmental origins of suicidal behavior using a wide range of approaches relying on the analyses of data from birth cohorts and population-based registers spanning from birth to adulthood.

Contributions. The first contribution will summarize available evidence of the in-utero and perinatal factors associated with suicide and suicide attempt over the lifespan. The study relies on a meta-analysis from birth cohorts and register studies that focus on a wide range of factors such as: fetal adversities (e.g., low birthweight), family characteristics at birth (e.g., low socioeconomic status, teenage motherhood), obstetric factors (e.g., birth complications) and exposures during pregnancy (e.g., to maternal smoking). The second contribution will focus on the causal role of maternal age at childbearing on suicidal behavior. Using data from linked Swedish population registers, the study used a family-based design (within-sibling and cousin comparison) to account for familial confounding factors and examine the strength of a causal inference on the role of maternal age on offspring suicidal behavior risk. The third contribution will focus on the association between childhood cognitive skills and adult suicide based on the

1958 British Birth Cohort spanning five decades of data. The study investigates the differences in cognitive skill trajectories from age 7 to 16 years between individuals who died by suicide and controls to identify when childhood differences in cognitive skills emerge. The fourth contribution will focus on the association between pubertal timing and self-harm in early childhood and adolescence in the Avon Longitudinal Study of Parents and Children. This study provides important insights into the understanding of suicidal behavior in a key moment of transition (childhood-adolescence) in the lifespan.

Conclusions. By adopting a developmental perspective, these contributions provide evidence for the role of perinatal, childhood, and pubertal factors in the vulnerability to suicidal behavior later in life. The findings support the developmental origin of health and diseases hypothesis for suicidal behavior and suggest opportunities for early suicide prevention at the population level.

23.1 A SYSTEMATIC REVIEW AND META-ANALYSIS OF THE IN UTERO AND PERINATAL INFLUENCES ON SUICIDE RISK

Massimiliano Orri*[1], David Gunnell[2], Stéphane Richard-Devantoy[3], Despina Bolanis[3], Jill Boruff[1], Gustavo Turecki[1], Marie-Claude Geoffroy[1]

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Individual Abstract: Background. Adverse in-utero and perinatal conditions may contribute to a heightened suicide risk throughout the lifespan, consistently with the Developmental Origins of Health and Diseases (DOHaD) hypothesis. However, existing evidence supporting the DOHaD hypothesis for suicide is sparse and contradictory.
Objectives. To perform a systematic review and meta-analysis of the available evidence of the association of in-utero and perinatal exposures with suicide and suicide attempt.

Methods. We searched MEDLINE, Embase, and PsycINFO from inception to January 24, 2019 for population-based prospective studies investigating the association of in-utero and perinatal factors with suicide and suicide attempt. Search was conducted by a health science librarian, and article screening, data extraction, and quality assessment (Newcastle-Ottawa Scale, NOS) were independently performed by two investigators. We calculated pooled odds ratio (ORs) with 95% CIs using random-effects models, and used meta-regression to investigate heterogeneity, funnel plots and Egger tests to investigate publication bias, and sensitivity analyses to investigate the robustness of the results.

Results. Of the initially retrieved 3013 records, we identified 42 studies that met the inclusion criteria. They had a low risk of bias (median quality score on the NOS 9/9; range 5-9). Family/parental characteristics, such as high birth order (eg, pooled ORs fourth or later born vs first born 1.52, 1.21-1.88), teenage mothers (1.80, 1.52-2.14), single mothers (1.57, 1.31-1.89), indices of socioeconomic position such as low maternal (1.36, 1.28-1.46) and paternal (1.38, 1.27-1.51) education, and fetal growth - low birthweight (1.30, 1.09-1.55) and small-for-gestational-age (1.18. 1.00-1.40) were associated with higher suicide risk. Father's age, low gestational age, obstetric characteristics (eg, cesarean section), and condition/exposure during pregnancy (eg, maternal smoking or hypertensive disease) were not associated with higher suicide risk. Similar patterns of associations were observed for suicide attempt, although these results were based on a lower number of studies. In meta-regression, differences in length of

follow-up explained most between-study heterogeneity. We found limited evidence for publication bias, and sensitivity analyses indicated robustness of the results.

Conclusions. These findings suggest that prenatal and perinatal characteristics are associated with increased suicide risk during the life course, supporting the developmental origin of health and diseases hypothesis for suicide. The low number of studies for some risk factors, especially for suicide attempt, leaves gaps in knowledge that need to be addressed. The mechanisms underlying the reported associations, and their causal nature still remain unclear.

23.2 THE ASSOCIATION BETWEEN MATERNAL AGE AT CHILDBEARING AND SUICIDAL BEHAVIOR USING SWEDISH, POPULATION-BASED REGISTERS

Lauren O'Reilly*[1], Ayesha Sujan[1], Martin Rickert[1], Erikka Vaughan[2], Henrik Larsson[3], Paul Lichteninstein[3], Brian D'Onofrio[1]

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Individual Abstract: Teenage childbearing remains a public health concern given that it is associated with increased risk of adverse outcomes for the offspring, such as poor educational outcomes, criminal activity, substance use/mental health problems (Coyne & D'Onofrio, 2012). However, minimal research has examined maternal age at childbearing (MAC) broadly and risk for offspring suicidality. Given that MAC is associated with several risk factors, research needs to rule out potential confounding factors (e.g., shared genetic and environmental factors) that may provide an alternative explanation for the association between MAC and adverse outcomes. The current study aimed to investigate the strength of an independent association between MAC and offspring suicidal behavior (i.e., suicide attempt and suicide) using quasi-experimental designs in order to account for unmeasured and measured confounding factors.

We merged data from seven population-based, longitudinal Swedish registers, which allowed us to examine 2,979,135 offspring born between January 1, 1973 and December 31, 2003 and followed through December 31, 2015. We created four MAC categories (≤19 years, 20-29 years [reference], 30-39 years, ≥40 years) to test a non-linear association. We defined suicidal behavior as first inpatient hospitalization due to suicide attempt or death by suicide after the age of 12 years using ICD-8/9/10 codes. We conducted four sets of Cox proportional hazard regression models. First, we estimated population associations unadjusted for covariates. Second, we re-estimated population associations while adjusting for pregnancy-related and parental characteristics (e.g., parity, parental education). Third, we utilized a sibling-comparison approach, in which we compared differentially exposed siblings to adjust for all factors that make siblings similar. Fourth, we compared differentially exposed first-born cousins to examine the generalizability of the sibling comparison and birth order and carry-over effects.

Children born to mothers aged ≤19 years old were at increased risk for suicidal behavior in the general population (Hazard Ratio [HR], 2.29 [95% Confidence Interval, 2.13-2.45]). When adjusting for covariates, the association was attenuated (HR, 1.81 [95% CI, 1.68-1.96]) and was further attenuated when adjusting for unmeasured confounding shared among sibling (HR, 1.36 [95% CI, 1.20-1.54]) and first-born cousins pairs (HR, 1.27 [95% CI, 1.09-1.47]). Children born to 30- to 39-year-old and ≥40 year-old mothers were at reduced risk in the

population (HR, 0.77 [95% CI, 0.74-0.80]; HR, 0.85 [95% CI, 0.74-0.98], respectively). These associations were stronger after adjusting for covariates (HR, 0.75 [95% CI, 0.71-0.79]; HR, 0.69 [95% CI, 0.59-0.80]) and unmeasured confounding (HR, 0.66 [95% CI, 0.61-0.72]; HR, 0.35 [95% CI, 0.26-0.46]), but were not statistically significant in the first-born comparison (HR, 1.03 [95% CI, 0.84-1.27]; HR, 0.39 [95% CI, 0.06-2.37]).

Measured and unmeasured factors partially confounded the association between MAC and suicidal behavior among children born to teenage women. After adjusting for shared familial factors, associations remained robust and protective among children born to women greater than 30 years old. While confidence intervals were wide, first-born cousin comparisons support the generalizability of the sibling-comparison results. Taken together, the results support a potential causal association between MAC and suicidal behavior, suggesting earlier ages are associated with increased offspring suicidal behavior. Future research needs to examine potential mediating factors between MAC and suicidal behavior.

23.3 CHILDHOOD COGNITIVE SKILLS TRAJECTORIES AND SUICIDE BY MID-ADULTHOOD: AN INVESTIGATION OF THE 1958 BRITISH BIRTH COHORT

Stéphane Richard-Devantoy*[1], Massimiliano Orri[2], Josie-Anne Bertrand[3], Kyle T. Greenway[2], Gustavo Turecki[2], David Gunnell[4], Chris Power[5], Marie-Claude Geoffroy[2]

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Individual Abstract: Background. Impairments in cognition are common in individuals with past histories of suicide attempts. However, our knowledge of how such cognitive impairments develop in the life-course is poor, as most existing studies have been conducted in adulthood. In particular existing studied did not documented the emergence of cognitive impairments in suicidal individuals while relying on repeated measurements of academic performance and IQ from childhood to adolescence while accounting for a large set of confounding and explanatory factors.

Objective. Our study aims to (1) establish whether individuals who died by suicide differed in their childhood-to-adolescence cognitive trajectories compared to those still alive, and (2) test whether such differences are explained by early-life characteristics.

Method. Participants were from the 1958 British Birth Cohort (N=17 638, representative of the UK population), with information on childhood-to-adolescence cognitive abilities and on suicide by age 54 years. Academic performance at ages 7, 11, and 16 years (mathematics and reading skills) and intelligence at age 11 years were assessed using standardized tests administered by the school teacher. Suicide was identified via coroner reports. We used growth curve modelling to model the trajectories of reading and mathematics skills from 7 to 16 years of age, and tested the difference in baseline level (i.e., age 7 years) and developmental course (slope between age 6 and 16 years) among individuals who died by suicide and those still alive using Wald tests. We accounted for the following early-life confounding factors: father social class, birthweight, maternal age at child birth and child birth order.

Results. Among the 1524 deaths, 55 (48 males) died by suicide by 54 years of age. While males who died by suicide and control participants (i.e., still alive by age 54) had similar reading scores at age 7 (effect size [Hedge's g]=-0.04, p=0.759), those who died by suicide have a steeper decrease of their scores over time compared to controls (entire sample, g=0.21,

p=0.099, male only, g = 0.30, p= 0.048). However, adjustments for early-life influences explained those differences (male only g=0.18, p=0.483; entire sample, g=0.15, p=0.336). For mathematics, a similar pattern was observed, although the differences were of smaller size. There was no difference between individuals who died by suicide versus controls in terms of intelligence.

Conclusions. Adults who died by suicide by age 54 years followed a different cognitive trajectory of childhood cognitive skills than those still alive at that age, demonstrating relatively poor academic performance (especially in reading) with a gap that grew over time. Adverse early-life influences fully accounted for these different trajectories, suggesting that they may possibly increase the risk of eventual suicide in part via deleterious effects on cognition.

23.4 PUBERTAL TIMING AND SELF-HARM IN ADOLESCENCE AND EARLY ADULTHOOD

Elystan Roberts*[1], Abigail Fraser[1], David Gunnell[1], Carol Joinson[1], Becky Mars[1]

[1]University of Bristol

Individual Abstract: Background: Earlier timing of puberty has been associated with a range of negative outcomes in both male and female adolescents, however few studies have focused on the relationship between pubertal timing and self-harm. Existing studies are limited by the use of subjective measures of pubertal timing, which may be biased by participants' self-image, and investigating suicide attempts or ideation, which may not capture the effects of pubertal timing on self-harm.

Objectives: To investigate the relationship between pubertal timing and self-harm in adolescence and early adulthood. A secondary objective was to examine whether the association differs for self-harm with and without suicidal intent.

Methods: The sample (n = 5,369, 47% male) was drawn from a large prospective UK birth cohort, the Avon Longitudinal Study of Parents and Children (ALSPAC). Pubertal timing was measured in males and females using age at peak height velocity (aPHV), the age at which participants' height increased at the fastest rate during adolescence. The continuous aPHV measure was also categorised into normative (mean aPHV ± 1 standard deviation: 12.7 to 14.4 years for males; 11.0 to 12.6 years for females) as well as early (<12.7 years for males; <11.0 years for females) and late (>14.4 years for males; >12.6 years for females) aPHV. Lifetime history of self-harm was reported at age 16 and 21 years, and suicidal intent was captured at age 16 years. Associations between age at peak height velocity and self-harm, both with and without suicidal intent, were analysed using multivariable logistic regression. Confounding variables were included in analyses, and missing data was imputed using multiple imputation.

Results: Later timing of puberty was associated with a reduced risk of self-harm in both sexes at age 16 years (females: per-year increase in aPHV OR 0.84; 95% CI 0.74, 0.96; males: per-year increase in aPHV OR 0.71; 95% CI 0.58, 0.88). Categorical analyses provided more evidence for a linear association in males: compared to normally timed males, those experiencing early aPHV were at increased risk of self-harm (OR 1.51; 95% CI 1.04, 2.19), whereas those experiencing late aPHV were at reduced risk (OR 0.50; 95% CI 0.28, 0.91). The

results were similar in females, where compared to normatively timed females those who developed late had a reduced risk of self-harm (OR 0.73; 95% CI 0.55, 0.97) and those who developed early experienced increased risk, although here the confidence interval included the null (OR 1.11; 95% CI 0.86, 1.43). Results attenuated at age 21 years. There was no strong evidence for differences in pubertal timing effects on self-harm with versus without suicidal intent in either sex.

Conclusions: Earlier timing of puberty is associated with increased risk of self-harm in both male and female adolescents at age 16 years. This association appears to attenuate by age 21 years. Future research is needed to establish whether these associations are causal and identify the mechanisms underlying them. Interventions targeted at individuals experiencing early pubertal development may help to reduce self-harm risk.

24. THE BRAIN-IMMUNE-GUT INTERACTOME: THE NEXT FRONTIER FOR UNDERSTANDING THE BIOLOGY OF SUICIDE

Chair: Faith Dickerson, Sheppard Pratt

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

Overall Session Abstract: In the past decade, new knowledge has emerged about the complex interaction among the brain, the immune system, and the gut, known as the Brain-Immune-Gut (BIG) Interactome. It is now established that there is bidirectional communication between the gastrointestinal tract and the central nervous system. This communication takes place through largely through soluble immune mediators such as cytokines as well as through direct gut-brain connections via the vagus nerve. The driving force of the interactome is the microbiome, the term used to characterize the large number of microbial organisms that inhabit the body and which exert effects on human emotions and behavior. The association between the Brain-Immune-Gut Interactome and suicide behavior is a new and promising area of research. The presenters in this symposium are researchers who are at the forefront of this emerging science.

In the first presentation, Dr. Yolken will present one of the first studies to investigate the composition of the microbiome in well-characterized psychiatric patients with a focus on suicide behavior. Results indicate a significant association between a lower level of microbial diversity, measured by the Shannon Index, and having a suicide attempt during the month prior to evaluation. There were also significant differences in the level of bacteria in the genus Prevotella and metabolic pathways involved in amino acid and coenzyme Q biosynthesis. These factors have been previously associated with a range of psychiatric and neurological disorders. These associations remained significant when adjusting for additional environmental factors such as antibiotic exposure, psychiatric medications, cigarette smoking and body mass index as well as psychiatric diagnosis and psychiatric symptom severity.

In the second presentation, Dr. Severance will present a study examining markers of gastrointestinal inflammation reflecting translocation of intestinal microbes across a permeabilized gut–vasculature barrier. The study population consisted of persons with serious mental illness in a hospital setting. Results indicated that mucosal-derived IgA antibodies directed against the fungal taxa, Candida albicans and Saccharomyces cerevisiae, were the

most significantly informative markers for recent suicide attempts in bipolar disorder and major depression. Interestingly, these associations were most robust in women suggesting that they may contribute to gender differences in mood disorders and suicide behavior.

In the third presentation, Dr. Dickerson will describe studies examining the association between infectious disease exposure and suicide measures. One of the studies was a cross-sectional investigation of suicide attempts. The other is an ongoing prospective cohort study of death by suicide. Exposure to cytomegalovirus, a human herpes virus, is a significant determinant of suicide outcome in both studies.

The Brain-Gut-Immune Interactome is amenable to a number of therapeutic interventions based largely on the ability to alter the microbiome. Potential interventions include the administration of probiotic, prebiotic or antibiotic medications as well as the feeding of diverse cultured microorganisms (often characterized as "fecal transplant"). A better understanding of the Brain-Immune-Gut Interactome may thus lead to novel methods for the prediction and prevention of suicide behaviors. Interaction between the presenters and the audience will help to shape this emerging field. Dr. Holly Wilcox will serve as the discussant for this symposium.

24.1 RECENT SUICIDE ATTEMPTS ARE ASSOCIATED WITH DECREASED MICROBIAL DIVERSITY AND AN ALTERED MICROBIOME

Robert Yolken*[1], Faith Dickerson[2]

[1]Johns Hopkins School of Medicine, [2]Sheppard Pratt

Individual Abstract: Introduction: Recent discoveries about the gut brain axis have established that there is bidirectional communication between the gastrointestinal tract and the brain. Communication takes place through the activities of microbial organisms (collectively termed the microbiome), the systemic immune system, and the vagus nerve. Identification and measurement of microbial organisms on mucosal surfaces is now feasible through high throughput genomic tools. Research in this area is rapidly expanding and has begun to examine the association between characteristics of the microbiome and alterations in mood and behavior.

Methods: In one of the first investigations on this topic, we examined the microbiome of the oropharynx which is the most proximal part of the human gastrointestinal tract. We tested samples from a cohort of 188 individuals with serious mental illness. All participants were assessed on the Columbia Suicide Severity Rating Scale about suicide attempts in the previous month as well as in their lifetime. The oral microbiome was measured by extraction of DNA from the samples followed by metagenomic sequencing and the microbiome was characterized for microbial diversity and taxa identification using Quantitative Insights Into Microbial Ecology 2 (QIIME2). The microbial diversity in the sample was calculated by means of the Shannon Diversity Index, a measure of the abundance and evenness of measured microbial taxa. The metabolic potential of the microbiome was calculated using Phylogenetic Investigation of Communities by Reconstruction of Unobserved States PICRUSt2.

Results: The sample included 70 individuals with persistent schizophrenia, 11 with recent onset psychosis, 46 with acute mania, 5 with bipolar depression, 10 with bipolar disorder not selected for mania or depression, and 46 with major depression. The mean age was 36.6 (± 13.3) and N=89 (47%) identified as female and N=58 (31%) as African-American. A total of 105 (56%) had made one or more suicide attempts in their lifetime and N=13 (7%) had made a suicide attempt in the past month. Results of linear regression analyses indicated a significant association between having a recent suicide attempt and a lower level of microbial diversity as measured by the Shannon Index (coefficient= -1.15, 95% CI -1.9 , -.41, p=.002 adjusted for age, gender, race). There were also significant differences in this group in the level of bacteria in the family Prevotellaceae and genus Prevotella and metabolic pathways involved in amino acid and coenzyme Q biosynthesis. These associations remained significant when adjusting for additional factors such as antibiotic exposure, psychiatric medications, cigarette smoking and BMI as well as psychiatric diagnosis, medications, and symptom severity. There were no significant alterations in the microbial diversity or composition of individuals who had a history of a suicide attempt but did not have a suicide attempt in the past month.

Discussion: Results of our study are consistent with other investigations in showing an association between reduced microbial diversity and adverse health outcomes. Ours is the first study of the microbiome, to our knowledge, to focus on suicide-related outcomes. The findings have implications for potential therapeutic interventions. Possible therapies include the use of probiotics or prebiotics which can be safely administered over extensive periods of time and which can increase the diversity of microbiome and normalize inflammatory processes. These interventions might be investigated in terms of decreasing suicide attempts in high risk individuals.

24.2 BLOOD BIOMARKERS OF FUNGAL-BASED GASTROINTESTINAL INFLAMMATION PREDICT RECENT SUICIDE ATTEMPTS IN WOMEN WITH MOOD DISORDERS

Emily Severance*[1], Faith Dickerson[2], Robert Yolken[1]

[1]Johns Hopkins University School of Medecine, [2]Sheppard Pratt

Individual Abstract: Introduction. Researchers from across medical disciplines are turning to the gut microbiome for clues regarding disease mechanisms and novel treatment targets. In psychiatry, investigations of the gut-brain axis document a disease-associated low-grade inflammatory state related to the translocation of intestinal microbes across a permeabilized gut-vasculature barrier. Translocated gut products and associated immune response likewise produce a systemic environment that can lead to permeability of the blood-brain barrier. This leaky gut phenotype has been demonstrated in schizophrenia, bipolar disorder, and major depressive disorder (MDD). The prevalence of suicide is high among individuals with psychiatric disorders compared to non-psychiatric controls, yet the heterogeneity of each of these disorders makes it difficult to identify a biomarker that reflects a risk specifically for suicide. The discovery of a biomarker or suite of biomarkers that might help to predict suicide susceptibility would be a powerful tool to prevent high-risk individuals from self-harm. Methods. In ongoing experiments of samples from a psychiatric cohort, here we explore if markers of gastrointestinal (GI) inflammation can predict suicide in individuals with schizophrenia (n=230), bipolar disorder (n=142) and MDD (n=103) compared to non-attempters in each of the disorders. We examined sCD14, LPS-binding protein, Candida

albicans IgG & IgA, Saccharomyces cerevisiae IgG & IgA, food antigen IgG & IgA and complement C4. Results. Mucosal-derived IgA antibodies directed against the fungal taxa, Candida albicans and Saccharomyces cerevisiae, were singularly the most significantly informative markers for suicide potential in bipolar disorder and MDD. Interestingly and reflective of the heterogeneity of these disorders, these associations reached statistical significance only in women. C. albicans IgA levels were significantly elevated in women with bipolar disorder who made a recent suicide attempt compared to women with bipolar disorder who did not recently attempt suicide ($p<0.005$). For S. cerevisiae, IgA levels were significantly elevated in women with MDD who recently attempted suicide compared to those who did not attempt suicide ($p<0.0002$). S. cerevisiae IgG levels were also significantly elevated in women with MDD who recently attempted suicide compared to those who did not ($p<0.01$). None of the other GI markers reached statistical significance in women and none of the analyses were informative in males or people with schizophrenia. Conclusions. Certain women with mood disorders have a fungal-based intestinal pathology that may reflect an increased likelihood to attempt suicide. Our previous studies support brain-related behavioral deficits in women with bipolar disorder who have elevated C. albicans exposures. The identification of susceptible individuals who have these GI-based risk factors will enable the design and testing of individualized treatments to prevent suicide. These treatments might include antifungal agents or dietary interventions that incorporate prebiotic and/or probiotic agents.

24.3 EXPOSURE TO NEUROTROPIC INFECTIOUS AGENTS CONFERS AN INCREASED RISK FOR SUICIDE BEHAVIOR

Faith Dickerson*[1], Cassie Stallings[1], Andrea Origoni[1], Emily Katsafanas[1], Kevin Sweeney[1]

[1]Sheppard Pratt

Individual Abstract: This presentation will describe the association between exposure to infectious agents and a suicide attempt history in a sample of persons with serious mental illness. We also report on a prospective study examining the association between exposure to these same infectious agents and subsequent death by suicide.

Introduction: Previous studies have identified an association between exposure to the protozoan Toxoplasma gondii and suicide attempts. However, few studies on this topic have utilized a panel of antibody markers to infectious agents. These agents generally have their primary interaction with hosts at the level of mucosal surfaces. The immune responses to these infectious agents are thus partially defined by the newly defined brain-immune-gut (BIG) interactome.

Study 1. We assessed patients receiving treatment for serious mental illness using the Columbia Suicide Severity Rating Scale. All patients had at least one blood sample drawn from which were measured IgG and IgM class antibodies to Toxoplasma gondii and to human herpesviruses, Cytomegalovirus (CMV) and Epstein Barr Virus (EBV), Varicella-Zoster virus (VZV), Herpes Simplex Virus Types 1 and 2, and Human Herpesvirus 6. Longitudinal samples were available from many of the study individuals. The association between suicide variables and levels of antibodies was analyzed with logistic regression models adjusting for demographic and clinical variables.

The study sample consisted of 517 samples from 287 individuals: 134 with schizophrenia or recent onset psychosis, 88 with bipolar disorder and 65 with major depression. A total of N=165 (58%) of participants had made a suicide attempt in their lifetime and 24 (8%) in the one month prior to evaluation.

We found a significant correlation between a lifetime history of a suicide attempt and the level of IgM class antibodies to CMV (coefficient =.018, 95% CI .005, .031, p=.009). We also found an association between a history of a lifetime suicide attempt and increased levels of IgM class antibodies to EBV (coefficient =.013, 95% CI .013, .214, p=.028). We also found a significant association between a suicide attempts in the previous month and the level of IgM class antibodies to Toxoplasma gondii (coefficient = .154, 95% CI .020, 288, p=.024). These associations were independent of age, gender, and race and also diagnostic group, BMI and cigarette smoking.

Study 2. We assessed patients receiving treatment for serious mental illness starting in 1999. As in Study 1, patients had a blood sample drawn for the measurement of antibody variables. After the end of 2015, data were submitted to the National Death Index to determine suicide outcomes. Multivariate regression models were employed to determine the association between baseline antibody levels, demographic and clinical variables and death by suicide.

The study sample consisted of 1292 participants: 733 with schizophrenia, 483 with bipolar disorder, and 76 with major depression. There was little overlap between this sample and that of Study 1. In a multivariate model, the individuals who died by suicide (n=16) had a higher level of IgG antibodies to CMV at the baseline assessment (HR=1.46, 95% CI 1.21, 1.76, p=<.001). Increasing levels of CMV antibodies were associated with increasing hazard ratios for suicide death; individuals who had the highest level of antibody were more than six times more likely to have died by suicide (HR=6.45, 95% CI 2.15, 19.32, p=.001).

Discussion: The identification of blood-based antibody markers including those in the brain-immune-gut (BIG) interactome will provide for more personalized methods for the assessment and treatment, and ultimately prevention, of suicide attempts in individuals with serious mental illnesses.

Wednesday, October 30, 2019

CONCURRENT SYMPOSIA SESSIONS
9:30 AM - 11:00 AM

25. REAL-TIME ASSESSMENT, EMA, ETHICAL, AND LEGAL ISSUES
Chair: Jane Pearson, National Institute of Mental Health

Overall Session Abstract: Ethical and Safety Issues Related to EMA and Passive Data Collection

Suicide researchers are increasingly using smart phones and other electronic devices to gather data to learn about the phenomenology of suicidal thoughts, behaviors, and associated risk conditions. The emergence of real-time data capture and transfer for analyses provides researchers with the opportunity to characterize physiological and neurocognitive changes in real-time using ecological momentary analysis (EMA) and other forms of active and passive data capture. Suicide studies using this paradigm consider how this non-verbal data can be associated with suicidal phenomenon, such as suicidal ideation, intent, and behavior for both outcomes, as well as adverse events. Determining how these data characterize clinical worsening has direct implications for safety monitoring and study feasibility.

Developing protocols where study outcomes of interest overlap with adverse events is not new to suicide researchers. In defining outcome measures and data for safety monitoring, researchers are often well served by working with various stakeholders (e.g., IRBs, DSMBs, health care providers, ethicists, individuals with lived experience- youth, their parents, institutional legal council, funders) to develop ethical and safe study procedures for assessing and addressing clinical worsening and suicidal crises. However, because the focus of real-time assessment research is often to identify suicide risk more comprehensively and with less self-report bias, and in real time as those processes occur, the research itself is often addressing the validity of 'risk' or 'clinical worsening.'

These timely issues require many iterations of discussions of how to define imminent risk for suicide, where 'drawing a line' for defining adverse events and conditions for intervening for safety might consider consequences of 'under-responding' as well as too conservatively implementing a safety protocol. These are the type of scenarios that can be discussed with stakeholders, and tested to the degree possible as empirical questions themselves. Specifically, there are a number of challenges in safety monitoring that have already identified in the field: how frequently should the EMA data be reviewed by the study team for safety concerns? How long is it reasonable to have potential risk data before looking at it? Relatedly, once the data has been reviewed, what is a reasonable timeframe for the study team to respond, if needed? If the validity of proposed risk is still being determined, how do you match a safety action with the putative signal of risk? How is this described and understood through informed consent? These questions can best be addressed empirically, often through pilot fielding of protocols. As the use of passive and EMA collection in the field of suicide research is still new, turning these safety and ethical questions into empirical questions, described in publications, will serve the field well. These findings will inform future studies using real-time data gathering for outcome data collection and safety monitoring, paving the way for advancing the field.

25.1 THE EXPERIENCE OF SUICIDAL THINKING IS NOT HOMOGENOUS: USING SMARTPHONE-BASED ECOLOGICAL MOMENTARY ASSESSMENT TO UNDERSTAND SUBTYPES OF SUICIDAL THINKING

Evan Kleiman*[1], Kate Bentley[2], Daniel Coppersmith[3], Alexander Millner[3], Matthew Nock[3]

[1]Rutgers University, Department of Psychology, [2]Massachusetts General Hospital/Harvard Medical School, Department of Psychiatry, [3]Harvard University, Department of Psychology

Individual Abstract: Research often compares people who have experienced suicidal thoughts to those who have not. Although this research is useful for improving our understanding of

suicide risk, splitting samples into those who have experienced suicidal thoughts from those who have not makes an implicit assumption that all people who have suicidal thoughts are alike. Recent advances in smartphone-based ecological momentary assessment (EMA) now allow us to challenge this assumption by examining whether there are distinct subtypes of individuals based on how they experience suicidal thinking in everyday life. In our initial work using EMA to study suicidal thinking among adults at high risk for suicide, we found that thoughts of suicide vary considerably over short periods of time (e.g., hour to hour). In later work, we showed that people could be placed into meaningful subgroups based on this short-term variation. The goals of this presentation are: (1) to review how we have used EMA to identify five distinct subtypes of individuals based on their patterns of suicidal thinking, (2) to discuss how a "digital phenotyping" approach that uses other streams of data (e.g., behavioral and ambulatory physiological data) can further refine our knowledge of these subgroups, and (3) to explore how future studies can build on this initial work to inform the way we assess and treat suicide risk. Additionally, this presentation will cover some of the practical challenges and lessons learned from doing this work.

25.2 SMARTPHONES AS TOOLS FOR SUICIDE PREVENTION

John Torous[1], Jamie Zelazny*[2]

[1]Beth Israel Deaconess Medical Center, Harvard Medical School, [2]University of Pittsburgh

Individual Abstract: Suicide is the second leading cause of death in young people and suicide rates have been steadily rising over the past 10 years. While risk factors for suicide have been identified, we have made little progress in identifying indicators of imminent suicidal risk. Researchers are urgently looking for new approaches to stop this deadly trend. Because many young people carry their smart phones almost continuously, the development of new technologies and phone applications appears to be a "no-brainer" in our quest to identify proximal indicators of imminent suicidal risk. However, as we forge ahead, we must carefully assess the risks and the benefits that accompany these new technologies. This talk will briefly summarize the current literature addressing risks and benefits of using smartphone technology for suicide prevention, including very relevant and complex ethical issues. Then, we will present challenges and "lessons learned" from our studies using cell phone applications.
While the development of smartphone applications provides a promising approach for detecting and managing fluctuations in suicidal thoughts and behaviors, it does not come without risk. In order to maximize the potential benefits that these innovative approaches offer, we must proactively identify potential risks and implement strategies to mitigate the risk in our protocols.

25.3 ECOLOGICAL MOMENTARY ASSESSMENT WITH HIGH-RISK SUICIDAL YOUTH

Catherine Glenn*[1], Evan Kleiman[2], Linda Alpert-Gillis[3], Yeates Conwell[4]

[1]University of Rochester, [2]Rutgers University, [3]University of Rochester Medical Center, [4]University of Rochester School of Medicine

Individual Abstract: Suicide is the second leading cause of death among adolescents worldwide. Although research on suicide risk factors has increased knowledge about which youth are at greatest risk for suicide over long-term periods of months and years, much less is known about when youth are most at risk over short-term periods of hours and days. As such, we know far less about short-term risk over some of the most high-risk periods for suicidal

behavior, such as the months following discharge from acute psychiatric hospitalization. One major challenge to examining short-term risk is that most research methods do not provide the temporal resolution or ecological validity needed to examine important fluctuations in risk during these key time periods. Addressing these limitations, ecological momentary assessment (EMA), which is the repeated examination of cognitions, emotions, and behaviors "in the wild" and in real time (via individuals' devices such as smartphones), provides the unique opportunity to study these high-risk periods. Given the advantages of this design, suicide research using EMA techniques has increased significantly over the past decade, which has raised a number of important questions about how to conduct this research safely and ethically with high-risk groups.

This presentation will provide an overview of EMA research among high-risk suicidal youth. Specifically, the following topics will be discussed: (1) Feasibility and acceptability of EMA designs with high-risk suicidal populations, including youth; (2) Major findings using EMA designs with high-risk suicidal populations, including youth; (3) Role of collaterals, including parents and clinicians, in EMA designs; (4) Risk and safety monitoring considerations when using EMA designs with high-risk populations; and (5) Strengths and limitations of these designs, as well as next steps in this line of research. Throughout this talk, the presenter will discuss a recently completed smartphone-based EMA study, funded by the American Foundation for Suicide Prevention (YIG-1-054-16), with 50 adolescents, 12-18 years old, who were hospitalized for suicide risk and were assessed for 28 days following their hospitalization. During the EMA period, adolescents completed three types of surveys via smartphone-based EMA: (1) Interval-contingent surveys, which adolescents completed each morning to assess sleep quantity and quality from the night before; (2) Signal-contingent surveys, which adolescents completed at random intervals during the day to measure fluctuations in affect, hopelessness, belongingness, as well as suicidal desire, suicidal intent, desire for life, and ability to keep self safe; and (3) Event-contingent surveys, which adolescents completed whenever they experienced a self-injurious or suicidal thought or behavior (SITB). Following the EMA phase, adolescents completed a final interview including questions about SITBs over the past month and a user feedback survey about their experience participating in the EMA study.

25.4 ETHICAL AND SAFETY ISSUES RELATED TO EMA AND PASSIVE DATA COLLECTION

Jane Pearson*[1], Galia Seigel[1]

[1]National Institute of Mental Health

Individual Abstract: Suicide researchers are increasingly using smart phones and other electronic devices to gather
data to learn about the phenomenology of suicidal thoughts, behaviors, and associated risk conditions. The emergence of real-time data capture and transfer for analyses provides researchers with the opportunity to characterize physiological and neurocognitive changes in real-time using ecological momentary analysis (EMA) and other forms of active and passive data capture. Suicide studies using this paradigm consider how this non-verbal data can be associated with suicidal phenomenon, such as suicidal ideation, intent, and behavior for both outcomes, as well as adverse events. Determining how these data characterize clinical worsening has direct implications for safety monitoring and study feasibility.

Developing protocols where study outcomes of interest overlap with adverse events is not new to suicide researchers. In defining outcome measures and data for safety monitoring, researchers are often well served by working with various stakeholders (e.g., IRBs, DSMBs, health care providers, ethicists, individuals with lived experience- youth, their parents, institutional legal council, funders) to develop ethical and safe study procedures for assessing and addressing clinical worsening and suicidal crises. However, because the focus of real-time assessment research is often to identify suicide risk more comprehensively and with less self-report bias, and in real time as those processes occur, the research itself is often addressing the validity of 'risk' or 'clinical worsening.' These timely issues require many iterations of discussions of how to define imminent risk for suicide, where 'drawing a line' for defining adverse events and conditions for intervening for safety might consider consequences of 'under-responding' as well as too conservatively implementing a safety protocol. These are the type of scenarios that can be discussed with stakeholders, and tested to the degree possible as empirical questions themselves. Specifically, there are a number of challenges in safety monitoring that have already identified in the field: how frequently should the EMA data be reviewed by the study team for safety concerns? How long is it reasonable to have potential risk data before looking at it? Relatedly, once the data has been reviewed, what is a reasonable timeframe for the study team to respond, if needed? If the validity of proposed risk is still being determined, how do you match a safety action with the putative signal of risk? How is this described and understood through informed consent? These questions can best be addressed empirically, often through pilot fielding of protocols. As the use of passive and EMA collection in the field of suicide research is still new, turning these safety and ethical questions into empirical questions, described in publications, will serve the field well. These findings will inform future studies using real-time data gathering for outcome data collection and safety monitoring, paving the way for advancing the field.

26. WHY WE NEED NEW TREATMENT TARGETS AND HOW WE CAN USE NEW TECHNOLOGIES TO IDENTIFY THEM

Chair: Joseph Franklin, Florida State University

Co-Chair: Jessica Ribeiro, Florida State University

Overall Session Abstract: The most important objective of suicidality research is to reduce suicidality. To accomplish this, we must identify treatment targets and methods of counteracting those targets. This symposium will provide data showing that we need new treatment targets and it will introduce a method that uses virtual reality technology to identify novel treatment targets.

In the first talk, Joe Franklin will present data from a meta-analysis of 345 randomized controlled trials that included self-injurious thoughts and behaviors (SITBs) as an outcome. This meta-analysis produced several notable findings, including the following: the effect size for SITB treatments has not improved across 60 years of research; the average SITB treatment produces a small reduction in SITBs; no treatment type was significantly stronger than any other; and effects did not vary notably with any moderators. These findings indicate that many SITB treatments work, but they tend to generate small effects, no SITB treatment stands out, and effect sizes have not improved across several decades of work. In short, this meta-analytic

evidence indicates that we must identify new treatment targets if we are to improve the efficacy of SITB treatments.

One approach would be to develop new targets based on recent theories, such as the Interpersonal Theory of Suicide. Although much correlational work has examined this theory, its predictive and causal hypotheses have rarely been tested. In the second talk, Jessica Ribeiro will present longitudinal data testing these latter hypotheses among a sample of over 1,000 high risk individuals. Results did not support theory hypotheses – the interaction between suicidal desire and capability produced poor prediction of future suicidal behaviors, and suicidal behaviors did not cause increases in suicidal capability. These findings suggest that we may need to look beyond extant theories for novel treatment targets.

Effective treatments successfully target the primary causes of a given outcome. In most fields, these primary causes are identified through experimental research that introduces a factor believed to increase a given outcome. In suicidality research, however, experiments obviously cannot seek to increase actual SITBs. In the third talk, Xieyining Huang describes a solution to this impediment: a virtual reality (VR) suicide paradigm. This approach allows researchers to test the causes of virtual suicide, which can then be employed to make inferences about the causes of actual suicide. Xieyining will present data across multiple studies showing: (1) exposure to VR suicide is safe; (2) VR suicide demonstrates construct validity (e.g., predictors of actual suicidal behavior also predict VR suicide); and (3) VR suicide seems to be driven primarily by the perceived functionality of VR suicide (e.g., to obtain a reward, escape an aversive state) rather than by stress, negative mood, pain, etc. themselves. This latter set of findings indicates that the perceived functionality of suicidal behavior may be a valuable treatment target.

In the fourth talk, Ryn Linthicum will present data on an experimental evaluation of this intriguing possibility. Using the VR suicide paradigm, this study found that, when raising doubts about the perceived functionality of VR suicide, the VR suicide rate drops dramatically. Extending these findings to actual suicidal behaviors, this group is currently developing a brief intervention that targets the perceived functionality of suicidal behaviors.

26.1 THE EFFICACY OF INTERVENTIONS OF SELF-INJURIOUS THOUGHTS AND BEHAVIORS: A META-ANALYSIS OF 345 RANDOMIZED CONTROLLED TRIALS

Joseph Franklin*[1], Xieyining Huang[1], Eleonora Guzmán[2], Kensie Funsch[1], Christine Cha[2], Jessica Ribeiro[1], Kathryn Fox[3]

[1]Florida State University, [2]Teachers College, Columbia University, [3]Harvard University

Individual Abstract: In recent decades, there have been major institutional and scientific efforts directed at reducing suicide and related self-injurious thoughts and behaviors (SITBs). However, broad trends and patterns remain unclear (e.g., overall efficacy of SITB treatments, changes in efficacy across time, variation in efficacy due to treatment type, primary outcome target, etc.). Existing reviews have either been qualitative or specific to particular treatment types or outcomes. We sought to broadly summarize the state of research on SITB treatment

and prevention programs via a meta-analytic review of all randomized controlled trials that have included a SITB outcome.

After screening nearly 4,000 studies, the present meta-analysis included 345 RCTs in which SITBs (including nonsuicidal self-injury, self-harm, suicide ideation, suicide attempts, and suicide deaths) were measured post-treatment. Study characteristics and results were coded in detail.

Overall, active treatments provided small to modest reductions in SITBs compared to control treatments (averaged weighted ORs ~ 0.85, $p<.001$; i.e., 15% reductions), with the weakest effects emerging for the suicide death outcome. No factors substantially moderated these effects. For example, no treatment type was significantly better than any other; there was no significant effects of primary target outcome (i.e., SITB or non-SITB); and the efficacy of SITB treatments has not improved significantly across nearly 60 years of research.

Results suggest that current treatments for SITBs provide only modest reductions in these outcomes compared to control treatments, and that these effects have not improved in several decades. Contrary to expectations, active treatments (including cognitive behavioral therapy, dialectical behavioral therapy, and psychopharmacological treatments) perform similarly well, with no treatments emerging as particularly efficacious. Despite an exponential increase in research on this topic over time, treatments have not improved. Many treatment types have been applied to SITBs, but these treatments and their targets have changed little since the 1980s and there is little-to-no evidence that proposed treatment targets play a major causal role in SITBs. These findings suggest that major innovations are needed and that researchers should prioritize the identification of treatment targets that play central causal roles in SITBs.

26.2 PROSPECTIVE TESTS OF THE FUNDAMENTAL ASSUMPTIONS ABOUT THE CAPABILITY FOR SUICIDE

Jessica Ribeiro*[1], Lauren Harris[1], Kathryn Linthicum[2], Joseph Franklin[1]

[1]Florida State University, [2]The University of North Carolina at Chapel Hill

Individual Abstract: Introduction: Since first introduced in 2005, the capability for suicide has had considerable influence in the field of suicide science. Despite its influence and burgeoning literature base, most studies have been limited to cross-sectional investigations of its associations with suicide-relevant outcomes, leaving major hypotheses about the capability for suicide untested. In this study, we test two fundamental hypotheses about the capability for suicide: (1) capability for suicide is acquired via repeated exposure to painful or fear-inducing experiences, and (2) capability for suicide interacts with the desire for suicide to predict suicidal behavior.

Methods: We investigate these hypotheses in a sample of 1,021 high risk suicidal and/or self-injuring individuals recruited worldwide. Assessments occurred at baseline and 3, 14, and 28 days post-baseline using a range of implicit and explicit measures. Capability for suicide was measured using self-report (ACSS-FAD), explicit image ratings, and implicit test (AMP-Suicide). Retention was high across all time points (>90%); suicide attempts were also prevalent at follow-up. First, to test whether exposure to suicidal behaviors (i.e., nonfatal

attempts; aborted attempts; interrupted attempts; suicide preparatory behaviors) during the course of the study mediated changes in capability, we used multiple mediation with bootstrapping.

Results: Results suggested that a small but statistically significant mediating effect of suicide attempt frequency on changes in ACSS-FAD scores. Aborted suicide attempts, interrupted attempts, and self-cutting did not emerge as significant mediating variables. There were no significant mediating effects were observed on explicit image ratings or implicit AMP-Suicide scores. Second, to test the predictive effects of the desire-capability interaction on prospective suicide attempts, we employed logistic regression predicting attempts at 28-days post-baseline. The interaction of capability and desire did not significantly predict nonfatal suicide attempts at follow-up, regardless of whether capability was measured using the ACSS-FAD, AMP-Suicide, or explicit image ratings (ps > 0.3).

Discussion: Taken together, results failed to provide robust support for fundamental assumptions about the development and predictive validity of capability for suicide, raising critical questions about the nature of the construct and its predictive effects.

26.3 VIRTUAL REALITY SUICIDE: A NEW METHOD FOR IDENTIFYING SUICIDALITY CAUSES AND TREATMENT TARGETS

Xieyining Huang*[1], Joseph Franklin[1]

[1]Florida State University

Individual Abstract: Due to logistical and ethical limitations of experimental studies, little is known about why people decide to engage in suicidal behaviors. However, it is possible to safely study what causes people to decide to engage in virtual suicidal behaviors and to use this information to make inferences about actual suicidal behaviors.

We have developed two VR suicide scenarios: shooting and jumping from heights. In each scenario, participants are placed in a realistic virtual environment and given the option to end the scenario by (a) engaging in a virtual suicidal behavior; or (b) engaging in a virtual non-suicidal behavior. We have evaluated this approach across several studies, including (1) an RCT designed to assess the safety of this approach (N = 287); (2) a test of predictors of the decision to engage in VR suicide (N = 179); and (3) a test of incentive ($20) and disincentive (evaluated speech) manipulations on the decision to engage in VR suicide (N = 32).

Study 1 indicated that there was no effect of VR suicide scenario exposure on subsequent suicidality or related outcomes (ps > 0.20). Study 2 obtained evidence for several significant predictors of VR suicide that also predict actual suicide death, including prior suicidal behaviors, male sex, perceived burdensomeness, agitation, and fearlessness about death (all ps < 0.05; ds = 0.48 – 1.14). Study 3 showed that participants were 500% more likely to engage in VR suicide under incentive and disincentive conditions (ps < 0.01).

Findings from Studies 1 and 2 suggest that this approach is a safe and valid laboratory approximation of suicidal behaviors. Study 3 indicated that perceived incentives and

disincentives exerted a powerful effect on the decision to engage in VR suicide. Combined with preliminary data from our ongoing studies (e.g., effects of stress, pain, escape from stress/pain), these findings raise an intriguing possibility: the decision to engage in suicidal behavior is primarily driven by its perceived function (e.g., obtain a reward, escape punishment, help someone else) rather than by stress, pain, and similar factors themselves. Overall, this new method shows promise for identifying the causes of suicidality. Interventions may benefit from targeting these causes.

26.4 BUT, WHAT IF? AN EXPERIMENTAL STUDY OF THE EFFECTS OF UNCERTAINTY ON SUICIDAL BEHAVIOR

Kathryn Linthicum*[1], Lauren Harris[1], Jessica Ribeiro[1]

[1]Florida State University

Individual Abstract: Introduction: Most people find suicide is inherently aversive; yet, for many suicidal individuals, suicide death is considered highly desirable. Introducing uncertainty about the perceived functionality of suicide may in turn influence the decision to engage in suicidal behavior, particularly if the alternative consequences of that behavior are undesirable. For instance, consider an individual who is planning to die by suicide via self-inflicted gunshot wound. Although the lethality of the method is high, it is not certain. If death does not occur, the likelihood of severe injury is extremely high. By amplifying the uncertainty of the expected outcome (i.e. death) and introducing the possibility of a very undesirable outcome (i.e. maiming) from the same decision, individuals may be less willing to engage in the behaviors. The present study was designed to experimentally test this hypothesis by manipulating the degree of certainty of desirable versus
undesirable consequences of engaging in virtual suicidal behavior.

Methods: Participants were randomized to one of four groups: Neutral; Certain Reward; Low Uncertainty; High Uncertainty. Participants were presented a choice to engage in virtual suicidal behavior or a non-suicide alternative. The Neutral group received no consequence associated with their choice; the Reward group was offered monetary compensation for selecting the suicide option; the Low Uncertainty group was informed that, by selecting the suicide option, there was 90% chance of payment and a 10% chance of shock; and the High Uncertainty group was told that there was 50% chance of payment and 50% chance of shock.

Results: Uncertainty significantly reduced the likelihood of suicide selection. The greatest reduction was observed in the high uncertainty group relative to the reward (17% vs. 44%; $p = .02$), producing statistically equivalent rates to the neutral condition (17% vs. 19%; $p > .05$).

Discussion: Results suggest that introducing doubt about the perceived functionality of suicide has considerable effects on willingness to engage in virtual suicidal behavior, suggesting this may be a useful target for interventions moving forward.

Discussant: Rory O'Connor, University of Glasgow

27. PSYCHOSIS

Chair: Merete Nordentoft, DRISP, Danish Research Institute for Suicide Prevention, Mental Health Center Copenhagen

Overall Session Abstract: Introduction: Suicide among people with mental illnesses is an important clinical and public health problem. Register-based research can help us to identify high-risk groups and high-risk periods. Clinical studies with more detailed information on a large number of patients are lacking.

Methods and results: Register-based research has demonstrated that suicide rates among people with mental disorders are approximately 20 fold higher than among people in the general population, and people with mental disorders constitute a high proportion of those who die from suicide. Based on Danish and international epidemiological studies, we will present the suicide risk in different diagnostic groups, and in different phases of treatment together with risk factors for suicide in different mental disorders. The suicide risk is high the first years after first contact, and the periods shortly after admission and shortly after discharge are distinct high-risk periods. Emergency room contacts are important markers of increased suicide risk.

Discussion: How can register-based research help us in identifying new possibilities for clinical interventions? Which new areas of research are warranted? What can be improved during inpatient stay, shortly after discharge, in relation to emergency room visits, and what will be the role of mental health services in reaching out towards people in the community at risk of suicide?

27.1 THE KEY ROLE OF MENTAL HEALTH SERVICES: CAN RESEARCH GUIDE US TO IDENTIFY NEW INTERVENTIONS?

Merete Nordentoft*[1], Annette Erlangsen[2], Trine Madsen[3]

[1]DRISP, Danish Research Institute for Suicide Prevention, Mental Health Center Copenhagen, [2]Danish Research Institute for Suicide Prevention, [3]Copenhagen Mental Health Center

Individual Abstract: Introduction: Suicide among people with mental illnesses is an important clinical and public health problem. Register-based research can help us to identify high-risk groups and high-risk periods. Clinical studies with more detailed information on a large number of patients are lacking.

Methods and results: Register-based research has demonstrated that suicide rates among people with mental disorders are approximately 20 fold higher than among people in the general population, and people with mental disorders constitute a high proportion of those who die from suicide. Based on Danish and international epidemiological studies, we will present the suicide risk in different diagnostic groups, and in different phases of treatment together with risk factors for suicide in different mental disorders. The suicide risk is high the first years after first contact, and the periods shortly after admission and shortly after discharge are distinct high-risk periods. Emergency room contacts are important markers of increased suicide risk.

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inpatient stay, shortly after discharge, in relation to emergency room visits, and what will be the role of mental health services in reaching out towards people in the community at risk of suicide?

27.2 EXPLORING SOCIO-ENVIRONMENTAL EXPLANATIONS FOR THE CO-OCCURRENCE OF PSYCHOSIS AND SUICIDE

Jordan DeVylder*[1], Hans Oh[2], Kyle Waldman[2], Zui Narita[3], Holly Wilcox[3]

[1]Fordham University, [2]University of Southern California, [3]Johns Hopkins University

Individual Abstract: People with schizophrenia are among the highest-risk groups for suicidal behavior and death by suicide. However, risk for suicidal behavior extends beyond psychotic disorders and also applies to individuals who experience sub-clinical "psychotic experiences," which resemble the hallucinations and delusions characteristic of psychotic disorders, but are of lesser intensity or persistence. As such, it has been proposed that screening for psychotic experiences may be of value in predicting subsequent suicide risk, perhaps even more so than screening for depression, substance use, and other common risk factors. However, it is unclear whether psychotic experiences are of sufficient severity to directly induce suicidal thoughts and behavior, which leads to the alternative possibility that psychosis and suicide may co-occur due to shared socio-environmental risk factors. This talk will begin with a discussion of our recent meta-analysis on this topic, which was unable to conclusively determine the role of socio-environmental factors in this relationship due to broad variability in methods and findings of the reviewed studies. This will be followed by the presentation of results from two new studies that attempt to clarify this issue; the first uses a general population sample of adults living in Baltimore and New York City from the Survey of Police-Public Encounters II, and the second uses nationally representative data from the National Comorbidity Survey-Replication. Both studies examine the association between psychotic experiences and suicidal ideation or behavior, and then attempt to deconstruct those associations by adjusting for various factors identified in the prior meta-analysis. In the first study, adults residing in Baltimore and New York City who reported psychotic experiences were more likely to report suicidal ideation, OR(95% CI)=6.17(3.91-9.74) and suicide attempts, OR(95% CI)=9.66(4.27-21.83), than those who did not. These associations were attenuated but not eliminated following adjustment for demographics, childhood trauma, intimate partner violence, loneliness, neighborhood disruption, psychiatric co-morbidities, and distress. The second study benefited from a nationally representative sample of adults, but included less comprehensive adjustment for trauma-related confounders; nonetheless, results were similar. In these data, past-year psychotic experiences were associated with past-year suicidal ideation, OR(95% CI)=3.93(1.48-10.40), and suicide attempts, OR(95% CI)=8.95(2.69-29.77). These associations again were attenuated but not fully explained by adjustment for psycho-social factors, including psychiatric co-morbidities, substance use, childhood poverty, trauma and neglect history, and parental mental illness. Taken together, these data suggest that the co-occurrence of psychosis and suicidal behavior is partly explained by shared underlying socio-environmental risk factors, yet there may also be a direct and potentially causal relationship between these clinical phenomena. The talk will conclude with a brief overview of our current efforts to translate these findings into clinical settings, including through our current prospective study to test whether positive psychosis screens predict subsequent suicidal behavior among youth in an emergency department.

27.3 PERCEPTUAL ABNORMALITIES AS RISK MARKERS FOR SUICIDAL BEHAVIOR

Kathryn Yates*[1], Ulla Lång[1], Ian Kelleher[1]

[1]Royal College of Surgeons in Ireland

Individual Abstract: This talk will detail how perceptual abnormalities in the general population act as important markers of risk for future suicidal behavior.

It will look at the relationship between perceptual abnormalities and suicidal behavior in individuals with mental illness, including some of the mechanisms that may explain the relationship.

It will also present new data on the relationship between perceptual abnormalities and suicidal behavior in other high risk groups, including people with chronic physical illnesses.

28. IMPLEMENTATION SCIENCE AND SUICIDE PREVENTION STRATEGIES

Chair: Yeates Conwell, University of Rochester School of Medicine

Overall Session Abstract: The field of suicide studies has made substantial strides in the determination of factors that place individuals at risk for suicidal behavior and the development of approaches to its prevention. Decades of experience have shown, however, that even evidence-based interventions tested using robust effectiveness research methods may fail to have the intended effect when taken to scale in real world settings. This symposium shares lessons learned from studies of implementation and dissemination of three evidence-based preventive interventions. First is the Safety Planning Intervention (SPI) widely deployed in VHA emergency departments (EDs). SPI was designed to provide patients at risk with coping skills and strategies and has been shown to be effective in reducing suicidal behavior and increasing treatment engagement after ED discharge. Dr. Brown will relate the association of SPI outcomes to the quality of planning, and impact of efforts to increase fidelity system wide. Second, Zero Suicide is a multi-component approach to reducing suicide in health care systems. It is being widely disseminated nationally, but with limited evidence about how best to do so effectively. Building on a large scale, NIMH-funded study of Zero Suicide, Dr. Stanley will provide an overview and describe early results of two strategies for its implementation in outpatient behavioral health clinics across New York State. Third, the European Alliance Against Depression (EAAD) has developed and deployed a 4-level intervention (support of primary care providers; public messaging; gate keeper training; and self-help activities, including digital self-management tools) with the objective of reducing suicide-related morbidity and mortality. Dr. Hegerl will describe the EAAD interventions and lessons learned about its successful regional implementation based on systematic process and other implementation research studies.

28.1 SUICIDE PREVENTION USING THE SAFETY PLANNING INTERVENTION: RECENT RESEARCH ADVANCES AND IMPLEMENTATION

Gregory Brown*[1], Barbara Stanley[2], Lisa Brenner[3], Glenn Currier[4], Emilie Langlosi[1], Michele Gordon[1], Kelly Green[1]

[1]Perelman School of Medicine University of Pennsylvania, [2]College of Physicians & Surgeons, Columbia University, [3]VHA Rocky Mountain Mental Illness Research, Education, and Clinical Center, University of Colorado, [4]Morsani College of Medicine, University of South Florida

Individual Abstract: The Safety Planning Intervention (SPI) is a brief clinical intervention that combined evidence-based strategies to reduce suicidal behavior through a prioritized list of coping skills and strategies. The SPI has been used as a standard of care for Veterans at risk for suicide since 2008. A recent cohort comparison study was conducted to determine whether the Safety Planning Intervention (SPI), administered in Emergency Departments (EDs) in the Veterans Health Administration (VHA) was associated with reduced suicidal behavior and improved outpatient treatment engagement in the 6 months following discharge (Stanley et al., 2018). The results of this study found that SPI plus follow-up telephone contact after ED discharge was associated with 45% fewer suicidal behaviors during follow-up. Despite these findings supporting the effectiveness of the intervention, several additional studies have conducted chart reviews and found that that quality of safety plans was highly variable and that higher quality plans predicted a decreased likelihood of future suicidal behaviors in VHA. Recent research efforts to improve quality of safety plans will be reviewed including the use of standardized rating scales for determining the degree of fidelity (both competency and adherence) to SPI. Additional dissemination and implementation efforts to improve fidelity to SPI in VHA will be discussed.

28.2 ZERO SUICIDE IMPLEMENTATION IN STATEWIDE BEHAVIORAL HEALTH OUTPATIENT CLINICS

Barbara Stanley*[1], Christa Labouliere[2], Gregory Brown[3], Kelly Green[4]

[1]College of Physicians & Surgeons, Columbia University, [2]Columbia University Irving Medical Center, [3]Perelman School of Medicine University of Pennsylvania, [4]University of Pennsylvania

Individual Abstract: Although the Zero Suicide approach to suicide prevention in healthcare systems has been widely disseminated, the evidence base has not been firmly established. This large scale NIMH-funded project evaluated the effectiveness of two implementation strategies of the AIM (Assess--Intervene-Monitor) Model, in outpatient behavioral health clinics throughout New York State. Behavioral health outpatients have a suicide rate nearly 100x higher than the general population , and 45% of those who die by suicide in New York State (NYS) receive care in outpatient behavioral health in the 30 days prior to their death (NYS-OMH, 2016). However, many behavioral health clinicians receive minimal or no formal training in suicide risk assessment and evidence-based interventions for the prevention of suicide, leaving them ill-prepared to treat suicidal individuals. This presentation will describe the implementation strategies used in this project, a comparison of training completion, clinician self-efficacy and knowledge change pre to post implementation and based on implementation condition. Additionally, the presentation will discuss “lessons learned” from this large scale implementation and evaluation of the ZS model in outpatient behavioral healthcare.

28.3 INTERNATIONAL IMPLEMENTATION OF COMMUNITY BASED SUICIDE PREVENTIVE PROGRAMMES: THE 4-LEVEL INTERVENTION OF THE EUROPEAN ALLIANCE AGAINST DEPRESSION

Ulrich Hegerl*[1], Ella Arensman[2], Victor Perez[3]

[1]Goethe Universität Frankfurt, [2]National Suicide Research Foundation, School of Public Health, [3]CIBERSAM, EEAD

Individual Abstract: Worldwide more than 800.000 people die every year by suicide and the number of attempted suicides is estimated to be 20 times higher. Depression and other psychiatric disorders are the main cause for suicidal behavior. The community based 4-level-intervention concept developed within the "European Alliance against Depression" (www.EAAD.net) combines the only partly overlapping aims i) to improve the care and treatment of patients with depression and ii) to prevent suicidal behaviour. It has been shown in several controlled studies to be effective concerning the prevention of suicidal behavior (1, 2, 3, 4) and has been implemented in more than 115 regions worldwide The 4-level intervention concept comprises training and support of primary care providers (level 1), a professional public relations campaign (level 2), training of community facilitators (teacher, priests, geriatric care givers, pharmacists, journalists) (level 3), and support for self-help activities of patients with depression and for their relatives (level 4). At level 4, digital self- management tools such as the iFightDepression tool (offered by EAAD) are gaining relevance. Implementation research and systematic process analyses have provided insights in mechanisms relevant for a successful regional implementation of the 4-level intervention concept in different cultures and health care systems. Becoming simultaneous active at 4 levels has been found to create strong synergistic and also catalytic effects. Via the EAAD and partners from 24 countries, the intervention concept and materials (available in more than 10 different languages) are offered to interested regions in and outside of Europe.

1) Hegerl et al 2006; Psychol Med 36: 1225-1234

2) Székely et al 2013; PLOS One 8: e75081

3) Hübner-Liebermann et al (2010): Gen Hosp Psychiatry 32: 514-518.

4) Hegerl et al 2013; Neurosci Biobehav Rev; 37: 2404-2409.

Discussant: Yeates Conwell, University of Rochester School of Medicine

Oral Paper Sessions

Monday, October 28, 2019

10:00 AM – 11:30 AM

HARNESSING TECHNOLOGY FOR CLINICAL PRACTICE

Americana Ballroom 1-2

Chair: Hanga Galfalvy

1. REPORTING OF SUICIDAL THOUGHTS: ECOLOGICAL MOMENTARY ASSESSMENT (EMA) VERSUS AN INTERVIEWER-ADMINISTERED RETROSPECTIVE MEASURE

Ilana Gratch*[1], Tse-Hwei Choo[2], Hanga Galfalvy[2], Liat Itzhaky[2], Barbara Stanley[3]

[1]Teachers College, Columbia University, [2]Columbia University, [3]Columbia University Vagelos School of Physicians and Surgeons

Background: Researchers and clinicians have typically relied on retrospective reports to monitor suicidal thoughts and behaviors. Recent advances in smartphone technology have made real-time monitoring of suicidal thoughts possible via mobile ecological momentary assessment (EMA). It is not yet clear, however, how information gleaned from EMA corresponds to that obtained via retrospective reports. The present study compared suicidal ideation assessed over a week using EMA with a retrospective, gold standard, interviewer-administered measure (Scale for Suicidal Ideation; SSI) covering the same period.
Methods: Fifty-one participants with current major depressive disorder were recruited through online postings and from the Comprehensive Psychiatric Emergency Program at New York-Presbyterian Hospital/Columbia University Irving Medical Center for a study of neurobiological underpinnings of suicidal subtypes. Participants completed a baseline assessment that included a diagnostic interview, clinician-administered measures, and self-report questionnaires. Following baseline assessments, participants began EMA to assess patterns of suicidal ideation (i.e., EMA SI) for 7 days (6x/day). At the completion of EMA, participants were asked to complete the SSI (Beck et al., 1979) by phone for the same time period as the EMA (the previous week) within the first 24 hours of EMA completion.
Results: Worst point EMA SI during the one-week period was strongly correlated with SSI total score ($r=.729$, $p<.001$). In examining EMA SI longitudinally, which takes into account all EMA epochs, SSI was also positively related to EMA SI.
Fifty-eight percent of participants (n = 30) had scores of zero on the SSI. In contrast, 98% of participants (n = 50) endorsed >1 EMA SI item during the week-long assessment period. Only one participant with a zero SSI had zero values for all EMA SI items at all time points. The other 29 participants with SSI scores of zero had non-zero values on EMA SI items at least once during the week (SSI-/EMA SI+). SSI-/EMA SI+ participants endorsed >1 ideation items in 73.3% of EMA epochs, on average, with the lowest rate for a single participant being 2.50% and the highest being 100%. SSI+/EMA SI+ participants reported non-zero ideation in 99.9%

of EMA epochs, on average, with the lowest rate 97.3% and the highest rate 100%. Participants with zero SSI scores demonstrated a broad range of EMA SI both in terms of overall mean and variability over the week.

In order to determine whether SSI-/EMA SI+ participants differed from SSI+/EMA SI+ participants, we compared them on clinical factors. SSI+/EMA SI+ participants scored higher on the Beck Depression Inventory ($t(47) = 3.75$, $p = .001$), the Beck Hopelessness Scale ($t(47) = 4.89$, $p<.0001$), the Hamilton Rating Scale for Depression, ($t(49) = 2.66$, $p = .010$), and baseline SSI ($t(32) = 2.81$, $p = .009$) compared to SSI-/EMA SI+ participants. However, SSI-/EMA SI+ participants were no less likely to have a history of suicidal behavior than SSI+/EMA SI+ participants.

Discussion: To our knowledge, this study is among the first to compare assessment of suicidal ideation using EMA with a retrospective, interviewer-administered, gold standard assessment of suicidal ideation using the SSI covering the same time period. Our results indicate that EMA worst point ideation and EMA suicidal ideation longitudinally assessed are highly correlated with the retrospective report obtained by the SSI. However, EMA identifies instances of suicidal thinking that are not detected through retrospective report. The present study serves as an important reminder to both researchers and clinicians that not only what we ask, but also how we ask and when we ask about suicidal thoughts may have implications in the assessment of suicide risk.

2. CHANGING THE PARADIGM FOR SUICIDE PREVENTION

Eric Caine*[1]

[1]University of Rochester Medical Center

Background: Approaches during the past 50-60 years to preventing suicide in the US have predominantly depended on detecting and intervening with persons 'at risk' or on the brink of suicide. These have had no measurable impact on suicide rates. Newer variations have sought to find "THE needle in the stack of needles," by creating predictive analytic, computer-generated algorithms to further concentrate risk pools—with the aim of identifying uniquely vulnerable/suicidal persons. Nonetheless, these and others remain deeply susceptible to ecological fallacy and the reality that common events cannot predict rare outcomes.

Methods: Four studies (Neeleman et al, 1998; Neeleman, 2001; Bergen, Hawton, et al, 2012; Olson, Crystal et al, 2018) present results that, when taken together, fundamentally challenge the premises of predictive analytics, identifying "warning signs" among persons in the general population, or routine suicide screening as effective approaches. They do point in alternative directions for prevention initiatives.

Results: The studies cited cumulatively involved 10s-of-thousands of subjects. The work of Neeleman demonstrated that early childhood risk factors were more often associated with deaths from natural causes and accidents, and that common risks for suicide—ranked on a continuum—increased the risks for deaths from natural causes and accidents, as well as suicides. Bergan, Hawton and colleagues found in England that ~2/3rds of the causes of death among persons with a prior history of deliberate self-harm (DSH), who were followed for several decades, were from natural causes. Olfson et al, who documented 12-month mortality among persons initially presenting to ERs for non-fatal opioid overdoses, found that their sample had greatly elevated rates of substance-related and suicide mortality; yet ~2/3rds of deaths were natural causes—with substantial similarity to those for English DSH decedents.

Discussion: Common events can predict common outcomes. The discussion will focus on the premise that future prevention programs (tailored for different age, sex, gender, ethnic and racial groups) should focus on persons with adverse health behaviors/problems (drinking, drug use, insomnia, pain, etc) and related psychosocial stresses (prior ACEs, family turmoil, partner violence, legal and job problems, etc), irrespective of perceived or currently measured suicide risk, with the goal of preventing premature mortality. It is argued that these efforts, however labeled, also will serve to prevent suicide while having many associated health and mortality benefits for all participants.

3. ONLINE INTERVENTION AND MENTAL HEALTH APP SERVICE USE AMONG COLLEGE STUDENTS EXPERIENCING SUICIDAL IDEATION

Jazmin Reyes-Portillo*[1], Farah Mahmud[1], Tanya Singh[1], Cody Weeks[1], Carrie Masia Warner[2]
[1]Montclair State University, [2]Montclair State University and Nathan Kline Institute for Psychiatric Research

Background: Despite the elevated risk for suicidal ideation and behavior, few college students receive mental health services (King et al., 2015). Given the ubiquity of technology in college students' lives, online interventions and mobile apps may increase opportunities for engaging college students in need of psychotherapy and help college and university mental health centers meet the increasing demand for services (Kern et al., 2018). However, research examining college students' use of online interventions and mental health apps has been limited. The current study examined potential preferences for online interventions and mental health apps, use of online interventions and mental health apps, and predictors of use among college students with current suicidal ideation.
Methods: Participants were 398 college students who completed an online survey examining mental health symptoms and cultural factors among college students. All participants provided informed consent to participate. Suicidal ideation was assessed using item nine from the Patient Health Questionnaire (PHQ-9). Students also completed questions assessing their preferences and willingness to use mental health apps as well as their actual use of online interventions and mental health apps.
Results: About 15% (n=59) of participants reported current suicidal ideation. Of these, 76.3 (n=45) were female and 37.3% (n=22) self-identified as Latino. Participants' average age was 20.07 (SD=4.27). The majority of participants (72.9%; n=43) reported being open to using a mental health app. Almost half the sample (n=27) reported a preference for mental health apps relative to seeing a therapist in person. In regard to actual service use, 18.6% (n=11) and 20.3% (n=12) students reported using online interventions and mental health apps in the past year, respectively. Non-Latinos were more likely to use mental health apps than Latinos ($r=-.31$, $p<.05$). Willingness to use mental health apps was positively associated with past year use of online interventions ($r=.29$, $p<.05$) and mental health apps ($r=.32$, $p<.05$). Preference for mental health apps was positively associated with use of online interventions ($r=.32$, $p<.05$), but not mental health app use ($r=.20$, $p>.05$). Finally, perceived need for help was positively associated with mental health app use ($r=.28$, $p<.05$), but not online intervention use ($r=.13$, $p>.05$).
Discussion: Most students reported being willing to use mental health apps, with many expressing a preference for mental health apps over in person therapy. However, actual use of mental health apps and online interventions in the past year was limited. Findings suggest that mental health apps and online interventions may be potentially untapped treatment modality

for college students experiencing suicidal ideation. Future research should aim to assess how best to integrate these technologies into the university and college mental health system.

4. USING PASSIVE DATA MONITORING AND MACHINE LEARNING ALGORITHMS TO EXAMINE NEGATIVE AFFECT AND COPING BEHAVIORS AMONG COLLEGE STUDENTS EXPERIENCING SUICIDAL IDEATION

Kevin Kuehn*[1], Yasaman Sefidgar[1], Paula Nurius[1], Anne Browning[1], Anind Dey[1], Jennifer Mankoff[1]

[1]University of Washington

Background: Suicide is the second leading cause of death in the United States among youth ages 12-19 (Murphy, Xu, Kochanek, & Arias, 2018). Despite the high prevalence, relatively little is known about the short-term predictors of suicidal crises (Davidson, Anestis, & Gutierrez, 2017). The few studies that have looked at short-term risk factors have found negative affect to be associated with suicidal thoughts and behaviors (Kleiman & Nock, 2018). One prominent limitation of these small studies has been the reliance on self-report methods for data collection. The present study looks at both active self-report and passive phone data to examine associations of negative affect and coping behaviors among a relatively large sample of college students who experience varying dimensions of suicidal ideation (SI).
Methods: Data is drawn from a 10-week long longitudinal study using both active self-report measures as well as passive data monitoring applications. Participants (n=209) were college students (mean age =18.37; 62% female) who answered a battery of baseline measures as well as daily, weekly, and biweekly EMA measures. A mobile phone application was installed on participants' phones that recorded global position system, Bluetooth, incoming and outgoing communications, and accelerometer features. We used negative affect and coping items from EMA self-reports and examined differences between participants who experienced SI against students whom did not report SI at the beginning of the study. We then used passive phone data to see if we could use this data to detect changes in negative affect and coping patterns among individuals with varying trajectories of SI.
Results: 45 out of the 209 (21.5%) participants reported SI at baseline. Of these 45, 22 (48.9%) participants remitted from SI between the pre-quarter and the mid-quarter assessment points, while 20 (44.4%) participants-maintained SI between these two time points. 10 participants developed SI over the course of the 5 week follow up. At the end of the 10-week quarter, 15 students continued to experience SI, 13 students remitted from SI between mid-quarter and post-quarter assessment periods, and 13 students had developed SI from mid-quarter to post-quarter assessment. Based on cross-sectional analyses, reappraisal emotion regulation strategies and loneliness were significantly associated with SI. We then used a machine learning algorithm to predict varying categories of SI status (remitted at midpoint of study, chronic SI, SI onset etc.).
Discussion: This study uses cross-sectional and intensive longitudinal data to examine varying dimensions of SI. We also use passive data collection procedures to determine features collected via smart phones that predict different dimensions of SI. These features may be one way to detect individuals who are experiencing suicidal ideation without relying on self-report and could help inform intervention efforts; however, the study relied exclusively on a single item of SI assessed at 3 different time points. Future studies should incorporate more frequent assessment of SI and include different dimensions of suicidality (e.g., planning, intent, etc.)

5. ECOLOGICAL MOMENTARY ASSESSMENT - MEASURED SUICIDAL IDEATION AND SELF-INJURY IN A RANDOMIZED TRIAL OF SSRI VS. DBT

Hanga Galfalvy*[1], Tse-Hwei Choo[1], Beth Brodsky[1], Barbara Stanley[1]

[1]Columbia University

Background: Ecological Monetary Assessment (EMA) can measure emotions, thoughts, behaviors and stressors in real time during participants' daily lives. In a 6-month trial comparing antidepressant SSRI/supportive clinical management (SSRI/M) and Dialectical Behavior Therapy (DBT) in outpatients with Borderline Personality Disorder (BPD), we used EMA before and after the intervention to test for change in suicidal ideation and risk of SIB.
Methods: 84 patients with BPD with a lifetime history of mood disorder were randomized to SSRI/M treatment or DBT. Six times a day, for one week, participants answered questions about suicidal ideation severity (scale: 0-36), affect, stressful events, coping strategies, and self-injurious behaviors (SIB). Mixed effect regression models tested differences in the EMA-assessed ideation score, with randomization group, timepoint and their interaction as fixed effects. EMA-measured SIB occurrence was analyzed with mixed effect logistic regression, with event indicator as outcome, and predictors as above.
Results: 80 participants completed EMA pre-treatment and 55 after treatment. Dropout was not associated with randomization group, baseline EMA severity, or number baseline SIBs. EMA-measured ideation during baseline did not differ between the randomization groups (DBT : 8.4 ±7.3, SSRI/M: 8.4 ±7.2, p=0.8828). There was no significant group difference in severity of ideation post-treatment compared to pre-treatment (time by group interaction b= 0.02, p= 0.9778), but there was a shared, significant decrease in ideation severity from pre-treatment to post-treatment (b= -1.81, p<0.0001). In terms of EMA-measured SIB, there was no difference between the groups at baseline (OR=1.36, p= 0.442), but there was a significant group difference in the post-treatment to pre-treatment change in the odds of SIB (interaction OR=3.40, p =0.0104), with the DBT group's odds of SIB declining significantly more post-treatment than the SSRI/M group. The discrepancy between the treatment effects on ideation and SIB is likely due to the differential risk of SIB conferred by higher suicidal ideation by treatment: while in the DBT group, ideation severity's effect on risk of SIB did not change from pre-treatment to post-treatment (time by ideation interaction OR=1.54 for each 5 point increase, p= 0.1536), in the SSRI/M group, higher ideation conferred higher SIB risk post-treatment then pre-treatment (time by ideation interaction OR=1.92 for each 5 point increase p=0.0408). The mechanism of the (relative) decoupling of the link between suicidal ideation severity and risk of SIB in the DBT group may be the significantly increased EMA-reported coping effectiveness in the DBT group post-treatment compared to baseline (b=0.49, p< 0.0001), compared to the non-significant change in coping effectiveness in the SSRI/M group (b=0.11, p=0.2027).
Discussion: EMA can offer a more detailed assessment of treatment effect, compared to traditional clinical outcome measures, and with careful design, the data collected is suitable for testing a candidate mediators of treatment effect. In the current study, DBT and SSRI both decreased suicidal ideation severity, but the DBT group experienced a larger decrease in the risk of SIB, likely due to increased coping effectiveness.

6. SMARTPHONE ECOLOGICAL MONITORING AND SUICIDE RISK PREDICTION: PRELIMINARY RESULTS OF THE EMMA STUDY

Margot Morgievre[1], Catherine Gentyl[2], Sofian Berrouiguet*[3], Philippe Courtet[2]

[1]Fondation Fondamentale, Paris, [2]University Hospital of Montpellier, [3]University Hospital Brest

Background: Recent technological advances such as mobile phones and other personal devices, electronic health (eHealth) data collection strategies now can provide access to real-time patient self-report data during the interval between visits. The "Ecological Momentary Assessment" method allows to evaluate in real time the psychological state of a person. EMMA is the first French application for the prediction and prevention of suicidal behaviors.
Methods: Prospective study in which it is expected to recruit 100 patients in 5 French University Hospitals.
Objective: To describe user profiles of the EMMA app in suicide behaviours. We hypothesize that patients experiencing suicide crisis will be prone to use the application. Patients with a history of recent suicide attempts (<8 days) or with suicidal ideation (item 18 ≥2 on the IDSC depression scale) -30). In the inclusion a clinical evaluation is made including depression, ideas and behaviors, suicidal, the evaluation is repeated in the follow-up at 1, 3 and 6 months.
Results: Thirty-eight patients have been included, of whom 14 have completed the follow-up. Patients self-evaluate using EMMA for 6 months (several times a day and / or once a week, they can also be evaluated whenever they wish). Preliminary data suggest that some patients used the application when a suicidal crisis occurred. Specifically, 4 patients were hospitalized in the emergency room after a suicidal ideation crisis. These patients completed the evaluation despite their condition, not only answering the daily questions of "emma", also spontaneously. In addition, they used the application to communicate with their relatives or emergency services in case of crisis, before going to the emergency department.
Discussion: The preliminary results showed that repeated assessment of the risk of suicidal behavior did not produce any iatrogenic effect. This preliminary study suggests a link between the level of suicidal ideation collected through "emma", the occurrence of suicidal events and the use of the application.
In addition, "emma" is easy to use and requires little time for help from the professional in its configuration. It would be useful to discuss the integration of the use of the app in the health system and in other care modalities, in both the emergency department and the acute care unit.

CONSIDERATIONS OF THE SOCIAL AND HEALTH CONTEXT OF SIB

Poinciana Salon 1

Chair: Tina Goldstein

1. IMPLICIT AFFECTIVE RESPONSES TO SUICIDE- AND DEATH-RELATED STIMULI, DELAY DISCOUNTING, AND LONGITUDINALLY ASSESSED SUICIDAL THOUGHTS AND BEHAVIORS

Shayna Cheek*[1], David Goldston[2], Stephanie Daniel[3], Nicole Heilbron[2], Keith Payne[4], Joseph Franklin[5], Alaattin Erkanli[1]

[1]Duke University, [2]Duke University School of Medicine, [3]Wake Forest School of Medicine, [4]University of North Carolina at Chapel Hill, [5]Florida State University

Background: The mechanisms underlying the maintenance of STBs over time remains understudied. Affective and cognitive responses may be reflective of underlying behavioral mechanisms associated with STBs. For example, the maintenance or recurrence of STBs may be partly explained by reinforcing behavioral consequences (e.g., cathartic effects, experiential avoidance). The effects of reinforcing consequences may be reflected in more favorable automatic or implicit affective responses to stimuli associated with death- and suicide-related stimuli. It also has been hypothesized that individuals at risk for STBs evidence decision-making biases in which their behavior is more influenced by immediate behavioral consequences than long-term consequences (i.e., delay discounting). In the context of a longitudinal study, and in reflection of behavioral processes, we hypothesized that a more favorable implicit affective response to suicide-and death-related stimuli, and greater delay discounting would be related to the most severe historical patterns of STBs.
Methods: 180 psychiatrically hospitalized adolescents were repeatedly assessed for a median 23.1 years (mean 19.6 years), with 71.7% retention of the total sample. At each assessment, participants reported the severity of STBs since their last assessment. Developmental trajectories of STBs from adolescence throughout young adulthood were derived using a Bayesian group-based trajectory model yielding four classes: an increasing risk class (11%); a highest overall risk class (12%); a decreasing risk class (33%); and a low risk class (44%) (see Goldston et al., 2006, for description of trajectories and their covariates). The Affective Misattribution Procedure (AMP), a task assessing implicit affective responses was used to assess automatic reactions towards suicide- and death-related stimuli (as well as pleasant, unpleasant and neutral control stimuli). The Iowa Gambling Task (IGT) was used to assess decision-making including delay discounting biases. This investigation focused on the first assessment of implicit affect and delay discounting in relation to past patterns of STBs.
Results: Results indicated that participants in the increasing risk class, the trajectory class with the highest level of STBs closest in time to the assessment of implicit affect, demonstrated more favorable responses to death-related images compared to neutral images ($b = 22.01$, $SE = 8.04$, $p < .01$). Similar patterns were not evident for pleasant and unpleasant control stimuli. The highest overall risk class (with consistent decreases in risk over time) showed the greatest improvements in IGT performance over trials, i.e., the least delay discounting ($b = 1.75$, $SE = 0.62$, $p < .01$).
Discussion: The trajectory class with the most recent severe STBs had the most favorable implicit affective responses to death-and suicide-related stimuli, and the group with initially highest risk but gradual and steady decreases in risk over time showed the least evidence of delay discounting. Although not entirely consistent with predictions, these patterns nonetheless may be reflective of underlying behavioral processes. The knowledge of these mechanisms is important in understanding risk for STBs and may be helpful in the development of new interventions.

2. DAILY STRESS AND SLEEP QUALITY: ALTERNATIVES TO ASSESSING IMMEDIATE RISK FOR SUICIDE IN TEENS?

Sunhye Bai*[1], Joan Asarnow[2]

[1]The Pennsylvania State University, [2]David Geffen School of Medicine at UCLA

Background: Suicide is the second leading cause of death in adolescents in the United States (Center for Disease Control., 2013) and rates of suicide, suicide attempts, and overall self-harm, including suicide attempts and self-harm with unclear or nonsuicidal intent (NSSI),

increase dramatically during adolescence. At the same time, stress and sleep problems, identified as potential warning signs of imminent suicide risk (Goldstein et al., 2008; Rudd et al., 2006; Miller et al., 2017), are common and increasing. Recent advances in technology have further enabled researchers to study suicide risk in the context of daily life, with the goal of developing interventions that can be delivered "just in time." One useful and potentially powerful strategy for this work is to emphasize the prevention of elevations in risk for self-harm, by focusing on the assessment and mitigation of imminent risk factors, such as stress and sleep.

Methods: The objective of the presented study is to examine variation in daily ratings of stress and sleep in a sample of youths selected for very-high suicide and suicide attempt risk, as potential targets of ecological momentary interventions. We characterize within-person variability in sleep quality, duration and stress across 10 consecutive days, and hypothesize that reductions in these imminent risk factors will be associated with lower risk of suicide and self-harm on the same day and over time. The strategy used is to combine data from daily diaries with that from a systematic interview assessing suicidal behavior and self-harm during that period.

Results: Participants were 69 adolescents recruited from a multi-site trial evaluating dialectical behavior therapy (DBT), enrolled after the trial's 12-month follow-up assessment. To expand the sample, 32 additional youths were recruited to be comparable to the study sample. Inclusion criteria were: 1) at least one suicide attempt or ≥ 3 SH episodes within 12-months; 2) a lifetime suicide attempt or suicidal behavior or ideation leading to an emergency department visit, hospitalization, or clinical evaluation. Immediately following enrollment, youths tracked sleep on actigraphs and reported on sleep and stress daily for 10 consecutive days. Approximately 6 months post enrollment, youths completed the Suicide Attempt Self-Injury Interview (SASII; Linehan et al., 2006), a systematic retrospective recall instrument designed to assess the dates and factors involved in nonfatal self-harm over a pre-specified time period. The SASII – conducted live in-person or by telephone – allows staff to intervene immediately in response to imminent concerns about suicidality.

Discussion: Average compliance to daily surveys was high (M=81.9%, SD=25.1%). Overall, adolescents reported fair sleep quality on a 1 (very bad) to 5 (very good) likert scale (M=3.04), with average sleep duration of 8 hours. However, reports of sleep quality varied between days for some, more than others; standard deviations ranged from 0, suggesting no variability, to 1.83, suggesting some variability within individuals. Adolescents reported a moderate amount of stress on a 1 (low) to 5 (high) scale (M=2.90). Standard deviations of stress ratings between the 10 days ranged from 0 to 1.76. The SASIIs identified nine youths (approximately 10%) who reported an incident of self-harm within 30 days of enrollment. Additional analysis will examine daily variations in sleep quality, timing and stress by suicide risk profiles, and examine the within-person, daily links between these risk factors and self-harm outcomes. Findings will illustrate the utility of daily measures of stress and sleep as signals of increased suicide risk and highlight specific targets for real time risk prevention.

3. THE RELATIONSHIP BETWEEN THE MOST WIDELY VIEWED SUICIDE-RELATED TWEETS AND SUICIDE DEATHS IN ONTARIO, CANADA

Mark Sinyor*[1], Marissa Williams[2], Rabia Zaheer[2], Raisa Loureiro[2], Jane Pirkis[3], Marnin Heisel[4], Ayal Schaffer[1], Amy Chueng[1], Donald Redelmeier[5], Thomas Niederkrotenthaler[6]

[1]Sunnybrook, University of Toronto, [2]Sunnybrook Health Sciences Centre, [3]University of Melbourne, [4]University of Western Ontario, [5]University of Toronto; Sunnybrook Research Institute; & Division of General Internal Medicine at Sunnybrook Health Sciences Centre, &

Institute for Clinical Evaluative Sciences, Toronto, [6]Medical University of Vienna, Center for Public Health, Institute for Social Medicine

Background: Suicide reporting in both mainstream and social media can influence suicides rates, however, little is known about the characteristics of social media posts that may confer benefit or harm. This study aims to address that gap.
Methods: Suicide-related Tweets geolocated to Toronto, Canada (July 1, 2015-June 30, 2016) were obtained from a media tracking company. Tweets with the highest "authority" based on number of followers, tweets, retweets and posting frequency were coded for content based on a validated coding rubric. This included basic information about tweets as well as putatively harmful and putatively protective elements. The outcome of interest was suicide deaths in Toronto, obtained from Ontario Coroner, within one week of each tweet compared to an earlier control window of the same duration. Bivariate and multivariate analyses were performed to determine the relationship between tweet elements and suicides.
Results: There were 787 high authority tweets related to suicide and 1,505 suicides in Ontario. Most tweets (77.5%) originated from a mainstream media source and 43% included educational information about suicide and or/ were advocating against stigma. Some elements independently associated with harm/more suicides in multivariate analyses included tweets about a prominent Canadian journalist's suicide (OR 5.67, 95% CI: 1.36-23.58) and shooting by firearms as a suicide method (OR 3.75, 95% CI: 1.37-10.28). Some elements associated with protection/fewer suicides included tweets about individual murder suicide (OR 0.02, 95% CI: 0.00-0.18), first responders in general (OR 0.18, 95% CI: 0.06-0.57), jumping or falling from height as a suicide method (OR 0.27, 95% CI: 0.10-0.68), tweets that contained black humour or were flippant in nature (OR 0.18, 95% CI: 0.05-0.61), and tweets that contained a message of hope (OR 0.31, 95% CI: 0.13-0.72).
Discussion: This analysis identified several elements of suicide-related tweets that were associated with harm and protection. Although these findings require replication, social media platforms and suicide experts should consider their relevance for future suicide prevention efforts on social media.

4. LAST NIGHT'S SLEEP PREDICTS TODAY'S SUICIDAL IDEATION AMONG AT-RISK ADOLESCENTS & COLLEGE STUDENTS: PRELIMINARY RESULTS FROM A LONGITUDINAL MULTI-METHOD INVESTIGATION OF THE SLEEP-SUICIDE ASSOCIATION

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Background: Studies consistently demonstrate a direct link between a myriad of subjective sleep disturbances in adolescents and the continuum of suicidality, leading to the identification of "sleep difficulties" among the consensus set of warning signs for suicide. To date, "sleep difficulties" have mainly been assessed in retrospective, cross-sectional studies using limited items to assess sleep. Yet, sleep is a complex behavior that can be measured along multiple dimensions. Longitudinal real-time assessment of sleep/wake behaviors with high-risk individuals applying well-defined and measured sleep constructs are needed to enhance the specificity of near-term suicide risk detection and render concrete targets for suicide prevention.
Methods: We are conducting a prospective evaluation of the sleep-suicide association daily over 3 months using objective ambulatory sleep assessment (i.e., actigraphy) and daily

cellphone assessments of subjective sleep and suicidality in a clinical sample of youth enrolled in an intensive outpatient program (IOP) for depression and suicidality. The sample includes 27 youth (M age=16.6, Range 13-23) who have completed the protocol to date (M days=54, Range 11-119). Participants wear an actiwatch on their non-dominant hand continuously to yield objective data on sleep/wake, and concurrently complete daily ratings of subjective sleep (timing, awakenings, quality, nightmares), suicidal ideation (intensity, timing) and behavior via a secure web-based platform. Mixed models examined the association between the previous night's sleep parameters (subjective and objective) and the odds of suicidal outcome (i.e., passive death wish, suicidal ideation) controlling for age, gender, and day of week (weekend vs. weekday). Lagged models were used to examine the effects of sleep duration (models covaried for the total sleep time of the prior two nights).

Results: Data indicates very high rates of compliance with the protocol, with 90% of daily diary entries completed, and 99% of days with actigraphy. As expected in this high-risk sample, participants endorse frequent suicidal ideation: passive death wish (99% of sample/49% of days), suicidal ideation (82%/26%), ideation with plan (66%/14%), ideation with intent (37%/1.5%) and NSSI (40%/10%). Participants report ideation most commonly in the early evening (4-8pm, 64% of days), followed by afternoon (12-4pm, 51% of days). Actigraphy data indicate mean total sleep time = 7.0 hours (Range 5.5-8.7) and sleep efficiency = 81.9% (Range 68-96%). Per daily diary data, mean sleep onset latency = 20.9 minutes (Range 7.9-57.5), nightmares are reported on 38% of nights, and mean sleep quality = 51.0 (Range 20.1-77.6 on a 1–100 scale).

Standardized odds ratios indicate that today's suicidal ideation is significantly associated with last night's subjective sleep onset latency (OR=1.49, $p<0.01$), sleep quality (OR=1.34, $p<0.01$) and nightmares (OR=1.7, $p=0.02$). Today's passive death wish is significantly associated with last night's sleep onset latency (OR=1.26, $p=0.02$), sleep quality (OR=1.34, $p<.01$), and objective total sleep time (OR=1.21, $p=0.05$).

Discussion: Prospective objective and subjective data indicate a range of sleep disturbances among youth at high risk for suicide. We document a significant temporal association whereby specific subjective sleep disturbances (sleep onset latency, sleep quality, and nightmares) predict next day's passive death wish and suicidal ideation; objectively derived total sleep time predicts next day's passive death wish. Further understanding of the specific and temporal association between sleep health dimensions and suicidality may hold promise to inform real-time monitoring and preventive strategies.

5. PATTERN OF LIFE EVENTS PRECEDING SUICIDE AMONG ELDERLY WITH PROXY-BASED DATA: A CASE – CONTROL PSYCHOLOGICAL AUTOPSY STUDY IN RURAL CHINA

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Background: The global crude suicide rate was 10.6 per 100,000 and the age-standardized suicide rate of Chinese was 8.0 per 100,000 in 2016. Suicide rates are highest in persons aged 70 years or over for both of men and women in almost all regions of the world. Suicide rates among the Chinese whose age were 60-69, 70-79,80+ were 23.4, 44.0, and 61.3 per 100,000, 1.9-, 4.5-, 6.7- fold higher than the rate of general population respectively. Life events are

significantly associated with increased risk for suicide among the elderly in rural China. However, there is lack of an objective measurement for life events among the rural Chinese elderly in psychological autopsy study as well as the pattern of life events. Thus, our study aims to evaluate the validity of measure tool for life events among rural Chinese elderly and analyze the pattern of life events preceding suicide.

Methods: Multi-stage stratified cluster sampling method was used to select research sites and 12 counties were randomly selected to recruit cases in 3 provinces. The suicides aged 60 and above were collected based on the death certification system consecutively. Age, sex, and location-matched living people were selected as the controls. Two informants were selected for each target. The first informant was one next-to-kin who lived with the target, and the second was always a friend, a neighbor, or a remote relative. We did 1,210 interviews in total for the 242 completed suicides and living controls. The time of interviews with informants of suicide victims was within 2-6 months after death, while interviews with informants of living comparisons were conducted as soon as possible. The average interview time was 90 mins. Demographic characteristics were collected. GDS, ULS-6, QOL, BHS-4, DSSI, and Life Event Scale for the Elderly (LESE) were used in the study. Mental disorder was measured by the Chinese version of DSM-IV, SCID.

Results: The median number of life events in the suicide cases and living controls was 5.0 (QR = 4.0) and 3.0 (QR = 4.3). ICC value of the number and intensity of life events between the proxy-based and the living control were 0.695 and 0.494. The incidence of life events was higher in suicides than in controls. Rural elderly who were being left behind were experienced more life events not only among suicides but also controls. The three most frequent life events were being diagnosed of chronic disease, hospitalization, and being diagnosed of terminal illness. After adjustment for sex, family annual income, and living alone, three significant predictors of live events in the final multivariate logistic regression model. Life events increased with exposure to unstable marital status [OR (95% CI) = 6.980 (1.195-40.761)], suffering from physical illness [OR (95% CI) = 9.685 (3.889-24.121)], and suffering from mental disorder [OR (95% CI) = 8.122(1.042-63.336)].

Discussion: The number of life events was more reliable than the intensity of life events. LESE is a valid instrument for measuring life events in psychological autopsy study with good convergent validity and discriminate validity. People who were being left behind were more likely to experience more life events. The three most frequent life events were all relating to Health/Hospital. Unstable marital status, suffering physical disease and mental disorder were the independent risk factors for life events among rural elderly in China.

6. SUICIDE IN SUBSTANCE MISUSE SERVICES – THE IMPACT OF MENTAL HEALTH SERVICES CONTACT

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Background: Substance use disorders (SUDs) are a well-known and important risk factor for suicide. Still, the role of substance misuse services has received little attention in suicide prevention. The few studies that have been conducted have found a large degree of concurrent service utilization in both substance misuse services and mental health services. Consequently, the object of the current study is to examine differences between persons utilizing both substance misuse services and mental health services compared to those only utilizing substance misuse services.

Methods: Every suicide in Norway between 2009 and 2017 in the Cause of Death Registry was linked with the Norwegian Patient Registry. The current sample consists of all cases that received treatment in Substance Misuse Services in the year before the suicide (N = 480). The analysis was stratified by whether the persons only received services in Substance Misuse Services or in both Mental Health Services and Substance Misuse Services. Chi-squared was used to test for differences between categorical variables and continuous variables, and were tested with the Mann-Whitney test. Furthermore, was a multivariate logistic regression model used to examine differences between the groups. Poisson regression with the year of death as a dependent variable and yearly suicide rate as an independent variable controlled for development over time.
Results: Of the persons who had contact with substance misuse services in the year before suicide, 65.4% also had contact with mental health services. The suicide rate was approximately twice as high in persons in contact with both sectors (124.05 per 100 000 patients) as in persons that only had contact with substance misuse services (67.72 per 100 000 patients). A significant increase of the suicide rate during the study period was found in persons that only had contact with substance misuse services (log (β) = 1.03, p = < .05) using Poisson regression. Persons who only received services in Substance Misuse Services last year were more often male (76 % vs 61 % - p = < .01), had last contact with outpatient services (81.9 % vs. 61.8 % - p = < .001), and had Substance Use Disorders as their last diagnosis (82.5 % vs. 51.8 % - p = < .001) compared to persons whom received treatment in both substance misuse and mental health services last year. In the adjusted model, persons in contact with both substance misuse services and mental health services more often had inpatient treatment (OR = 9.88 (95 % CI 6.17 – 16.11), p = < .001), more often outpatient treatment (OR = 6.59 (95 % CI 2.21 – 22.39), p = < .01) and were at great risk for dying within 14 days after last contact (OR = 4.14 (95 % CI 2.56 – 6.84), p = < .001).
Discussion: The current study is to our best knowledge the first to describe persons who die by suicide after contact with both substance misuse services and mental health services last year. The significant increase over the years is most likely due to a substantial increase in the number of patients and the development of the sector in the period. Furthermore, the logistic regression indicates that persons in contact with both services receive more inpatient and outpatient services than persons only receiving substance misuse services, and more often die within 14 days after contact. These findings highlight the need for cooperation and coordination between substance misuse and mental health services and an increased focus on persons with concurrent substance use and mental health disorders.

MENTAL HEALTH AND SCREENING: WHAT MATTERS?

Poinciana Salon 2

Chair: Lisa Horowitz

1. IS DEPRESSION SCREENING ENOUGH FOR DETECTING SUICIDE RISK IN PEDIATRIC MEDICAL PATIENTS?

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Background: Suicide is the second leading cause of death for youth ages 10-24 for the 8th consecutive year (CDC, 2017). Medically ill youth are at a heightened risk for suicidal thoughts and behavior. In 2016, the Joint Commission issued a Sentinel Event Alert recommending that all medical patients be screened for suicide risk (Joint Commission, 2016), but did not provide specific guidelines for screening implementation. As a result, hospitals frequently screen patients for suicide risk using depression screening instruments. The Patient Health Questionnaire for Adolescents (PHQ-A) is a commonly used depression screen that includes an item that is purported to measure suicidal ideation and self-harm (Item #9). However, studies indicate that depression screening alone may not be adequate to detect medical patients at risk for suicide (Recklitis et al., 2006; Walker et al., 2011). This study aims to determine if depression screening can identify suicide risk in pediatric medical inpatients who screen positive on suicide-specific measures.
Methods: As part of a larger instrument validation study, a convenience sample of medical inpatients, ages 10-21, were recruited from two pediatric hospitals. Participants completed a self-report screening measure for depression (PHQ-A), two validated suicide risk screening tools, the Ask Suicide-Screening Questions (ASQ) and the Suicidal Ideation Questionnaire (SIQ; patients ages 10-14 completed the SIQ-Junior), and a demographics/exploratory variable questionnaire. Patients who scored ≥ 11 on the PHQ-A screened positive for depression and those who responded "Yes" to any of the four ASQ items and/or scored above the SIQ/SIQ-JR cut-off score (SIQ≥41 or SIQ-JR≥31) were positive for suicide risk. Univariate and multivariate statistics were calculated to examine the relationship between screening positive for depression and suicide risk.
Results: A total of 400 pediatric medical inpatients participated as part of the larger study (59% female; 47% white; mean age 15.2 ± 2.9 yrs). Thirty-nine patients (9.8%) screened positive for depression only, 16 (4.0%) screened positive for suicide risk only, and 36 (9.0%) screened positive for both depression and suicide risk. After controlling for demographic factors, patients who screened positive for depression were 13 times more likely to also screen positive for suicide risk (95% CI: 6.8-23.8, p<.001). Of the patients who screened positive for suicide risk, 37.9% (22/58) did not screen positive on the PHQ-A, and nearly half (26/58) did not endorse Item #9 on the PHQ-A. Notably, 16 (27.6%) participants who screened negative for depression and on Item #9 were found to be at risk for suicide based on the suicide-specific measures.
Discussion: In this sample of inpatient pediatric medical patients, depression screening alone would have failed to detect over a quarter of youth at risk for suicide. While there is a clear relationship between depression and suicide risk, some medical patients at risk for suicide may pass through the healthcare system undetected if depression screening is used as a proxy for identifying suicide risk. Asking youth directly about suicidal thoughts and behaviors with the use of validated suicide risk screening tools may identify more patients at risk and in need of further mental health care.

2. RISK OF SUICIDE ATTEMPT ASSOCIATED WITH PATTERNS OF ALCOHOL USE DETERMINED BY ROUTINE AUDIT-C ASSESSMENT AMONG ADULTS RECEIVING MENTAL HEALTH CARE

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Background: Alcohol use is a risk factor for suicide attempt, both at the time of suicide attempt and among those with an alcohol use disorder, particularly for individuals with mental illness.

Screening tools for unhealthy alcohol use, like the Alcohol Use Disorders Identification Test-Consumption [AUDIT-C] questionnaire, may help clinicians identify patients at higher risk of suicide. However, no research to date that has examined the risk of suicide attempt following patient-reported alcohol use on the AUDIT-C. Using data from Kaiser Permanente Washington (KPWA)—a regional healthcare system in Washington State—we evaluated the association between patterns of alcohol use reported via routine AUDIT-C assessment and subsequent short-term risk of suicide attempt.

Methods: Electronic health records were used to identify adult patient visits to a mental health provider with a documented AUDIT-C between 1/1/2010 and 6/30/2015. Each patient visit was followed for 90 days to ascertain the presence (or absence) of fatal or non-fatal suicide attempt, defined using diagnoses codes and death certificate data. Main outcome analyses used generalized estimating equations to conduct visit-level analyses and account for the correlation between multiple AUDIT-Cs for individuals, using separate models to evaluate the association between (1) level of consumption and (2) frequency of heavy episodic drinking (6+ drinks/occasion) and suicide attempt. Models were adjusted for age, gender, race/ethnicity and screening year.

Results: At the first visit in the study period, 22.1% of patients (N=44,106) reported non-drinking, and 38.6%, 34.5%, and 4.8% reported low-, moderate-, and high-level drinking, respectively; 65.1% of patients reported "never" heavy episodic drinking, and 21.9%, 7.1%, 4.4$ and 1.5% reported "less than monthly," "monthly," "weekly," and "daily or almost daily," heavy episodic drinking respectively. Of 60,247 patient visits with a documented AUDIT-C, 372 (61.7 per 10,000) were followed by a suicide attempt (fatal or non-fatal) within 90 days. For level of consumption, the risk of suicide attempt was 2.6 times more likely (95% CI, 1.80-3.74) for patients reporting high-level alcohol use compared to those reporting low-level use, but the risk of suicide attempt for those reporting moderate-level use was not associated with higher suicide attempt risk than low-level use (OR 0.95, 95% CI 0.74 – 1.22). For frequency of heavy episodic drinking, relative to patients reporting "never," those reporting "daily or almost daily" and those reporting "weekly" were 3.62 times (95% CI 2.16-6.07) and 1.58 times (95% CI 1.02-2.46) more likely to have a suicide attempt, but those reporting monthly or less than monthly were not at increased risk.

Discussion: Routine patient-reported alcohol screening information documented in the medical record may be useful for identifying short-term suicide risk, especially for patients with the riskiest patterns of alcohol use. Findings suggest addressing alcohol use as part of routine suicide-related care, particularly with patients reporting high-level consumption or heavy episodic use more than monthly, could hold promise as a suicide prevention strategy in clinical settings.

3. UNIVERSAL SUICIDE RISK SCREENING IN RURAL ADULT PRIMARY CARE: A PILOT TEST OF THE ASK-SUICIDE SCREENING QUESTIONS (ASQ) TOOLKIT

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Background: Rural areas of the U.S. have disproportionately higher suicide rates than urban areas. Primary care is a critical intervention point for suicide prevention in rural communities because of high levels of stigma and a lack of mental health care access. Universal suicide risk screening in primary care has been found to increase suicide risk detection, decrease rates of acute care utilization, and increase behavioral health referral rates. However, little is known about the feasibility of universal suicide risk screening programs in rural adult primary care.

This pilot study aimed to evaluate the feasibility of a universal suicide risk screening program in a rural adult primary care practice using two elements of the Ask Suicide Risk Screening Questions (ASQ) Toolkit (the ASQ screening tool and the ASQ Brief Suicide Safety Assessment; BSSA). Additionally, this study aimed to describe how the implementation of the ASQ and the ASQ BSSA as a universal suicide risk screening program would increase the frequency of screening and suicide risk detection compared to treatment as usual.

Methods: A sample of patients (N = 196) in a primary care clinic in rural West Virginia was recruited to participate in an electronic universal suicide risk screening program using the ASQ screening tool (ASQ) and the ASQ BSSA. A two-phase design was used to compare suicide risk screening and detection frequencies during a baseline phase (treatment as usual) and an intervention phase. During the intervention phase, patients who consented after watching a brief consent video completed the ASQ electronically as well as a Screening Opinions Questionnaire developed by the researchers, which asked patients their opinions about suicide risk screening during the visit. Results of the ASQ were viewed by the primary care provider (PCP) in real time. For patients who screened positive, the PCP administered a brief risk assessment and completed disposition planning using the ASQ BSSA. Feasibility of the intervention was measured by the proportion of patients who consented to be screened, the ASQ and BSSA completion rates, and one item on the Opinions Questionnaire that asked whether PCP's should screen for suicide risk. To evaluate the impact of the intervention on screening and detection rates, Chi-Square comparisons were made between the proportion of patients who were screened and who were detected as "at risk" for both phases out of the total number of patients seen by the PCP.

Results: A total of 340 patients were approached during the intervention condition. Out of the 204 patients who agreed to watch the consent video, N = 196 (96.0%) agreed to be screened. All but one of these completed the ASQ (99.0%). Of these, 175 screened negative (89.7%), 19 were "non-acute" positive screens, (9.7%), and one patient was an "acute" positive screen (0.5%). All of the patients that had positive screens received the full BSSA intervention. Of the patients surveyed, 95.9% agreed that PCP's should ask patients about suicide. Screening rates were significantly higher during the intervention phase (57.4%) compared to the during the baseline phase (5.8%; $X2= 178.5$, $p < .001$). Similarly, risk was detected in 10.3% of the cases during the intervention phase compared to 0.7% of cases during the baseline phase ($X2= 23.1$, $p < .001$).

Discussion: This pilot study from a rural outpatient primary care clinic provides preliminary evidence that universal suicide risk screening using the ASQ/BSSA tools is feasible in the rural primary care setting and that screening is amenable to patients. Future research should incorporate more diverse samples from multiple practice settings in order to further evaluate the feasibility and effectiveness of the ASQ Tools in adult rural primary care.

4. ASSOCIATION BETWEEN SUICIDE IDEATION REPORTED ON THE PHQ-9 AND SUICIDE BEHAVIOR AMONG INDIVIDUALS WITH SUBSTANCE USE DISORDERS

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Background: Compared to the general population, individuals with substance use disorders are at higher risk for suicidal behavior. The Patient Health Questionnaire (PHQ-9) is routinely collected in many large health systems across the country and item 9 (passive thoughts of death self-harm) is often used to screen patients for suicide risk. PHQ-9 item 9 has demonstrated

sensitivity in identifying individuals at risk for future suicidal behavior in the general population and among individuals with psychosis. We assessed how well this item identifies suicidal behavior among individuals with a substance use disorder.
Methods: We used an existing data set containing electronic health records (EHR) and insurance claims data for seven large health systems. All outpatient visits between January 2009 and June 2015 to behavioral health or primary care departments where a psychiatric diagnosis was made and a PHQ-9 was completed were included in the dataset. We identified the subset of visits where a co-morbid substance use disorder diagnosis was made (i.e., opioid, cocaine, cannabis, other drug use disorders, excluding nicotine; n=186,401visits). Suicide attempts in the 90 days following each visit were obtained from EHR or claims data; suicide deaths from state death records were also included. Logistic regression was used to calculate odds ratios associated with PHQ-9 item 9 responses, adjusting for patient demographic and clinical characteristics and health service use.
Results: In bivariate analyses, risk of suicide attempt in the 90 days following an outpatient visit was 4.9% among individuals reporting self-harm thoughts "nearly every day" versus 1.1% among patients reporting no thoughts of self-harms ($\chi2=1151$, $p<.0001$). Suicide attempt within 30 days following the visit followed a similar pattern (2.7% vs 0.5% respectively; $\chi2=751$, $p<.0001$). Suicide deaths, though fewer in number, were also proportionally higher in those reporting suicide thoughts "nearly every day" versus those reporting no thoughts. Adjusted odds ratios (AORs) for suicide attempt risk—controlling for demographic characteristics, psychiatric diagnoses, psychiatric hospitalization, mental health-related emergency department visits, and previously diagnosed self-harm—remained significantly higher as frequency of ideation on item 9 increased, with AORs of 1.56 (CI 1.37-1.78) for "several days," 2.17 (CI 1.83-2.56) for "more than half the days," and 3.24 (CI 2.69-3.91) for "nearly every day" compared to those denying suicide thoughts. Adjusted odds ratios predicting suicide death were similarly higher among all item 9 responses compared to reporting no thoughts of self-harm.
Discussion: Among an outpatient sample of individuals with psychiatric and substance use disorder diagnoses, PHQ-9 item 9 accurately identified individuals with increased near-term risk of suicide behavior above and beyond risks related to mental health diagnoses alone.

5. SUICIDE AFTER CONTACT WITH OUTPATIENT MENTAL HEALTH SERVICES - A NATIONWIDE REGISTRY STUDY FROM NORWAY

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Background: Despite the last decades shift towards more outpatient treatment within the mental health system, the existing literature has mainly examined suicide in current inpatients or patients discharged from inpatient care. There are very few studies on suicide among outpatients. Our aim was thus to identify the number and describe characteristics of persons dying of suicide during and after outpatient mental health treatment and compare patients who had active versus ended outpatient treatment at time of death.
Methods: All suicide deaths among outpatients in the period 2008–2017 were identified by a linkage of the Cause of Death Registry (CDR) and the Norwegian Patient Registry (NPR). For the current study, only persons who had their last contact as outpatients in a mental health service for adults were included. A stratification was made according to whether the outpatient treatment was active or ended. The treatment was categorized as ended when an end date was registered in NPR before the date of death or if there had been no contact with services during

the last 90 days. Differences between categorical variables were tested using chi-squared test, while continuous variables were tested with Mann-Whitney and t-test.
Results: In the study period, 2,147 (37.9 %) of all people who died by suicide in Norway (N = 5661) had contact with an adult mental health service in the year before death. Of these, 1115 (51.9 %) had their last contact as outpatients. The majority were men (61.2 %) and the mean age at death were 44.1 years. The two most frequent registered diagnoses at last contact were affective disorders (29.8 %) and unspecified mental disorders (ICD-10 code: F99, Z or no F-diagnoses) (29.3 %). At time of death, 644 (57.8 %) outpatients were registered with an active treatment and 471 (42.2%) with an ended treatment. There were no significant gender differences between these groups, but outpatients who died with an active treatment were slightly younger than persons with an ended treatment (mean age = 43.0 years vs. 45.7 years, p = .007). Outpatients with an active treatment also had more outpatient contact last year (median = 10 days (SD = 22.5) vs. median = 4 days (SD = 13.3), p < .001) and a larger proportion had been admitted to a psychiatric hospital last year (52.6 % vs. 33.4 %, p <. 001). The median days from last contact to suicide were 8 days (SD = 18.4) in persons with active outpatient treatment and 110 days (SD = 106) among persons with an ended treatment (p < .001). Unspecified diagnoses were more often registered as the last main diagnosis among persons with an ended treatment (p = .02) while psychosis was more often found in the outpatients with an active treatment (p = .004).
Discussion: More than half of the people who died in suicide after contact with mental health services had their last contact as outpatients, highlighting the importance of suicide prevention initiatives targeted at this patient group. The outpatients who died with an active treatment tended to have more outpatient contact and were more likely to have been admitted to psychiatric hospital last year than persons who died after an ended outpatient treatment. This may indicate that these groups differ in the type of treatment they have received from the services the last year before suicide. Further, the well-known post-discharge clustering seems to be less prevalent among persons who die in suicide after an ended outpatient treatment – an area requiring more research.

6. CARE PROCESSES RECEIVED BY EMERGENCY DEPARTMENT PATIENTS WHO SCREEN POSITIVE FOR SUICIDE RISK: THE SYSTEM OF SAFETY STUDY

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Background: Most of those who die by suicide visit an emergency department in the year before death. The Zero Suicide model is a practical framework for implementing best practices for suicide prevention across health care systems. The System of Safety study examines the effectiveness of Zero Suicide implementation on clinician behaviors and patient outcomes. The current data represent a subset of all emergency department presentations: future analyses will use electronic health record data to examine all presentations during this period.
Methods: Research assistants conducted chart reviews to assess the care received by patients who screened positive on the Patient Safety Screener (PSS-3) after implementation of new protocols and continuous quality improvement efforts in four emergency departments. These data are a random subset of charts and focus on five emergency departments in one health system over a 15-month period.
Results: Research assistants reviewed a total of 312 charts of patients (52.6% female) who screened positive for suicide risk. 165 (52.9%) patients had suicidal ideation on the day of the

visit and 90 (28.8%) had ideation in the past two weeks. 197 (63.1%) patients had a lifetime suicide attempt, of which 35 had attempts in the past 24 hours. Psychosocial history was obtained for 280 (57.7%) patients and the nurse verbally communicated screening results to the physician for 49 patients (13.7%). Environmental safety precautions were taken for 179 patients (57.4%), and 171 patients received a BH evaluation (54.8%). Only 47 patients (15.1%) received suicide-specific interventions, including discharge instructions and the safety planning intervention. Most patients were discharged home (n=197; 63.1%).
Discussion: We aimed to improve several care processes as part of the Zero Suicide model through training, protocol changes and continuous quality improvement. However, some care processes were not consistently delivered, suggesting areas for continued improvement. There is particularly an absence of documented suicide-specific interventions for patients with suicide risk.

SUICIDE RISK: LEARNING FROM THE EPIDEMIOLOGICAL PERSPECTIVE

Poinciana Salon 3-4

Chair: Amanda Bakian

1. PERIMENSTRUAL EXACERBATION OF ONGOING SUICIDAL IDEATION

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Background: Suicide is the second leading cause of death for women. In recent years, suicidal thoughts and behaviors (STBs) have increased in prevalence, with steeper rates of increase for women (45%) compared to men (16%). Improved prediction and prevention of STBs will require the identification of transdiagnostic risk factors focused on proximal (time-varying) suicide risk.
The perimenstrual weeks (the weeks before and during menses) represent a highly plausible yet unstudied biological trigger for proximal suicide risk. Cross-sectional studies have demonstrated greater frequency of suicide attempts and deaths in perimenstrual weeks than other cycle phases. While not all women experience significant changes in symptoms across the menstrual cycle, known risk factors for STBs including early life adversity, borderline personality disorder, and impulsivity also predict adverse responses to ovarian hormone changes. Despite promising preliminary evidence, no published research has prospectively examined whether the perimenstrual phase increases the severity of suicidal ideation (SI) in at-risk women. The current study is the first to demonstrate the prospective impact of the menstrual cycle on STBs and known STB risk factors (depressed mood, hopelessness, guilt, rejection sensitivity, interpersonal conflict, anxiety, mood swings, irritability) in women with SI.

Methods: A total of 30 female outpatients aged 18-45 with recent SI completed phone measures of symptoms and suicidality across an average of 40 days. Participants were excluded for hormone use, current pregnancy, history of reproductive mood disorder, irregular menstrual cycles, serious medical illness, and BMI outside of a normal range. Medication use was measured daily and covaried in analyses. Urine luteinizing hormone (LH) and salivary progesterone (P4) were used to confirm ovulation and cycle phase. Cyclical worsening of

symptoms was evaluated using phase contrasts in multilevel models. Each day was coded as belonging to a particular cycle phase based the following: (1) forward and backward count, (2) day of LH surge, and (3) exponential P4 rise following ovulation.
Results: As predicted, the perimenstrual phase was associated with the most severe SI; elevated levels extended through the follicular and ovulatory phases and declined to baseline by the midluteal phase. The perimenstrual phase was also characterized by higher levels of depressive symptoms, hopelessness, anxiety, mood swings, guilt, rejection sensitivity, and anger/irritability relative to all other cycle phases. Depressive symptoms (depressed mood, hopelessness, guilt) showed a delayed pattern in which exacerbations were observed during the perimenstrual and follicular phases, while anger/irritability showed a pattern of midluteal symptom rise with a perimenstrual peak. Overall, the ovulatory phase demonstrated the lowest symptoms.
Discussion: This study is the first to prospectively demonstrate that females with chronic suicidality may be at elevated risk for perimenstrual worsening of suicidality and risk-related symptoms. Findings are consistent with prior research examining borderline personality disorder symptom fluctuation over the cycle, which demonstrated midluteal exacerbation of interpersonal symptoms and delayed worsening of depressive symptoms. These findings highlight the importance of assessing cycle phase and symptom change for improved prediction of proximal SI and suicide risk. Future research should examine suicidality during reproductive transitions (e.g. puberty and menopause) for at-risk women, as this data suggests that ovarian hormone fluctuations may significantly alter proximal suicide risk in this population.

2. RISK FACTORS OF SUICIDE IN TREATMENT-SEEKING ADULTS WITH OPIOID USE DISORDER

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Background: Life expectancy in the U.S. has declined for three years in a row, fueled largely by a record number of suicides and opioid overdose deaths. Although substance use disorder in general is known to increase suicide risk, opioid use disorders (OUD) have a distinctly strong relationship with suicide as compared with other substances. Around a third of individuals with OUD report a lifetime suicide attempt. However, to date, research on suicide risk in OUD is largely at the population level. In the current study, we examined the risk factors associated with history of suicidal behavior (SB) in treatment-seeking individuals with OUD.
Methods: Participants (N=570; 29.6% female; 17.4% Hispanic) were recruited through a multicenter, open-label, randomized trial to compare the effectiveness of extended-release naltrexone versus buprenorphine-naloxone. Participants were 18 years or older, had Diagnostic and Statistical Manual of Mental Disorders-5 opioid use disorder, and had used non-prescribed opioids in the past 30 days. Exclusions included serious current suicidal or homicidal behavior or other serious psychiatric, substance use or medical disorders. Logistic regression models were conducted to compare baseline demographic and clinical characteristics between OUD patients with lifetime history of suicidal behavior (OUD+SB) with those without such history (OUD-SB). All models were adjusted for site as a random effect. All hypothesis tests were two-sided with a significance level of α=0.001 to correct for multiple comparisons.

Results: Ninety-four participants (16.5%) endorsed history of suicidal behavior. OUD patients with history of suicidal behavior demonstrated significant degree of comorbid psychiatric disorders and history of stressful life events. Specifically, they were significantly more likely to have comorbid major depressive (OUD+SB= 46.8%; OUD-SB= 28.4%), bipolar (OUD+SB= 25.5%; OUD-SB= 11.6%) and anxiety (OUD+SB= 63.8%; OUD-SB= 41.4%) disorders, history of physical (OUD+SB= 72.3%; OUD-SB= 34.3%) and sexual (OUD+SB= 54.8%; OUD-SB= 21.3%) abuse, compared with those without history of suicidal behavior (all $p<0.001$). Demographic characteristics, duration and type of abused opioid, comorbid other substances abuse, and smoking status did not significantly differentiate the two groups.
Discussion: Comorbid mood and anxiety disorders, and history of physical and sexual abuse may be significantly associated with suicidal behavior in opioid abusing individuals. These findings are consistent with prior studies on methadone-maintenance OUD patients. Overall, suicide risk factors in OUD patients parallel those reported in general population. What is striking, however, is the extremely high sample prevalence of these risk factors among opioid users, which may have contributed to the high rate of lifetime suicidal behavior for participants in the current study. Clinicians should carefully assess suicidality in OUD patients who have comorbid mood and anxiety disorders or histories of abuse. This may help in curbing the high suicide rate in this population.

3. PREDICTORS OF SHORT AND LONG TERM RECURRENCE OF SUICIDAL BEHAVIOR IN BORDERLINE PERSONALITY DISORDER

Demián Rodante[1], Leandro Grendas[1], Soledad Puppo[1], Patricia Vidjen[2], Alicia Portela[2], Sasha Rojas[3], Chiapella Luciana[4], Federico M. Daray[1], Federico Daray*[5]

[1]Institute of Pharmacology - School of Medicine - University of Buenos Aires, [2]José Tiburcio Borda Hospital, [3]University of Arkansas, [4]National Scientific and Technical Research Council (CONICET), [5]University of Buenos Aires

Background: Borderline personality disorder (BPD) is the most diagnosed and studied personality disorder among the clinical population. The lifetime risk of suicide among patients with BPD is up to 10%, a suicide mortality rate 50 times higher than the general population. Understanding how these risk factors change across time and how they interact could help inform suicide prevention strategies among patients with BPD and recurrent suicidal behavior (SB).
The aims of the present study were as follows, 1) determine the incidence of SB (suicide reattempts and death by suicide) among high risk BPD patients, 2) identify predictors for short and long term recurrence of SB, and 3) measure change of predictors across time and interactions that increase SB risk.

Methods: A multicenter prospective cohort study was designed to compare data obtained from 136 patients admitted to the emergency department for current suicidal ideation (SI) or a recent suicide attempt (SA). Subjects were clinically evaluated and monitored for a new suicide attempt (SA) or suicide during a 24-month follow-up period.
Results: The incidence of a new SA was 25.63 events/100 persons-year and of suicide was 0.66 events/100 person-year. Child sexual abuse (CSA) was the only significant predictor throughout the complete follow-up period. The absence of prior psychiatric treatment predicts the recurrence of SB in the first 6 months of follow-up. Patient age, poor psychosocial functioning before hospitalization, age at first SA, and being a multiple suicide attempter

increased risk of SB recurrence at the long-term period (24th month). In addition, there was an interaction between CSA and poor social functioning that increased the risk of SB.
Discussion The risk of recurrence was higher during the first 6 months. Risk factors at 6 and 24 months vary. These findings are important for implementing suicide prevention strategies.

4. THE RELATIONSHIP BETWEEN SHORT-TERM AMBIENT AIR POLLUTION AND SUICIDE DEATH IN UTAH: THE MODERATING ROLE OF FAMILIAL RISK

Amanda Bakian*[1], James VanDerslice[1], Danli Chen[1], Brandon Callor[2], Yue Zhang[1], Zhe Yu[1], Daniel Mendoza[1], Hilary Coon[1]

[1]University of Utah, [2]Utah Office of the Medical Examiner

Background: Suicide is the tenth leading cause of death in the U.S and the eighth in Utah. While suicide's etiology is complex, it is widely hypothesized that interactions between an underlying genetic predisposition and proximal environmental factors are in suicide's causal pathway. Growing evidence suggests that short-term ambient air pollution exposure is a risk factor for suicide. In a previous study, we reported a 20% increased risk of suicide following short-term exposure to nitrogen dioxide (NO2) and a 5% increased risk following short-term exposure to fine particulate matter (PM2.5) among suicide decedents from Salt Lake County, Utah. Moreover, research points to heterogeneity in a person's susceptibility to suicide death following exposure to air pollution based on currently unknown underlying individual, familial, and genetic characteristics. The objectives of the current study are to 1) Investigate the relationship between suicide and short-term exposure to ambient NO2, ozone (O3), and PM2.5 in a Utah-wide sample of suicide decedents, and 2) Determine how the relationship between suicide risk and short-term exposure to ambient air pollutants is moderated by a decedent's familial risk of suicide.
Methods: Information on all Utah suicide deaths from 2000-2014 was made available through the Utah Office of the Medical Examiner (N = 5862). Estimated exposure to average daily NO2, PM2.5, and O3 at decedents' residence at time-of-death was categorized into quartiles. Decedents were linked to genealogical information extending back to the 18th century in the Utah Population Database and their extended familial risk of suicide was estimated using the familial standardized incidence ratio. A bi-directional time-stratified case-crossover design with a 21-day stratum length was used to estimate the odds ratio (OR) of suicide following short-term exposure to daily average NO2, PM2.5, and O3 with the lowest quartile of exposure serving as the reference. Multiple conditional logistic regression models were fit considering daily average air pollutant exposure and adjusted for average temperature, air pressure, and length of day on the day of (lag 0) and each of the five days (lags 1-5) preceding the suicide. Models were stratified based on whether the suicide case had a a) high, b) low, or c) unknown extended familial risk of suicide.
Results: Significantly increased odds of suicide were associated with exposure to the 2nd (OR: 1.13; 95% confidence interval (CI): 1.02-1.25), 3rd (OR: 1.15; 95% CI: 1.03-1.28) and 4th (OR: 1.13; 95% CI: 1.01-1.27) quartiles of daily average PM2.5 on lag 4. Similarly, significantly higher odds of suicide were associated with exposure to the 3rd (OR: 1.18; 95% CI: 1.04-1.34), and 4th (OR: 1.26; 95% CI: 1.09-1.46) quartiles of daily average NO2 on lag 4. ORs associated with exposure to the 4th quartile of PM2.5 and NO2 (on lag 4) were 28% and 37% higher, respectively, compared to the 1st quartile in cases with high extended familial suicide risk while no association was found between PM2.5 and NO2 exposure and suicide in cases with low or unknown extended familial suicide risk.

Discussion: Mounting evidence from geographically, meteorologically, and culturally diverse regions including Utah supports a relationship between short-term ambient air pollution and suicide. High extended familial risk of suicide is an indirect measure of increased genetic risk as the likelihood of sharing similar environmental risks among very distant relatives is low. The finding that cases with high extended familial suicide risk may be especially susceptible to short-term ambient air pollution exposure suggests that air pollution may be particularly harmful in more genetically vulnerable individuals.

5. VIOLENCE INVOLVEMENT: DIFFERENTIATING SUICIDES WITH AND WITHOUT SUICIDE ATTEMPT HISTORIES

Steven Stack*[1]

[1]Wayne State University

Background: A suicide attempt is a key predictor of death by suicide. A classic Meta-analysis of 240 papers by Harris & Barraclough (1997) reported that subjects marked by a suicide attempt are 38 times more apt to die by suicide than those who are not. However, it is also true that a majority of deaths by suicides have no suicide attempt history (e.g., Fushimi, et al., 2006; Nordentoft et al, 2011). There is very little work on what distinguishes these two pathways to suicide. A previous paper reported that violence involvement was an important distinguishing characteristic between ideators & attempters (Stack, S., 2014). Based on Joiner's (2005) IPTS ACS or the acquired capability for suicide. painful experiences can desensitize the individual to violence against oneself. I extend the notion of ACS to violence. The central hypothesis is: H1. Violence perpetration distinguishes between suicides with and suicides without a suicide attempt history.
Methods: All data are taken from the National Violent Death Reporting System (NVDRS). These CDC data cover a representative sample of all suicides in 17 reporting states (N=30,570). They are from a variety of county level sources including coroner & medical examiner reports, death certificates, police reports, child fatality reviews, hospital reports, and abstractor reports. The dependent variable is a dichotomy: death by suicide without a previous attempt (=1) and all other suicides (=0). The key independent variable is whether or not the deceased was a perpetrator of violence (0, 1). Following previous work on the NVDRS (e.g., Stack & Rockett, 2017), controls are incorporated for 12 demographic variables (e.g., race, sex, marital status), 8 stressful life events (e.g., financial, job, legal, marital problems), 12 psychiatric markers (e.g., toxicology tests for alcohol & drugs, depression, current mental health treatment), and method of suicide. Given the dichotomous dependent variable, multiple logistic regression techniques are appropriate.
Results: Controlling for the other constructs, violence perpetrators were 1.30 (CI: 1.07, 1.57) times more apt to complete suicide with no suicide attempt history than non-perpetrators. Females were 45% less apt (CI. 50, .58) than males to die by suicide without a suicide attempt history. Persons over 65 were 1.96 times more apt than others to die by suicide directly with no attempt history. Only 3 stressful life events distinguished between the suicide with and without attempt history (e.g., intimate partner problems, OR= .84, CI: .77, .91) with such events lowering the odds of a direct path to suicide with no previous attempt. 7 of 12 psychiatric predictors distinguished suicides with vs. without attempts, all lowering the odds of suicide with no previous attempt. Suicides by firearms were 1.77 times (1.44, 2.17) more apt than other methods to lack any suicide attempt history. The model explained 22.4% of the variance and correctly classified 82.69% of the cases.

Discussion: Violence involvement helps to distinguish those suicides with vs. those without a previous attempt. This is consistent with the ACS theorem of Joiner's IPT. Persons bypassing a previous suicide attempt are apt to be males, the elderly, and persons who use firearms as a method of suicide. Importantly, suicides with no attempt history were much less apt to be marked by traditional psychiatric predictors such as depression and the presence of any mental disorder. The psychiatric model may be best applied to those cases marked by a history of suicide attempts. In addition, stressful life events did not generally distinguish between the two groups of suicides. Caution needs to be exercised in extrapolating risk of a suicide death on the basis of a suicide attempt.

6. SUICIDE RATES AND RISK RATIOS IN PERSONS WITH OR WITHOUT CONTACT WITH SECONDARY MENTAL HEALTH SERVICES IN NORWAY

Fredrik Walby*[1], Anine Therese Kildahl[1], Martin Myhre[1]

[1]National Centre for Suicide Research and Prevention - University of Oslo

Background: Suicide is a complex and multi-faceted event, but mental illness is the most prominent risk factor for suicide. To the best of our knowledge, this is the first study that reports suicide rates of person in contact with all the different secondary mental health services in a nation-wide study and that investigates the differences in suicide rates within these services and the effect on suicide rates in the remaining general population.
Methods: We linked all suicide deaths in Norway between 2010 and 2016 (N = 3986) from the Cause of Death Registry with the Norwegian Patient Registry. The sample was split into persons with and without contact with secondary mental health services (mental health care, substance misuse services and private mental health specialists) in the year before suicide. We estimated the prevalence, age-standardized rates, and population attributable risk (PAR) for both groups stratified by gender.
Results: We found significantly different age-adjusted suicide rates in persons with (124.05 per 100 000 patients [117.95 – 130.48]) and without (6.98 per 100 000 inhabitants [6.69 – 7.28]) contact with secondary mental health services last year. The suicide rates by sector was 128.18 in mental health care, 188.26 in substance misuse services, and 52.81 in private mental health specialist contact last year. Suicide rates were higher in males than females in all the secondary mental health services, but rate ratios and PAR were higher in females than males. Suicide rates in females without contact with services the year before suicide was particularly low (3.25 per 100 000).
Discussion: The results from this study highlight that suicide rates, at least in a high-income country with easy access to care, vary enormously between different groups and according to gender. Such knowledge should inform both the development of and prioritization of different prevention efforts. Suicide prevention interventions on the general population level need to focus more on males not in contact with services.

Monday, October 28, 2019

1:30 PM – 3:00 PM

CONTEMPLATIONS FROM LARGE DATA SETS

Americana Ballroom 1-2

Chair: Cynthia Classen

1. DYSFUNCTION OF MULTIPLE COMPONENTS OF THE STRESS RESPONSE DIFFERENTIATES SUICIDE IDEATORS AND SUICIDE ATTEMPTERS

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

Background: The stress response may provide critical psychobiological information regarding the transition from suicidal thought to action. While most studies in these at-risk patients have focused on the cortisol response alone, the Trier Social Stress Test (TSST) paradigm can be used to probe functioning of multiple components of this system including the HPA axis and the sympathetic adreno-medullary system (SAM).
Methods: A modified TSST was administered to 102 unmedicated patients with current major depressive episode (24 with prior suicide attempt, 44 without past attempt but with current suicidal ideation, and 34 with no suicidal thinking or attempt) as well as 75 healthy volunteers. Salivary cortisol, □α-amylase and heart rate were collected pre-stress and at five timepoints after. Heart rate, mood and subjective ratings were also collected.
Results: Groups differed in cortisol response across assessment points (F[12,680]=1.78, p=.048). Relative to ideators, past attempters had later time to peak (p = .032) and tended to have higher peak cortisol. Groups also differed in α-amylase levels (F[3,139]=4.07, p=.008). Relative to ideators, past attempters had lower baseline α-amylase (p = .011) and lower overall α-amylase output (AUC with respect to ground, p = .007).
Discussion: Components of the stress response may represent critical biological factors differentiating those who act upon their suicidal ideation. Diminished α-amylase together with a later and higher cortisol response appeared to be associated with risk of acting on ideation. Conversely, a higher α-amylase level and an earlier onset stress response appeared to be protective in the context of ideation. The timing and synchrony of these components of the stress response system may be critical in terms of adaptive behavior.

2. LATENT CLASS ANALYSIS OF BIPOLAR DISORDER SYMPTOMS AND SUICIDAL IDEATION AND BEHAVIORS

Josephine Au*[1], Ana Martinez de Andino[1], Yara Mekawi[1], Madison Silverstein[1], Dorian Lamis[1]

[1]Emory University School of Medicine

Background: Individuals with bipolar disorder are at increased risk of dying by suicide compared to those with unipolar depression and healthy controls (Goldstein et al., 2012). Previous studies have shown that depressive symptoms, but not manic symptoms, are predictive of suicidal ideation and behaviors (Michaels, Balthrop, Pulido, Rudd, & Joiner, 2018; Ryu et al., 2010). Some studies also found that mixed states of depression and mania are related to increased risk of suicide (Baldessarini et al., 2012). The aims of this study were to statistically uncover subgroups of patients with bipolar disorders and examine how such

subgroups are related to concurrent and prospective suicide risk. We hypothesized that (1) There would be subgroups of patients who were in depressed, manic, and mixed states, and that (2) Those who were in depressed and mixed states would have significantly higher concurrent and subsequent suicide risk.

Methods: Data was collected from an intervention study with primarily underserved patients who were screened with Mood Disorder Questionnaire (Hirschfeld, 2002) for bipolar I and II disorders (N = 150). Using latent class analysis, subgroups of bipolar disorder patients were generated based on their demographics (e.g., age, race, gender) and baseline ratings of the Beck Depression Inventory – II (BDI – II; Beck, Steer, & Brown, 1996) and the Altman Self-Rating Mania Scale (ASRM; Altman, Hedeker, Peterson, & Davis, 1997). They also completed the Beck Scale for Suicide Ideation (BSSI) and the Suicide Behavior Questionnaire Revised (SBQR) at baseline and six weeks after baseline.

Results: Based on the Bayesian Information Criterion and bootstrap likelihood ratio test using the TECH14 command in Mplus, the following four-class model was the most robust: 1. Mild symptom (low in both depressive and manic symptoms) (n = 23) 2. Moderately depressed (n = 48), 3. Manic (had the highest ratings in all 4 ASRM items) (n = 22), and 4. Depressed (highest ratings in all BDI-II items) (n = 57) subgroups. The Depressed subgroup reported the most suicidal ideation and behavior, followed by the Manic, Moderately Depressed, and Mild subgroups.

Discussion: Only two out of the three hypothesized groups (i.e., depressed, manic, mixed) were uncovered from LCA (i.e., Depressed and Manic subgroups). In addition, two other subgroups were identified from LCA (Moderately Depressed and Mild). Consistent with our second hypothesis, those who had the highest ratings in depressive symptoms at baseline reported higher levels of concurrent and subsequent suicidal ideation and behaviors than the other three subgroups, followed by the group with the highest manic symptom ratings. However, the Manic subgroup conferred higher concurrent and prospective suicide risk than the Moderately Depressed subgroup, despite that the latter group had higher BDI-II ratings. These results highlight the importance of attending to the severity of both manic and depressive symptoms - rather than the presence of either mania or depression - to determine suicide risk.

3. LATENT CLASS PROFILES OF SERUM FATTY ACIDS ARE ASSOCIATED WITH RISK OF SUICIDE IN MILITARY PERSONNEL

Arthur Ryan*[1], Wendy Ingram[2], Holly Wilcox[3], John Umhau[4], Marjan Ghahramanlou-Holloway[5], Patricia Deuster[5]

[1]VISN 5 MIRECC / Baltimore VA, [2]Johns Hopkins School of Public Health, [3]Johns Hopkins Schools of Public Health and Medicine, [4]United States Food and Drug Administration, [5]Uniformed Services University of the Health Sciences

Background: Fatty acids are essential to the brain's development and proper functioning. In military personnel, serum fatty acid levels have been shown to differ between suicide decedents and controls. Suicide decedents evinced lower levels of the Omega-6 dihomo-gamma-linolenic acid (DGLA), the Omega-3's eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), and the saturated stearic acid (SA). Conversely, Suicide decedents showed increased levels of the unsaturated palmitoleic acid (PA) and vaccenic acid (VA). In this study, we conducted a latent class cluster analysis (LCCA) to identify latent classes of serum fatty acid levels in a military personnel sample. Once those latent classes were identified, we tested whether those classes were differentially likely to die of suicide during their military service.

Methods: Prospectively collected samples stored by the Armed Forces Health Surveillance Center from 800 active duty suicide decedents and 800 matched controls (N = 1600) were assayed for levels of various fatty acids. Based on previous research employing this dataset, we selected for analysis 6 fatty acids that were previously associated with suicide risk (DGLA, EPA, DHA, SA, PA, and VA). We employed these fatty acid concentrations in a latent class cluster analysis (LCCA) using all 1,600 individuals. LCCA is a data-driven statistical method that attempts to identify intra-individual constellations of observed variables that reflect underlying latent classes (i.e., subgroups) within the sample. LCCA was conducted using the "mclust" package in R. The mclust package identifies a best fitting Gaussian finite mixture model using an expectation-maximization algorithm. After the LCCA identified latent classes, we conducted a chi-square test to determine whether suicide decedents and controls were differentially represented across the classes. Following a significant omnibus result, we conducted individual chi-square tests to determine whether suicide descendants were significantly over or underrepresented within the individual classes.
Results: The LCCA identified an ellipsoidal, equal shape and orientation (VEE) Gaussian distribution with six classes as the best fitting model (log. likelihood = 39,184, n = 1,587, df = 63, BIC = 77,874, clustering table = 947/183/170/160/88/39). The omnibus chi-squared test showed that suicide decedents were unequally represented among the classes, chi-square (5, N = 1,600) = 15.42, p = .009). Individual chi-square tests demonstrated that suicide decedents were significantly underrepresented in two classes, the 183-member class (73 suicides, prevalence ratio (PR) = 0.78) and the 170-member class (72 suicides, PR = 0.83). The 183-member class was characterized by elevated levels of DGLA and SA and lower levels of PA and VA. The 170-member class was characterized by elevated levels of DHA, EPA, and SA with lower levels of PA and VA.
Discussion: Our LCCA identified two profiles of serum fatty acids that were associated with a decreased risk of suicide. Both of these profiles were characterized by above average levels of the saturated fatty acid SA with lower than average levels of the unsaturated fatty acids PA and VA. The 183-member class was additionally characterized by a marked elevation of the Omega-6 DGLA. In contrast, the 170-member class was characterized by marked elevations of the Omega-3's DHA and EPA. These fatty acid profiles may shed light on some of the metabolic and immune pathways associated with risk for suicidal behavior suicide. Replication of these findings may inform future intervention research targeting the molecular pathways associated with these fatty acids.

4. NONFATAL SUICIDE ATTEMPTS: WHERE'S THE DATA?

Cynthia Claassen*[1], Bethany Hughes[1], Michael Schoenbaum[2], Holly Hedegaard[3], Olla Elbasheer[1]

[1]John Peter Smith Hospital Behavioral Health, [2]National Institute of Mental Health, [3]Centers for Disease Control and Prevention

Background: While national estimates are published each year, there is currently no way to know how many suicide attempts occur in many parts of the U.S at local, state, and regional levels. Multiple past studies suggest that the single most salient predictor of future suicide is a prior, nonfatal suicide attempt. However, without a better understanding of the epidemiology of nonfatal attempts at the local level, information of value to preventionists such as the following remains unknown:

a) Do nonfatal attempt rates go up when suicide rates rise?

b) Do parts of the country with more deaths also have more nonfatal attempts?

c) What kinds of suicide prevention efforts are most effective in lowering rates of nonfatal suicide attempts?

Some -but not all - states have started to collect data about suicide attempts treated in hospital emergency departments within their geographic boundaries. However, there is no national source that identifies which states are collecting these data, precisely what data are being collected, or how injury preventionists can access the information. This project sought to answer questions:

1) How many state-level data collection processes now exist that include counts of suicide attempts?

2) Under what state-level authority are these data being collected and how can they be accessed by suicide prevention groups?

The project received exempt status from the North Texas Regional IRB and was conducted by a local working group under direction of the United States' National Action Alliance for Suicide Prevention Data and Surveillance Task Force (DSTF).

Methods: Suicide Attempt Data: The CDC identifies hospital billing forms as a reliable source of nonfatal suicide attempt data. If these data were uniformly available for every U.S. state, a more comprehensive understanding of the epidemiology of nonfatal suicide attempts would be available.

A telephone survey was conducted among state-level personnel involved in collection of hospital-based administrative claims data to determine data collection status (voluntary, mandatory, no collection) and administrative mechanism authorizing collection (voluntary, mandatory; inpatient only; inpatient and ED). Copies of state legislative/administrative directives requesting these data were collected and analyzed.

We intend to use the data collected via this survey of states to produce two white papers which will be submitted to the DSTF and Action Alliance leadership. These white papers will serve as the basis for further DSTF plans to encourage "optimization" of state-level claims datasets and to ensure their utility for state-level suicide prevention initiatives.

Results: Forty-nine states plus the District of Columbia responded to the survey. Results suggest that an increasing number of states are collecting ICD-10 clinical management diagnoses on hospital discharge and ED patients. However, only approximately half the states are requiring that External Cause of Injury diagnosis codes also be reported. Although several states show good rates of External Cause reporting without mandates, reliable reporting of suicide attempts is therefore only guaranteed in about half of all U.S. states.

Discussion: In the past 15 years, an increasing number of states have begun requiring that healthcare systems report the number of suicide attempts treated in their system. However, in 2019, over 50% of all states still do not require the kind of reporting that would ensure accurate counting of suicide attempts or any other type of injury. For suicide prevention efforts to progress, uniform reporting needs to be in place nation-wide.

5. USE OF LONG GUNS IN MARYLAND SUICIDES, 2003-2018

Paul Nestadt*[1]

[1]Johns Hopkins University School of Medicine

Background: Firearms account for the majority of American suicides, largely because of their lethality and ease of access. In the US, long gun sales are far less regulated than handgun sales. Age limits are lower for long guns; an unlicensed firearm dealer may not sell a handgun to anyone under 18, but there is no such limit for rifles or shotguns. States may choose to expand upon federal gun laws, but often maintain lower standards for long gun sales. Maryland and Pennsylvania, for instance, require background checks for private handgun sales but not for long guns. Although Maryland enforces a 7-day waiting period for handgun purchases, long guns can be attained immediately. Many suicides are impulsive and may be averted by waiting periods, so the increased accessibility of long guns make them a unique concern. This is particularly true in rural areas, where long guns are most prevalent and suicide rates are highest and are driven by gun suicides. In 2019, the Maryland legislature failed to pass a bill that would have closed the long gun loophole in background checks, partially due to a lack of evidence that a significant proportion of firearm suicides were completed with long guns.
Methods: Using police narratives attained through the Office of the Chief Medical Examiner of Maryland, we coded the type of gun used, as well as several clinical and demographic variable, for all 3,994 non-homicide gun deaths in Maryland from 2003-2018, including 3,931 suicides, 29 accidents, and 34 deaths of undetermined manner. Proportions of gun suicides utilizing long guns were calculated separately by demographic groups and trended over time. Urban-rural differences were determined using the National Center for Health Statistics' classification system. Logistic regression was used to calculate odds ratios of long gun to handgun suicides across the urban-rural spectrum, controlling for decedent demographics.
Results: From 2003-2018, 28.4% of Maryland gun suicides used long guns. Long guns were also responsible for 20.7% of accidental gun deaths and 35.3% of gun deaths of undetermined manner. In the most rural counties, 51.6% of gun suicides were by long gun, compared to 16.8% of decedents in the most urban counties. Younger decedents were more likely to use long guns, totaling 44.6% of decedents 18 or younger, compared to 28.1% of decedents over 18. There was no clear trend in overall long gun use over the 16-year study period.
In unadjusted analysis, the use of long guns was 5.3x more common in the most rural counties compared to most urban (OR=5.3, 95%CI 3.2-8.8). Male firearm suicide decedents were more than twice as likely to use a long gun (OR=2.4, 95%CI 1.8-3.2), as were whites (OR=2.3, 95%CI 1.8-2.8) compared to non-whites. Decedents who died with a blood alcohol level over 0.08 were more likely to use a long gun (OR=1.2, 95%CI 1.03-1.44), but there were no differences between groups by use of opioids or psychiatric medications.

Compared to the most urban (large central metro) counties, firearm suicide decedents in most rural (non-core) counties were 4.2x more likely to use long guns (OR=4.2, 95%CI 2.5-7.0) after adjusting for age, sex and race. There was a consistent increase in the odds of long gun use as rurality increased.

Discussion: Long guns are used in a large proportion of Maryland firearm suicides, particularly in rural areas, and are used most commonly in young, white, male suicides. Lethal means counseling and suicide prevention efforts should include assessments for long gun access in addition to handguns. Long guns remain the most easily attainable firearms in the state, and legislators should consider their impact when exempting them from standard background checks, waiting periods, and age limits.

6. A LATENT PROFILE ANALYSIS OF NSSI CHARACTERISTICS AND FOUR-MONTH OUTCOMES IN EMERGENCY DEPARTMENT YOUTH

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Background: Non-suicidal self-injury (NSSI) is alarmingly prevalent in youth. Expanding research focusing on individual aspects of NSSI behavior, recent studies have begun to identify distinct NSSI typologies, or profiles, of NSSI characteristics. For example, studies with undergraduates have revealed NSSI profiles differing in methods, severity, and function of NSSI (Klonsky & Olino, 2008; Case et al. 2019). Among adolescents, research with latent methods has been primarily conducted in school-recruited youth (Somer et al., 2015; Xin et al., 2016), and examines mixed suicidal and nonsuicidal self-injury profiles (Herres et al., 2018). Less is known about NSSI-specific profiles in high risk clinical samples of youth. The current short-term prospective study aims are to (1) identify latent profiles of NSSI behavior and function characteristics in self-injurying youth presenting to a psychiatric emergency department (ED) and (2) compare these latent profiles on psychiatric and self-injury outcomes assessed 4-months after their index ED visit.

Methods: The sample included N= 193 participants (Mean age = 17.80 years; 68.2% female) presenting to a psychiatric ED in a Midwestern city; the sample was restricted to youth with an NSSI history. An adapted self-report version of the NSSI section of the Self-Injurious Thoughts and Behaviors interview (SITBI; Nock et al., 2007) was administered at baseline. Multiple clinical/psychiatric outcomes (e.g., ED visits and hospitalizations; NSSI engagement) were assessed at 4-month follow-up. For Aim 1, latent profile analyses were tested in M Plus using 8 NSSI indicators. For Aim 2, profiles were compared across psychiatric and self-injury outcomes using ANCOVAs, covarying for age, sex, and lifetime suicide attempt history.

Results: Primary aim findings revealed that a 4-class latent model demonstrated significant and optimal fit. The four class model of NSSI was characterized by the following profiles: 1. A high-severity NSSI group with earlier age of onset and lower confidence resisting NSSI (20.5%); 2. A moderate-severity NSSI group (28.5%); 3. A group endorsing high levels of social communication functions for NSSI (29.1%); and 4. A group minimally endorsing all functions for NSSI (21.9%). In ANCOVA analyses, significant differences on follow-up outcomes existed by profile. Most notably, the severe NSSI group (group 1) reported greater NSSI engagement and ED visits and hospitalizations for suicide ideation/attempt at follow-up than other profiles.

Discussion: The present study revealed four distinct typologies of NSSI characteristics in a psychiatric ED-recruited youth sample. Primary findings converge with previous studies, indicating a spectrum of NSSI profiles exist with varying severity and reasons for NSSI. Novel to the current study, findings revealed baseline NSSI profiles differed in multiple self-injury and psychiatric outcomes at a 4-month follow-up. The findings indicate a severe NSSI group may be in particular need of intensive clinical intervention and monitoring following a psychiatric ED visit.

THE BIOLOGY, BRAIN, AND BEHAVIOR SURROUNDING SUICIDE

Poinciana Salon 3-4

Chair: Anthony Gifuni

1. ARE ADOLESCENT SUICIDAL BEHAVIORS RELATED TO DIFFERENCES IN CORTICAL THICKNESS DEVELOPMENT?

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Background: Suicidal behaviors represent a major source of adolescent mortality and morbidity. During adolescence, cortical grey matter undergoes significant maturational changes detectable at the macrostructural level. Structural anomalies emerging during adolescent brain development could favor suicidal vulnerability.
Methods: Three groups of adolescents were recruited: patients with a depressive disorder and a history of suicide attempts (SA; N=33, mean age=16.2±1.01, females=79%), psychiatric controls with a depressive disorder and without a history of suicide attempt (PC; N =37, mean age 16.1±1.48, females=78%), and healthy controls (HC; N =30, mean age=15.2±1.44, females=73%). T1-weighted structural scans were acquired with 3T magnetic resonance imaging. Cortical thickness was measured in 68 regions bilaterally, after surfaces reconstruction with FreeSurfer 5.3. Linear regression modeling examined the effect of group, age, and their interaction while controlling for gender and IQ.
Results: Significant differences in the interaction between age and cortical thickness were found in SA compared to PC and HC ($F>4.0$, $p<0.05$) in the right insula, left superior temporal and right inferior temporal cortex. Post-hoc analyses revealed that instead of declining with age, cortical thickness was correlated positively with age in SA only. Comparisons of regional cortical thickness at the level of the whole group (controlling for age) did not reveal any significant difference (FDR threshold= 0.05).
Discussion: This study suggests that deficient structural maturation in regions implicated in social cognition, visual perception and emotions may contribute to a heightened suicide risk during adolescence. Longitudinal studies and larger sample sizes are necessary to confirm the regional specificity of these findings.

2. BRAIN ENTROPY IN ADOLESCENT GIRLS WITH AND WITHOUT NON-SUICIDAL SELF-INJURY

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Background: Non-suicidal self-injury (NSSI) is a common problem in adolescents and is associated with an increased risk of future suicide attempts. Suicide prevention efforts stand in need of addressing this issue. Both suicidal and non-suicidal thoughts and behaviors are associated with rigid thinking, getting "stuck" on negative thoughts, and having a limited capacity for imagining alternative strategies to finding relief of suffering other than self-harm. Calculation of the entropy of brain signals from resting-state fMRI is a novel approach that can reveal insights about neural flexibility which may shed light on neural abnormalities in adolescents with suicidal and non-suicidal self-injury.
Methods: Adolescent girls aged 12-16 with and without NSSI were recruited into a neuroimaging study. The brain imaging protocol included a 12-minute resting-state fMRI scan

with the following parameters: voxel size 2x2x2mm3, TR=0.8s, multiband factor=8. Preprocessing steps utilized the Human Connectome Project minimal processing pipeline (motion correction, geometric distortion correction, removal of noise from physiological signals.) We performed a wavelet transform of the ROI time courses, focusing on the level 3 wavelet coefficients, which corresponds to a frequency range of approximately 0.08-0.16 Hz. Shannon Entropy was calculated on regions of interest (ROIs) within fronto-limbic circuitry including amygdala, hippocampus, nucleus accumbens, thalamus, caudate, putamen, Brodmann Area 25 (BA25), insula, rostral and anterior cingulate cortex (rACC). Entropy values were correlated the following clinical measures: Beck Scale for Suicidal Ideation (BSSI), and the Beck Depression Inventory (BDI).
Results: Data from 50 adolescents (30 with NSSI) were analyzed. Across all regions examined, a trend was observed where adolescents with NSSI showed lower entropy than those without NSSI; this was most significant in right amygdala (t=2.5, p=0.02). Left BA25 was inversely correlated with BSSI score (r=-.3, p=0.02), and with total BDI score) R=-0.3, p=0.04); similar inverse correlations with depression and suicide ratings were observed with several other ROIs at a trend level.
Discussion: We report preliminary evidence supporting a relationship between suicidal thinking, self-injurious behavior and depression symptoms with reduced entropy in the signaling patterns of fronto-limbic brain regions in adolescents. Complexity of brain signals has been associated with mental flexibility and creativity; reduced entropy in these adolescents may underlie a propensity to get stuck on negative thoughts about self-harm. If confirmed with additional research, these findings could suggest a potential treatment target for interventions designed to prevent suicide in adolescents.

3. CHARACTERIZATION OF RARE GENETIC VARIANTS INVOLVED IN RISK OF SUICIDE DEATH

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Background: Genetic studies to date have begun to improve our understanding of the biological basis of suicide risk. However, only a small fraction of the genetic variation influencing suicide risk has been accounted for. Here we focus on the role of rare, functionally relevant, genetic variation in the complex genetic architecture of suicide death. Rare variants with a large impact on gene function are key targets for drug development in other complex traits such as familial hypercholesterolemia (high cholesterol) and Autism Spectrum Disorder and are a compelling source of the unaccounted for genetic variation involved in suicide risk. To explore rare variation in suicide death we use the large genetic dataset and resources available in the Utah Suicide Genetic Risk Study (USGRS). Since 1998, the USGRS has collected >6,000 de-identified DNA samples from suicides through a two-decade collaboration with Utah Department of Health's centralized Office of the Medical Examiner. Genome-wide genetic data is now available for >4,300 population-ascertained individuals who died by suicide. Additionally, about 80% of cases in the USGRS have comprehensive electronic

medical record (EMR) data from diagnostic and procedural codes (ICD9/ICD10) allowing for phenotypic description of cases with risk variants.
Methods: We performed a targeted discovery analysis of 30,377 rare variants with potential functional gene consequences, present on the PsychArray BeadChip in 2,672 USGRS suicide deaths and >50,000 ancestry matched controls from the Genome Aggregation Database. Variants were selected for analysis if they passed all QC filters and at least one of three variant annotation tools predicted that the variant had a high impact damaging effect on gene function. Allele frequencies were compared between cases and controls with a Fisher's exact test (Bonferroni adjusted significance P<1.69E-06). A follow-up analysis with an independent control set and discovery cases was then performed to prioritize variants with significantly elevated allele frequencies in suicide cases. Phenotypic attributes of suicide cases with prioritized rare risk variants were then assessed using aggregated ICD codes to define relevant co-occurring psychiatric and medical conditions in EMR data.
Results: We identified nine novel rare variants with high impact predicted gene consequences that are significantly associated with suicide death. These suicide risk variants replicated in an independent control set. Loss-of-function variants were identified in LILRB1 and PLEKHA4 and missense variants were identified in SNAPC1, TNKS1BP1, ADGRF5, PER1, ESS2, SLC25A41 and SPRED1. Disease-related postmortem brain tissue expression results from PsychENCODE showed genome-wide significant expression differences for PLEKHA4 (schizophrenia and autism), PER1 (schizophrenia and bipolar disorder), SPRED1 (autism), and TNKS1BP1 (schizophrenia). Both PER1 and SNAPC1 have other supporting evidence of suicide risk. Pain, depression and accidental trauma were the most common co-occurring conditions in suicide cases with these rare variants.
Discussion: To truly understand risk of suicide death and to implement highly effective interventions that provide appropriate, targeted services to those most likely to die, we must characterize genetic risk factors specifically associated with suicide death. Our study suggests an important role for rare variants in suicide risk. Rare variants can have a critical impact on suicide risk at the individual level. The discovery of rare risk variants in suicide cases and the identification of suicide risk genes is a critical step towards the development of targeted interventions.

4. POTENTIAL ROLE OF BRAIN POLY (ADP-RIBOSE) POLYMERASE 1 (PARP1) IN THE PATHOLOGY OF MAJOR DEPRESSIVE DISORDER AND SUICIDE

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Background: Poly (ADP-ribose) polymerase 1 (PARP1) is primarily recognized as a nuclear enzyme responsible for performing post-translational modification (PARylation) of numerous nuclear proteins, thereby altering their biological activity. An important stimulus that activates PARP1 is a DNA strand break secondary to DNA oxidation, wherein PARP1 works with other nuclear proteins to orchestrate DNA base excision repair. PARP1 expression is upregulated in the face of elevated levels of DNA damage, and drugs that inhibit PARP1 are used therapeutically to facilitate tumor cell toxicity produced by DNA damaging cancer treatments. Because PARP1 activation also facilitates inflammation, PARP1 inhibitors also have anti-inflammatory properties and produce robust neuroprotective effects in CNS disorders in which oxidative stress and damage is thought to play a pathological role, e.g. Parkinson’s disease,

Alzheimer's disease, and ischemia. We recently reported elevated levels of DNA oxidation and upregulation of PARP1 gene expression in postmortem brains from donors that had major depressive disorder (MDD) and that had died primarily by suicide. We also found that PARP1 inhibitors demonstrate antidepressant effects in three different animal models used to search for antidepressant drug effects.
Methods: In this study, we used fluorescence immunohistochemistry to examine the cellular distribution of PARP1 immunoreactivity (ir) in the brain, and then measured PARP1-ir in postmortem prefrontal cortex (BA10) from three groups of age-matched subjects (n=8 per group): psychiatrically normal control (NC), MDD dying by suicide (MDD-S), and MDD dying of medical/natural causes other than suicide (MDD-N). The level of PARP1-ir was estimated as a fraction of a defined region above a threshold that was fixed across treatment groups.
Results: The density of PARP1-ir varied across layers of human BA10 cortex and within subregions of the rat and human hippocampus. In BA10, the highest density of PARP1-ir was in layer 1, whereas the PARP1-ir in the hippocampus was highest in the dentate gyrus granular layer. The intracellular location of PARP1 was anatomically dependent. In all regions, PARP1-ir was found in the nucleus of most if not all cells. However, dense PARP1-ir was also observed in the cell cytosol and processes of a small number of cells in BA10 cortex and hippocampus. Dual immunostaining for PARP1 and GFAP (astrocyte marker) in rat hippocampus demonstrated that a small number of astrocytes demonstrate dense PARP1-ir in the cytosol and proximal processes. The identity of other intensely labeled PARP1-ir positive cells remains unknown. A trend for elevated levels of PARP1-ir in the MDD-S group, but not the MDD-N group, was observed for all areas of BA10 cortex including white matter, reaching significance for only layer 1 ($F=3.86$; $p=0.037$).
Discussion: The discovery of brain cells with cytosolic PARP1-ir suggests possible non-nuclear function(s) of PARP1 and implies that a more detailed cellular analysis of PARP1-ir in MDD and suicide is needed. Elevated PARP1 expression in the MDD-S group may reveal a pathology unique to suicide and separate from MDD, or might relate to the severity of MDD in the MDD-S group. PARP1 is a potentially important therapeutic target for consideration of the development of a novel class of antidepressant drugs.

5. GENOME-WIDE ASSOCIATION STUDY OF TREATMENT-EMERGENT SUICIDAL IDEATION

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Background: Antidepressant treatment has been linked to the onset of suicidal ideation, leading to a black-box warning label. The mechanism of treatment-emergent suicidal ideation (TESI) remains unclear, but genetic factors may play a prominent role. A number of genetic studies, including genome-wide association studies (GWASs) have been conducted on TESI.
Methods: We conducted GWASs of TESI on three sample sets: the STAR*D major deprression cohort ((Sequenced Treatment Alternatives to Relieve Depression; N=421, of which 63 with TESI), STEP-BD bipolar disorder cohort (Systematic Treatment Enhancement Program for Bipolar Disorder; N=307, of which 54 with TESI), and the IMPACT psychiatric patient cohort (Individualized Medicine: Pharmacogenetic Assessment & Clinical Treatment;

N=111, of which 24 with TESI). We conducted the GWASs using PLINK, gene-based and gene-set analyses using MAGMA, and polygenic risk score analysis using PRSice.
Results: We did not find genome-wide significant markers from our GWAS of TESI in any of the three samples. However, our preliminary analysis showed that polygenic scores for TESI in STEP-BD were associated with TESI in the IMPACT sample ($p<0.05$).
Discussion: While we did not find significant results from our current GWAS of TESI, our sample sizes are limiting. We are expanding our GWAS effort to include additional participants from the IMPACT study in which we found 874 participants of which 92 had emergent suicidal ideation through follow-up visits. We will also conduct additional polygenic risk score analyses.

6. ASSOCIATION OF LIPID PROFILE IN COMPLETED SUICIDES: A HOSPITAL BASED CASE- CONTROL STUDY

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Background: Previous research has reported mixed findings on the effect of the altered lipid profile on suicidal behavior. Most of the studies reported on attempted suicide, suicidal threats and few in completed suicide cases. The present study was undertaken to find levels of serum lipids in both suicidal and non-suicidal death cases and to find any correlation with suicidal behavior.
Methods: In this study, 50 suicidal deaths and 50 non suicidal deaths (n=100) were recruited belonging to age group of 19-60 years within 24 hours of death, excluding any known case lipid disorders, drug abuse or ante mortem medical/surgical intervention (if any). 5ml femoral blood was collected for serum separation and preserved at -4o C. The lipid profile (total cholesterol, triglycerides, HDL, VLDL) analysis was done using "Global 240 Analyzer" analyzer at Department of Forensic Medicine, AIIMS, New Delhi, India using manufacturer's protocol. Analysis of the data was done as per the unmatched case-control design using SPSS 21.
Results: Total cholesterol levels were found to be significantly lower ($p = 0.014$) in the suicidal cases (140.700 ± 5.9172) than controls (159.532 ± 4.7059). We found no significant difference among LDL, VLDL, HDL & triglycerides in both the groups. Also, no association of total Cholesterol, triglycerides, HDL, LDL and VLDL with demographic profile was found.
Discussion: Our study supports a positive association between low mean total cholesterol level and suicidal behavior irrespective of age, sex and socio-economic status. This postmortem study results adds to a majority of research showing the association between suicidal behavior and lower total serum cholesterol levels.

SUICIDE AND SUICIDE PREVENTION ACROSS SETTINGS AND POPULATIONS

Poinciana Salon 1

Chair: Jordan DeVylder

1. MENTAL DISORDERS AND SUICIDAL BEHAVIOR IN REFUGEES AND SWEDISH-BORN INDIVIDUALS: IS THE ASSOCIATION AFFECTED BY WORK DISABILITY?

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Background: Among potential pathways to suicidal behavior in individuals with mental disorders, work disability (WD) may play an important role. The current study examined the role of WD (effect modification and mediation) in the relationship between mental disorders and suicide attempt and suicide in Swedish-born individuals and refugees.
Methods: A cohort of 4,195,058 individuals aged 16-64 years, residing in Sweden in 2004 and 2005, whereof 163,160 refugees were followed 2006-2013 with respect to suicide attempt and suicide. Crude and multivariate adjusted risk estimates of suicide attempt and suicide were calculated as hazard ratios (HR) with 95% confidence intervals (CI). The reference groups comprised individuals with neither mental disorders nor WD. WD factors, including sickness absence (SA) and disability pension (DP) were explored as potential modifiers and mediators.
Results: In both Swedish-born and refugees, SA and DP were associated with an elevated risk of suicide attempt in individuals with and without mental disorders. In refugees, the multi-adjusted HRs for suicide attempt in long-term SA ranged from 2.96 (95% CI: 2.14-4.09) (those without mental disorder) to 6.39 (95% CI: 3.21-12.08) (those with a mental disorder). Similar associations were observed in Swedish-born. Elevated suicide attempt risks were also observed in DP. In Swedish-born individuals, there was a synergy effect between mental disorders and SA and DP respectively with respect to suicidal behavior. Both SA and DP were found to mediate the studied associations in Swedish-born individuals, but not in refugees.
Discussion: There is an effect modification between mental disorders and WD for subsequent suicidal behavior in Swedish-born individuals. Moreover, the association between mental disorders and subsequent suicidal behavior is mediated by SA and DP in Swedish-born. Also, for refugees without mental disorder, WD is a risk factor for subsequent suicidal behavior. Particularly for Swedish-born individuals with mental disorders, information on WD is vital in a clinical suicide risk assessment.

2. SUICIDE ATTEMPTS AND EATING DISORDER FEATURES: A MEDIATING ROLE FOR SUICIDE CAPABILITY?

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Background: Individuals with eating disorders (EDs) bear a heightened risk for suicide compared to the general population. However, it is unclear which ED, and which ED features, are most strongly predictive of suicide attempts. Specific features of EDs (i.e., restrictive eating, fasting, binge-eating, purging and other compensatory behaviours), rather than diagnostic categories, may be most helpful for explaining heightened suicide risk. However, little to no studies have examined ED features more broadly. Moreover, previous studies do not address reasons why certain ED features elevate suicide risk. Capability for suicide is one theoretical construct that may explain why individuals with certain ED features may be more likely to attempt suicide. Therefore, the present study examined a wide variety of ED features to determine which are best associated with ideation and attempts and explored the role of capability.
Methods: 387 participants were recruited using MTurk. There was a total of 70 participants with a lifetime history of suicide attempts, 114 with a lifetime history of ideation but no history

of attempts, and 203 with no history of either ideation or attempts (as measured by the Youth Risk Behavior Survey Suicide Screening).
Results: We first examined which ED features (as measured by the Eating Pathology Inventory Scale) distinguished ideators from nonsuicidal participants. Independent samples t-tests revealed small differences between the two groups. Specifically, compared to nonsuicidal participants, ideators were more likely to endorse body dissatisfaction ($d = 0.23$, $p = 0.04$), purging behaviours ($d = 0.27$, $p = 0.03$), and restrictive eating behaviours ($d = 0.39$, $p < 0.01$). We next examined which features distinguished ideators from attempters. Analyses revealed small differences between the two groups; attempters were more likely to endorse restrictive eating behaviours ($d = 0.31$, $p = 0.04$), excessive exercise ($d = 0.20$, $p = 0.04$), and muscle building ($d = 0.32$, $p = 0.04$).

Exploratory factor analysis using a principal-axis factor extraction with promax rotation was conducted to explore the underlying structure of four capability measures ($\chi 2$ (351) = 5952.91, $p < 0.001$; KMO = .88). Analyses revealed a three-factor solution (eigenvalues: 7.6, 3.9, 2.4) which accounted for a total of 52% of the variance. Factor 1 indexed Fearlessness About Death ($\alpha = .92$), Factor 2 indexed Practical Capability ($\alpha = .88$), and Factor 3 indexed Acquired Capability ($\alpha = .80$). Mediation analyses revealed that Practical Capability mediated the relationship between restrictive eating, excessive exercise, and muscle building behaviours and their relationship with suicide ideation. Fearlessness about death and acquired capability did not mediate any relationships.

Discussion: The results of our study suggest that some ED features (body dissatisfaction, purging behaviours, and restrictive eating behaviours) may predict suicidal ideation whereas others (restrictive eating behaviours, excessive exercise, and muscle building) may predict attempts among those with ideation. Further, practical capability (factors that may make a suicide attempt easier or more feasible) accounted for the relationship between the aforementioned ED features and suicide history group. These results support current theories of suicide which emphasize the role of suicide capability as a key factor in the progression from suicidal thoughts to attempts (i.e., 3-step theory, IPTS). While results are preliminary, this is one of the first studies to examine a wide range of ED features in relation to ideation and attempts as well as examine the role of capability, as a broadened construct, in the relationship of ED features and suicide.

3. SELECTIVE AND UNIVERSAL SCREENING FOR SUICIDE RISK IN A PEDIATRIC EMERGENCY DEPARTMENT

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Background: The risk of death by suicide is elevated following discharge from emergency departments, but hospitals generally do not utilize formal screening procedures to predict subsequent risk. The Joint Commission now recommends screening for suicide risk as a patient safety goal. The recent development of the Ask Suicide-Screening Questions (ASQ) instrument allows rapid screening for suicide risk by emergency department staff, without requiring specialty training. However, there has been little prior research on the predictive validity of suicide-risk screens implemented as selective or universal screening in emergency settings. The aims of this study were (1) to determine the validity of the ASQ for predicting subsequent

return visits to the emergency department for suicide-related reasons or death by suicide, and (2) to determine whether screening improves upon the chief complaint in terms of predictive validity and identification of otherwise undetected individuals.
Methods: This prospective cohort study (N=15,003) tested the predictive validity of the ASQ instrument in a pediatric emergency department. It was first implemented as selective screening intervention for youth ages eight and older with behavioral or psychiatric presenting problems (2013-2016, n=4,666) and subsequently implemented as a universal screening intervention for all youth ages eight and older (2017-2018, n=10,337). We used survival analyses and relative risk calculations to determine the predictive validity of a positive ASQ screen within each condition, in terms of associations with subsequent return visits to the ED for suicide-related reasons or death by suicide.
Results: Adjusting for demographics and baseline presenting chief complaint, positive ASQ screens were associated with greater risk of suicide-related outcomes among both the universal sample, hazard ratio (95% CI)=6.81(4.17-11.11), and the selective sample, hazard ratio (95% CI)=4.76(3.50-6.57). Notably, the predictive validity of positive ASQ screens was greatest among the non-psychiatric sub-sample of the universal screening condition, hazard ratio (95% CI)=7.06(3.16-15.79). In the combined universal and selective sample, the 3-month relative risk for a subsequent suicide-related event was RR(95% CI)=17.76(11.98-26.33). Notably, patients that screened positive, despite not presenting to the ED with suicidal ideation or attempt, were disproportionately likely to be Black, $X2(4,n=2241)=11.69$, $p=0.020$, and male, $X2(1,n=2241)=19.25$, $p<0.001$. Only three people died by suicide during the follow-up period, of which two had screened positive on the ASQ, RR(95% CI)=4.50(0.41-49.57).
Discussion: Screening for suicide risk in pediatric emergency departments appears to be an effective method for predicting subsequent risk of suicidal behavior. Both universal and selective screening approaches are effective, with universal screening expending slightly more clinical resources but also yielding greater benefits in identifying those who did not present with ideation or attempt. Future studies should study the impact of screening in combination with other interventions in reducing suicide risk.

4. PREPPED AND READY: MOTIVATING BEHAVIOR CHANGE IN PARENTS FOR SUICIDE PREVENTION

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Background: Suicide is the second leading cause of death for young people in the United States, claiming more than 5,000 lives each year (CDC, 2018). Restricting access to lethal means has proven to decrease rates of completed suicides (Silva, 2012; Kreitman, 1976;Barber, 2014), and yet finding ways to make this a reality in the United States has been difficult. Interventions that provide the tools to accomplish safe storage (i.e. gun lock) are most likely to show significant change (Rowhani-Rahbar, 2016). Even so, most families do not recall having conversations with their health care providers about firearms, and some have reservations about physicians asking about firearms(Garbutt, 2016). Some successful programs focus on providing education to high-risk families (Johnson, 2011), but 82% of youth who die by self-inflicted gunshot wounds are not in mental health treatment when they die (Fowler, 2017). Identifying additional avenues to implement means restriction in the community may be a valuable approach given the rate of suicides for youth in our country continues to climb.

Methods: Parents of children or teenagers were invited to attend a series of nine presentations hosted at local schools, churches and one hospital. One attendee from each household with children was invited to participate in this study that involved three brief surveys completed on smart phones or tablets. The survey included basic demographics, questions about firearm ownership and storage, medication storage, and beliefs about health topics and suicide prevention. The one-hour presentation was provided by a child psychiatrist and covered the following topics: self-care for parents, the teenage brain, screen time, eating disorders, vaping and substance use, suicide rates/prevention and safe storage of lethal means. PowerPoint slides were used, with specific examples included where access to lethal means led to poor outcomes. Immediately following the presentation, the participants completed the post survey emailed to them. The use of the gun lock was demonstrated by the officer and then questions were answered by the psychiatrist for ~10-15 minutes. Upon departure, participants were provided a toolkit that included a lockable medication storage box, a Ziploc bag with kitty litter (for medication disposal), four weekly medication organizers, and a handout with highlights from the presentation. A cable gun lock was also provided to any attendee that wanted one. The final survey was emailed to the participants two weeks later, with two reminders sent two days apart.
Results: Five hundred attendees completed the pre- and post- test, and of those 355 completed the final survey (71%). The sample was 82.9% female, 90.5% Caucasian, 58.3% between the ages of 45-59, 76.9% suburban and 89.8% had a college degree. At baseline, 38.7% reported firearms in the home, while 38% reported firearms ownership at the final survey. At the final survey, 28% of firearm owners (37/134) reported they had used a cable gun lock and 23% (31/134) reported locking up a firearm with another method since the presentation. Fifty-eight percent (205/355) reported they had disposed of old medication while 52% (186/355) reported they had locked up bottles of medication. One hundred percent of attendees agreed they learned valuable information at the presentation.
Discussion: This study provides evidence that educating parents and providing tools can lead to behavior change, although we lacked diversity in our sample. Our analysis will be completed soon as the final surveys are not complete, and we will be able to include more statistics on behavior change among parents. Given parents are not always comfortable discussing firearms with physicians, reaching them in the community may prove to be a viable alternative.

5. ALCOHOL USE DISORDER AND RISK OF SUICIDE IN A SWEDISH POPULATION-BASED COHORT

Alexis Edwards*[1], Henrik Ohlsson[2], Jan Sundquist[2], Kristina Sundquist[2], Kenneth Kendler[1]
[1]Virginia Commonwealth University, [2]Lund University

Background: Alcohol use disorder (AUD) has been identified as a risk factor for suicidal behavior, including suicide completion. To improve efforts at prevention, it is critical to evaluate this association in the context of the psychiatric comorbidity common with AUD, and to clarify its etiology.
Methods: Survival analyses were conducted using a prospective cohort consisting of native Swedes born from 1950-1970. Data were utilized from proband age 15 until 2012 (N=2,229,880) AUD was determined from medical, criminal, and pharmacy registries.
Results: The rate of suicide was 3.54% for women and 3.94% for men with AUD, compared to 0.29% and 0.76% of women and men, respectively, without alcohol use disorder. The population-based unadjusted AUD-based HRs were 37.53 and 16.33 for women and men. After

controlling for sociodemographic factors and psychiatric comorbidity, AUD remained robustly associated with suicide (HR=5.07, 95% CI: 4.27, 6.00 among women; HR=4.45, 95% CI: 4.03, 4.90 among men). Co-relative analyses indicated that familial confounding accounted for most, but not all, of the observed association, as the AUD-associated hazard ratio decreased among discordant pairs of increasing genetic relatedness. Extrapolation to monozygotic twin pairs, a powerful pseudo-control for observational studies, resulted in an estimate of HR=3.7. A substantial and likely largely causal relationship remained after accounting for psychiatric comorbidity. Additional analyses suggested that suicide risk decreases as time elapses after an AUD registration.
Discussion: AUD is a potent risk factor for suicide, with a substantial causal role persisting after accounting for confounding factors. The direct effect of AUD on suicide risk is strongest in the years proximal to the registration. These findings underscore the impact of AUD on suicide risk, even in the absence of other mental illness, and implicate the time frame subsequent to a registration as critical for efforts at reducing alcohol-related suicide.

6. ALCOHOL USE TO COPE WITH NEGATIVE AFFECT MODERATES THE ASSOCIATION BETWEEN DEPRESSIVE SYMPTOMS AND SUICIDAL IDEATION AMONG EMERGING ADULTS

Carlos Yeguez*[1], Ryan Hill[2], Michael Meinzer[3], Jeremy Pettit[1]

[1]Florida International University, [2]Baylor College of Medicine, [3]University of Maryland

Background: High depressive symptoms, alcohol use, and their combination have been identified as robust predictors of suicidal ideation (SI) among adolescents and emerging adults. Additionally, alcohol use as a coping strategy for negative affect (i.e., drinking to cope) has been associated with more prevalent and higher levels of SI. Relying on drinking to cope may create interpersonal problems and reduce the ability to find alternative coping strategies, concerns which have been associated with high levels of SI. The present study is the first to examine whether drinking to cope moderates the relation between SI and depressive symptoms among emerging adults. We hypothesized that drinking to cope would exacerbate the effect of depressive symptoms on SI.
Methods: Our sample included 328 emerging adults, ages 18-25, (mean age = 19.5 years; 73.2% female; 71.3% Hispanic), who reported on SI, depressive symptoms, interpersonal problems (i.e., thwarted belongingness and perceived burdensomeness), past year alcohol use frequency, and their motives for engaging in alcohol use (i.e., coping, conformity, enhancement, and socializing). Our measure of depressive symptoms did not include an item assessing SI. Furthermore, our sample only included individuals who used alcohol at least once in their lifetime as the motives for alcohol use questionnaire was not administered to non-alcohol users. Independent samples t-tests indicated that were no differences in SI ($t = .983$, $p = .326$) or depressive symptoms ($t = .444$, $p = .657$) among individuals who did ($n = 328$) and did not ($n = 83$) complete the motives for alcohol use questionnaire. We evaluated a hierarchical linear regression model with SI as the criterion variable and demographic characteristics (i.e., age, sex, ethnicity), alcohol use frequency, and depressive symptoms in block 1, thwarted belongingness and perceived burdensomeness in block 2, motives for alcohol use in block 3, and the interaction of depressive symptoms and drinking to cope in block 4. All continuous predictor variables were mean-centered and there were no missing data in this sample.

Results: The model including all four blocks accounted for unique variance in SI over and above the variance accounted for in blocks 1-3 (R-squared = .416, F = 18.675, p < .001). Depressive symptoms (b = .330, p < .001), perceived burdensomeness (b = .417, p < .001), and the interaction of depressive symptoms and drinking to cope (b = .046, p = .007) were significantly and positively associated with SI. To probe the form of the interaction between depressive symptoms and drinking to cope on SI, we calculated simple slopes that examined the association between depressive symptoms and SI at low and high values of the moderator, drinking to cope. At low levels of drinking to cope, depressive symptoms were not significantly associated with SI (b = .189, p = .052), but at high levels of drinking to cope depressive symptoms were significantly and positively associated with SI (b = .471, p < .001), indicating that drinking to cope exacerbates the effect of depressive symptoms on SI.
Discussion: These findings are the first to document that the relation between depressive symptoms and SI among emerging adults depends on the extent to which individuals use alcohol to cope with negative affect. Furthermore, depressive symptoms are not associated with SI at low levels of drinking to cope after controlling for interpersonal problems among emerging adults. Implications for theory development and prevention efforts will be discussed.

SUICIDE IS COMPLEX: HIGHLIGHTING SOCIAL AND ENVIRONMENTAL CONTRIBUTORS

Poinciana Salon 2

Chair: John Richardson

1. THE QUALITY OF LIFE AND PRODUCTIVITY LOSSES ASSOCIATED WITH SUICIDE DEATHS AND RELATED BEREAVEMENT

John Richardson*[1], David Hutton[2], Lisa Prosser[2], Daniel Eisenberg[2], Cheryl King[3]

[1]RTI International, [2]University of Michigan School of Public Health, [3]University of Michigan Medical School

Background: Prior studies have quantified the economic burden of suicide in the US; however, they have failed to include the full magnitude of impact on all those exposed to and bereaved by suicide each year. This is the first study in the US to account for the quality of life impacts and productivity losses among all those exposed to suicide deaths.
Methods: A cross-sectional nationally representative survey was conducted in 2018 on a sample of US adults ages 18 and older who knew someone who died by suicide (n=666). The reported prevalence and number of exposures to suicide over 10 years was used to estimate the average number of people exposed per suicide that occurs in the US. This estimate was multiplied by the average quality adjusted life year (QALY) and productivity losses reported by exposed individuals in the survey. Health-related quality of life for these individuals was reported retrospectively on a visual analogue scale (VAS) for the year before and at time intervals after the death. The VAS score was transformed into health utility using a power function that was calibrated using VAS scores and EQ-5D valuations measured in the survey for current health. QALYs lost from exposure to the suicide was calculated as the change in health utility aggregated over time. Productivity losses were calculated by multiplying average income estimates by the reported time lost from absenteeism and presenteeism (being at work but not fully productive) due to the suicide. The total QALY and productivity losses per suicide

among the exposed were multiplied by the number of suicides that occurred in the US in 2016. These estimates were combined with the QALY and productivity losses from the suicide decedents, which were estimated based on previously published annual probabilities of survival from US life tables; average health utility estimates by age, sex, and general health status; average annual income by age and sex; and average annual consumption by age. All estimates of future losses were discounted by 3% annually to 2016 USD.
Results: We estimated that 453 people on average were exposed to each suicide death in the US, and a total of 16.4 QALYs were lost per suicide within this group. In comparison, 14.3 QALYS were lost on average per suicide decedent. The total QALYs lost from the 44,965 suicides that occurred in 2016 in the US was approximately 1.4 million QALYs lost. Productivity losses were $2.4 million per suicide among the exposed and $0.6 million for a suicide decedent, totaling $134 billion in productivity losses from suicide in 2016.
Discussion: Previous estimates of the economic and quality of life impacts of suicide have substantially underestimated the losses from suicide by not including the spillover impacts on all those exposed to the death. There are substantial economic and quality of life burdens experienced among those exposed that can potentially be minimized through improved treatment and support services. Future studies should explore the cost-effectiveness of helping those exposed to and bereaved by suicide.

2. QUALITY OF LIFE DOMAINS ARE ASSOCIATED WITH SUICIDE IDEATION THROUGH PERCEIVED BURDENSOMENESS AND THWARTED BELONGINGNESS

Kaitlyn Schuler*[1], Kim Van Orden[2], Phillip Smith[1]

[1]University of South Alabama, [2]University of Rochester School of Medicine

Background: Older adult suicide is a significant public health concern. Though a number of risk factors for suicide in older adults have been identified (e.g., depression, disease, disability, disconnectedness, and lethal means (Conwell, Van Orden & Caine, 2011; Conwell et al., 2015), identifying specific psychological mechanisms posited to be proximal causes of suicide in older adults may better inform prevention efforts. The interpersonal theory of suicide states that suicidal ideation (SI) is caused by the experiences of perceived burdensomeness (PB) and thwarted belongingness (TB; Joiner, 2005). Though existing research supports that these constructs are associated with SI when controlling for typical risk factors (Stanley et al., 2016), no study has explicitly examined whether PB and TB explain the association between specific quality of life domains and SI. Therefore, the current study examined an atemporal statistical mediation model in which we predicted PB and TB to explain the associations of multiple domains of quality of life (physical, psychological, environmental, social) and SI.
Methods: Participants were 80 older adult primary care patients. All completed baseline interviews for an RCT examining the effectiveness of a manualized intervention, ENGAGE, in promoting connectedness in older adults. All participants endorsed either feeling lonely or like a burden on others in the two weeks prior to study enrollment. The majority of the participants were female (66.3%), caucasian (90%), widowed (32.5%) and divorced (30.0%) with an average age of 72.1 years. The Interpersonal Needs Questionnaire-15 (INQ; Van Orden, Cukrowicz, Witte, & Joiner, 2012) was used to assess TB and PB. The Geriatric Suicide Ideation Scale was used to assess SI (GSIS; O'Rourke, 2018). Finally, the Brief World Health Organization Quality of Life scale was used to assess physical, psychological, social, and environmental domains of quality of life (WHOQOL;Vahedi, 2010). Four parallel mediation

analyses were conducted using Hayes Process (2013) with the four quality of life domains predicting suicide ideation through PB and TB. Depression was included as a covariate in all analyses (QIDS; Rush et al., 2003).
Results: PB and TB partially or completely mediated the association between all domains of quality of life and SI. Specifically, there was a significant indirect effect for physical (B=-.6563, SE=.2134, CI=-1.0958, -0.2500), social (B=-1.9428, SE=0.7979, CI=-3.6829, -0l.5693) environmental (B=-0.6704, SE=0.4186, CI=-1.1811, -0.1403) and psychological (B=-0.6737, SE=0.3405, CI=-1.4505, -0.1188) quality of life. As demonstrated by insignificant direct effects, PB and TB completely mediated the association between Physical (B=-.5303, SE=0.3452, p=.1298), Social (B=-.4040, SE=.8686, p=.6436), and Environmental (B=-0.5679, SE=0.3881, p=.1487) domains of quality of life and SI. A significant direct effect between Psychological quality of life and SI (B=-2.2517, SE=0.4690, p<.001) indicated that PB and TB partially mediated the association between this domain and SI. The total effect was significant for each of the four domains.
Discussion: Our results support the hypothesized and theory-derived associations among domains of quality of life and SI via PB and TB in older adults. PB and TB completely mediated the relations of all domains of quality of life and SI with the exception of the psychological quality of life domain. Clinical interventions should target PB and TB in mitigating the influence of quality of life factors (e.g., transportation, medical issues, and cognitive concerns) on SI. Future studies should focus on testing this model in larger samples using longitudinal designs.

3. THE INTERGENERATIONAL TRANSMISSION OF SUICIDE ATTEMPTS: TIMING OF EXPOSURE TO A PARENTAL SUICIDE ATTEMPT AND THE OFFSPRING'S RISK FOR ATTEMPTING SUICIDE

Ana Ortin*[1], Tiina Ristikari[2], Markus Keski-Säntti[2], Mika Gissler[2], Juha Veijola[3], Andre Sourander[4], Cristiane S. Duarte[5]

[1]Hunter College & Behavioral Neuroscience Grad. Prog., CUNY, [2]National Institute for Health and Welfare, [3]University of Oulu, [4]University of Turku, [5]Columbia University & New York State Psychiatric Institute

Background: Most studies on the familial transmission of suicide attempt (SA) have focused on the parental history of SA without distinguishing when the SA happened. First, a parent may attempt suicide before or after a child's birth. This poses a problem by entangling the effect of the offspring's direct exposure to a parental SA with a possible suicide vulnerability which could be transmitted from parents to children if the offspring has only been indirectly exposed (before birth) to a parental SA. Second, for offspring directly exposed, the parental SA effects may differ depending on the developmental stage when the parental SA happened: childhood, adolescence, or young adulthood. This study examined how the timing of a parental SA (either before or after the child's birth, or at specific developmental stages) influence the risk for attempting suicide in the offspring. Among offspring who were directly exposed to a parental SA, we sought to identify the time to the offspring's first SA since the parental SA within each developmental stage.
Methods: The sample included 59,469 children (48.8% females), drawn from the 1987 Finnish Birth Cohort Study (FBCS), an ongoing register-based study. The Finnish Hospital Discharge Register was the source for dates of parental SAs (1969 to 2016) and offspring first SA (1987-2016). Socio-demographic and mental health covariates originated from countrywide registers,

such as Statistics Finland or the National Medical Birth Register. Timing of parental SA was coded as (a) before and after the child's birth, and (b) the developmental stage of the direct exposure to a parental SA: childhood (≤ 12 years), adolescence (13-17 years), and young adulthood (18-29 years).
Results: In the 1987 FBCS, 1,295 (2.2%) cohort members and 2,391 (4.0%) of their parents attempted suicide. Having a parent who attempted suicide increased offspring's risk for attempting suicide (OR = 2.42; 95% CI, 1.99-2.94). Among the offspring of parents who attempted suicide, 472 (19.7%) were exposed before birth (or indirectly) and 1,919 (80.3%) after birth (or directly). Timing of the parental SA (before or after a child's birth) was not associated with higher odds of attempting suicide in the offspring (OR = 1.08, 95% CI, 0.67-1.76). Among the offspring directly exposed to a parental SA, 785 (40.9%) were children (ages 0-12), 405 (21.1%) were adolescents (ages 13-17), and 729 (38.0%) were young adults (ages 18-29) when the parent attempted suicide. Offspring exposed to a parental SA in childhood and adolescence had 2.1 and 2.2 higher odds of attempting suicide than offspring exposed in young adulthood. However, the first SA of offspring who were adolescents or young adults when the parent attempted suicide happened sooner (within the same year of parental SA) compared to the first SA of offspring who were children when the parent attempted suicide (six years after the parental SA).
Discussion: Our findings advance knowledge about the familial transmission of SAs. Offspring with a parent who has attempted suicide are at high risk for attempting suicide regardless of when the parental SA took place, before or after the child's birth, indicating that mechanisms beyond the direct exposure to a parental SA may be involved in the transmission of the familial vulnerability. Information about the developmental period when youth was exposed to a parental SA is of clinical value. Our findings indicate that all offspring of parents who have attempted suicide deserve special attention. Long-term monitoring is needed for youth whose parents attempted during the offspring's childhood. Short-term monitoring is needed for adolescents and young adults whose parents attempted suicide recently, because they may attempt suicide within the same year of the parental SA.

4. THE USE OF PUBLIC MESSAGING WITH VETERANS AT RISK FOR SUICIDE

Elizabeth Karras*[1], Janet McCarten[1], Nora Arriola[2], Peter Britton[1], Karen Besterman-Dahan[2], Tracy Stecker[1]

[1]VA Center of Excellence for Suicide Prevention, [2]Tampa VA Medical Center

Background: Veterans are at increased risk for suicide as compared to their civilian peers underscoring the need for effective strategies to facilitate help seeking among Veterans vulnerable to self-directed violence. The VA has embarked on the regular use of public messaging campaigns as part of a public health approach to suicide prevention to increase help seeking, specifically Veterans' use of crisis support services. However, there is a paucity of research examining the effectiveness of these campaigns to increase help seeking among Veterans at high risk. Without careful study, unintentional (and potentially harmful) messages may be disseminated underscoring the importance of message testing with targeted audiences. The main objective of this study is to begin to address this gap and identify characteristics of effective messages that facilitate help seeking among Veterans at high risk for suicide.
Methods: Individual interviews (N=40) were conducted in August 2018- April 2019 with a nationwide sample of VA Veteran patients who experienced a recent non-fatal suicide attempt in the past 3-6 months. Interviews were conducted virtually using Zoom, and participants were

exposed to a convenience sample of 3 existing messages (PSAs) that were designed to promote help seeking. An interview guide steered open-ended conversations on: (a) perceptions of study PSAs including what they believe messages are about, what their purpose is and whom they target; (b) what features and attributes increase attention to and processing of messages, and how they influence the likelihood for help seeking during crisis; (c) facilitators and barriers to message use with Veterans at high risk for suicide. Interviews were audio-recorded, transcribed verbatim, and analyzed using constant comparison techniques in ATLAS. Limited demographics were also be collected.

Results: Findings showed that Veterans could generally discern the main point of suicide prevention messages (i.e., get help) but were often unable to identify actionable steps to translate content to help seeking behaviors despite explicit crisis line promotion. Participants also did not regularly perceive themselves as targets for these messages despite content developed towards populations at high risk for suicide. Reasons that messages did not resonate for Veterans included: (a) the promotion of protective factors that participants lacked (e.g., "Reminding me that that's what I don't have. That's not where I am."); (b) feeling excluded by generalized "one size fits all" message characteristics (e.g., "I would like to have seen a female Veteran."); and (c) a dissonance between message appeals and what suicidal crisis feels like (e.g., "It was just too bright and warm, and it wasn't reaching me in a dark place."). Conversely, PSAs that depicted more solemn themes and provocative images (e.g., "It reminds me of a dark place without making me sink into it.") were more relatable and interpretable (e.g., "I could relate to that mental state"). When asked about dissemination, messaging was perceived as uniquely capable of intervening with Veterans during periods of distress but that social isolation surrounding crisis served as a significant barrier to effective communication.

Discussion: The presentation will conclude with discussion of implications and next steps for suicide prevention message design and use.

5. SEXUAL MINORITY SUICIDE, MINORITY STRESS, AND RELIGION/SPIRITUALITY

Brandon Hoeflein*[1]

[1]Palo Alto University

Background: Sexual minority (LGBQ) individuals report suicide attempt rates four times greater than their heterosexual peers (King, et al., 2008). Minority stress theory highlights the role of social stress in increasing the suicide attempt rates of LGBTQ individuals (Meyer, 2003). In a separate but parallel line of research, religion and spirituality have been found to largely protect against suicidality in the general population. However, religion/spirituality's protective role should not be generalized to sexual minority individuals due to some religious institutions' histories of anti-LGBTQ discrimination. The current work is rooted in Bicultural Identity Integration theory, which suggests better mental health outcomes for bicultural individuals who experience their dual cultural identities as interwoven and harmonious. It was hypothesized that higher levels of spirituality/religiosity would moderate the influence of minority stress on sexual minority suicidal ideation.

Methods: Participants were recruited through social media (Facebook) and Amazon's mTurk to answer an online survey. Inclusion criteria included: (a) 18+ years old; (b) currently identify as a sexual minority (non-heterosexual); (c) identify as Christian currently or previously; (d) U.S. resident; (e) fluent in English; (f) cisgender. Data from gender minority individuals were kept separate, as this population has a unique history with religious institutions and special

considerations in minority stress factors. The final sample (N = 367) was predominantly White (88.3%), female (71.9%), younger (M age = 31), and well-educated (62.6% hold at least a Bachelor's degree). Item-level missing data was handled via two-way imputation. Minority stress was conceptualized via the following process: internalized homonegativity, rejection sensitivity, outness dissatisfaction, experiences of discrimination, and experiences of victimization. Religion/spirituality was operationally defined using the Moral Objections to Suicide subscale of the Reasons for Living Inventory (RFL-MOS). The hypothesis was tested using structural equation modeling in Mplus.
Results: Results showed that RFL-MOS significant moderates the relationship between minority stress and suicidal ideation, such that those with higher RFL-MOS scores exhibited lower levels of suicidal ideation.
Discussion: These results match previous findings that RFL-MOS is an important cultural suicide risk factor and extends previous work to the unique experiences of sexual minority individuals. This finding is applicable to sexual minority individuals who currently identify as religious/spiritual and those who have previously identified as such. The current study highlights the importance of assessing spiritual/moral objections to suicide as part of a comprehensive, culturally competent suicide risk assessment.

6. THE IMPACT OF ECONOMIC CRISES ON THE INCIDENCE OF SUICIDES IN ICELAND 1911-2017

Hogni Oskarsson*[1], Kristinn Tomasson[2], Sigurdur Palsson[3], Helgi Tomasson[4]

[1]Humus Inc., [2]Administration of Occupational Safety and Health in Iceland, [3]National Hospital, Iceland, [4]University of Iceland

Background: Suicides are number 16 as a cause of death worldwide. The causes are not always known, but often associated with depression or trauma. Suicide incidence has decreased world-wide in the past three decades. The economic crisis of 2008 led to an increase in many countries. There are many confounding factors which make comparisons between countries difficult. The goal of this study is to assess the impact of economic crises in Iceland.
Methods: The work is based on suicide data from 1911 to 2017 and six economic crises during this period. The incidence is calculated five and ten years before and after the index year of each crisis. To assess the crisis impact over the period count data was as assessed by estimating a quasi-Poisson model. The evolution over time is assessed by inspection of cumulative sum of squared residuals (CUSUMSQ).
Results: Suicide incidence increased through the past century and began to decline around 1990. Due to the small population size there are wide upwards incidence fluctuations, within and outside the crisis periods. The crises of 1931 and 1948 showed an increase, whereas in the others there is no change or a decrease. The sizes of deviations from expected value are, for the whole period, in compliance with the quasi-poisson model for counts.
Discussion: There is no statistical correlation between the six economic crises and suicide incidence in the Icelandic data. It should be emphasized that the study is based on population incidence and does not preclude a negative impact of economic crises on individuals.

Tuesday, October 29, 2019

1:30 PM – 3:00 PM

IMPACT OF SOCIAL AND ENVIRONMENTAL TRANSITIONS

Americana Ballroom 1-2

Chair: Katrina Witt

1. SUICIDE AND TRAUMATIC BRAIN INJURY AMONG INDIVIDUALS SEEKING VETERANS HEALTH ADMINISTRATION SERVICES BETWEEN FISCAL YEARS 2006 TO 2015

Lisa Brenner*[1], Trisha Hostetter[2], Claire Hoffmire[1], Rachel Sayko Adams[3], Kelly Stearns-Yoder[1], Jeri Forster[1]

[1]VHA Rocky Mountain Mental Illness Research, Education, and Clinical Center, University of Colorado, [2]VHA Rocky Mountain Mental Illness Research, Education, and Clinical Center, [3]VHA Rocky Mountain Mental Illness Research, Education, and Clinical Center, Brandeis University

Background: According to the US Department of Veterans Affairs 2018 National Suicide Data Report, in 2016, the suicide rate among Veterans was approximately 1.5 times greater than that among civilian adults, after accounting for age and gender. Similar to population-based studies with civilians, having a history of traumatic brain injury (TBI) has been associated with increased risk of death by suicide among Veterans, yet there have been fewer systematic studies.
Methods: Participants included all Veterans with a TBI diagnosis in VHA electronic medical records during, or prior to, the study window (n=215,610), compared to a 20% random sample of VHA patients without a TBI diagnosis (n=1,187,639). In this retrospective, cohort study, Cox proportional hazards models were fit accounting for time-dependent measures (e.g., psychiatric diagnoses, Charlson/Deyo Comorbidity Score), other chronic conditions, and demographics (age, gender) for those with TBI compared to those without. Additional models were fit to evaluate the impact of TBI severity (mild, moderate/severe) on the association between TBI and suicide and to examine the association between TBI and suicide method (firearm versus other). Death by suicide and method of suicide were obtained from the National Death Index.
Results: The hazard of suicide was 2.19 times higher for those with TBI (95% CI=2.02-2.37) compared to those without TBI. TBI was still significant after accounting for psychiatric conditions and other covariates (HR=1.71; 95% CI=1.56-1.87). Considering TBI severity, moderate to severe TBI compared to no TBI remained significantly associated with an elevated hazard of suicide after adjustment (HR=2.45; 95% CI=2.02-2.97), as well as mild TBI compared to no TBI (HR=1.62 95% CI=1.47-1.78). Additionally, moderate to severe TBI was significantly associated with an increase in the odds of suicide by firearm among decedents (OR=2.39; 95% CI = 1.48-3.87).

Discussion: History of TBI is associated with an elevated risk for suicide among VHA patients. Firearm safety could be an effective upstream prevention approach within this patient population.

2. USING LATENT CLASS APPROACHES TO UNDERSTAND TRAJECTORIES OF SUICIDE ATTEMPT METHOD LETHALITY OVER TIME: ASSOCIATIONS WITH RISKS OF SUICIDE ATTEMPT REPETITION AND SUICIDE DEATH

Katrina Witt*[1], Jane Pirkis[2], Karen Smith[3], Deborah Scott[4], Dan I. Lubman[4]

[1]Orygen, the National Centre for Excellence in Youth Mental Health, The University of Melbourne, [2]Centre for Mental Health, The University of Melbourne, [3]Monash University, [4]Turning Point and Eastern Health Clinical School, Monash University

Background: Suicide is the leading cause of injury-related death for Australians and Americans between 18-44 years. Attempted suicide, and particularly frequent repetition of attempted suicide, is a major risk factor for suicide. Given that emerging work suggests that the risk of repetition and suicide may be influenced by method choice, knowledge of the methods used at previous episodes of non-fatal suicide attempts may be a more important predictor of suicide risk than the number of previous episodes alone. However, few studies have taken a longitudinal approach to model trajectories of methods used over time, changes in the potential lethality of these methods, or considered how differences in these patterns may be associated with attempted suicide repetition and/or suicide risk.
Methods: A retrospective cohort of all suicide attempt-related ambulance attendances in the state of Victoria, Australia over a five-year period (1 January 2012 and 31 December 2016). One-quarter of Australia's population live in the state of Victoria. Group-based trajectory modeling was used to characterize trajectories in suicide attempt method lethality. A series of regression models were used to investigate the extent to which sex, self-reported alcohol and illicit drug use, and clinical symptoms of depression, anxiety or psychosis were associated with method lethality within these classes. Multiple-event Cox regression modeling was used to investigate the risk of suicide attempt repetition by trajectory class, whilst competing risks Cox regression was used to investigate the risk of suicide death.
Results: Modeling identified two distinct trajectories in suicide attempt lethality, characterized by low-stable (i.e., predominately self-cutting and intentional drug overdose) and moderate-decreasing lethality (i.e., predominately attempted asphyxia/hanging, drowning, and jumping). Depressive symptoms were associated with decreasing lethality, whilst acute alcohol intoxication and psychosis symptoms were both associated with increasing lethality. Over a median follow-up period of 35 months, one-quarter of the cohort made a further suicide attempt. There were no significant differences between classes in the hazards of reattempting suicide by trajectory class over this period. However, membership to the moderate-decreasing class was associated with an increase in the sub-distribution hazard of suicide death (SHR: 2.85).
Discussion: This project is the first to characterize trajectories of suicide attempt method lethality, and demographic and clinical factors associated with changes in lethality. We found that although suicide attempt lethality may decline over time, the risk of suicide remains high, particularly for those in the moderate-decreasing class. We also found that acute alcohol intoxication may influence suicide attempt lethality, even amongst those using methods typically associated with lower potential lethality (e.g., self-cutting and intentional drug overdose). These findings have important implications for suicide prevention efforts.

3. EXAMINATION OF CHARACTERISTICS OF RUMINATIVE THINKING AS FACTORS DIFFERENTIATING INDIVIDUALS ACROSS THE SUICIDALITY CONTINUUM

Megan Rogers*[1], Julia Gorday[1], Thomas Joiner[1]

[1]Florida State University

Background: Rumination, characterized by perseverative and repetitive negative thinking about the causes, meaning, and consequences of one's distress, has been associated with thoughts of suicide and suicide attempts, both cross-sectionally and longitudinally (Miranda & Nolen-Hoeksema, 2007; Morrison & O'Connor, 2008; Rogers & Joiner, 2017). However, less attention has been paid to specific empirically-identified features of ruminative thinking—including the frequency (i.e., how often rumination occurs), duration (i.e., how long rumination lasts), perceived controllability (i.e., the degree to which individuals feel in control of their thoughts), and content (i.e., diversity and type of topics that an individual ruminates about) of rumination—and their unique associations with suicide-related outcomes. The present study examined associations between the frequency, duration, perceived controllability, and content of ruminative thinking, and suicidal ideation, lifetime suicide plans, and lifetime suicide attempts.

Methods: A sample of 548 adults (53.6% female, 45.4% male, 0.9% transgender/non-conforming) were recruited via Amazon's MTurk, a crowdsourcing website that provides access to inexpensive, yet relatively high quality, data that approximates the general population (Buhrmester, Kwang, & Gosling, 2011). Ages ranged from 18 to 98 years (M = 36.54, SD = 12.33), and participants self-identified as predominantly White/European American (443; 80.8%), with 56 (10.2%) as Black/African American, 40 (7.3%) as Asian, 34 (6.2%) as Hispanic/Latino, 10 (1.8%) as American Indian/Native American, 2 (0.4%) as Pacific Islander, and 2 (0.4%) as another race/ethnicity. All participants completed a battery of self-report measures, including items designed to assess characteristics of ruminative thinking, items assessing lifetime suicidal ideation, plans, and attempts, and the Beck Scale for Suicide Ideation (Beck & Steer, 1991).

Results: The duration ($\beta = .13$, $p = .040$) and controllability ($\beta = .21$, $p = .002$), but not frequency ($\beta = .03$, $p = .683$) or content ($\beta = .02$, $p = .768$), of ruminative thinking were positively associated with suicidal ideation, controlling for age ($\beta = -.10$, $p = .018$) and gender ($\beta = -.04$, $p = .382$). On the other hand, only controllability (OR = 1.43, p = .003) was associated with the presence of a lifetime suicide plan, above and beyond frequency (OR = 1.05, p = .746), duration (OR = .85, p = .186), and content (OR = 1.04, p = .501) of ruminative thinking, as well as age (OR = 1.01, p = .562), gender (OR = 1.73, p = .024), and current suicidal ideation (OR = 1.86, $p < .001$). Likewise, controllability (OR = 1.28, p = .048) of ruminative thinking was associated with the presence of a lifetime suicide attempt, controlling for frequency (OR = 1.10, p = .551), duration (OR = .78, p = .062), and content (OR = 1.06, p = .353) of ruminative thinking, age (OR = 1.00, p = .658), gender (OR = 2.08, p = .004), and current suicidal ideation (OR = 1.45, p = .004).

Discussion: Overall, these findings provide evidence for the role of perceived control of ruminative thinking in relation to current suicidal ideation, lifetime suicide plans, and lifetime suicide attempts. Moreover, perceived control of ruminative thoughts may be a factor that facilitates a transition from suicidal thoughts to suicidal behaviors, consistent with the ideation-

to-action theory (Klonsky & May, 2014), and may be worth targeting in clinical interventions. Additional clinical implications, limitations, and future directions will also be discussed.

4. CHARACTERIZING TRANSGENDER SUICIDAL IDEATION PHENOTYPES IN SOCIAL MEDIA USING NATURAL LANGUAGE PROCESSING

Adrienne Grzenda*[1]

[1]UCLA – NPI

Background: Suicidal ideation and suicide attempts occur at alarmingly high rates in the transgender population. While minority stress and desire-capability frameworks partly explain suicidal ideation in these populations, investigation has been lacking into specific, intervenable risk factors beyond discrimination and isolation. Investigation is largely hampered by the small sample sizes typically available to single-center academic studies and invisibly of the population in electronic health records. Online social media and internet forums, however, afford increased access to vulnerable populations.
Methods: Reddit is an online forum for the distribution of news and online discussion. Posts from subreddit r/SuicideWatch were collected and screened for self-identification of transgender status utilizing an exhaustive list of identifiers (e.g., trans*, FTM, MTF, "gender dysphoria). A total of 2110 unique narratives were identified spanning January 2012- March 2019. Unstructured data were mined for demographic data (e.g., age, birth sex, country). Language frequency/distribution were examined. Topic modeling was performed using latent Dirichlet allocation (LDA). Classification models were trained and tested in the task of detecting suicidal ideation in posts within other subreddits using LDA-derived language features.
Results: Transgender users with suicidal ideation frequently used language related to emotions (e.g., feel, depression), the passage of time (e.g., year, month), settings (e.g., school, work), transition (e.g., body, hormone), death (e.g., kill, die), and expletives (e.g., f*cking). LDA demonstrated that suicidal ideation topics included negative self-perception (e.g., "body", "trap", "freak", "waste", "sick", "hate"), external stressors (e.g., "job", "college", "money", "afford", "debt", "finish"), difficulties with family (e.g., "cry","dad","mom","break","bad"), hopelessness (e.g., "curse", "poison", "passive","repress","exclude", "unrelenting"), and suicide planning (e.g., "bridge","Jump","traffic","sleeping_pill","funeral","chemical"). Extracted features were able to achieve high accuracy in detecting suicidal posts within general discussion subreddits.
Discussion: Improving suicide prevention requires both an improved understanding of specific risk factors and the development of new methods of detection and intervention. Here we demonstrate a novel method for exploring and predicting suicidal ideation and behavior in the transgender population. Future work will investigate if classification features translate across different media platforms.

5. ATTACHMENT STYLES AND SUICIDE-RELATED THOUGHTS AND BEHAVIOURS: A META-ANALYTIC REVIEW

Sasha MacNeil*[1], Massimiliano Orri[2], Marie-Claude Geoffroy[2], Johanne Renaud[2], Jean-Philippe Gouin[1]

[1]Concordia University, [2]McGill University

Background: Contemporary psychological theories of suicide highlight negative social relationships as important risk factors for the development of suicide-related thoughts and behaviours (SRTBs). Attachment styles represents one's expectations about the availability and responsiveness of closer others. Individuals with high attachment anxiety tend to fear rejection, while individuals with high attachment avoidance tend to have difficulty opening up and depending on others. Given the association between attachment style and relationship quality and satisfaction, attachment style may be associated with risk for SRTBs. The goal of the current study was to provide a comprehensive quantitative summary of the existing literature on the association between attachment styles and SRTBs to determine which attachment styles are related to SRTBs.
Methods: 41 studies met inclusion criteria for the current meta-analysis. Information on attachment styles, SRTBs, study sample, and methodology were extracted from each study. Cohen's d was selected as the common effect size metric. Random-effect meta-analytic models were employed to determine the cumulative association between individual attachment styles and SRTBs.
Results: Overall, secure attachment was associated with less SRTBs (d = -0.315). Conversely, fearful attachment was associated with increased risk for SRTBs (d = 0.375). Anxious-preoccupied attachment was also associated with greater risk for SRTBs (d = 0.424). Finally, avoidant-dismissive attachment was also associated with greater risk for SRTBs (d = 0.135), but to a lesser extent than attachment anxiety.
Discussion: Individuals with an insecure attachment style are at greater risk for expressing SRTBs, especially if they present with high levels of attachment anxiety. Individuals with attachment anxiety may be at greater risk of perceiving social disruptions, contributing to unmet attachment needs. In addition, these individuals may engage in problematic cognitive and behavioural strategies to meet attachment needs, with paradoxal effects of contributing to worse relationship quality. Poorer relationship quality and interpersonal disruptions may lead to increased suicide risk. These results suggest that attachment style may help identify at risk individuals and may have implications for interventions targeting attachment processes and enhancing relational functioning for the reduction of SRTBs.

6. MACHINE LEARNING ON BRAIN IMAGING TO CLASSIFY SUICIDAL BEHAVIOR

Savannah Gosnell[1], Ramiro Salas*[1]

[1]Baylor College of Medicine

Background: Biomarkers of suicidal behavior are sorely needed: Most patients that are about to attempt suicide do not report ideation when they speak to a mental health provider. Our goal was to classify psychiatric inpatients as suicidal vs. not, even when diagnoses were the same among groups. To that end, we used structural and functional brain imaging and machine learning.
Methods: We used a sample of suicidal (n=63) and non-suicidal (n=65) psychiatric inpatients. We defined suicidal as having both at least one past attempt, and current ideation, while non suicidal patients had neither past attempt nor current ideation. We studied possible differences in structural and resting state functional connectivity measures in whole brain analysis. These measures were used as features in a random forest classification, for training the model. An

additional group of similar suicidal (N=16) and non-suicidal (N=16) patients that were not used for training the model were used for testing of the model.
Results: The random forest model (built on 80% of the patients) had sensitivity=79.4% and specificity=72.3%. When the model was tested on the independent sample (using the independent 20% of patients) it showed sensitivity=81.3% and specificity=75.0%, confirming the generalizability of the model. The features that generalized the best were resting state functional connectivity features from frontal and middle temporal regions, as well as the amygdala, parahippocampus, putamen, habenula, and vermis.
Discussion: We showed that neuroimaging (an unbiased biomarker) can be used to classify suicidal behavior in psychiatric inpatients without observing any clinical features. In the future, we plan to add clinical and demographic features and follow up data to study the possibility of using brain imaging-based machine learning not only to classify, but also to predict, suicidality.

WE CAN DO THIS! NOVEL EFFECTIVE INTERVENTIONS FOR SUICIDE PREVENTION

Poinciana Salon 3-4

Chair: Anthony Pisani

1. USING THE COLLABORATIVE ASSESSMENT AND MANAGEMENT OF SUICIDALITY (CAMS) TO REDUCE SUICIDAL IDEATION WITH US SOLDIERS: A PRELIMINARY MACHINE LEARNING INVESTIGATION

David Jobes*[1], Ronald Kessler[2], Samantha Chalker[1], Alex Luedtke[3], Ekaterina Sadikova[2]

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Background: Although clinical trials have identified a variety of candidate variables for use in precision treatment protocols, none has proven sufficiently powerful to guide treatment selection individually. The current investigation explored whether preliminary precision treatment rules (PTRs) can be developed for the effect of the Collaborative Assessment and Management of Suicidality (CAMS) relative to enhanced-care as usual (E-CAU) to eliminate suicidal ideation (SI) within three months of initiating treatment within a randomized controlled trial (Jobes et al., 2017).
Methods: A state-of-the-art ensemble machine learning method was used to develop the PTR among (n=148) U.S. Soldiers with serious suicidal ideation who were predominately male and white with an age range from 18 to 48.
Results: Results suggested that CAMS was the optimal treatment for 77.8% of Soldier-patients and that treatment assignment according to the PTR compared to random treatment assignment would result in a 13.6% (95% CI: 0.9-26.3%) increase in the proportion of patients with three-month suicidal ideation reduction.
Discussion: To our knowledge, this is the first application of machine learning to randomized controlled trial data set. The preliminary results are encouraging related to the prospect to routing different suicidal patients to treatments that optimally suited for them. Replication using larger samples with comprehensive assessments of baseline predictors is nevertheless needed to develop a more definitive PTR to provide clinical decision support for treatment providers in deciding when CAMS might be more effective than usual care for particular suicidal patients.

2. SAFETY PLANNING: WHAT DOES IT MEAN TO YOU?

Jennifer Boggs*[1], Arne Beck[1], Bobbi Jo Yarborough[2], Michael Schoenbaum[3], Christine Stewart[4], Julie Richards[5], Gregory Simon[5], Brian Ahmedani[6]

[1]Kaiser Permanente Colorado Institute for Health Research, [2]Kaiser Permanente Northwest Center for Health Research, [3]National Institute of Mental Health, [4]Kaiser Permanente Washington, [5]Kaiser Permanente Washington Health Research Institute, [6]Henry Ford Health System

Background: Little is known about the prevalence of specific safety planning elements that patients with suicide risk receive in mental health or general medical settings. As part of a National Institute for Mental Health funded evaluation of the National Zero Suicide Model across several Mental Health Research Network integrated healthcare systems in the United States, using electronic medical record [EMR] documentation, we measured exposure to safety planning elements prior to implementation of Safety Planning templates.
Methods: Manual chart reviews (n=360, 120 per site) were conducted across three healthcare systems (Kaiser Permanente Colorado (KPCO), Kaiser Permanente Northwest (KPNW), and Henry Ford Health System (HFHS)). During the study period (2013-2017), none of these sites had implemented standard practices or standardized EMR tools to track safety planning processes, but all reported that they conducted safety planning as part of typical workflows. All medical and mental health encounters for one month were reviewed following identification of suicide risk defined by: endorsement of the suicide question on the PHQ-9 depression screener during routine care visits or by an ICD-9/10 diagnostic code for a recent suicide attempt. Exposure to different domains of Safety Planning were assessed by manual chart review in each encounter including: warning signs, coping strategies, distractions, informal or professional contacts for help, and lethal means safety.
Results: The proportion of patients identified at risk of suicide who received any safety planning practice ranged from 56% to 89%. Among those who received any safety planning, a vast majority occurred in the outpatient mental health setting, even among those initially seen in the emergency/inpatient setting for a suicide attempt. Patients received the following safety planning elements (ranges across three health systems): professional contacts for help = 38-54%; safety counseling for firearms = 24-48%; safety counseling for medications = 18-40%; informal contacts (e.g. family) for help = 17-26%; internal coping strategies = 2-14%; and safety counseling for other lethal means = 0-13%; warning signs = 0-7%; and distractions = 0-8%.
Discussion: Safety planning practices documented in the EMR vary widely. Without standard tools and workflows, patients may be less likely to receive robust safety plans. Prior to the implementation of templates, "safety planning" was most likely to only include: professional contacts for help, lethal means assessment/counseling for firearms and/or medications, and/or informal contacts for help. Standardized safety planning templates and reminders built in the EMR may help prompt providers to engage all patients with suicide risk in all domains of safety planning. Future work will examine uptake of safety planning templates in the EMR, as well as the impact of exposure to specific safety planning elements on suicide outcomes.

3. VIDEO-BASED INSTRUCTION FOR SUICIDE PREVENTION IN PRIMARY CARE

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Background: About a third of individuals who die by suicide had primary care contact in the preceding month. Primary care thus offers a high-potential context for reducing the incidence of suicide. In order to make a positive difference, providers must be prepared to engage with, assess, and respond to suicide concerns they uncover and must have the confidence to engage with and support suicidal patients. Primary care providers thus need effective and practical training that can be delivered within the time and resource constraints of the healthcare environment. However, training is currently scarce and its effectiveness unknown. This paper reports clinician engagement with and learning from a brief, online suicide prevention training appropriate for the demanding schedules of the primary care environment.
Methods: A curriculum of video-based online modules was developed from a previously tested evidence-based training for mental health professionals. Twenty-one videos spread across 6 modules (total 48 minutes) were tested with 65 medical residents and 67 nurse practitioner trainees (N=132). We assessed engagement with the video instruction, satisfaction with the modules, pre/post gains in knowledge and self-efficacy, and perceptions of ability to transfer the training into a clinical setting. Trainees also provided detailed feedback to inform the next steps in the development of this training.
Results: Participants' engagement with the videos was high and 89.5% of participants were satisfied to very satisfied with the overall quality of the modules. Increase in knowledge after the training was large for both learner groups, with the number of questions answered successfully rising from a mean of 6 to a mean of 11 out of 17. Confidence in ability to assess and manage suicide risk rose significantly across both groups, with significantly higher gains in confidence for nurse practitioners. Perceptions of ability to transfer the training into a clinical setting were moderate. Feedback from participants asked for more detailed patient scenarios, examples of the skills being used in practice, and examples of standardized responses.
Discussion: Engagement, satisfaction, knowledge increase, and increase in self-efficacy all reached satisfactory levels. Participants' perception of their ability to transfer their training to clinical settings left scope for improvement. In the next iteration of these modules, training transfer will be improved by adding: video-based skill demonstrations; the perspective of a suicide attempt survivor to make the training more relatable; and a memorable framework and mnemonic (Connect-Assess-Respond-Extend, CARE) to assist with retention and implementation of knowledge. In addition, the revised versions of the videos will include material on using standardized assessment tools and will improve production values, moving beyond direct-to-camera speech and introducing two-way discussions between the instructor and patient advocate. A new iteration of the training called SafeSide Primary CARE that incorporates these steps has been developed and is currently being disseminated and evaluated.

4. THE SUICIDE PREVENTION INTERVENTION FOR AT-RISK INDIVIDUALS IN TRANSITION (SPIRIT) STUDY: BASELINE DESCRIPTIVE DATA FROM A MULTI-SITE TRIAL OF JAIL DETAINEES AT RISK FOR SUICIDE

Lauren Weinstock*[1], Ivan Miller[2], Sarah Arias[2], Richard Jones[1], Ted Miller[3], Barbara Stanley[4], Gregory Brown[5], Hannah Graves[1], Louis Cerbo[6], Sheryl Kubiak[7], Michael Stein[8], Jennifer Johnson[9]

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Background: Although US jails are known to serve as catchment areas for individuals at high risk for suicide, few formal investigations into specific suicide risk patterns and prevention needs of this population have been conducted to date. The SPIRIT trial, representing the first randomized evaluation of an intervention to reduce suicide risk in the vulnerable year after jail release, provides a unique opportunity to more carefully evaluate the patterns of suicide risk during the time-limited period of jail detention.
Methods: Unsentenced male and female jail detainees (N=800) at risk for suicide were recruited from jails in Flint, MI and Cranston, RI, and randomized to either the Standard of Care (SoC) or SoC plus Stanley and Brown's Safety Planning Intervention (SPI). SPI consisted of safety planning during jail detention with telephone follow-up across the first 6 months post-release. At study entry, participants were assessed on a number of baseline demographic and clinical features, including recent and lifetime history of suicide behaviors, mental health treatment utilization, and psychiatric diagnosis.
Results: Between May 2016 and November 2018, participants were enrolled into the SPIRIT study at the rate of approximately 27 participants per month. To achieve this final sample of 800 randomized, research assistants screened 3119 jail detainees, roughly 64% (n=1989) of whom were recruited from the general population. Remaining participants were recruited directly from jail suicide watch. As anticipated, the sample was predominantly male (n=587; 73%) with a history of numerous prior incarcerations [M(SD)=7.8(11.1)]. Roughly half of the sample (n=382; 48%) identified as being in a racial minority group. Within the 30 days prior to the baseline assessment, 49% (n=397) reported having made a suicide attempt, typically prior to the index arrest and jail detention, and 85% (n=679) reported a lifetime history of suicide attempt. Including preparatory behaviors, aborted attempts, and interrupted suicide attempts, 91% of the sample (n=728) endorsed a lifetime history of suicide behavior.
Among those for whom diagnostic data are currently available (n=554), approximately 84% (n=466) endorsed a history of major depressive episode, 39% (n=252) endorsed a history of (hypo)manic episode, and 45% (n=218) endorsed a lifetime history of psychotic symptoms. Seventy-three percent (n=584) of the SPIRIT sample had engaged in some outpatient mental health or substance use treatment in the year prior to study entry. Slightly more than two thirds (n=546; 68%) endorsed a lifetime history of psychiatric hospitalization. Additional data regarding suicide methods contemplated and used, as well as rates of substance misuse, will be available at the time of this presentation.

Discussion: Baseline SPIRIT data highlight the incredibly high risk for suicide encountered in the jail detention setting. Of note, rates of 30-day and lifetime suicide attempts and behaviors were at least as high, if not higher, than those reported by other samples known to be at high risk, including psychiatric inpatients and individuals presenting to emergency departments (EDs) in crisis. The vast majority of these suicidal pretrial jail detainees will return to the community (and regain access to lethal means including vehicles, firearms, and drugs) within days. Given that almost 11 million people in the U.S. per year experience pretrial jail detention, this presentation will discuss the implications of the high-risk nature of this sample for population-level suicide prevention efforts.

5. DEVELOPMENT OF A SAFETY AND COPING PLANNING INTERVENTION FOR SUICIDAL ADOLESCENTS IN ACUTE PSYCHIATRIC CARE

Kimberly O'Brien*[1], Joanna Almeida[2], Lauren View[3], Molly Schofield[3], William Hall[3], Laika Aguinaldo[4], Colleen Ryan[5], Eleni Maneta[3]

[1]Education Development Center, [2]Simmons University, [3]Boston Children's Hospital, [4]University of California, San Diego, [5]Children's Specialized Hospital

Background: Emerging research has bolstered the evidence base for safety planning with individuals in a suicidal crisis. Because safety planning was initially developed for adults, it does not focus on adolescents' unique risks and the critical role of parents in establishing and maintaining their safety. The aim of this study was to use feedback from suicidal adolescents and their parents to inform the development of the Adolescent Safety and Coping Plan (ASCP) which can be used after discharge from an acute psychiatric care setting.

Methods: We conducted semi-structured, qualitative in-depth interviews with 20 adolescents who were psychiatrically hospitalized following a suicide attempt, and their 20 parents (or guardians) separately to obtain feedback on current standardized safety planning procedures for adults, and how they could be improved to meet the needs of suicidal adolescents and their parents. We used purposive sampling to recruit participants from the inpatient psychiatric unit of a general pediatric hospital in the northeast United States. To be eligible for the study, participants had to be between the ages of 13 to 17, and psychiatrically hospitalized following a suicide attempt. All participants (Mage=14.4 years; 75% female) were interviewed within two weeks of a suicide attempt. Interviews were audio recorded, transcribed, and cleaned for analysis. Transcripts were double-coded, data were analyzed with NVivo 11 software, and memos were created by the principal investigator. All co-investigators read the memos, agreed on the interpretation, and discussed the ideas for ASCP components prior to development.

Results: Findings demonstrated the need for the ASCP to have developmentally appropriate language, layout, and content. In addition, adolescents wanted greater emphasis placed on positivity and reasons for living. Adolescents also wanted to incorporate Crisis Text Line into the list of emergency resources, as texting is their preferred method of communication. Parents wanted more direct involvement, and many adolescents and parents felt that two separate but related safety and coping plans, tailored specifically to their respective needs, may be a more effective safety planning intervention. It is important to note that adolescents and parents spontaneously endorsed the helpfulness of the safety scale that clinicians used on the inpatient psychiatric unit and suggested that incorporating it into the ASCP would be helpful. Specifically, parents and adolescents felt that the safety scale should be put into the ASCP to help adolescents directly connect feelings to actions using developmentally appropriate language, and to ensure that parents and adolescents share the same mode of communication. Parents also noted the need for a manual for clinicians with instructions on how to use the ASCP with the adolescent and parent. Parents also suggested that the ASCP should be used as a daily means of communication and preventative care.

Discussion: Suicide is on the rise for adolescents and immediately post-hospitalization is arguably the period of highest risk. Despite the great need for interventions and treatment tools that can be used by adolescents and their families following hospitalization, there is very little research to date on such interventions. The ASCP was designed specifically to account for the unique developmental needs of adolescents, including the critical incorporation of parents into the safety planning process. Our study findings indicated that adolescents preferred the use of simpler, more positive language, with a focus on actions they can take to help themselves during the crisis. The request to include a safety scale and separate parent component to the ASCP were other notable findings.

6. A PARTNERED APPROACH TO DEVELOPING IMPLEMENTATION STRATEGIES TO PROMOTE FIREARM SAFETY AS A SUICIDE PREVENTION STRATEGY IN PEDIATRIC PRIMARY CARE

Shari Jager-Hyman*[1], Courtney Wolk[1], Steven Marcus[1], Brian Ahmedani[2], John Zeber[3], Joel Fein[4], Gregory Brown[1], Rinad Beidas[1]

[1]University of Pennsylvania, [2]Henry Ford Health System, [3]University of Massachusetts, [4]The Children's Hospital of Philadelphia

Background: Firearm safety promotion is a promising suicide prevention strategy that can be implemented in pediatric primary care and is recommended by a number of physician groups, including the American Academy of Pediatrics. Safety Check is an evidence-based approach to improving parental firearm safety behavior in pediatric primary care, comprised of three components: screening, brief counseling on firearm safety, and the provision of cable locks. Despite empirical support and expert recommendations, the components of Safety Check remain underutilized. Using a participatory design, the Adolescent Suicide Prevention In Routine clinical Encounters (ASPIRE) study aimed to develop an improved understanding of how to best implement components of Safety Check as a suicide prevention strategy in pediatric primary care.

Methods: Using a mixed-methods approach, we collaboratively developed implementation strategies in partnership with stakeholders from two large health systems. We surveyed 141 clinicians and leaders of 82 pediatric primary care practices to understand acceptability and use of the three firearm components of Safety Check and subsequently conducted qualitative interviews with stakeholders across nine groups (including parents, clinicians, health system leadership, and firearm experts) to understand barriers and facilitators to implementation. These findings informed the development of a menu of implementation strategies for promoting firearm safety as a suicide prevention strategy in pediatric primary care that will be tested in a future study.

Results: Results from the survey indicated that screening and counseling are acceptable to clinicians and are commonly, though not routinely, used. Clinicians were less accepting of the third component of Safety Check and rarely distributed firearm locks. Several themes emerged from qualitative interviews across stakeholder groups (n = 70), including the importance of: alignment with the health systems priorities; a commitment from leadership; leveraging existing infrastructure, such as the electronic health record (EHR) system; funding; and minimizing workflow disruption. Firearm expert stakeholders (n = 12) identified additional themes, including low acceptance of screening and the importance of partnering with firearm safety experts (e.g., safety course instructors) who may be viewed by patients as more credible sources of firearm-related information than healthcare providers. Based on these themes, we developed a list of implementation strategies that may enhance the uptake and effectiveness of the intervention. Strategies include: training providers on implementing the intervention with cultural sensitivity to firearm owners, EHR integration, and creating a plan to identifying which members of the medical team will be responsible for each competent of the intervention.

Discussion: The primary objectives of this mixed-method contextual inquiry were to use a partnered-approach to: (1) gauge the acceptability and use of the three Safety Check components; (2) elucidate factors important for the effective implementation of firearm safety promotion as a strategy for suicide prevention; and (3) to develop a menu of implementation strategies to be tested empirically in future studies. Findings from this study may serve as the building blocks for identifying effective implementation strategies with the potential to affect clinician, organization, and system behaviors and reduce the rate of adolescent suicide.

ADDRESSING VETERANS AND SUICIDE

Poinciana Salon 1

Chair: Leo Sher

1. VETERAN SUICIDE PREVENTION: ENHANCING CARE FOR VETERANS CRISIS LINE CALLERS

Megan McCarthy*[1], Matthew Miller[1], Taylor Sullivan[2], John McCarthy[1]

[1]Department of Veterans Affairs, [2]Serious Mental Illness Treatment Resource and Evaluation Center

Background: The Department of Veterans Affairs (VA) Veterans Crisis Line (VCL) offers crisis support and care coordination for Veteran callers. The VCL serves all Veterans and its integration in the VA health system enables unique care coordination and enhancement opportunities.
This presentation will present the most recent findings regarding suicide risk and risk factors among VCL callers, summarize characteristics of VCL calls, callers, and activity trends, and report how these findings have informed service enhancements for VCL callers.

Methods: Using data from the VA Corporate Data Warehouse, the VA/Department of Defense Suicide Data Repository, and VCL operational data from the Office of Mental Health and Suicide Prevention, we analyzed VCL call volume, characteristics and, for identified VCL callers, patterns of VA health services utilization, before and after VCL calls.
Results: Veterans Crisis Line call activity increased from 2010 to 2018, with documented calls rising from 102,753 in 2010 to 658,201 in 2018. 19.1% of VCL calls in 2018 were from callers who provided identifying information and had received VA services in the prior two years. Work for a cohort of identified VA patients who called the VCL in 2016 indicate that 12-month suicide rates following the initial documented call in 2016 were approximately 6 times greater than those observed for the overall VHA patient population. Risks were particularly high among callers whose calls were classified by VCL responders as at high risk. The VCL has implemented new approaches to enhance VCL services. The presentation will discuss ongoing and developing initiatives.
Discussion: The Veterans Crisis Line answers over 650,000 calls per year and embodies the VA's commitment to serving Veterans. Ongoing operations and quality improvement analytics directly inform VA suicide prevention services. As a national crisis line that is embedded within the nation's largest integrated health system, the VCL is uniquely positioned to address the needs of Veterans Crisis Line callers. VA continues to innovate to enhance the organization and delivery of services for VCL callers.

2. PREDICTING SUICIDE REATTEMPTS IN OLDER VETERANS USING MACHINE LEARNING

Amy X. Lai[1], Craig S. Meyer[2], Yixia Li[1], Ilse R. Wiechers[3], Yeates Conwell[4], Amy Byers*[5]

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Background: Reattempting suicide after an initial non-fatal attempt is often lethal, especially for older veterans who have the most suicide deaths. US Department of Veterans Affairs (VA) has programs to prevent reattempts, but 10-20% of veterans with prior non-fatal attempt will still reattempt. Though research has identified risk factors of reattempts, it is unclear who will actually reattempt. Predicting reattempts with reasonable reliability is challenging, but modern epidemiological approaches such as machine learning that can handle large number and complex combination of factors may provide opportunities. Unlike traditional statistical models that are used for inference, these modern approaches are often used for prediction where maximizing predictive ability rather than interpreting coefficients is the focus. We aim to build a prediction model for suicide reattempts using VA electronic health data (EHD), and to evaluate feasibility of a scalable tool to help clinicians identify older veterans who will likely reattempt.
Methods: Our sample included 7,678 veterans >=50 years with an initial non-fatal suicide attempt during fiscal years 2012-2013 (mean age (SD)=58.5 (7.3) years; 9% women). Sample was created by linking national data (National Suicide Prevention Applications Network, Suicide Data Repository, National Patient Care Database, Centers for Medicare and Medicaid Services). A broad range of factors before and after the initial attempt were considered to predict reattempts within 12 months, including sociodemographics, psychiatric (mood, anxiety, substance disorders) and medical (cerebrovascular, TBI, circulatory, dementia) conditions determined using ICD-9 codes, medications indicating high suicide risk (benzodiazepine, sedative-hypnotic, opioid, antidepressant, antiepileptic, antipsychotic), suicide ideation and plans, and health services use (inpatient, outpatient, psychotherapy, social work). We divided the dataset into training and testing sets for model building and evaluation, and used Lasso logistic regression to identify predictive factors. Using the training set, we applied machine learning algorithms including Ridge logistic regression, CART, Random Forest, and AdaBoost with 5-fold cross-validation to determine best prediction model. Models were evaluated using recall (sensitivity), precision (TP/[TP + FP]), and receiver operating characteristic (roc) metrics to reduce false negatives and positives and assess performance. Final model with highest metrics is validated using testing set.
Results: Among veterans with an initial non-fatal suicide attempt, 15% reattempted within one year (N=1,118; 94% non-fatal; 6% fatal). Nearly all had psychiatric or medical diagnoses, and 31% had prior suicide ideation or plan while 2% had new report of ideation or plan after initial attempt but before reattempt. Roughly 23% had medications around time of initial attempt. Ridge logistic regression (recall: 69%, precision: 77%, roc auc: 81%) and Adaboost (recall: 67%, precision: 74%, roc auc: 80%) produced highest results using training set, with both having high recall and precision scores near or above 70%.
Discussion: Findings provide initial evidence that a scalable tool predicting late-life suicide reattempt using EHD is complex but viable. Results suggest that modern epidemiological methods can correctly identify nearly 70% of suicide reattempts, and accurately predict a reattempt around 75% of the time. Although other factors like quality of social life may be needed to improve performance, findings highlight the potential of a prediction tool to help clinicians more readily identify those at high risk of late-life suicide reattempt.

3. IMPLEMENTATION OF THE VETERANS HEALTH ADMINISTRATION'S REACH VET PREDICTIVE MODELING AND CLINICAL PROGRAM

Bridget Matarazzo*[1], Bridget Matarazzo[1], Kaily Cannizzaro[1], Sara Landes[2], Mark Reger[2], Aaron Eagan[2], Jodie Trafton[2], Lisa Brenner[3], John McCarthy[2]

[1]VA Rocky Mountain Mental Illness Research, Education and Clinical Center, [2]Department of Veterans Affairs, [3]VHA Rocky Mountain Mental Illness Research, Education, and Clinical Center, University of Colorado

Background: Various predictive models for suicide risk exist (Belsher et al., 2019). The Veteran's Health Administration (VHA)'s Recovery Engagement and Coordination for Health - Veterans Enhanced Treatment (REACH VET) program is unique in that it has successfully developed a clinical program for Veterans identified via a suicide predictive model (McCarthy et al., 2015). In REACH VET, Veterans in the top 0.1% risk tier at the facility where they receive care are identified monthly and populated onto a dashboard. Each facility has a coordinator who then alerts the Veteran's provider to the identification. The provider then re-evaluates the care the Veteran is receiving and reaches out the Veteran to assess clinical risk and discuss potential care enhancement strategies. The program was fully implemented nationally in early 2017. Consistent with the Evidence-Based System for Innovation Support (EBSIS; Wandersman et al., 2012), implementation support has included technical assistance, trainings, tool development, and quality assurance via performance metrics.
Methods: REACH VET coordinators and providers utilize standardized note templates in the VHA electronic medical record (EMR) to document steps taken (e.g., care re-evaluation, outreach, etc.) for Veterans identified through REACH VET. Data from these EMR entries are populated onto a dashboard for tracking purposes. These data also are translated into a performance metric report which details completion rates for each required step. Additionally, the REACH VET implementation team tracks utilization of the resources offered to the field.
Results: In the two years since the REACH VET program was fully implemented, performance on the key metric of outreach attempted increased from 50% to 90% of all identified Veterans nationally. Current performance metrics nationally meet the VA-established benchmark for implementation (i.e., 90%). Implementation uptake has occurred in the context of high utilization of the tools made available to the field. Between 100 and 150 individuals continue to attend monthly technical assistance phone calls and an average of 60 emails come in to the REACH VET support email address monthly. We will also present data on utilization of the REACH VET resource portal and trainings. Additionally, qualitative data regarding provider and patient experiences will be reported.
Discussion: Data suggest that is feasible to implement a clinical program based on a suicide predictive model in a large United States healthcare system. Thoughtful and tailored implementation support has likely aided in the implementation success. A limitation of these data is that we cannot directly link program uptake to implementation support.

4. A RANDOMIZED CONTROLLED TRIAL OF MINDFULNESS-BASED COGNITIVE THERAPY FOR PREVENTING SUICIDE IN HIGH-RISK MILITARY VETERANS

Alejandro Interian*[1], Barbara Stanley[2], Megan Chesin[3], Miriam Latorre[1], Lauren St. Hill[1], Rachael Miller[1], Arlene King[1], Dianna Boschulte[1], Michael Gara[4], Anna Kline[4]

[1]VA New Jersey Healthcare System, [2]College of Physicians & Surgeons, Columbia University, [3]William Paterson University, [4]Rutgers University - Robert Wood Johnson Medical School

Background: U.S. rates of suicide have been rising and it is now the 10th leading cause of death for Americans. Even higher rates have been observed among US Veterans, making suicide prevention the top clinical priority in the Veterans Health Administration (VHA). A

recent evidence review concluded that a research gap exists for effective interventions that reduce suicide in high-risk Veterans. To address this need, a randomized controlled trial evaluated Mindfulness-Based Cognitive Therapy adapted for Suicide (MBCT-S). Study aims were to evaluate whether MBCT-S augmented VHA treatment-as-usual (TAU) in reducing: 1) time to suicidal event (i.e., suicide behavior or suicide-related emergency service); 2) time to suicide attempt; and 3) other suicide-related factors.

Methods: Veterans at high-risk for suicide (N=140) were randomized to either MBCT-S+TAU or TAU only (control). MBCT-S combined mindfulness intervention with suicide safety planning. Assessments occurred over 3 months: baseline; mid-treatment; and post-treatment. Outcomes included suicidal events, suicide attempts, and other suicide-related factors (suicidal ideation, depression severity, hopelessness, distress tolerance, and suicide-related coping [i.e., ability to engage in safety planning]). Suicidal behaviors were identified via the Columbia Suicide Severity Rating Scale and VHA electronic medical record review. Analyses adopted an intent-to-treat analytic approach. Kaplan-Meier curves evaluated time to suicidal events and attempts within 100 days. Other analyses used repeated measures, linear mixed models.

Results: Kaplan-Meier curves showed a significant advantage for the MBCT-S condition, over control, on time to a suicide attempt (log-rank $\chi 2=3.99$, P=.046). Within 100 days, 5 (7%) of MBCT-S participants made a suicide attempt, compared to 13 (18.8%) controls (Number-needed-to-treat= 8.48). Also, MBCT S participants showed significantly greater improvement than controls in distress tolerance across time (p=.004). Significant effects for study condition were not observed for time to suicidal event, suicidal ideation, depression, hopelessness, and suicide-related coping.

Since 50.7% of participants received VHA residential care at some point between baseline and post-treatment (46.5% MBCT-S; 53.5% Control), stratified analyses evaluated the influence of this important TAU context. VHA residential care included different programs specializing in treatment for substance abuse, PTSD, general mental health, or homelessness. Notably, across several outcomes, MBCT-S showed a stronger advantage over control among participants receiving any VHA residential care. Time to suicide attempt was significantly different between MBCT-S and control only among participants receiving residential care (p=.004), not among outpatients. Among those receiving residential care, suicide attempts occurred in 0 (0%) MBCT-S participants, compared to 9 (23.7%) controls. Similarly, only MBCT-S participants receiving VHA residential care showed significantly greater improvement over time, than controls, on depression (p=.032), hopelessness (p=.002), distress tolerance (p=.002) and suicide-related coping (.02).

Discussion: MBCT-S shows promise for reducing suicide attempts and improving suicide-related outcomes among Veterans at high-risk for suicide, particularly when received concurrently with VHA residential care. The findings of this study directly address the research gap of efficacious suicide prevention interventions for high-risk Veterans. Results show promise for an intervention, MBCT-S, that can be integrated within existing VHA programs.

5. DHEA AND DHEAS LEVELS AS POTENTIAL BIOMARKERS OF SUICIDAL BEHAVIOR IN COMBAT VETERANS

Leo Sher*[1], Janine Flory[1], Linda Bierer[1], Iouri Makotkine[1], Rachel Yehuda[1]

[1]James J. Peters VA Medical Center and Icahn School of Medicine at Mount Sinai

Background: Combat veterans are at increased risk for attempting and committing suicide. Deployment-related stressors may elevate a risk for suicidal ideation and suicide attempts. Efforts at suicide prevention are impeded by the lack of knowledge about the neurobiological and psychological contributors to suicidal behavior in combat veterans. The goal of this study was to determine whether combat veterans who have made a suicide attempt post-deployment can be distinguished from combat veterans who have never made a suicide attempt based on differences in psychological and biological variables.
Methods: Combat veterans with or without a history of post deployment suicide attempts were enrolled in the study. Demographic and clinical parameters of suicide attempters and non-attempters were assessed. All participants underwent a psychiatric interview by a trained clinician using Mini-International Neuropsychiatric Interview (MINI) to determine DSM-IV diagnoses, the Montgomery–Asberg Depression Rating Scale (MADRS) to assess severity of depression and suicidality, the Brown–Goodwin Aggression Scale to assess aggression, and the Scale for Suicidal Ideation (SSI). Blood samples were assayed for dehydroepiandrosterone (DHEA) and dehydroepiandrosterone sulfate (DHEA-S).
Results: Suicide attempters had higher SSI ($p<0.001$) and MADRS – suicidal thoughts item ($p=0.022$) scores in comparison to non-attempters. There was a trend towards higher MADRS scores in the suicide attempter group compared to non-attempters ($p=0.077$). Suicide attempters had significantly lower levels of DHEA ($p=0.031$) and DHEA-S ($p=0.037$) compared to non-attempters. Scale for Suicidal Ideation scores in all study participants combined negatively correlate with DHEA ($p=0.001$) and DHEAS ($p=0.006$) levels. DHEAS levels negatively correlate with Scale for Suicidal Ideation scores in suicide non-attempters ($p=0.002$) but not in suicide attempters ($p=0.435$). DHEA/DHEAS ratios positively correlate with total adolescence aggression, total adulthood aggression, and total aggression scale scores in suicide attempters ($p=0.008$, $p=0.007$, and $p=0.023$, respectively) but not in suicide non-attempters ($p=0.493$, $p=0.405$, and $p=0.431$, respectively).
Discussion: There are psychobiological differences between combat veterans with or without a history of suicide attempt. Combat veterans with history of a suicide attempt are at an elevated suicide risk long after suicide attempt. Among combat veterans, DHEA and DHEAS levels are significantly lower in suicide attempters in comparison to non-attempters. These findings suggest that DHEA and DHEAS levels may be biological markers of suicidal behavior in combat veterans.

6. REACH VET, THE VETERANS AFFAIRS SUICIDE PREDICTIVE MODELING CLINICAL PROGRAM: EVALUATION OF EFFECTS ON HEALTH CARE UTILIZATION, ENGAGEMENT, SAFETY PLANNING, AND MORTALITY OUTCOMES

John McCarthy*[1], Aaron Eagan[1], Claire Hannemann[1], Samantha Cooper[1], Bridget Matarazzo[1], Mark Reger[1], Sara Landes[1], Jodie Trafton[1], Michael Schoenbaum[1], Ira R. Katz[1]

[1]Department of Veterans Affairs

Background: In 2017, the Veterans Health Administration (VHA) implemented the Recovery Engagement And Coordination for Health¬--Veterans Enhanced Treatment (REACH-VET) initiative, applying a validated suicide prediction algorithm to identify patients in the top 0.1% predicted suicide risk tier, to support care enhancements. Studies are needed to assess effectiveness.

Methods: Using VHA health system records, we assessed effects for individuals included in monthly REACH-VET top 0.1% risk cohorts, 3/2017-2/2018 (n=24,128). We evaluated changes in utilization, engagement, and new suicide safety plan documentation, for the 6-months post- vs. pre- cohort entry. Differences were compared to those for a pre-REACH VET high-risk cohort from 9/30/2010 (n=5944). We also compared 6-month all-cause mortality. With available data, for individuals entering REACH-VET in March-June 2017, we examined suicide, non-suicide external cause and all-cause 6-month mortality (REACH-VET: n=9286).
Results: The REACH-VET cohort had significantly greater increases in health care appointments, outpatient mental health encounters, and new suicide safety plan documentation; smaller decreases in inpatient mental health admissions and emergency department visit days; and lower 6-month all-cause mortality (REACH-VET 2.2% vs. 2.9%). For the March-June subcohort compared to the pre-REACH VET cohort, all-cause mortality was lower (2.1% vs. 2.9%), and differences in suicide (REACH-VET 0.26% vs. 0.32%) and non-suicide external cause mortality (0.55% vs. 0.61%) were non-significant.
Discussion REACH-VET implementation was substantial and associated with greater treatment engagement, new suicide safety plan documentation, and lower all-cause mortality. REACH-VET is a promising intervention for individuals identified as at high suicide risk per indicators in the electronic health record.

YOUTH SUICIDAL IDEATION AND BEHAVIOR ARE NOT UNITARY

Poinciana Salon 2

Chair: Anita Tørmoen

1. PUBERTAL TIMING AND SELF-HARM IN ADOLESCENCE AND EARLY ADULTHOOD

Elystan Roberts*[1], Abigail Fraser[1], David Gunnell[1], Carol Joinson[1], Becky Mars[1]

[1]University of Bristol

Background: Earlier timing of puberty has been associated with a range of negative outcomes in both male and female adolescents, however few studies have focused on the relationship between pubertal timing and self-harm. Existing studies are limited by the use of subjective measures of pubertal timing, which may be biased by participants' self-image, and investigating suicide attempts or ideation, which may not capture the effects of pubertal timing on self-harm.
Methods: The sample (n = 5,369, 47% male) was drawn from a large prospective UK birth cohort, the Avon Longitudinal Study of Parents and Children (ALSPAC). Pubertal timing was measured in males and females using age at peak height velocity (aPHV), the age at which participants' height increased at the fastest rate during adolescence. Lifetime history of self-harm was reported at age 16 and 21 years.
Results: Later timing of puberty was associated with a reduced risk of self-harm in both sexes at age 16 years (females: per-year increase in aPHV OR 0.84; 95% CI 0.74, 0.96; males: per-year increase in aPHV OR 0.71; 95% CI 0.58, 0.88). Results attenuated at age 21 years.
Discussion: This study is the first to use an objective measure of pubertal timing when investigating its association with self-harm in males. The association between pubertal timing and self-harm risk may be explained by the same underlying factors in both sexes, or they may be sex-specific. There are some effects which may be unique or stronger for females, such as

body dissatisfaction or early experiences of sexualization and harassment. Alternatively, the mechanism underlying the association may be a common experience between the sexes, such as neurocognitive change, isolation, or associating with older peers. These results provide evidence that both male and female early developers are at increased risk of self-harm. Future research should investigate the mediating factors which underlie the pubertal timing associations.

2. CHANGE IN PREVALENCE OF SELF-HARM FROM 2002-2018 AMONG NORWEGIAN ADOLESCENTS

Anita Tørmoen*[1], Ingeborg Rossow[2], Fredrik Walby[1], Berit Grøholt[3], Martin Myhre[1]

[1]University of Oslo, National Centre for Suicide Research, [2]National Institute of Public Health, [3]Institute of Clinical Medicine, University of Oslo

Background: Self-harm is highly prevalent among adolescents in the general population and it is related to mental health problems, negative life events and suicide. Few studies have examined changes in prevalence in self-harm over time. There is also a lack of studies into factors that can explain changes in self-harm over time. This study examines whether change in prevalence of self-harm among adolescents had occurred, and if so, to what extent changes in known risk factors for self-harm may have contributed.
Methods: Two sets of cross-sectional school based anonymous surveys among adolescents in secondary school in Norway (grades 8 through 10) were used. First, data from the "Young in Norway" study, conducted in 2002 (N=5842) and from the "Young Data" conducted in 2017 and 2018 (N=29063) were used to estimate last year prevalence of self-harm. Second, we used stepwise logistic regression to examine whether and to what extent changes in factors known to be associated with self-harm could explain change in prevalence of self-harm over the observation period. The regression model was also stratified by gender, grade and urban or rural dwelling.
Results: An extensive increase from 4.1% to 16.2% in past year prevalence of self-harm among Norwegian adolescents was observed over the 15-year study period from 2002 to 2017/18. Cross-tabulations of past year self-harm and demographic variables showed that girls and students in 10th grade more often reported self-harm, as compared to boys and students in lower grader, respectively. Whether the distribution of these correlates to self-harm had changed over the observation period, was explored in further analyses. Results show that the period change estimate (beta) was markedly reduced when adjusting for depressive symptoms; from 1.57 to 1.30. The difference between these two estimates (0.27), corresponds to 17 % of the increase in self-harm prevalence from 2002 to 2017/-18 being explained by concurrent increase in depressive symptoms.
Discussion: The prevalence self-harm in adolescents almost quadrupled between 2002 – 2017/18. Increase in depressive symptoms could only partly explain the increase in self-harm. Several well-known explanatory variables for self-harm were included, and the results imply the need to examine other factors related to self-harm. New knowledge on associated factors related to the increase in self-harm will inform policymakers, professionals and relevant society agencies on prevention and treatment of self-harm among youngsters.

3. PATHWAYS BETWEEN EARLY LIFE ADVERSITY AND ADOLESCENT SELF-HARM: THE MEDIATING ROLE OF INFLAMMATION IN THE AVON LONGITUDINAL STUDY OF PARENTS AND CHILDREN (ALSPAC)

Abigail Russell*[1], Jon Heron[1], David Gunnell[1], Tamsin Ford[2], Gibran Hemani[1], Carol Joinson[1], Paul Moran[1], Caroline Relton[1], Matthew Suderman[1], Becky Mars[1]

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

Background: Adverse childhood experiences (ACEs) such as physical and emotional abuse are strongly associated with self-harm, but mechanisms underlying this relationship are unclear. Inflammation has been linked to both the experience of ACEs and self-harm or suicide in prior research. This is the first study to examine whether inflammatory markers mediate the association between exposure to ACEs and self-harm.
Methods: Participants were 4,308 young people from the Avon Longitudinal Study of Parents and Children (ALSPAC); a population-based birth cohort in the UK. A structural equation modelling approach was used to fit a mediation model with the number of ACEs experienced between ages 0-9 years, levels of the inflammatory markers interleukin-6 and c-reactive protein measured at 9.5 years, and self-harm reported at 16 years old. We also performed two sample Mendelian Randomisation to assess whether there was evidence that genetic variants associated with inflammatory markers were associated with an increased risk of self-harm.
Results: The mean number of ACEs young people experienced was 1.41 (SE 0.03). Higher ACE scores were associated with an increased risk of self-harm at 16 (direct effect Relative Risk (RR) per additional ACE 1.11, 95% CI 1.05, 1.18, $p<0.001$). We did not find evidence of an indirect effect of ACEs on self-harm via inflammation (RR 1.00, 95% CI 1.00, 1.01, $p=0.38$). Results of the Mendelian Randomisation will also be presented.
Discussion: Young people who have been exposed to ACEs are a group at high risk of self-harm. Further research is needed to identify alternative psychological and biological mechanisms underlying this relationship, as it does not appear to be mediated by inflammation.

4. THE PROTECTIVE ROLE OF SCHOOL CLIMATE AND ACADEMIC EFFICACY ON SUICIDE IDEATION AND BEHAVIOR AMONG ADOLESCENTS ATTENDING VOCATIONAL EDUCATION AND TRAINING SCHOOLS IN ISRAEL

Joy Benatov*[1], Shai Hen-Gal[2], Zehava Sapir[3]

[1]University of Haifa, Israel, [2]Amal Holdings, [3]Ministry of Labor and Social Affairs

Background: The interpersonal theory of suicide postulates that a sense of thwarted belonging and perceived burdensome are the central factors giving rise to suicide ideation (Joiner, 2007). Schools are children's main social environment. The school as a community can provide sense of belonging (or lack thereof) and install sense of efficacy and productivity, contrary to a sense of being a burden. School climate represents students' experiences of school life that are reflected in the norms, goals, values, interpersonal relationships, organizational structures, and learning environment. The purpose of the current study is to explore the protective role of school factors on, suicide ideation and suicide behavior (SIB) and whether these factors are directly linked to SIB or mediated via depression.
Methods: The study included 5,688 students from 70 vocational education and training (VET) high schools in Israel. Students filled out self-report questioners measuring suicide ideation, and attempts in the past 3 months, academic self-efficacy, class belonging, peers' social support, teachers' social support, school autonomy.

Results: Structural equation modeling (SEM) analysis indicated that sense of class belonging, peers' social support, teachers' social support and students' academic efficacy were all negatively associated with depression. Conversely, school autonomy was positively associated to depression. Depression significantly mediated the effects of class atmosphere, school autonomy and pupils' academic efficacy. In addition, class belonging and academic self-efficacy were found to have direct paths to suicide ideation and behavior.
Discussion: The study's findings demonstrate the importance of the school community in suicide prevention. Further, future research and implications for school-based interventions are discussed.

5. IMPACT OF AN ACCEPTING ADULT ON SUICIDE ATTEMPTS AMONG LGBTQ YOUTH

Amy Green*[1], Myeshia Price-Feeney[1], Samuel Dorison[1]
[1]The Trevor Project

Background: The CDC's Youth Risk Behavior Surveillance Survey (YRBS) highlights adverse mental health indicators among lesbian, gay, bisexual, and questioning (LGBQ) students including increased depressive symptoms, rates of seriously considering suicide, and rates of attempted suicide (Zaza et al., 2016). Mental health disparities for LGBTQ youth have been linked to minority stress, such as experiences of rejection from others (Myers, 2003). The current study examines the impact of acceptance from adults as a potential protective factor in reducing suicide attempts in LGBTQ youth.
Methods: A national quantitative cross-sectional study examined the experiences of over 25,000 LGBTQ youth between the ages of 13 and 24 with representation from each of the 50 states and the District of Columbia. Youth were asked whether they had disclosed their sexual orientation to any of the following adults: parent, family member other than a parent or sibling, teacher or guidance counselor, doctor or other healthcare provider. Those youth were asked to what extent they were accepted by the adult(s) to whom they disclosed their sexual orientation. Results were dichotomized to create a variable indicating whether youth had felt accepted by one or more of the adults to whom they disclosed. Past year suicide attempt was assessed based on the question used in the CDC's YRBS.
Results: Eighty percent of the sample reported disclosing their sexual orientation to at least one adult. Seventy-nine percent of youth who disclosed their sexual orientation to an adult had at least one adult accept them. A binary logistic regression model was run to predict past year suicide attempt among the sample of youth who disclosed their sexual orientation to at least one adult (n= 19,684). Predictor variables included youth age (13-17 vs. 18-24), gender identity (cisgender vs. transgender or gender diverse), race/ethnicity (white vs. youth of color), and adult acceptance. All predictor variables were significant at $p<.001$ in this model. Youth who were ages 13-17 were more than 2.5 times as likely to attempt suicide in the past year compared to youth ages 18-24 (OR = 2.7), youth identifying as transgender or gender diverse were more than 2 times as likely to attempt suicide compared to their cisgender LGBQ peers (OR = 2.4), and youth of color were slightly more likely to attempt suicide in the past year compared to their non-Hispanic White peers (OR = 1.26). When looking at the impact of acceptance from one adult on past year suicide attempts while controlling for the aforementioned demographic variables, youth who reported being accepted by an adult were 40% less likely than LGBTQ peers who were not accepted (OR = .60) to report attempting suicide in the past year.

Discussion: Our study highlighted the crucial role of accepting adults in the lives of LGBTQ youth. Youth who reported being accepted by at least one adult in their life were at significantly reduced risk of having a suicide attempt in the past year. Results confirm past work (Ryan et al., 2010) on the need to develop and test interventions that increase acceptance from parents and family member in the lives of LGBTQ youth and also have implications for the need to promote acceptance-based training of school and health professionals.

6. THE SHORT-TERM PREVALENCE OF NON-FATAL AND FATAL REPETITION OF DELIBERATE SELF-HARM: A SYSTEMATIC REVIEW AND META-ANALYSIS OF LONGITUDINAL STUDIES

Liu Bao-Peng*[1], Lunde Ketil Berge[2], Cun-Xian Jia[1], Ping Qin[2]

[1]Shandong University School of Public Health, [2]National Center for Suicide Research and Prevention, University of Oslo

Background: Deliberate self-harm is often recurrent and confers an important risk factor of subsequent suicide. With great varieties of the reported prevalence of non-fatal and fatal repetition of deliberate self-harm, this systematic review aims to provide the pooled prevalence estimates and to explore their differences by age, gender, and other factors in recent years.
Methods: We performed a systematic search of original articles in databases of PubMed, ISI Web of Science, EMBASE, and PsycINFO from January, 1999 to December, 2018 to include longitudinal studies and estimate the 0.5-year, 1-year, 2-year, and 3-year prevalence of non-fatal and fatal repetition of deliberate self-harm. Quality of studies included for consideration was assessed with the modified Newcastle-Ottawa Scale (NOS). Pooled prevalence and 95%CIs were computed using the Freeman-Tuckey variant of the arcsine square root transformation of proportions. Random effect models (REM) were used to calculate the pooled estimates. Subgroup analysis and meta-regression were used to investigate the heterogeneity. Publication bias was evaluated with Egger's test and funnel plots.
Results: We identified 9200 potentially eligible articles and included 77 longitudinal studies for this systematic review and meta-analysis. The estimated prevalence of non-fatal repetition was 13.82% (95%CI: 11.86%-15.90%), 16.77% (95%CI: 15.01%-18.61%), 16.97% (95%CI: 12.40%-22.10%), and 16.81% (95%CI: 10.14%-24.76%), respectively, during the 0.5-year, 1-year, 2-year, and 3-year follow-up. The corresponding prevalence of fatal repetition was 0.77% (95%CI: 0.47%-1.14%), 1.34% (95%CI: 0.86%-1.92%), 1.57% (95%CI: 0.61%-2.93%), and 2.46% (95%CI: 1.13%-4.26%), respectively. When focusing on the 1-year follow-up, the pooled estimates of non-fatal repetition were comparably high between males and females, but the pooled estimate of fatal repetition was significantly higher in males than females (RR: 2.10, 95%CI:1.68-2.63). At the same time, the prevalence of non-fatal DSH repetition was highest in adults of middle-age (14.77%, 95%CI:7.72%-23.56%), whilst the 1-year prevalence of fatal repetition was highest among the elderly (2.11%, 95%CI: 1.35%-3.02%). By geographical location, Europe has the highest prevalence of non-fatal repetition (18.98%, 95%CI:16.85%-21.19%) and Asia has the highest prevalence of DSH repetition leading to death (1.96%, 95%CI: 1.37%-2.65%).
Discussion: Both non-fatal and fatal deliberate self-harm repetitions are common among people with deliberate self-harm, but the prevalence differs considerably by factors such as gender, age and geographical location. These insights may inform provision of follow-up care and effort of suicide prevention for this high-risk group of population.

Wednesday, October 30, 2019

11:15 AM -12:45 PM

POPULATION APPROACHES TO EXAMINING SUICIDE

Poinciana Salon 1

Chair: Becky Mars

1. CONTEXTUAL FACTORS ASSOCIATED WITH COUNTY LEVEL SUICIDE RATES IN THE UNITED STATES, 1999 TO 2016

Danielle Steelesmith*[1], Cynthia Fontanella[1], John Campo[2], Jeffrey Bridge[3], Keith Warren[1], Elisabeth Root[1]

[1]Ohio State University, [2]West Virginia University and the Rockefeller Neuroscience Institute, [3]The Research Institute at Nationwide Children's Hospital

Background: Suicide is a major public health problem and the tenth leading cause of death in the United States. Despite national prevention efforts, suicide rates have continued to trend higher. Recent analyses found that suicide rates increased by more than 30% in 25 states from 1999 to 2016 and nearly 90% of US counties had an increase of over 20% from 2005 to 2015. Rural counties consistently have the highest suicide rates and demonstrate the greatest increases over time, although limited research has been devoted to rural suicide. Some studies suggest that limited socioeconomic opportunity, isolation, and limited access to mental health care in rural communities may contribute to higher suicide rates, but further research is needed to explore the association of contextual factors and county-level suicide rates. The project aims are twofold: 1) estimate suicide rates over time and by geographic location and 2) examine associations between suicide rates and county-level contextual factors by geographic location.
Methods: All individuals aged 25 to 64 who died by suicide between January 1st, 1999 and December 31st, 2016 in the United States were included in the study. Suicide decedents were grouped at the county level and summarized across 3-year periods to stabilize suicide rates over the 18-year period. All US counties were included. Rural-urban continuum codes were used to classify counties as large metro, small metro, micro, and rural. Contextual variables were drawn from multiple data sources and included county level variables for area deprivation, social fragmentation, social capital, population without health insurance, psychiatrist availability, primary care provider availability, veteran population, gun shops, and drinking establishments. Control variables for county population characteristics were also included. Spatial analysis was used to map excess risk of suicides within counties over time. Longitudinal random effects negative binomial regression models were used to test associations between contextual variables and suicide rates as well as interactions between contextual variables.
Results: Between 1999 and 2016, 453,577 individuals died by suicide in the United States. Areas of the country with an excess risk of suicide tended to be western states (i.e. CO, NM, UT, and WY), Appalachia (i.e. KY, VA, and WV), and the Ozarks (i.e. AR and MO). Suicide rates were higher and increased more rapidly in rural than large metropolitan counties. High

area deprivation was related to higher suicide rates especially in rural areas, although the impact of deprivation declined over time. The presence of gun shops was related to an increase in suicide rates, with the greatest impact in large metro counties. High social capital was associated with lower suicide rates than low social capital (IRR=0.90, 95% CI=0.88-0.93, p<.001). High social fragmentation, the percent of the population without health insurance, and the percent of veterans in a county were associated with higher suicide rates (IRR=1.10, 95% CI=1.07-1.13, p<.001; IRR=1.00, 95%CI=1.00-1.01, p<.001, IRR = 1.02, 95% CI=1.02-1.03 p<.001 respectively).
Discussion: Suicide rates are increasing across the nation and most rapidly in rural counties. Study findings suggest that increasing social connectedness and civic opportunities, improving health insurance coverage, and partnering with community residents to limit the ability of high-risk individuals to access lethal means are worthy of consideration across the rural-urban continuum. Suicide rates in rural counties are especially vulnerable to the impact of deprivation, suggesting that rural counties present special challenges and deserve targeted suicide prevention efforts.

2. PROSPECTIVE ASSOCIATIONS BETWEEN INTERNET USE AND POOR MENTAL HEALTH: A POPULATION-BASED STUDY

Becky Mars*[1], David Gunnell[1], Lucy Biddle[1], Judi Kidger[1], Paul Moran[1], Lizzy Winstone[1], Jon Heron[1]

[1]University of Bristol

Background: Most existing studies of Internet use and self-harm have been cross-sectional. This study investigated prospective associations between Internet use (hours online and specific internet experiences) and future self-harm and mental health problems.
Methods: Participants included 1,431 respondents from the Avon Longitudinal Study of Parents and Children (ALSPAC), a UK birth cohort. Internet use was assessed via self-report questionnaire in 2010, when participants were aged 18 years old. Measures of Internet use included hours online, and exposure to nine different Internet experiences (e.g. being bullied online). Past year self-harm was assessed at age 20 years and mental health problems (depression and anxiety) were assessed at 21 years. Associations were investigated using logistic regression models and analyses were conducted separately for males and females.
Results: After adjustment for confounders (socioeconomic position and previous mental health problems), females reporting high levels of Internet use were found to be at increased risk of depression at follow-up (highest tertile vs lowest tertile OR= 1.41, 95%CI 0.90, 2.20), whereas males with high levels of Internet use were found to be at increased risk for self-harm (highest tertile vs lowest tertile OR=2.53, 95%CI 0.93, 6.90). There was no evidence to suggest an association between hours spent online and anxiety.
With regards to internet experiences, associations were found for females but not for males. In fully adjusted models, being bullied online was associated with an increased risk of future depression (OR=1.76, 95%CI 1.09, 2.86) and self-harm (OR= 2.42, 96%CI 1.41, 4.15) for females. Other experiences associated with an increased risk of self-harm were receiving unwanted sexual comments or material and coming across porn, or violent/gruesome material. Other experiences associated with an increased risk of depression included meeting someone face to face that you first met online.

Discussion: Our findings underscore the importance of digital literacy education for young people and suggest that policy makers, industry, schools, and families should work together to

help individuals to stay safe online and restrict access to potentially harmful content. Interventions are also needed to reduce cyberbullying, and support those who have experienced this form of victimization.

3. THE ROLE OF SOCIAL CONNECTEDNESS AND SELF-ESTEEM IN SUICIDAL IDEATION AMONG HISPANIC ADOLESCENTS LIVING IN THE UNITED STATES

Carolina Vélez-Grau*[1], Madelyn Gould[2], Prakash Gorroochurn[3]

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Background: Hispanic youth are disproportionally affected by suicidal ideation and suicide attempts compared with other racial groups in the United States. Lack of social connectedness and low self-esteem, which can increase feelings of burdensomeness, are factors associated with increased risk for suicide. However, these factors have not been fully examined among Hispanic youth.

Guided by the Interpersonal Theory of Suicide and the Sociocultural Model of Suicide, this study aims to examine the role of social connectedness in the family and school domains and self-esteem in suicidal ideation among Hispanic adolescents. Potential gender differences in these relationships will also be examined. Connectedness to the family was defined as feeling part of, cared for, and loved by the family. Connectedness to school was defined as feeling close to people and part of the school. Self-esteem was defined as recognizing good qualities in oneself, being proud and liking oneself, feeling socially accepted and wanted. Focusing on these factors may improve suicide assessment, prevention and intervention of suicidal ideation among Hispanic youth.

Methods: The analysis employed data from the wave 1, in-home questionnaire of the National Longitudinal Study of Adolescent Health (Add Health). The sample included 3,380 Hispanic adolescents, ages 13 to 19 years. Factor analysis was used to model the interdependency of the main factors. Multiple logistic regression models first adjusted for sociodemographic characteristics such as Hispanic subgroups, age, income, and then added depression as another covariate. In addition, multiple logistic regression model adding interaction terms to examine the effects of gender on the relationship between the main independent factors and suicidal ideation were examined.

Results: Thirteen percent of Hispanic adolescents reported thinking about suicide. Logistic regression analyses indicated that low connectedness to family and school and low self-esteem were significantly associated with suicidal ideation. Low connectedness to the family had the largest detrimental effect on suicidal ideation. Low self-esteem, low family and school connectedness had a significantly higher impact on suicidal ideation among females than males. These results held after controlling for depression and other sociodemographic characteristics associated with risk for suicide. Mexican-origin and Puerto Rican-origin adolescents were at higher risk for suicidal ideation compared with adolescents from other Hispanic subgroups.

Discussion: Components of the Interpersonal Theory of Suicide, particularly low social connectedness and low self-esteem (i.e., a dimension of burdensomeness), were significantly associated with suicidal ideation among Hispanic adolescents. Hispanic sociocultural values provided a framework to understand these components and explain why females were more affected by low social connectedness than males. These findings contribute to current research

by identifying specific factors associated with the emergence of suicidal ideation among Hispanic adolescents. The findings lay the groundwork for a culturally informed population-based intervention targeting modifiable factors that can reduce the risk for suicidal ideation among this group of high-risk adolescents.

4. NEIGHBORHOOD CONTEXT AND SUICIDAL BEHAVIOR AMONG PUERTO RICAN ADOLESCENTS AND YOUNG ADULTS: FINDINGS FROM A TWO-SITE LONGITUDINAL STUDY

Kiara Alvarez*[1], Souvik Banerjee[1], Lillian Polanco-Roman[2], Patrick Shrout[3], Hector Bird[2], Glorisa Canino[4], Cristiane Duarte[2], Margarita Alegria[1]

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Background: Few studies have addressed the impact of the neighborhood and community context on suicidal ideation (SI) and attempts (SA) among adolescents (Allen & Goldman-Mellor, 2017). Lower neighborhood socioeconomic status and youth report of exposure to violence has been linked with higher risk of SA (Dupere, Leventhal, & Lacourse, 2009; Lambert et al., 2008; Vermeiren, Ruchkin, Leckman, Deboutte, & Schwab-Stone, 2002). In a study comparing the impact of objective versus self-reported measures of neighborhood characteristics on SI and SA, no association was found with objective neighborhood characteristics, but an adolescent's perception of low neighborhood safety and low neighborhood cohesion both increased the likelihood of SI and SA (Allen & Goldman-Mellor, 2017). From a social ecological perspective, these neighborhood characteristics may impact youth suicide risk via their impact on more proximal contexts, such as family and peer relationships, and via individual mental health symptoms (Leventhal & Brooks-Gunn, 2000). Assessment of the impact of perceived neighborhood context on suicide risk may be particularly important in understanding prevention targets for US Latinx youth, who are at high risk of SI and SA (Lanhingrichsen-Roling et al., 2009; CDC, 2015) and exposure to living in disadvantanged neighborhoods (Gudino, Nadeem, Kataoka, & Lau, 2011).
Methods: Participants are from the Boricua Youth Study (BYS), a probability-based community sample of Puerto Rican youth followed across 4 waves from childhood to young adulthood. This analysis included participants who were in 3rd grade and up at W3 and retained for an average 11-year follow-up in W4 (n=1810; ages 15-29 at W4). Subjective neighborhood context (negative characteristics, exposure to violence, monitoring, negative school environment) and social context (parent-child relationship, maternal warmth, social support, peer relationship quality) were assessed via parent and youth report. Objective neighborhood context (poverty, residential mobility, and murder rates) was assessed via 2000 US Census and 2002 crime data, linked to W1 residence. Lifetime suicidal ideation and attempts were assessed via the CIDI. We estimated two separate models, one with lifetime SI as the outcome and one with lifetime SA, using multilevel logistic regression models allowing for random effects at the Census block group level with clustered heteroskedasticity-robust standard errors. All models were survey-weighted and adjusted for sociodemographic characteristics.
Results: Objective neighborhood characteristics were not associated with report of lifetime SI or SA in young adulthood, once subjective neighborhood context was included in the model. Of the subjective neighborhood characteristics, only school environment was significantly associated with increased risk of lifetime SI (OR=1.24 in final model) and SA (OR=1.30).

Youth reported social support was associated with reduced risk of SI (OR=.62)and parent-reported maternal warmth was associated with reduced risk of SA (OR=.52); however, the impact of school environment remained consistent when these were added to the model.
Discussion: Our findings extend prior work on the association of subjective versus objective neighborhood characteristics with suicide risk by utilizing longitudinal data and demonstrating that one particular subjective characteristic – negative school environment in childhood – is associated with higher risk of SI and SA in young adulthood. This study expands our understanding of the impact of neighborhood context on risk of suicidal behavior and highlights the potential importance of school climate interventions in reducing long-term suicide risk.

5. ARE CHILDHOOD ADVERSITIES RELATED TO ELEVATED RISK FOR SUICIDE IDEATION AND ATTEMPTS IN PUERTO RICAN YOUNG WOMEN?

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

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Background: In the U.S., Puerto Rican adults have higher rates of suicide ideation (SI) and attempts (SA) than other Latino/a and non-Hispanic White individuals (Fortuna et al., 2007), particularly young women (Baca-Garcia et al., 2011). In Puerto Rico, young women are also at higher risk for SI and SA than young men (Velez-Perez, Maldonado-Santiago & Rivera-Lugo, 2017). Adverse child experiences (ACES) may help explain this disparity, as ACES are linked to SI and SA (Johnson et al., 2002; Brezo et al., 2008). Research suggests girls may be more sensitive to ACEs (Bale & Epperson, 2015). Indeed, ACEs were more strongly linked to early alcohol use (Ramos-Olazagasti et al., 2017) and smoking (Fuller-Thomson et al., 2013) in girls than boys. The present study examined whether cumulative ACEs differentially impact risk for SI and SA among young women (v. young men) who grew up in two different contexts (South Bronx, NY and PR). It was hypothesized that more women (v. men) would endorse SA and SI in both contexts, and that cumulative ACEs would be more strongly associated with SA and SI in women than men.
Methods: Participants are from the Boricua Youth Study (BYS; N=2,004; 49% female; Wave 1 ages 5-13 years old), a multi-site, probability-based, community sample of Puerto Rican youths followed through young adulthood (Wave 4 ages 15-29 years old) across two sites: the greater San Juan area, PR (PR) and the South Bronx, NY (NY). SI/SA was assessed in young adulthood inquiring about SI and SA in the past year and lifetime. Eleven ACEs were assessed in childhood/early adolescence including child maltreatment, parental loss, parental maladjustment, and exposure to community violence. Logistic regression models included ACEs, gender, and interaction terms between gender and ACEs, predicting, in young adulthood, lifetime SA and SI plus past year SI.
Results: In both sites, women (v. men) endorsed more lifetime SA, but not more lifetime SI, nor past year SI. Experiencing four or more ACES was related to higher odds of lifetime SA (OR = 2.12; 95% CI = 1.35, 3.36) and lifetime SI (OR = 1.91; 95% CI = 1.37, 2.67) compared to those with 0-1 ACE, for both men and women. For past year SI, there was an interactive gender effect: women endorsing 4 or more ACEs had higher odds of past year SI (OR = 3.83;

95% CI = 1.80, 8.15) compared to those with 0-1 ACE, while the association was not statistically significant for men (interaction=1.96, p=0.01). No site differences were detected.
Discussion: ACEs were prospectively related to SA in young adulthood, and in girls only, also to SI. ACEs may impact SA through changes in stress responses and neurodevelopment in boys and girls. Girls may be more sensitive than boys to the effects of cumulative ACEs, specifically involving thoughts of suicide. This may be due to gender differences in pubertal development, coping, and context. This study provides information about potential developmental consequences of ACES in relation to risk for SI and SA. Further research is warranted to better understand underlying mechanisms of the long-term effects of ACES to impact risk for SI in young women.

6. STRESS EXPOSURE AND STRESS GENERATION IN THE PREDICTION OF SUICIDAL IDEATION AND BEHAVIORS

Amanda Uliaszek*[1]

[1]University of Toronto

Background: Theoretical models have proposed that suicidality is intricately linked to interpersonal stress (e.g., Joiner, 2005); however, the exact nature of this relationship is unknown. The diathesis-stress model of suicide suggests that a stressor is a necessary precursor to suicidality (Mann, Waternaux, Haas, & Malone, 1999), while the behavioral sensitization model suggests the strength of the relationship between stress and suicidal behaviors decreases over time (Joiner & Rudd, 2000). Despite this theoretical emphasis on the dynamic relationship between stress and suicidality, most studies have focused only on cross-sectional associations and limited conceptualizations of life stress. Research is needed examining prospective relationships and multi-dimensional measurements of life stress. Two models are applicable to testing the stress-suicide relationship: 1) the stress exposure model posits that differential manifestations of life stress predict both suicidal ideation and behaviors and 2) the stress generation model posits that suicidal ideation and behaviors can prospectively predict life stress. Taken together, an exploration of these models can help explain the cyclical, chronic relationship between suicidality and life stress over time. To date, no study has explored these relationships in an adult sample.
Methods: The present study examined 101 adults currently experiencing symptoms of borderline personality disorder and high rates of suicidality. Participants completed self-report questionnaires and a gold-standard life stress interview in a three-wave design over the course of one year. The assessment included interpersonal and non-interpersonal assessments of both chronic and episodic life stress.
Results: Cross-lagged panel analyses were used to examine the relationships between suicidal ideation and behaviors and multiple dimensions of life stress. This type of analysis is ideal for examining prospective relationships while accounting for the autoregressive pathways within each construct. All models demonstrated excellent fit. Evidence for both chronic and episodic interpersonal stress generation was found for suicidal ideation. Chronic interpersonal stress generation was also supported for suicidal behaviors. The only evidence for the stress exposure model came from non-interpersonal chronic life stress prospectively predicting suicidal behaviors over and above baseline suicidal behaviors.
Discussion: This exploration of the dynamic and bi-directional relationships between suicidality and life stress provided evidence for, not only how certain types of stress can predict future suicidality, but how suicidal ideation and behaviors can generate increases in

interpersonal forms of life stress over time. Non-interpersonal chronic stress, or long standing financial, health, and occupational difficulties, was shown to predict suicidal behaviors. There was no evidence of interpersonal stressors prospectively predicting suicidality above and beyond baseline levels. Instead, both suicidal ideation and behaviors predicted increasing interpersonal problems. This study provides insight into the damaging ways the experience of suicidality can contribute to future distress, potentially contributing to further psychopathology symptoms. Treatment implications and prophylactic interventions are discussed.

CULTURAL AND CONTEXTUAL FACTORS OF SUICIDE

Americana Ballroom 1-2

Chair: Melissa Pearson

1. THE TRANSITION FROM SUICIDAL THOUGHTS TO BEHAVIOURS: DO HALLUCINATIONS PLAY A ROLE?

Emily Hielscher[1], Jordan DeVylder[2], Melissa Connell[1], Penelope Hasking[3], Graham Martin[4], James Scott[1], Jordan DeVylder*[5]

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Background: Although suicidal ideation is a well-documented risk factor for suicide, the majority of those with suicidal thoughts do not go on to make an attempt. Therefore, it is important to improve prediction of which individuals are more likely to act on their suicidal thoughts. Auditory hallucinations (AH) and psychological distress (PD) are strongly associated with both suicidal thoughts and behaviour, but their role in the ideation-to-attempt transition has not been investigated in a longitudinal dataset.
Methods: Participants were from an Australian longitudinal cohort of 1793 adolescents (12–17 years). Suicidal thoughts and behaviours were measured using the Self-Harm Behaviour Questionnaire. Items from the Diagnostic Interview Schedule for Children assessed AH. PD was categorised using the General Health Questionnaire clinical cut-off. Those reporting suicidal ideation were stratified into four groups: (i) Those who did not have PD or AH (reference group), (ii) AH only, (iii) PD only, (iv) PD and AH. Using logistic regression, we examined associations between baseline suicidal ideation, and incident suicide attempts during the 12-month follow-up, stratified by the four comparison groups. Analyses were adjusted for demographics.
Results: AH were strongly and independently associated with baseline suicidal ideation (OR=3.84; 95%CI=2.46–6.02) and suicide attempts in the following 12 months (OR=3.21; 95%CI=1.18–8.76). Among adolescents with baseline suicidal ideation (n=235; 13.1%), 6.0% (n=14) attempted suicide at follow-up. Those with AH only were not at significantly increased risk of transition from suicidal thoughts to attempts (OR=2.97; 95%CI=0.26–34.59). Similarly, adolescents with PD only did not have a significant increase in transition from ideation to attempts (OR=4.48; 95%CI=0.91–22.14). Adolescents who had both PD and AH had an eight-fold increased risk (OR=8.42; 95%CI=1.46–48.67) of acting on their suicidal thoughts.
Discussion: Adolescents with both PD and AH had the greatest likelihood of acting on their suicidal thoughts. AH and PD alone did not significantly predict the transition from suicidal

thoughts to attempts, although the non-significant associations may be attributable to the low prevalence of adolescents who attempted suicide and the limited statistical power. Screening adolescents who are distressed and report hallucinations may assist with predicting those at greatest risk of future suicide attempts.

2. SUICIDE RESEARCH IN MAINLAND CHINA AND HONG KONG IN THREE DECADES: A SYSTEMATIC SCOPING REVIEW

Qijin Cheng*[1], Xingzhou Zhang[1], Carrie Lui[2], Paul Yip[3]

[1]The Chinese University of Hong Kong, [2]James Cook University, [3]The University of Hong Kong

Background: Both Mainland China and Hong Kong have experienced a belt shape change in suicide rates during the three decades from 1985 to 2015, yet corresponding suicide research efforts and features in the region are not well known by the international colleagues. The present study aims to outline essential features of suicide research in CN and HK between 1985 and 2015, appraise research quality, synthesize key findings, and identify key contributors.
Methods: PsycINFO, PubMed, Web of Science, China National Knowledge Infrastructure (CNKI), China Biomedical Literature Database (CBM), and Digital Journal of Wanfang Data (Wanfang) were used in the systematic search. The inclusion criteria included: 1) being published in an academic or professional journal; 2) published between Jan 1, 1985 and Dec 31, 2015; 3) written in Chinese or English, 4) focused on human suicide, including suicidal thoughts, suicidal behaviors, and suicide prevention; and 5) the first or corresponding author was affiliated with a research institute in CN or HK, or the data of the study were first-hand collected in CN or HK.
Results: 6,430 articles, including 5,841 Chinese and 589 English articles, met the inclusion criteria. These Chinese and English publications were compared in terms of overall trend, research perspectives, research methods, subject population, special suicide method, research quality, key contributors, and funding supports.
Discussion: A large amount of Chinese literature of suicide research has been accumulated in the three decades, which demonstrated commonalities but also differences from the English literature conducted in the same region. Having a comprehensive review of both Chinese and English literature can provide more insights to the development of suicide research and prevention in the region and inform future research agenda and policy making.

3. THE VALUE OF SPATIAL ANALYSIS TO DETECT SMALL AREA VARIATION OF SELF-HARM IN RURAL SRI LANKA

Melissa Pearson*[1], Shu-Sen Chang[2], Michael Eddleston[1], David Gunnell[3], Keith Hawton[4], Suneth Agampodi[5], Thilini Agampodi[5], Duleeka Knipe[6], Lal Muttuwatta[7], Jane Soerensen[8], Flemming Konradsen[8]

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Background: Fatal and non-fatal self-harm are major public health problems in rural Asia. Most spatial analysis of suicide has been undertaken in high income settings where patterns may be different from low- and middle-income settings. Our aim was to analyse spatial patterns of suicide and self-harm in Sri Lanka.
Methods: Detailed spatial information for self-harm across 180 villages in Sri Lanka was available for analysis. We used the indirect standardisation method to calculate age-standardised incidence ratios for all self-harm episodes in each geographic unit (180 villages with approximately 200 households per village). We tested for spatial autocorrelation using Moran's I statistic. "Smoothed" incidence rate ratios were calculated using the Markov chain Monte Carlo method. Their associations with socio-economic factors were investigated using Bayesian hierarchical models.
Results: In total, 2,234 self-harm events were eligible for analysis. Smoothed village self-harm incidence ratios (IRR 0.4 – 2.0) showed a five-fold difference between the areas of high and low ratios. There was evidence of spatial clustering (Moran's I = 0.0778; p-value = 0.031). Two spatial patterns were visible from the maps; one area of high risk for males in middle ages using pesticides for self-harm across a central position in the study area. The other pattern was observed of high-risk areas for young females using non-pesticide methods of self-harm predominantly in the north-western tip of the study area. There was little evidence that farming communities or population density explained the spatial patterns. In adjusted analysis, only deprivation showed an association with village self-harm incidence (adjusted = 1.10 [90% credible interval 1.03,1.18]).
Discussion: To our knowledge this is the first spatial analysis of self-harm data from a large rural area in a LMIC. Given the limited capacity for surveillance data on suicide and self-harm in many LMIC and the importance of Asia in terms of the global burden of the problem, this study represents an important contribution to our understanding of small area variations. The study supports the use of spatial analysis to direct prevention activities to communities at greatest risk. Specifically, findings from this study suggest that for this setting, attention to different age groups and methods of self-harm in certain geographical areas would be relevant

4. GENDER-SPECIFIC RISK FOR LATE-LIFE SUICIDE IN RURAL CHINA: A CASE-CONTROL PSYCHOLOGICAL AUTOPSY STUDY

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Background: Despite the high suicide rate and the unique pattern of gender-difference among elderly people in rural China, research addressing this issue is scarce. This psychological autopsy study aims to throw light on this research gap.
Methods: The study was conducted in the rural area of three provinces in China. And include 242 persons (135 males and 107 females) 60 years and above who had committed suicide between June 2014 and September 2015. Using 1:1 matched case-control design, living community controls matched in age (± 3 years) and gender were randomly selected from the same living location. Interviews were carried out with informants for both the suicide cases and living controls. We collected data on suicide means, time, suicidal intent, and previous attempts among suicide cases. In addition, we considered risk factors from three broad

domains: social-demographic characteristics, psychological factors, and social environment and life event variables.
Results: In suicide cases, men were more likely to use alcohol before suicide than female (12.6% vs. 4.7%). There was no gender difference on suicide method, time, spot, suicide intent, and previous attempts. The univariate analyses showed that unstable marital status, the presence of mental disorder, the severity of depressive symptoms, higher degree of hopelessness, impulsivity, loneliness, lack of social support, poorer family function, worse quality of life, and more stressful life events were associated with suicide in both men and women. For men, other risk factors were the present of chronic physical illness, worse functions of daily living, and the occurrence of stressful life events in the last month. Variables that remained in the multivariable conditional logistic model for both men and women were the severity of depressive symptoms and the degree of hopelessness.
Discussion: Even though the national mortality data showed more suicide deaths among men than women, we did not find many gender differences in factors related to suicide in the rural elderly in China. Depression and hopelessness were the two major risk factors for suicide among both the male and female elderly. Suicide prevention programs that focus on depression and hopelessness in this vulnerable population are sorely needed.

5. PHYSICAL DISABILITY, SUICIDE IDEATION, AND SUICIDE ATTEMPTS: A CLOSER EXAMINATION OF INFLUENCING FACTORS

Lauren Khazem*[1], Michael Anestis[2], Kim Gratz[3], AnnaBelle Bryan[1], Craig Bryan[1]

[1]National Center for Veterans Studies, University of Utah, [2]University of Southern Mississippi, [3]University of Toledo

Background: Physical disabilities (PD) have been implicated as risk factors for suicide ideation (SI) and attempts (SA; Khazem & Anestis, 2019; Khazem, Jahn, Cukrowicz, & Anestis, 2017). However, the mechanisms contributing to this increased risk are largely unknown (Khazem, 2018). While perceived burdensomeness is associated with SI in this population (Khazem et al., 2017; Russell, Turner, & Joiner, 2009), it remains unclear which individuals with PD are more prone to experiencing perceived burdensomeness. Furthermore, experiences of PD-related stigma may be one pathway to the development of feelings of perceived burdensomeness, as it has been associated with lower self-esteem and mastery, greater isolation (Jacoby, 1994), and SI (Green et al., 2015). It remains largely unknown which aspects of PD (e.g., severity, perceived visibility) prompt heightened suicide risk through these experiences. Given the aforementioned findings, we anticipate that both the severity and perceived visibility of individuals' PD will be indirectly associated with the self-reported likelihood of future SI and SA through perceived burdensomeness, while these relationships will be strongest at high levels of PD-related stigma.
Methods: In this ongoing research, individuals with a PD significantly impacting activities of daily living or instrumental activities of daily living are administered a series of structured interviews and online self-report measures. Participants' reported likelihood of future SI and SA is assessed through the Self-Injurious Thoughts and Behaviors Interview (SITBI; Nock et al., 2007), and PD severity is measured through responses to the Craig Handicap Assessment and Reporting Technique Interview (CHART; Whiteneck, Charlifue, Gerhart, Overholser, & Richardson, 1992). Participants rate the perceived visibility of their PD on a Likert scale ranging from 1 ("Not at all visible to others") to 5 ("Very visible to others"). Experiences of PD-related stigma are measured via responses to the Jacoby Stigma Scale (JSS; Jacoby, 1994).

A series of moderated mediation analyses utilizing 10,000 bootstrap samples will be conducted via SPSS PROCESS version 3.3 (Hayes, 2018) to test study hypotheses.
Results: Preliminary results for 53 individuals (46.29% with mobility impairment, 42.59% with visual impairment, Mean age=41.04, SD=13.50) indicate an association between PD severity and stigma (r=.30, p=.04), as well as associations between the perceived visibility of PD and the likelihood of future SI (r=-.27, p=.05) and perceived burdensomeness (r=-.30, p=.03). PD-related stigma is associated with perceived burdensomeness (r=.46, p=.001). Notably, 62.26% of participants' most visible PD are congenital, and of those with congenital PD, 54.55% have experienced SI (compared to 35% for those with acquired PD); 10% of those with congenital PD have a history of SA (compared to 9.09% for those with acquired PD). Full results and implications of this research and will be presented.
Discussion: Currently, the dearth of research focused on physical disability and suicide precludes better understating reasons for the heightened risk of suicide in this population. Results of this research will aid in clarifying the relationship between PD and suicide risk and inform suicide prevention efforts from both a research and clinical perspective.

6. PREVENTION OF SUICIDE AND PESTICIDES: EVOLUTION OF PESTICIDE MANAGEMENT (POLICY) IN NEPAL

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Background: Suicide prevention is a government priority in Nepal. However, the suicide rate in the country is largely unknown. In 2014, WHO has estimated that Nepal had the 7th highest suicide rate in the world (24.9 per 100,000), the 3d highest for women (20 per 100,000), and 17th highest for men (30.1 per 100,000). According to police, pesticide self-harm is the second most common means of suicide in the country, but there is no data on which pesticides cause most deaths. This presentation will highlight a multi-disciplinary project supported by the University of Edinburgh (UK) that aims to determine the highly hazardous pesticides (HHPs) used for suicide and analyse trajectories of pesticide policy development in Nepal with the view of presenting the government with culturally appropriate and evidence-based solutions for pesticide suicide prevention.
Methods: The mixed methods project is implemented in collaboration with the Nepal Public Health Foundation, the Ministries of Agriculture, Health and other Nepali partners. The project aims to gather: a) quantitative data on pesticide self-harm from select hospitals, toxicology labs, and police; and b) analyse policy development using qualitative methods of key informant interviews and legislation, policy and stakeholder analysis.
We apply the policy diffusion and policy transfer theories, tracing policy development within the regional and global contexts to highlight regional influences (i.e. India and Sri Lanka) on Nepali pesticide policy. We analyse public and government discourse on harms associated with pesticides and the stated government reasons for pesticide ban. As a conclusion, we triangulate the quantitative and qualitative findings to make evidence-based recommendations on policy development to reduce the suicide rate in Nepal.

Results: In the first year of the study, 1145 cases of pesticide poisoning were identified, with 4% mortality. The HHP identity was available in 27 fatal and 468 surviving patients, and unavailable in 650. The HHPS responsible for deaths identified in this small sample included: aluminum phosphide, chlorpyriphos and cypermethrin mix, dichlorvos, and methyl parathion. Our study identified poor documentation and management of hospital record files. Issues included the absence of patient identification numbers, non-systematic collection of files, patient files missing essential information such as outcome and the name of the compound. The government health management information system does not record suicide.

It is likely that the low numbers of pesticide poisoning deaths recorded in hospitals are due to underreporting (due to stigma and perceived negative consequences), referral of serious cases to private hospitals among others.

Discussion: The presentation will discuss the identified gaps in hospital, police and toxicology labs' record keeping. These deficiencies result in suicide reporting being unreliable.
In 2019, pesticide management underwent changes, with the 1991 Pesticide Act replaced with the new pesticide law. The same year, Nepal's Ministry of Agriculture has banned five pesticides the main cited reason for this is the elimination of high pesticide residues found in food. Suicide prevention is not mentioned as one of the reasons for the ban of HHPs.

Our findings show that pesticide policy in Nepal reflects the trend of eliminating most hazardous pesticides from the market. To achieve a long-lasting impact and fulfill its goal of reducing the suicide rate, Nepal needs a more nuanced and cross-sectoral comprehensive action on suicide prevention, including measures aimed at improving hospital records-keeping and overall public health surveillance, tackling stigma, and clarifying the status of attempted suicide in the law.

APPROACHES TO UNDERSTANDING RISK AND PREVENTING SUICIDE IN SPECIFIC POPULATIONS

Poinciana Salon 3-4

Chair: Lauren Weinstock

1. SUICIDE IN MIDDLE-AGED ADULTS – AN UNATTENDED HEALTH PROBLEM GLOBALLY

Ping Qin*[1]

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Background: Suicide in middle-aged adults contributes to a large proportion of potential years of life loss and could have a profound influence on family relatives of three generations: children, spouse and siblings, and parents. However, the relative importance of this problem is not well received and should be understood in the right context globally. This study aims to provide an overview of suicide in middle-aged adults in WHO member states and to enhance our understanding of suicide in this age group as an important health problem.
Methods: Data on age-specific suicide, traffic accident and population for 93 countries or dependences, on latest available year were obtained from the WHO mortality database alongside with their age-specific population from WHO or UN. Suicide in middle-aged adults

of 40-64 years was compared with mortality by traffic accidents in this age group, and the differences were further profiled by region and income level of the countries.
Results: Adults of 40-64 years old accounted for 35.5% of the population from 10 years and above in the 93 countries, however, suicide by this middle-aged population counted for 44.2% of all suicides from these countries – a proportion which was much higher in males and in high income countries. Overall, suicide rate in adults of 40-64 years in these country was 14.1 per 100000 (95%CI: 12.2-17.1) whilst the rate of 11.3 per 100000 (95%CI: 9.3-13.4) for all population over 10 years old. A higher rate in middle-aged adults than the national rate was seen in 78.5% (n=73) of these countries. At the same time, 61.3% (57/93) of these countries had more lives lost from suicide than from road traffic accidents among adults aged 40-64 years – a fact that was particularly prominent in high-income countries (82.2%, 43.3% and 30.0%, respectively of high, upper-medium and low-medium income countries) and in countries of Western Pacific (71.4%) and Europe (82.2%).
Discussion: Suicide in middle-aged adults imposes an important health problem in many parts of the world and should receive high priorities in both research and prevention.

2. SERIAL, TITRATED IV KETAMINE INFUSIONS CAN STOP SUICIDAL IDEATION IN OUTPATIENTS WITH TREATMENT RESISTANT DEPRESSION AND AVERT ER VISITS, HOSPITALIZATION, AND SUICIDE

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Background: Recent studies examining the effect of single and repeat-dose ketamine infusions in treatment resistant depression have shown promising results in diminishing suicidal ideation (SI). We describe the efficacy of titrated serial ketamine infusions in stopping suicidal

ideation and averting ER visits and hospitalizations in a very large, naturalistic sample of adult and adolescent outpatients with treatment resistant depression (TRD) and complex psychiatric comorbidity in a real-world psychiatry outpatient practice.

Methods: This is a retrospective chart review of 231 adults and adolescents presenting with TRD and complex psychiatric comorbidity in a large real-world psychiatry office practice with > 5400 visits/year. Each patient underwent a 60-90 min comprehensive diagnostic consultation by the single treating psychiatrist. Medical, psychiatric, and psychotherapy records were requested and reviewed when available. Appropriate patients were treated with 6 serial, titrated ketamine infusions (0.5-1.2 mg/kg within 40-50 min via syringe pump) over 2-3 weeks. PHQ-9 was obtained at baseline and before each infusion. The presence, frequency, and intensity of suicidality expressed in PHQ-9 Item 9 was analyzed over the treatment course and correlated to decrease in total PHQ-9. Suicide deaths, attempts, ER visits, and psychiatric hospitalizations were analyzed over the course of treatment and for an additional 4 weeks.
Results: 60.73% of patients with TRD presented with suicidal ideation and 50% had previous suicide attempts. Most had multiple comorbidities and hospitalizations. Serial, titrated ketamine infusions erased suicidality completely in 58.65% and markedly diminished suicidal ideation in 78.95%. Cessation of SI occurred after 1 infusion in 35.62%; those whose suicidal ideation did not remit after 1 infusion required 4 serial titrated infusions and an average dose of 0.75 mg/kg to stop suicidal ideation. Notably, despite the frequency and severity of suicidal

ideation, there were no suicide deaths, attempts, ER visits or hospitalizations required in this very large cohort.
Discussion: This is the first report of serial, titrated IV ketamine infusions in a real-world psychiatry office for adults and adolescents with treatment-resistant depression (TRD) and complex psychiatric comorbidity to safely and rapidly treat severe suicidal ideation and avert ER evaluation and psychiatric hospitalization. It represents the largest number of patients to date reported from a single site in studies of IV ketamine infusions for treatment resistant depression and suicidality, and a potential breakthrough treatment option for psychiatrists to provide in the office. This is the largest patient cohort to date in the ketamine literature, unique because it is drawn from a single practice and a single treating psychiatrist. We present critical data regarding actual patient outcomes using serial, titrated ketamine infusions for patients with severe TRD, complex psychiatric comorbidity, and imminent suicidal ideation -- most notably, that there were no suicide deaths, attempts, ER visits or psychiatric hospitalizations. We present the percentage of patients whose suicidal ideation stops at each serial infusion, the mean dose of ketamine required for cessation of suicidal ideation, and the change in PHQ-9 found when it stops. This data supports the urgent need to carefully consider the potential life-saving intervention available now in offering serial, titrated ketamine infusions to outpatients with treatment-resistant depression and other psychiatric comorbidities at imminent risk of suicide. The potential to avert suicide, preserve life, reduce patient and family suffering, and reduce healthcare costs is enormous.

3. REDUCING SUICIDAL IDEATION THROUGH INSOMNIA TREATMENT (REST-IT): A RANDOMIZED CLINICAL TRIAL

William McCall*[1], Ruth Benca[2], Meredith Rumble[3], Doug Case[4], Andrew Krystal[5]

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Background: Insomnia is a risk factor for suicidal ideation, suicidal behavior, and suicide death. We sought to determine whether targeted treatment of insomnia in suicidal adults with insomnia would provide a superior reduction in suicidal ideation.
Methods: Reducing Suicidal Ideation Through Insomnia Treatment (REST-IT) was an 8-week, 3-site, double-blind, placebo-controlled, parallel-group randomized controlled trial of zolpidem-controlled release (CR) hypnotic therapy versus placebo. Participants were medication-free 18-65-year olds, with Major Depressive Disorder, insomnia and suicidal ideation. Suicidal ideation was the main outcome, measured first by the Scale for Suicide Ideation, and second as measured by the Columbia-Suicide Severity Rating Scale.
Results: One hundred and three participants were randomized to zolpidem-CR (N=51) or placebo (N=52), including 64 women and 39 men, mean age of 40.5 years. Zolpidem-CR had a robust anti-insomnia effect, especially in patients with the most severe insomnia symptoms. The Scale for Suicide Ideation showed no significant treatment effect with a least squares estimate of -0.56 (0.83) (95% CI: -2.19, 1.08), but the reduction in scores was positively related to improvement in insomnia after removing the effect of other depression symptoms ($p< 0.002$). The Columbia-Suicide Severity Rating Scale suicidal ideation subscale showed an advantage for zolpidem-CR ($p=0.035$), with a treatment effect of -0.26 (0.12) (95% CI: -0.50, -0.02). The advantage for zolpidem-CR in reducing suicidal ideation on the C-SSRS was greater in patients with more severe insomnia. No deaths or suicide attempts occurred.

Discussion: While the results do not argue for the routine prescription of hypnotics for mitigating suicidal ideation in all depressed outpatients with insomnia, they suggest that with proper safety procedures it is possible to achieve a more rapid reduction in suicidal ideation by time-limited prescribing small quantities of hypnotics, especially in patients with severe insomnia.

4. SUICIDE AS A STRATEGIC RESEARCH PHENOMENON FOR HEALTH DISPARITIES: THE EXAMPLE OF ASIAN AMERICANS

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Background: The increasing rates of suicide have raised concerns that we are experiencing a national suicide epidemic. Based on a recent report, the suicide rate for non-Hispanic Whites was close to three times the rate for non-Hispanic Blacks and 2.5 times the rate for Hispanics (MMWR, 2018). However, because of the rarity of the phenomenon of suicide, most analyses of national level data exclude the smaller racial/ethnic groups and thus, provide a partial picture of the burden of suicide by race/ethnicity. For instance, in New York City from 1997-2015, suicide was among the top ten leading causes of death only for the Asian American population (Asian American Federation, 2017). Among all Asian Americans, Korean Americans (KAs) have the highest suicide risk and suicide mortality rates. From 2003-2012, the suicide rates among Korean American men nearly doubled from 6.5 per 100,000 to 13.9, surpassing those of all other Asian American groups (Kung et al, 2016). Although these disparities have been attributed to high rates of undiagnosed and untreated mental health disorders, the lack of theories on suicide disparities, coupled with the statistically rarity of suicide have limited our understanding of suicide.

Methods: To achieve the three objectives of this presentation, we used the following approaches:

1: Analyzed patient demographics derived from ED visits involving suicide/self-harm and other suicide-related diagnoses obtained from the NYS Department of Health Statewide Planning and Research Cooperative System (SPARCS), a comprehensive all payer system to collect discharge information for hospital visits. We focused on New York City and the borough of Queens.

2. Revisited the Minority Stress Model using a structural and intersectional lens. This model depicts how stressors that stem from belonging to a minority group (e.g., perceived discrimination, expectations of rejection) have deleterious implications for a person's mental health. We included in the model structural constraints and reconceptualized discrimination as a systematic exclusion from opportunities, particularly salient for understanding exclusion of racial/ethnic minority groups from mental health care. We adopted an intersectional lens to examine the interlocking hierarchies of gender, race/ethnicity, class and sexual orientation that systematically exclude individuals from opportunities, including mental health care.

3. Conducted a comprehensive literature review on Korean American mental health and suicide to assess whether suicide can be considered a "strategic research phenomenon."

Results: 1. We found that in 2015, Asian Americans had the highest suicide/self-harm ED visits (16 per 1000) compared to Hispanics, non-Hispanic Blacks and non-Hispanic Whites (7, 11 and 12 per 1000, respectively).
2. We constructed a revised model of minority stress that enables an examination of social determinants contributing to suicide disparities.

3.The literature review supported the conclusion that suicide is a strategic research phenomenon because it clearly reveals the factors/mechanisms that undermine mental health in extremis and contributes to suicide disparities.

Discussion: This presentation revealed the need for closer and more nuanced examinations of the phenomenon of suicide by race/ethnicity by using the borough as the unit of analysis and focusing on Asian Americans. It suggested an adaptation of the Minority Stress Model (Meyer, 2003) as an appropriate framework for understanding disparities in suicide. It also suggested that the phenomenon of suicide although rare constitutes a "strategic research phenomenon," (Merton, 1987) because it brings into sharp focus fundamental issues related to disparities in access to mental health care.

5. THE SUICIDE PREVENTION INTERVENTION FOR AT-RISK INDIVIDUALS IN TRANSITION (SPIRIT) STUDY: RATIONALE AND PROTOCOL FOR THE MAIN STUDY AND THE OPIOID-RELATED SUPPLEMENT

Jennifer Johnson*[1], Richard Jones[2], Ted Miller[3], Gregory Brown[4], Barbara Stanley[5], Ivan Miller[6], Sarah Arias[6], Danis Russell[7], Julie Rexroth[8], Holly Fitting[9], Louis Cerbo[10], Sheryl Kubiak[11], Michael Stein[12], Christopher Matkovic[13], Lauren Weinstock[2]

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Background: About half of individuals who die by suicide are not in mental health care at the time of their suicide. One of the places where individuals at risk can be found is in the criminal justice system. Nearly 11 million people per year are arrested and held in pretrial jail detention, typically for only a few days. About two third of these individuals have mental health disorders, and nearly three fourths have substance use disorders. They are typically arrested at moments of crisis. Therefore, interventions at the time of arrest and jail detention can be considered to serve a similar population health function as emergency department interventions (i.e., they intervene with high risk individuals at a high-risk moment).
Methods: SPIRIT is a large (n = 800) randomized trial examines the effectiveness and cost-effectiveness of a brief suicide prevention intervention for reducing suicide behaviors and hospitalizations in the year after release from pretrial jail detention. It is the first randomized trial of a suicide prevention intervention in the vulnerable year after jail release. This presentation describes the context, rationale, and execution of design decisions including:
1. Standard care in jail and after release
2. Challenges and strategies for coordination between jail and community mental health centers
3. Rationale and context for cost-effectiveness analyses

4. Recruitment and training of embedded community counselors
5. The choice of the Safety Planning Intervention (SPI) as the intervention to test
6. Feasibility of telephone follow-up sessions
7. Strategies for achieving our 88% (to date) post-release follow-up rate for assessments
8. Randomization before determining full eligibility, and how this is addressed from a clinical trials perspective
9. Suicide-related problem solving and belongingness as target mechanisms
10. Limited exclusion criteria
11. Recruitment procedures that allowed us to recruit the full sample of 800 suicidal jail detainees in 29 months
12. Rationale for key outcomes
13. Procedures allowing efficiently response to the more than 1,000 expected adverse events to date.

By virtue of the high rates of both suicidality and drug use in the SPIRIT sample, SPIRIT is well positioned to elucidate the relationships among suicide prevention, suicide behavior, and substance use in order to inform suicide prevention efforts. A substantive proportion of opioid overdoses (both fatal and non-fatal) may better represent undetected suicide attempts. There are limited published data to guide effective intervention and prevention efforts. This is a critical gap, given that different potential pathways toward intervention might be indicated, depending upon whether an opioid overdose is accidental or occurs within the context of self-directed harm. The SPIRIT supplement will: (1) determine whether the effectiveness of SPI changes with substance use severity, (2) determine how SPI effects accidental and intentional overdose; (3) elucidate the functional associations between substance use and suicide behaviors in this sample (e.g., perceived inability to overcome addiction as a reason for suicide; substance use with the goal of reducing fear of making an attempt; suicide attempts made in an altered state of mind; impulsive attempts made because drugs are a lethal means that are present), and (4) examine underreporting and reasons for underreporting accidental and intentional overdoses on the SPIRIT sample.

Results: This presentation describes the context, rationale, and execution of design decisions, including metrics of clinical trials success.
Discussion: The presentation will highlight clinical and research considerations in a unique context and discuss how to navigate them successfully.

6. EXPLORING THE ASSOCIATION BETWEEN REWARD RESPONSIVITY, ATTENTION, AND SUICIDALITY IN DEPRESSION

Sakina Rizvi*[1], Amanda Ceniti[1], Troy Chow[1], Shane McInerney[2], Yvonne Bergmans[1], Norm Farb[2], Tim Salomons[3], Diego Pizzagalli[4], Gustavo Turecki[5], Sidney Kennedy[6]

[1]St. Michael's Hospital, [2]University of Toronto, [3]Queen's University, [4]Harvard University, [5]McGill University, [6]St. Michael's Hospital and University of Toronto

Background: Several studies report impaired reward processing in suicidal individuals. However, the full spectrum of reward processing abnormalities and the interaction with other

cognitive indices such as attention remain unclear. This preliminary analysis from the Canadian Biomarker Integration Network for Depression (CAN-BIND) suicide biomarker study explored impairment in making a stimulus-reward association (i.e. reduced response bias) and its correlation to focal attention among suicidal and non-suicidal individuals.
Methods: MDD patients with current suicidal ideation and a history of suicide attempt (n=3), no attempt (n=3), as well as MDD patients with lifetime attempt but no current suicidal ideation (n=2) and healthy controls (n=1) underwent a reward response bias task under functional magnetic resonance (fMRI) conditions. In the task, when reward associated with correctly identifying a stimulus is manipulated, there is a change in response bias towards the stimulus associated with more frequent reward. A lack of response bias towards reward is interpreted as reflecting low reward engagement. Attention was measured using the Shifted-Attention Emotional Appraisal Task (SEAT), a focal attention task in which participants respond to indoor or outdoor scenes, while ignoring superimposed neutral or salient faces.
Results: Among MDD patients with suicidality, a positive correlation between reward response bias and reaction time to salient vs. neutral faces was found (r=-0.37), such that individuals with less response bias (i.e. less reward learning) had a smaller difference in reaction time between salient and neutral faces.
Discussion: These data demonstrate feasibility of this novel paradigm. With a larger sample size, we will be able to confirm potential associations between reward response and attention, such that individuals who are less responsive to rewarding stimuli attend less to emotionally salient faces. The implication of such findings would suggest a more widespread lack of engagement in both emotional and rewarding stimuli, which would have implications for treatment targets.

THERE IS NEVER ONE CAUSE OF SUICIDE: HIDDEN FACTORS

Poinciana Salon 2

Chair: Alexis May

1. IDENTIFICATION OF CO-OCCURRING RISK FACTORS AMONG US HIGH SCHOOL STUDENTS AT RISK FOR SUICIDAL THOUGHTS AND BEHAVIORS

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Background: Suicidal thoughts and behaviors are profoundly epidemic among U.S. adolescents and are very challenging to predict and prevent. However, emerging conceptual models and advanced analytic methods provide helpful tools for researchers seeking to unravel these complex interactions and identify actionable opportunities for intervention.
Methods: Cohorts of adolescents exhibiting either depression symptoms or depression symptoms accompanied by suicidal ideation were extracted from the 2015 and 2017 datasets from the CDC's National Youth Risk Behavior Survey (YRBS) of US high school students. Latent class analysis was used to identify distinct subtypes of at-risk youth based on risk behaviors and environments.
Results: Four distinct subtypes (i.e. "classes") of high school students with differing levels of risk for suicidal behaviors were identified for both the depression cohort and the depression plus suicidal ideation cohort. In general, the subtype with lower risk behaviors and robust social supports was less likely to experience suicidal thoughts and behaviors (STBs). A subtype

where there was moderate engagement in risk behaviors (substance abuse, violence involvement, early sexual activity), but robust social supports was at moderate risk. Two subtypes were found to be at high risk for suicidal thoughts in behaviors: The first, larger subtype was comprised predominately by younger females, many who identified as sexual minority, with moderate to high levels of academic performance who were susceptible to bullying at school and online. These students tended not engage in high levels of externalizing risk behaviors, making them hard to detect in a school-based environment. The other subtype, which was particularly susceptible to suicide attempts, was characterized by students with high engagement in risk behaviors and low social supports. Many of these students had low English fluency and identified as sexual minority.
Discussion: Conclusions: Many students at risk for STBs do not exhibit any obvious externalizing risk behaviors and may be difficult to detect. Given these challenges, and the high prevalence of depression and STBs among adolescents, universal screening in clinical settings, and universally focused suicide prevention programs in school-based settings are needed. Program planners should consider targeting middle school students, since many students enter high school already at high risk for STBs. At the same time, tailored interventions are needed to reach high risk students with language, cultural and acute social integration challenges.

2. BEHIND THERAPISTS' EMOTIONAL RESPONSE TO SUICIDAL PATIENTS: A STUDY ON THE NARRATIVE CRISIS MODEL OF SUICIDE AND CLINICIANS' EMOTIONS

Gelan Ying*[1], Shira Barzilay[1], Min Eun Jeon[2], Erica D. Musser[3], Igor Galynker[4]

[1]Mount Sinai School of Medicine, [2]Florida State University, [3]ABC-ERICA Lab, CASE, [4]Mount Sinai Beth Israel

Background: Clinicians' negative emotional responses to suicidal patients are predictive of imminent suicidal risk. However, the underlying pathway behind this association has not been identified. Therefore, this prospective study aimed to investigate the potential association between clinicians' emotional responses and the components of the Narrative Crisis Model of suicide, including individuals' trait vulnerability for suicide (TV), Suicidal Narrative (SN; a narrative identity with no future), and the Suicide Crisis Syndrome (SCS), a pre-suicidal mental state.
Methods: 1001 adult patients and 118 clinicians were recruited from both inpatient and outpatient clinics. Clinicians' emotional responses were measured through the Therapist Response Questionnaire Suicide Form (TRQ-SF) immediately after intake with patients. TV was assessed using the composite score from the Child Trauma Questionnaire, the Relationship Scales Questionnaire, and the Urgency, Premeditation (lack of), Perseverance (lack of), Sensation Seeking, Positive Urgency (UPPS-P) impulsive behavior scale. SN was measured with the Suicidal Narrative Inventory. SCS was assessed using the Suicide Crisis Inventory. All assessment batteries were administered at intake. Multilevel regression analyses controlling for clinician differences were employed to examine the associations between the TV, SNI, SCS factors and clinicians' emotional responses as the outcome.
Results: After controlling for clinicians' age, gender, therapeutic orientation, and years of experience, only patients' Suicidal Narrative was associated with clinicians' emotional responses (b=0.143, p=.021). Suicidal Narrative was also related to clinicians' feelings of distress (b=0.190, p=.013) and affiliation (b=-0.035, p=.030) after their initial meeting with the patients. Specifically, in subsequent multilevel regression analyses, patients' perceived

burdensomeness (b=0.139, p=.049), one of the Suicidal Narrative, was associated with total scores of negative emotional responses.
Discussion: Clinicians appear to respond emotionally to patients' Suicidal Narrative, specifically to their feelings of burdensomeness. Future investigation on the potential implication of SN in improving clinical predictions of imminent suicidal risk is warranted.

3. IMPLICIT AFFECTIVE RESPONSES TO SUICIDE- AND DEATH-RELATED STIMULI, DELAY DISCOUNTING, AND LONGITUDINALLY ASSESSED SUICIDAL THOUGHTS AND BEHAVIORS

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Background: Behavioral processes have been theorized to be related to recurrence of suicidal thoughts and behaviors (STBs). For example, the maintenance or recurrence of STBs may be partly associated with reinforcing behavioral consequences such as cathartic effects, experiential avoidance, sense of control, and attention. The effects of reinforcing consequences associated with STBs may be reflected in how individuals respond to environmental cues related to death and suicide. For example, individuals who have experienced some reinforcing consequences of STBs may evidence more favorable automatic or implicit affective responses to stimuli associated with death- and suicide-related stimuli. Moreover, some studies have suggested that individuals at risk for STBs evidence delay discounting, a decision-making bias characterized by behavior being more influenced by immediate consequences than long-term consequences of that behavior. In the context of a longitudinal study, we hypothesized, consistent with these behavioral processes, that favorable implicit affective responses to suicide- and death-related stimuli, and greater delay discounting would be related to more severe suicide ideation, and more severe ratings of STBs over repeated assessments.
Methods: 180 psychiatrically hospitalized adolescents were repeatedly assessed for a median 23.1 years (mean 19.6 years), with 71.7% retention of the total sample, including 5.6% deaths (2,778 total assessments). This investigation focused on yearly assessments of implicit affect and delay discounting in the last three years of the longitudinal study (up to three assessments per participant). At each assessment, participants reported the severity of STBs since last assessment (1 = no suicidal thoughts or behaviors to 5 = repeat suicide attempts) and also completed the Beck Scale for Suicide Ideation (BSS), assessing severity of suicide ideation over the last week. The Affective Misattribution Procedure (AMP), a task assessing implicit affective responses, was used to assess automatic reactions towards suicide- and death-related stimuli (as well as pleasant, unpleasant and neutral control stimuli). The Iowa Gambling Task (IGT) was used to assess decision-making including delay discounting biases.
Results: The degree to which participants rated death- and suicide-related stimuli as positive was related to severity of suicide ideation (b=0.018, se=0.006, p=0.003) and ratings of most severe STBs since last assessment (b=0.005, se=0.003, p=0.036). This same pattern was not evident for control stimuli. Favorability of responses to death- and suicide-related stimuli were unrelated to current depression severity, hopelessness, impulsivity, gender, or race/ethnicity. Unexpectedly and in the opposite direction from our predictions, the degree of improvement in IGT performance from Block 1 to 5 was positively associated with greater severity of STBs (b=0.012, se=0.005, p=0.0092).

Discussion: Our predictions regarding the relationship between delay discounting biases and suicidal ideation, and STBs were not confirmed. Nonetheless, implicit affective responses to death- and suicide-related stimuli were related both to recent suicide ideation and the most severe STBs since last assessment. As such, they serve as a marker of potential risk, as well as a factor reflecting possible behavioral mechanisms related to recurrent STBs. As such, implicit responses may be helpful in understanding risk for STBs and may be helpful in development of new interventions.

4. MORE THAN JUST DEPRESSION: WE MUST SCREEN MEN FOR ANGER/IRRITABILITY TO DETECT SUICIDE RISK

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Background: Over 47,000 people in the U.S. die each year by suicide; over three-quarter of who are men (Murphy et al., 2018; Curtin et al., 2016). The largest increase in suicide over the past 20 years has been among working-age men (25-64) (Curtin et al., 2016) who are sometimes referred to as a "double jeopardy" risk group due to elevated suicide risk and difficulty engaging in help-seeking behavior (Addis & Mahalik, 2003; Good & Wood, 1995). Suicide remains under-detected and under-treated by health and mental health professionals, especially among men. Many health and even behavioral health professionals only ask about suicide specifically after screening for depressive symptoms. Depression, albeit an important risk factor for suicide, is not the only risk factor and it may not always be present in individuals who die by suicide. Traditional depression screening measures do not include questions about anger/irritability, potentially missing this alternative manifestation of depression in men (Giegling et al., 2009; Ammerman, Kleiman, Uyeji, Knorr, McCloskey 2015; Oliffe & Phillips 2008). This study examined the prediction of suicide risk among working-age men using a traditional depression screener and a single item screener for anger/irritability. Additionally, the researchers assessed the predictive ability of anger/irritability for suicidal risk among men without depression.

Methods: A statewide men's mental health and suicide prevention campaign, Healthy Men Michigan, encouraged men to complete an anonymous online depression and suicide screening. This study included 2,153 men representing all parts of Michigan, including rural areas. Depression was assessed using the Harvard Department of Psychiatry/National Depression Screening Day Scale (HANDS; Baer et al., 2000). The researchers assessed anger/irritability with the DSM-5 Cross Cutting Measure (American Psychiatric Association, 2013). Suicide risk was assessed using the Columbia Suicide Severity Rating Scale (Posner et al., 2011) and the ninth item of the HANDS, which asks about suicidal ideation. Logistic regression prediction models assessed relationships among suicide risk, depression, and anger/irritability.

Results: More than 50% of the men screened positive for suicide risk, and more than 75% screened positive for moderate to high levels of depression. One-fourth of men screened positive for moderate or severe anger/irritability. The logistic regression model indicated that irritability/anger was associated with past month suicide risk (OR=1.52;95%CI,1.21-1.89;p<.001]) after controlling for depression (OR=11.29; 95%CI:8.49,15.02;p<.001). A sub-group logistic regression analysis was conducted using only men who did not screen positive for depression (N=535). Men screening positive for anger/irritability (n=63) were 3.15 times

more likely to endorse suicide risk (95%CI:1.26,7.88,p=.01) than men who did not score positive for anger.
Discussion: Anger/irritability are critical risk factors to ask directly about when screening for suicide risk among working-age men. Reliance on positive screens for depression as a pre-curser for asking questions specific to suicide is potentially life threatening as 12% of men who screened for suicide risk in the present study reported no or low risk for depression. Masculinity theory suggests strongly that anger/irritability are important factors to consider when assessing male experiences of depression and this study provides evidence for the strong link between anger/irritability and suicide, absent from traditional measures of depression.

5. DISENTANGLING AFFECTIVE DYNAMICS IN DAILY LIFE: THEIR ROLE IN UNDERSTANDING PAST, CONCURRENT, AND FUTURE SUICIDAL THOUGHTS AND BEHAVIORS

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Background: Identifying real-world risk factors for suicidal thoughts and behaviors is a critical component of suicide prevention. Recent ecological momentary assessment (EMA) studies have highlighted the role of negative emotions as they relate to the desire to engage in suicidal behavior, as well as suicidal actions themselves. However, prior work has been limited by a focus on the mean, or average, levels of emotional experience, to the exclusion of other affective dynamics. For instance, individuals can vary not only in the average amount of negative affect they experience, but also in the extent to which negative emotions stay stable across time (e.g. inertia, carry-over, autoregression) or how much negative emotions vary across minutes, hours, or days (e.g. instability, lability, fluctuation). Much existing work has also been unable to disentangle risk factors for suicidal thoughts from suicidal behaviors, in spite of theoretical and empirical work highlighting the importance of understanding the transition from suicidal ideation to action (Klonsky & May, 2015).
Methods: We investigated how dynamics of negative affect (NA), measured using a 3-week EMA, relate to past, concurrent, and future suicidal thoughts and behaviors among young adult women (N = 161). Using dynamic structural equation modeling, we modeled mean NA, NA variability, and NA stability as random within-person effects, and investigated associations between these effects and suicide-related parameters at the between-persons level. Specifically, past year suicidal thoughts and behaviors were tested as predictors of NA dynamics, and NA dynamics were tested as predictors of suicidal ideation or attempts over follow-up. We also tested the covariance of suicide urges reported during the EMA and EMA NA dynamics.
Results: Both past year suicidal ideation (SI) and past year suicide attempts (SA) predicted higher mean NA (SI B = .33, SA B = .27) and greater NA variability (SI B = .33, SA B = .32). NA stability was predicted by past year SI (B = .22) but not past year SA. Affective dynamics also differentiated between those with a history of SI only and those with a history of SA: individuals with past year SA had higher mean NA (B = .31), NA variability (B = .58), and NA stability (B = .26) compared to individuals with past year SI without a lifetime history of SA. Greater endorsement of urges to engage in suicidal behavior during the EMA were also associated with higher mean NA (B = .24) and more variable NA (B = .23). No EMA affective dynamics predicted SI or SA over follow-up.
Discussion: Both suicidal thoughts and behaviors were associated with not only elevated mean levels of negative affect, but also the extent to which participants' negative emotions exhibited

intra-individual variability and stability across assessments, suggesting that thorough assessment of affective reactivity and carry-over may improve our understanding of suicidal thoughts and behaviors. This is particularly important given that these affective dynamics differentiated individuals with a history of suicidal ideation from those with a history of suicide attempts, suggesting their potential relevance in understanding the transition from suicidal thoughts to behaviors. Although no associations between affective dynamics and future SI or SA over extended follow-up were found, further research is needed to identify whether these dynamics may predict suicidality over shorter intervals, such as days or weeks.

6. DYADIC KNOWLEDGE OF SUICIDE HISTORY, CURRENT DEPRESSIVE SYMPTOMS, AND FUTURE SUICIDE RISK WITHIN ROMANTIC COUPLES

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Background: Suicidal individuals do not exist in a vacuum. They are part of relationships, friendships, and communities. Many theories of suicide explicitly incorporate relational and interpersonal factors. For example, Durkheim's early investigations of suicide were grounded in social influences (Durkheim, 1897), the interpersonal psychological theory of suicide (Joiner, 2007) highlights low belongingness and a belief that one is a burden on others as the primary drivers of suicidal desire, and the three-step theory (Klonsky & May, 2015) emphasizes the role of connection in protecting against worsening suicidal ideation. Ruptures in relationships can serve to increase risk, while support can reduce risk factor. However, research on suicide prevention and intervention has overwhelmingly 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, approximately half disclosed their history of suicidal thoughts or behaviors to a romantic partner (Frey, Hans, & Cerel, 2016). Among service members, spouses and friends were the two most common groups to whom suicidal thoughts were communicated prior to an attempt (National Center for Telehealth and Technology & Defense Suicide Prevention Office, 2016). However, very little is known about what details of suicide history are communicated and the specific characteristics of romantic relationships that contribute to the presence or absence of such communication.

Methods: This study tested 1) how accurately members of romantic couples knew of each other's depression symptoms, suicide histories, and risk for future suicidal thoughts and behaviors and 2) whether couple-specific factors moderated those associations. Accuracy in predicting depression symptoms was tested using the Truth and Bias Model (T&B; West & Kenny, 2011). Participants were 43 mixed-sex couples (N = 86 individuals) recruited for a larger study of National Guard or Reserves members and their partners. Participants reported on their own depression symptoms, suicide history and expectation of future suicide risk, as well as their perceptions of their partners' depression symptoms, suicide history and future suicide risk. Effects were tested for moderation by communication style and relationship satisfaction.

Results: Results suggest that many individuals knew about their partners' depression symptoms and past suicidal ideation (77%). In contrast, fewer were aware of their partners' future suicide ideation risk (44%) and the minority knew about past suicidal behavior (23%) or risk for future suicide attempt (14%). Associations were not moderated by positive or negative communication styles or relationship satisfaction.

Discussion: Taken together, these results suggest that while romantic partners share some parts of their suicide histories with each other, some important aspects, such as suicidal behavior are kept private. Further, partners tend in underestimate future suicide risk. Notably, regardless of communication style or relationship quality, results were consistent, suggesting that even couples in strong relationships may not be aware of each other's suicide history and risk. Implications for the development of couples-based suicide prevention interventions will be discussed.

POSTER SESSIONS

Monday, October 28, 2019

11:30 AM – 1:30 PM

Americana 3-4

M1. SYSTEM DYNAMICS AND PARTICLE FILTERING FOR INSIGHT INTO SUICIDE RATES IN CANADA

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Background: Over the past 12 years, suicide deaths in Canada have ranged between 3,500 and 4,400 deaths per years, while age-standardized suicide mortality rates have remained generally stable between 11 and 12 deaths per 100,000 population. Suicide deaths have significant impacts at a community, family and individual level. Suicide attempts sometimes results in hospitalization, or permanent disability, requiring long-term care and loss of income. Estimating and predicting suicide trends is helpful to inform public health actors who can develop prevention policies and program, as well as the health care sector that can provide early intervention.

Methods: We will be using a system dynamics model previously developed by Australian researchers, which has been adapted for use in Canada. We have used data from 2000 to 2015, to project the hypothesized upcoming trend of suicide for the period from 2016 to 2025. Population-level demographic data and suicide-related (thoughts, mortality) data were obtained from Statistics Canada, and self-harm hospitalization data were obtained from the Discharge Abstract Database. A sex-stratified and method-stratified system dynamics model was developed to capture the heterogeneity between men and women in suicide attempts, as well by method, taking into account lethality of methods. Furthermore, a contemporary machine learning algorithm -- the Sequential Monte Carlo approach of particle filtering -- was used to recurrently reground the model state using available time series data. This approach allows for improving estimates of the current model state, forecasting of future suicide counts in Canada. It further allows for assessment of the (probabilistic) tradeoffs between different intervention strategies (reduced access to suicide means and service intervention) using the particle-filtered model.

Results: The result from this study provides modelled estimates for the future trend of suicide or self-harm counts in Canada. After running a yearly model, initial analyses indicate that the number of suicide will increase by about 7% and 5% among Canadian males and females, respectively. The assessment of intervention reveals that the service intervention reduced the number suicides more than the intervention associated with reduced access to means. The combined effect of intervention prevented about 15% and 10% of suicides among males and females, respectively. While particle filtering can serve as an effective method for combining model-generated predictions with available data, the ability of particle filtering to accurately predict suicide was sensitive to the method-specific percentage of fatal attempts and lethal intent percentage.

Discussion: Predicting the dynamics of suicide in a nationally representative population by applying particle filtering with suicide system dynamics model and incorporating time series

of suicide counts is a valuable technique to assist the public health authorities in estimating risk of suicides, including in supporting prediction and intervention evaluation in a fashion that adapts to evolution of factors affecting suicide occurrence. This is helpful for providing insight into future patterns of suicide mortality, as well as in support of an approach to assessing the potential impact of suicide prevention interventions among Canadian population.

M2. INTIMATE PARTNER VIOLENCE AND RISK OF REPEAT SUICIDE ATTEMPT: PRESENTATION OF BASELINE RESULTS FROM A PROSPECTIVE PANEL STUDY IN THE EMERGENCY DEPARTMENT

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Background: Suicide is the leading cause of death in Australians aged 15-44 years (ABS, 2017). Essential when considering prevention, is the correct and timely identification of individuals with high risk for suicidal behaviour following an emergency department (ED) presentation. Recent research in the ED has linked Intimate Partner Violence (IPV) victimization with repeat suicide attempt/s at six-months post-discharge (Haglund et al., 2016). Despite the heightened fatality risk associated with IPV victimization and suicide, consensus has not been reached on the magnitude of the relationship, nor has causality been established (Hegarty et al., 2013; Lum et al., 2016). There is a critical need to establish suicide risk in IPV populations and understand health service utilization patterns in these populations. Many knowledge gaps remain that may carry important clinical implications for integrated IPV and suicide prevention efforts. Reconciling these gaps could result in renewed screening practices and the development of appropriate and timely intervention strategies.
In this study, we aimed to investigate the social and clinical risks for suicidal behaviour among individuals with a history of IPV victimization, and for the first time, explore the health service presentation patterns of IPV victims who have attempted suicide.

Methods: This phase of research reports the baseline survey results of a prospective mixed methods panel study conducted in the suburbs of Sydney, Australia and surrounding rural and regional locations. Simple random sampling - using online recruitment strategies and face-to-face recruitment in emergency departments - was used to invite individuals to take part in a quantitative baseline survey with potential follow-up at 12-months. Anonymous surveys distributed both online and in paper form were administered to collect information on participants' demographic variables, emergency department experiences and health service utilization. Validated measures were used to assess the severity of suicidal ideation and behaviours in the past six months (Columbia Suicide Self Report Scale; C-SSRS) and to measure the severity of IPV (Composite Abuse Scale (Revised) – Short Form; CASR-SF). Additional information was collected on alcohol use, hopelessness, social support and help-seeking behaviours.
Results: In total, 787 individuals (631 females; 125 males; 31 non-binary) with a recent suicidal presentation (<18 months) to hospitals in Sydney suburbs. The mean age of the sample was 30 years (SD=12.58). Approximately, 60% of the sample identified as heterosexuals (female=367; male=78) and 40% identified as members of the LGBTQI group (female=231; male=40). In total, 500 participants (female=412; male=62) screened positively for potential IPV on five evidence-based fear and control items. Of this group, only 126 participants completed the CASR-SF resulting in a mean of 14.53 (SD=20.97; range=0-75). Subscale analyses revealed that lifetime experiences of physical (30%), psychological (43%) and sexual

abuse (28%) by an intimate partner were prevalent among the sample. The most common forms of physical violence experienced were shaking (female=210; male=18), hitting (female=128; male=18) and choking (female=109; male=4).
Discussion: These baseline results will be used in the next phase of this research, which is to run multiple linear regression models to investigate dose-response effects related to IPV severity and level of suicide risk, and differential effects associated with the type of IPV (e.g., physical, psychological, sexual and financial) and impacts on suicidal ideation, attempt and method. Analyses will be adjusted for baseline IPV and baseline suicide attempt.

M3. FROM ALGOS TO E-HEALTH: BRIEF HISTORY OF BRIEF CONTACT INTERVENTIONS DISSEMINATION AS A STANDARD CARE IN FRANCE AND PERSPECTIVES

Sofian Berrouiguet*[1], Michel Walter[1], Philippe Courtet[2], Guillaume Vaiva[3]

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Background: There is growing evidence in the literature that brief contact interventions (BCIs) might be reliable suicide prevention strategies. Due to the human and societal burden of suicide in France, French government has supported the assessment of the effectiveness of combining BCIs to reduce suicide at a national level.
Methods: Study Objective: To assess the effectiveness of a decision-making algorithm for suicide prevention (ALGOS) combining existing BCIs in reducing suicide reattempts in patients discharged after a suicide attempt.
Results: Methods: A randomized, multicenter, controlled, parallel trial was conducted in 23 hospitals. The study was conducted from January 26, 2010, to February 28, 2013. People who had made a suicide attempt were randomly assigned to either the intervention group (ALGOS) or the control group. The primary outcome was the rate of participants who reattempted suicide (fatal or not) within the 6-month study period.
Discussion: Results: 1,040 patients were recruited. After 6 months, 58 participants in the intervention group (12.8%) reattempted suicide compared with 77 (17.2%) in the control group. The difference between groups (4.4%; 95% CI, −0.7% to 9.0%) was not significant (complete-case analysis, P = .059). We found an absolute reduction in global adverse events outcome (fatal and non-fatal suicide reattempt and loss to follow-up) at 6 and 13 months.

M4. EXPANDING THE SYSTEM: THE IMPACT OF FAMILY DYNAMICS ON HELP-SEEKING AND TREATMENT FOR SUICIDAL ADOLESCENTS

Laura Frey*[1], David Goldston[2], Anthony Fulginiti[3], Jennifer Le[4], Stacie Gibson[5]

[1]University of Louisville, [2]Duke University School of Medicine, [3]Graduate School of Social Work, University of Denver, [4]University of Louisville & Norton Children's Hospital, [5]Norton Children's Hospital

Background: To assist someone with suicidal thoughts or behavior, a gatekeeper or loved one must know that the individual is feeling suicidal; often, one of the primary ways we know someone is feeling suicidal is when they disclose that information. Nonetheless, fear of stigmatizing or unsupportive reactions may lead some to conceal their suicidal thoughts or behaviors. Family members are often recipients of disclosure, yet existing family dynamics and misunderstandings about suicide may likely provoke unhelpful reactions. We will present preliminary data from an ongoing study funded by American Foundation for Suicide

Prevention that examines the role of parent-child communication and family dynamics following suicidal ideation and attempts. Specifically, we are examining how parental expressed emotion impacts suicidality, suicide disclosure, and treatment outcomes.
Methods: Data collection for this study is currently ongoing with funding from the American Foundation for Suicide Prevention. Overall, 150 families will be recruited to participate through the emergency department (ED) at a children's hospital. Youth must be ages 13–17 presenting with suicidal ideation and living in the home with their family, and both adolescents and a guardian complete surveys and interviews about family dynamics, communication, and suicidal crises. Both youth and a guardian complete surveys and separate interviews, and follow-ups at 2- and 4-months. We anticipate nearly 80 families will be recruited by October, based on the current rate of data collection. Preliminary data (n = 34 parent-child dyads) presented below is based on adolescents with a mean age of 15.5 (SD = 1.4) and their guardians. All youth measured above the clinical cut-off (31.0) for suicide risk (M = 64.5), as measured by the SIQ-JR.
Results: On average, adolescents reported higher levels of expressed emotion in their families than their parents (MDifference = 8.4). Parent reports indicated the majority of families were above the clinical cut off (ranging from 1.9–2.3) on areas of family functioning as measured by the McMaster Family Assessment Device, demonstrating unhealthy functioning overall (M = 3.0) and in problem-solving (M = 2.9), communication (M = 2.9), affective responsiveness (M = 3.2), and behavioral control (M = 3.2). Various types of expressed emotion—such as intrusiveness, emotional overinvolvement, negative attitude toward illness, and low tolerance and high expectations—were not linked directly to suicidality but were linked to help-seeking behaviors. Youth from families with higher levels of expressed emotion were less likely to disclose suicidal thoughts (β = -.22) and behaviors (β = -.23) as well as reasons for being suicidal (β = -.37). Qualitative data from both adolescent and parent interviews exploring the ways in which family dynamics impact youth and parental support will also be presented.
Discussion: These findings are especially concerning because the family dynamics measured directly relate to skills adolescents must learn to cope with suicidal thoughts. Although most adolescents received pharmaceutical interventions, the majority of our sample also receive individual therapy to address emotion regulation, distress tolerance, impulsivity, and interpersonal skills. It would be unreasonable to expect an adolescent to demonstrate these skills at a high proficiency when they are not practiced by the family members with whom they reside. Ongoing data collection will allow more sophisticated analyses to ascertain specific ways in which family dynamics are linked to help-seeking and treatment outcomes, which will then allow us to provide additional recommendations for how to help suicidal youth and their families who work hard to support them.

M5. NEAR-TERM RISK FOR SUICIDE AMONG PSYCHOTIC PATIENTS: A RETROSPECTIVE EXAMINATION OF THE LAST 30 DAYS OF LIFE

Alan Berman[1], Paul Nestadt*[1]

[1]Johns Hopkins University School of Medicine

Background: Individuals with diagnosed psychotic disorders have significant risk for death by suicide. Health care providers often have opportunities to identify these individuals but lack empirical data on near-term risk factors. This study aimed to identify dynamic, state-related risk factors observed by clinical practitioners within the last 30 days of the lives of well characterized suicide decedents in order to identify near-term risks that are specific to patients suffering from diagnosed psychotic disorders.

Methods: This retrospective chart review study drew upon a convenience sample of all clinical patient charts archived through the first author's 35-year forensic practice. Case data were systematically reviewed and abstracted from charts of the final 30 days of life, with >50 variables coded. 157 well characterized suicides from 40 states were included, including 24 with psychotic illness (schizophrenia or mood disorder with prominent psychotic features) and 133 non-psychotic suicides. Fisher's exact and Mann-Whitney U tests were used to compare psychotic to non-psychotic patients.
Results: Risk factors charted most frequently for psychotic patients were: Being unemployed (or retired, disabled, or a student); having a history of suicide ideation (SI) or suicide attempt; current anxiety or agitation; comorbidity; social isolation or withdrawal; being angry, irritable, or having a history of violence; current substance use, and non-adherence. Psychotic patients were also less likely to be married, more likely to have been treated inpatient, less likely to have left a note, and less likely to have sleep, relationship, or financial problems. There was no significant difference in suicide methods, although patients with psychosis demonstrated a stronger association with jumping from a height. Three-fourths of psychotic patients and two-thirds of non-psychotic patients denied SI when last asked by a clinical caregiver; five out of six of these psychotic patients who denied having suicide ideation were dead by suicide within two days of being asked.
Discussion: These findings suggest that a prudent risk assessment of psychotic patients might reasonably focus on the presence or absence of employment, inpatient treatment, current substance use, hyperarousal, non-adherence, and history of suicidal behavior. Other generalized acute suicide risk factors such as insomnia and acute relational and financial stressors, seem to play less of a role in this population. Although it is clear that the majority of these decedents denied SI when asked proximal to their suicides, SI was even less of a predictor in the psychotic group and should not be relied on.
Reliance on verbalized or reported SI as a gateway to a suicide risk assessment is questioned, particularly in patients suffering from psychosis. The need for a better understanding of their near-term risk for suicide, particularly in the absence of stated SI, is highlighted.

In addition to refocusing risk assessments, this profile has implications for both monitoring and treatment of in patients. Greater attention through close watch of patients with these risk factors may be called for, at least until positive symptoms, agitation, and irritability diminish and/or adherence improves. Counseling both patients and their family to be more observant of the above risk factors and the implication that they may be prodromal of increased, near-term suicide risk is called for. This counseling should be embedded into a discussion of a safety plan for the patient.

M6. DIFFERENTIATING SINGLE SUICIDE ATTEMPTERS FROM MULTIPLE SUICIDE ATTEMPTERS USING PERSONALITY TRAITS: A META-ANALYSIS OF CURRENT LITERATURE

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Background: Despite considerable research into predictors of suicide, the state of today's suicide prediction is still lacking with no substantial improvements. Research has turned to the ideation-to-action framework to improve risk factor and prediction accuracy. Past literature has also demonstrated a relationship between personality disorders and suicide severity. Based on the tenants of the ideation-to-action framework, this study proposes a new distinction between

single attempters and multiple attempters based on pathological personality traits. The hypothesis is that multiple attempters will present with a more extreme personality profile than single attempters.

Methods: We conducted a meta-analysis on all currently available literature that related to the topics of multiple suicide attempts and personality traits. In order to identify potential papers to include in this study, PubMed and PsycINFO were searched using the search term (Attempted suicide* OR suicide attempt* OR parasuicide) AND (multiple attempt OR repeat* OR chronic OR single OR recurr*) AND (personality) AND (trait* OR inventory OR disposition OR characteristic* OR assessment OR temperament). Only studies that measured both the number of attempts or attempter status and a measure of personality traits were included. 49 studies were identified. After contacting authors for access to data, we were able to analyze nine studies. Sample sizes were 596 single attempters and 363 multiple attempters. The Analysis was conducted using a random-effects model to account for the heterogeneity of the populations and the fact that in many cases a trait was measured using multiple measures.

Results: Of the nine articles in this meta-analysis, five were sampled from a clinical population, and four were from a community population and seven different countries were represented with The USA comprising the highest number (3). Ten measures of personality traits were included.

Six personality traits occurred with enough instances to conduct the analysis: aggression, anxiousness, distractibility, excitement seeking, impulsivity and suspiciousness. Two traits had significant results, with elevated levels in multiple attempters for both aggression and distractibility with medium and small effect sizes respectively.

Discussion: Our results supported our hypothesis that multiple attempters would present with a more extreme personality profile SAs. Raised aggression is consistent with prior research suggesting that suicidal populations with elevated aggression have increased risk of suicide or self-harm. The elevation of distractibility, a subscale of the Barratt Impulsivity Scale, is surprising based on the declining evidence of impulsivity as a predictive factor of suicide attempts. This could be evidence that the relationship of impulsivity to suicide is more complicated than previously thought and warrants a multidimensional approach.

Through the process of organizing and selecting personality traits, a comprehensive investigation of the most common personality measures and traits took place. Supplemental tables summarize the most common personality trait measures, the most commonly measured traits and a preliminary proposal for mapping the top occurring traits onto three different personality models, including the new HiTOP model.

The clinical implications of this study may warrant a potentially different treatment regime that would focus specifically on decreasing aggression and distractibility to lower risk for repeated attempts. The results also suggest that that individual personality traits may have predictive validity over and above just personality disorders and that further exploration of their predictive ability could be warranted.

M7. POSITIVE AND NEGATIVE FUTURE THINKING AMONG SUICIDAL ADOLESCENTS: A PROSPECTIVE INVESTIGATION

Brianna Meddaoui*[1], Olivia Pollak[1], Kelly Wilson[1], Christine B. Cha[1]

[1]Teachers College, Columbia University

Background: Suicide is a leading cause of death among adolescents in the United States, yet detection of suicide risk remains a critical challenge for researchers. There is burgeoning

interest in the role that future-oriented cognition plays in suicidality, with evidence that a deficit in positive future thinking is associated with suicidal ideation (SI). However, existing research has focused on adult samples and largely relied on cross-sectional studies. This prospective study addresses such gaps by testing the association between future thinking and SI among community-based adolescents.

Methods: The present study was conducted among 78 community-based adolescents (M=16.6 years, SD=2.27). We measured future-oriented cognition using the Future Thinking Test (FTT; MacLeod et al., 1997), which prompted adolescents to generate as many positive and negative future events as they could across three different time points (next week, next 3 months, and next 5-10 years), and rate the likelihood and valence of each listed event. Composite FTT scores were calculated by multiplying the number of events, likelihood, and valence. Scores were calculated for each time point (next week, next 3 months, and next 5-10 years) and then aggregated to yield a total score for positive FTT and negative FTT. Lifetime SI was measured using the Self Injurious Thoughts and Behaviors (SITBI; Nock et al., 2007), and recent severity of SI was measured using the Suicidal Ideation Questionnaire (SIQ; Reynolds, 1987). SIQ was measured at baseline, as well as 3- and 6-months later.

Results: At baseline, positive FTT scores were generally higher than negative FTT scores overall, as indicated by a significant main effect of valence, Fs=47.84-61.04, ps<.001. There was no significant main effect of group (Lifetime SI vs. no SI), nor a significant interaction, Fs=2.08-.780, ps=.15-.38. Further, neither positive nor negative FTT scores were associated with recent severity of SI at any time point, βs=.02-0.12, ps=.36-.87, though findings were marginally significant for positive FTT scores at 6 months, β=-0.29, p=.06. Post-hoc analyses explored potential effects of time frames assessed. When isolating positive FTT scores by time frame, scores for the most distal time frame (5-10 years) predicted SI severity 6 months later, β=-0.32, p=.04.

Discussion: Overall, there was little evidence for a robust association between future thinking and SI among adolescents. The one caveat was for deficits in positive future thinking specifically pertaining to the more distant future, which predicted greater severity of SI 6 months later. At minimum, the present results suggest that future thinking patterns detected among suicidal adults may be less prominent among adolescents, and that assessing future thinking by temporal distance may provide additional insights. Future work is encouraged to replicate post-hoc findings pertaining to temporal distance and test the present hypotheses in a larger sample of adolescents.

M8. DIFFERENCE IN CIVILIAN SAMPLE V. MILITARY SAMPLE RANKINGS OF THE FIVE CORE CONSTRUCTS FROM SUICIDE STATUS FORM DATA

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Background: The suicide status form (SSF) is a tracking and treatment planning tool that is utilized in the implementation of the Collaborative Assessment and Management of Suicidality (CAMS; Jobes, 2012). The SSF begins with breakdown of five theoretical constructs based on a culmination of work from Schneidman (1985; 1987; 1993), Beck et al. (1979; 1990), and Baumeister (1990): pain, stress, agitation, self-hate, and hopelessness. During the first initial session of CAMS, patients are asked to rate on a scale of 1 to 5, the degree to which they are experiencing each construct. The patient is also asked to rank the importance of each construct relative to the four other constructs. Through the interim sessions, patients are asked to only rate each construct, without including a relative ranking. The "core assessment" of the SSF is a culmination of these individual axis assessments (Jobes, 2012). Research has shown that the

ranking of core assessment items are reliable and valid in illustrating an individual's suicide risk, specifically in determining acute versus chronic suicide risk (Jobes et al., 1997; Conrad et al., 2007).
There has been no previous research that has investigated the differences between the military population's and the civilian population's core assessment item rankings. The present data allows researchers insight into the patient's suicidality. By understanding how the individual's experience impact healing, this research may influence the development of future treatment for that individual. For example, by determining to what extent a given population ranks stress as the primary construct, results could highlight the need for treatment protocol which target stress specifically. Ultimately, these results can lead to greater understanding and improved treatment for both military populations and the civilian population experiencing suicidal crisis. Using this empirical knowledge, researchers can develop the most effective treatments specifically designed for patients in different populations.

Methods: Analysis of ranking frequencies will be used to compare quantitative data from completed SSFs of suicidal patients (N= 158). The three samples examined originate from two research studies: Operation Worth Living (OWL; n= 86), from which the military sample is derived and the Aftercare Focus Study (AFS), from which the outpatient (n= 31) and inpatient (n= 41) samples are derived. Using several Fisher's Exact Tests (FET), an analysis of contingency tables will be conducted across the small samples.
Results: This study will not only increase our understanding of suicidal populations as a whole, but also give insight to the possibility of identifying focused treatments for populations and individuals based on which core construct the patient identifies most with. This information can be used to develop the most effective treatments for a given patient and can personalize treatment for that person. The top ranked core construct of stress was significantly ranked higher by suicidal military patients (p= .052, FET). Remaining core constructs (pain, agitation, self-hate, and hopelessness) did not differ significantly between military and civilian samples.
Discussion: This analysis will assist in developing both assessments and treatments for patients experiencing suicidal crisis by identifying unique characteristics of different samples (e.g., military, civilian). The core constructs from the SSF (e.g., stress) can be utilized as a framework by which different sample's ideating patterns can be assessed. Treatments designed for those within the military sample experiencing suicidal crisis can specifically target stress in an effort to implement the most effective treatment using empirical science.

M9. ASSESSING ANXIETY SUBTYPES AS PREDICTORS OF SUICIDAL IDEATION AMONG ADOLESCENTS

Sara Fernandes*[1], Kelly M. Wilson[1], Christine B. Cha[1]

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Background: Suicide is a leading cause of death worldwide. Adolescents and those with mental health disorders are at increased risk for suicidal ideation and related outcomes. Indeed, suicide is the second leading cause of death for 15- to 24-year-olds within the United States. Past studies have found evidence for depressive symptoms and anxiety disorders being risk factors for suicidal ideation and attempt in adults and adolescents. However, much of this work relied on diagnoses and trait variables rather than continuous measures of severity. In turn, further research is needed to better understand how anxiety severity and its subtypes relate to suicidal ideation severity in youth. This would allow anxiety to be assessed as a dynamic construct with the potential to interact with other risk factors. The present study prospectively

investigates the association between anxiety and suicidal ideation in a community-based sample of adolescents and assesses depressive symptoms as a potential moderator.
Methods: A total of 89 adolescents between 12 and 19 years of age (M = 16.06, SD = 2.27) participated in this study with the majority being female (76.8%). They completed a series of self-report measures including the Suicidal Ideation Questionnaire (Reynolds, 1987), the Screen for Child Anxiety Related Disorders (Birmaher et al., 1997), and the Quick Inventory of Depressive Symptoms (Rush et al., 2003) during a laboratory visit. These questionnaires measured participants' suicidal ideation severity within the past month, anxiety severity within the past three months, and depressive symptoms within the past week, respectively. Participants were also emailed follow-up measures pertaining to suicidal ideation 3 and 6 months after their initial visit.
Results: Bivariate analyses revealed that anxiety severity significantly predicted suicidal ideation severity at baseline, as well as 3 and 6 months later (βs = 0.57-0.58, ps < .0001). Generalized anxiety and school avoidance symptoms were the only anxiety subtypes related to ideation at multiple time points (βs = 0.31-0.42, ps = .02-.03). Multivariate analyses revealed that anxiety severity was still significantly associated with baseline ideation after controlling for age (β = 0.55, p < .0001). No specific subtypes were associated with baseline ideation controlling for age (βs = -0.09-0.26, ps = .07-.47). Neither anxiety severity nor subtypes predicted ideation at 3 and 6 months later after controlling for baseline ideation (βs = -0.11-0.20, ps = .06-.98). Similar to anxiety severity, depressive symptoms predicted ideation severity at baseline controlling for age (β = 0.53, p = .01). They did not predict ideation at 3 and 6 months later after controlling for baseline ideation (βs = 0.03-0.19, ps = .34-.90). Depressive symptoms did not interact with anxiety to predict ideation severity at any time point (βs = -0.18-0.28, ps = .15-.99).
Discussion: Findings are consistent with the literature supporting anxiety and subtypes as risk factors for suicidal ideation when examined in isolation. But, they are not predictive of future ideation beyond that of history of ideation. Results expand on past studies by exploring associations between anxiety and suicidal ideation using continuous scales rather than formal diagnoses. Furthermore, the current study prospectively explored the predictive validity of anxiety severity in assessment of suicidal ideation. Further research is needed to better understand associations between anxiety subtypes and commonly comorbid risk factors in predicting suicidal ideation. Likewise, more work is needed to understand if and why generalized anxiety and school avoidance symptoms may be more potent risk factors than other subtypes.

M10. RISKS FOR SUICIDAL THOUGHTS AND BEHAVIORS DIFFER FOR PRE- VS. POST-PUBERTAL YOUTH

Trevor Long*[1], Andrea Wiglesworth[1], Kristen A. Lindquist[1], Eva H. Telzer[1], Mitchell J. Prinstein[1]

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Background: In recent years, clinicians and educators have reported anecdotally that young (i.e., pre-pubertal) children increasingly have reported suicidal thoughts and behaviors (STB). Yet, while research in adolescent suicidality abounds, research regarding STBs among young children is remarkably rare. Recent reviews suggest that young children who report suicidal ideation also report symptoms of depression, social difficulties, as well as markers of disruptive behavior, such as ADHD symptoms. A recently convened NIMH panel urged greater attention to the study of suicide among pre-pubertal youth, with particular emphasis on the identification of risk factors that differ between child and adolescent STBs.

This study offered an opportunity to examine STB correlates among a sample of mostly pre- (i.e., child) and post-pubertal (i.e., adolescent) youth to examine such differences. It was hypothesized that markers of internalizing symptoms, including depression and loneliness, as well as markers of social stress, including peer rejection and unpopularity, would be more closely associated with suicidal ideation among adolescents than children. In contrast, it was hypothesized that emotional regulation would be more closely associated with suicidal ideation in children as compared to adolescents.

Methods: This sample included 790 participants (n = 451 in grade 6, 58.4% of girls pre-menarche; n = 339 in grade 9, 97.5% of girls post- menarche) from three public middle schools and three public high schools in a rural, lower middle-class community. Approximately 50.3% of participants were female, 36.6% Caucasian, 22.8% African-American, and 34.1% Latinx. Participants completed self-report measures of depressive symptoms (SMFQ), emotion regulation (ERQ), loneliness, and suicide ideation and attempts within the past year. Participants also completed a peer-nominated sociometric assessment to assess peers' likeability and popularity within their grade.

Results: Analyses revealed significant interactions by grade suggesting that emotion regulation and depressive symptoms were more strongly associated with suicide ideation among children, as compared to adolescents. In contrast, peer rejection and unpopularity were more closely associated with ideation among adolescents as compared to children. Last, suicidal ideation was more closely associated with suicide attempts for adolescents as compared to children.

Discussion: Results suggest that as compared to adolescents, STBs in childhood may be more closely associated with impulsivity and comorbid internalized distress, perhaps suggesting that suicidal thoughts and behaviors follow from emotional dysregulation experiences. Adolescents, in contrast, may be especially likely to become suicidal following interpersonal difficulties.

M11. PARENTHOOD AND ITS RELATIONSHIP TO THE NARRATIVE-CRISIS MODEL OF SUICIDE

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Background: Suicide Crisis Syndrome (SCS) is defined as a negative-cognitive affect state associated with imminent suicidal behavior in those at risk for suicide. The Narrative Crisis Model (NCM) of suicide presents a pathway for which an individual with trait vulnerabilities can develop a suicide narrative (SN) that then increases their risk for SCS. The SN includes, but is not limited to perceived burdensomeness, social defeat, fear of humiliation, and thwarted belongingness which all characterize the quality of an individual's experience of interpersonal distress. Interpersonal distress was shown to be associated with SCS and suicidal ideation and behaviors. Evidence for the role of living with children as protective against interpersonal distress and risk of suicide ideation and behavior is mixed. We, therefore, aim to investigate a mechanism by which parenthood is protective against SCS, an acute state of suicide risk.

Methods: Participants (N = 433) were recruited from four outpatient psychiatry clinics in New York City and were identified as at first encounter with their Psychiatrist. Following informed consent, participants were administered a battery of scales including demographic inventory. The Suicide Narrative Inventory (SNI) was used to measure perceived burdensomeness, thwarted belongingness, social defeat, and humiliation, which are defined as a single entity called the Interpersonal Factor (SNI-I). SCS was measured using the Suicide Crisis Inventory

(SCI). Lastly, the Columbia Suicide Severity Rating Scale (CSSRS) was used to assess prospective suicidal thoughts and behaviors (STB) one month following the initial assessment. We compared participants who lived with their children (n = 77) to participants who did not live with children (n = 356). A moderated mediation analysis was conducted to examine how living with children moderates the mediation effect of SCS on the relationship between SCI-I and STB.

Results: Our results showed a significant partial mediation effect; SNI-I is positively correlated to STB both directly (b =.401, p <.001) and indirectly through SCS (b = .207, 95% CI [.066, .364]). Living with a child moderated both direct and indirect pathways such that correlation of the direct pathway increased (STI-I to STB), but becomes insignificant (b = .096, p = .647) and the indirect relationship increased and remained significant (b = .307, 95% CI [.097, .559]).

Discussion: Contrary to our hypothesis, results suggest that in people with higher interpersonal distress, living with a child can increase their likelihood of SCS as well as their likelihood to have STB. A possible explanation could be that lack of support to parents or distress related to the relationship between a parent and child could lead to SCS and subsequently STB. Additionally, another explanation could be that the tendency of parents to report STB may be compromised due to societal expectations. Other variables unique to parents that live with children (socioeconomic stressors, gender, family structure) could be influencing these results and should be refined in future studies. Nonetheless, using the NCM to explain parenthood's effects on those at risk of suicide may offer insights into family-focused suicide prevention programs.

M12. ANXIETY SYMPTOM CLUSTERS AND SUICIDE IDEATION AMONG LATINO YOUNG ADULT OUTPATIENTS

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Background: Young adulthood is an especially vulnerable period for the onset of mental health problems, such as depression and anxiety disorders (Cuijpers et al., 2016; Zvolensky et al., 2016). It is also a period of elevated risk for suicidal ideation and behavior. Among young adults, Latinos appear to be a particularly at-risk group for suicidal ideation and behavior (Kann et al.,2014) and anxiety disorders. An emerging body of literature suggests an association between anxiety and suicidal ideation and behavior even after controlling for depressive symptoms (Rapp et al., 2017). However, anxiety has tended to be measured broadly in terms of disorders and trait-like constructs. The majority of adult and adolescent studies have not examined specific elements of anxiety as they are related to SI and behavior (Crawford et al., 2015), particularly among diverse samples of young adults. Some research suggests that physiological symptoms of anxiety often precede suicide attempts and deaths (Ribeiro et al., 2015) and Latino youth are more likely to report somatic/physiological symptoms and distress associated with these symptoms (e.g., Pina & Silverman, 2005). Additionally, cultural factors, such as having a positive ethnic identity have been found to attenuate somatic symptoms among ethnic minority youth (e.g., Rogers-Sirin & Gupta, 2012). The following presentation will examine the association between anxiety symptom clusters (i.e., somatic/panic/agoraphobia, generalized anxiety, separation anxiety, and social anxiety) and suicidal ideation among Latino young adult outpatients, as well as the buffering role of ethnic identity.

Methods: Participants were 57 patients who self-identified as Latino (n=45; 78.9%) receiving cognitive behavioral therapy for anxiety disorders in an outpatient clinic in urban academic medical center who completed the Screen for Child Anxiety Related Emotional Disorders (SCARED) and Patient Health Questionnaire (PHQ-9) at intake. All participants provided informed consent. Of these, 64.9% (n=37) were female with a mean age of 18.16 (SD=2.17). Participants were also asked the question "How closely do you identify with other people who are of the same racial and ethnic descent as yourself (i.e., same cultural background as yours)?" at intake, which was used to assess ethnic identity.
Results: About 37 percent (n=21) of participants reported experiencing suicidal ideation in the past two weeks. Logistic regression analyses revealed that somatic and generalized anxiety symptoms were significantly associated with suicidal ideation (OR 2.95, CI=1.45-6.01; OR 3.78, CI=1.57-9.13, respectively). Separation anxiety and social anxiety symptoms were not significantly associated with suicidal ideation. Having a positive ethnic identity also did not emerge as a significant moderator.
Discussion: These results suggest that assessing somatic and generalized anxiety symptoms is especially important when evaluating suicide risk among Latino young adults suffering from anxiety disorders, which is in contrast to recent evidence showing social anxiety to be a significant risk factor.

M13. SLEEP DISTURBANCES ASSOCIATED WITH INTERMEDIATE PHENOTYPES FOR SUICIDAL BEHAVIOR IN VETERANS WITH DEPRESSION

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Background: Rates of suicide among Veterans are sevenfold higher than in the civilian population. Sleep disturbances are among many biological, psychological, and social factors that confer elevated risk for suicide. Sleep problems appear to predict risk for suicide including poor sleep quality, sleep latency, and nightmares. Suicide attempts are much more likely to occur at night, however, the specific risk factors and sleep characteristics have yet to be delineated.
Methods: Veterans are recruited from the JJPVAMC in Bronx, NY. Current Diagnosis of major depressive disorder (MDD) is assessed using the Mini International Neuropsychiatric Interview for DSM-IV disorders. Intermediate phenotypes of suicidal behaviors and risk factors such as stress, severity and symptoms of depression, and impulsivity are assessed using the Childhood Trauma Questionnaire, the Mississippi Scale, the Beck Depression Inventory, the Beck Hopelessness Scale, and the Barrat Impulsiveness Scale. Sleep disturbance is assessed using the Pittsburgh Sleep Quality Index. Finally, suicidal behavior and attempt is recorded on the Columbia Suicide History Form.
Key risk factors associated with suicide include childhood and combat stress, as well as symptoms related to depression severity and impulsivity; in the present study, we have observed elevated levels of these risk factors in Veterans with a history of suicide attempt. Subjects consist of 1) Veterans (n=21) who meet criteria for Major Depressive Disorder (MDD) and have a lifetime history of suicide attempt, 2) Veterans (n=33) who meet criteria for MDD

without any history of suicide attempts, and 3) a group of psychiatrically healthy Veterans (n=31) with no history of mental illness or suicide attempts.

Results: Deep clinical phenotyping was performed where we found significant group differences in depression severity, where attempters have greater symptom severity than non-attempters ($p \leq .02$). Attempters also show greater levels of hopelessness ($p \leq .02$). There are significant differences in impulsivity across all three groups($p < 0.0001$); attempters have significantly higher scores than non-attempters ($p = 0.0115457$). Since stress is a major risk factor in the diathesis of suicidal behavior, we also performed a comprehensive battery to assess childhood and adulthood stressors. We found that childhood trauma is significantly greater in depressed Veterans vs controls ($p \leq 0.0019$). Attempters had significantly higher scores of combat related stress than non-attempters ($p < .003$). These risk factors may contribute to the significant sleep disturbances reported by veterans with a history of suicidal behavior.
In evaluating sleep disturbances, we found that attempters display significantly higher scores on sleep measures (corresponding to worse sleep quality and greater sleep disturbances) than non-attempters ($p \leq .04$). Attempters reported higher frequency of sleep disturbances (related to nightmares, pain, increased latency) compared to non-attempters and controls ($p = 0.0205$, $p < .001$, respectively).

Discussion: Taken together, these data suggest that behavioral traits, such as impulsivity, together with lifetime stress, may lead to sleep dysregulation and increased risk for suicidal behavior. This can be conceptualized in a model where childhood trauma, as well as stressors in adulthood, leads to mood disorder psychopathology, including the trait of impulsiveness, and increased risk for suicide. Dysregulation of sleep reciprocally impacts frontal lobe functioning, impacting cognitive flexibility, thereby increasing impulsivity, and resulting in higher risk of suicidal behavior.

M14. THE PSYCHOLOGY OF SUICIDE IN LAW ENFORCEMENT: RISK FACTORS AND PROACTIVE APPROACHES

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Background: Suicide rates among law enforcement have recently elicited more attention than in years past, not only from the media but researchers within the mental health sector and the criminal justice administration. Suicide has become increasingly problematic in law enforcement compared to the suicide rates of the general population. Literature has outlined that law enforcement death by suicide has been rising yearly and is now surpassing deaths that occur in the line of duty, those which occur while responding to a call. The likelihood of repeated trauma and stress puts law enforcement at a higher risk of developing depression, other mental disorders, and suicidal ideation compared to the general population. Therefore, mandated proactive programs for these officers are needed now more than ever before.
Methods: The current research methodology for providing care to law enforcement includes the provision of multiple reactive suicide prevention and wellness programs. There are limitations to these programs due to some agencies only requiring aforementioned programs after a critical incident has occurred and some not requiring these programs at all. The literature has shown that engaging instead in proactive programs has the potential to reduce suicidality, increase resiliency and increase sense of support.
Results: Current research has been able to identify specific risk factors for suicidality among law enforcement. These risk factors include low social support and isolation, poor access to care or resistance to seek help, a medical or mental illness diagnosis, significant level of

hopelessness and alcohol abuse. There have been many programs developed to assist police officers when a crisis has already occurred. Evidence shows that these programs can assist in providing support. However, there is now an emphasis on research regarding proactive programs that have the potential to increase police officer resiliency when faced with a traumatic and/or stressful experience while in the field. Additionally, programs like the "Gatekeeper Program" has been developed to have a group of fellow officers trained to identify these risks in their fellow brothers and sisters in uniform.

Discussion: Current research calls for greater training and development of support from the precincts. Stigma against the mental health field and these proactive programs may be influencing whether a precinct makes these programs a requirement for all police officers. Further, difficulties in research on mental health and law enforcement as a rapidly evolving and politically charged topic, access to data, accessibility to population, and cooperation and other aspects will be explored. Ultimately, this poster will highlight the common factors found in law enforcement suicidality and well as their level of potential for completion of suicide, identifying potential risk factors, and providing trainings to potentially reduce suicide rates.

M15. LONGITUDINAL ASSOCIATIONS AMONG RELATIONAL VICTIMIZATION, EXPRESSIVE SUPPRESSION, AND ADOLESCENT SUICIDAL IDEATION

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Background: Adolescence is a critical developmental vulnerability period for suicidal thoughts and behaviors (STBs), which may be due, in part, to an increase in the number of interpersonal stressors that occur during this period. Both overt and especially relational forms of peer victimization (PV) have been linked, concurrently, and sometimes prospectively with adolescents STBs. Relational victimization (RV) is defined as exposure to behaviors aimed at damaging relationships or one's social reputation such as exclusion, manipulation, or rumor spreading, while overt victimization involves physical aggression. Most prior studies of relational victimization as a suicide risk factor have been limited, however, by the use of self-reported measures; past research suggests that depressive symptoms are associated with over-reporting of peer victimization experiences. Thus, a preliminary goal of this study was to examine whether peer-reported (i.e., using sociometric peer nominations) overt and relational victimization are associated with later STBs.

The primary goal of this research was to examine moderators of the prospective association between forms of peer victimization and adolescent STBs. Note that not all individuals who experience victimization later experience STBs. Therefore, it is important to identify what factors may differentiate those who are or are not at most risk. This study examined expressive suppression (ES) as a form of emotion regulation that may especially relevant. ES reflects the extent to which individuals suppress (i.e., inhibit) emotional expression (i.e. facial expressions). This maybe especially important in the context of stress, since verbal and nonverbal expressions of emotion are required to elicit social support. It was thus hypothesized that the longitudinal association of peer victimization (i.e., particularly relational forms) and STBs would be greater among those who reported high levels of expressive suppression of emotion. Sensitivity analyses examined whether these factors predicted STBs above and beyond the effects of depressive symptoms.

Methods: Participants included 507 adolescents (grade 6-7 at baseline; 50.3% female) who participated in a longitudinal study in three low-income middle schools in rural southeastern United States. Participants completed self-report measures of depressive symptoms (MFQ), expressive suppression, suicidal ideation and attempts in two consecutive years. Relational victimization was assessed using peer-reported sociometric nominations. Using counterbalanced gradewide rosters, each student nominated an unlimited number of peers who were the victims of gossip, social exclusion, etc; a tally of nominations was standardized within each grade and school.
Results: Analyses revealed a significant longitudinal association between relational, but not overt, victimization and suicidal ideation, after controlling for depressive symptoms. Results were qualified by a significant interaction effect; post hoc probing revealed that the association between relational victimization and suicidal ideation was significantly stronger among adolescents who reported high levels of expressive suppression.
Discussion: Results offer important treatment implications by identifying emotional expression of stress as an important determinant of suicidal ideation among adolescents experiencing interpersonal stress.

M16. ADOLESCENT REASONS FOR LIVING AND SUICIDAL IDEATION: AN EXAMINATION OF INTENT

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Background: Suicide among youth is a significant public health concern. The majority of research focuses on factors that add to suicide risk, instead of promoting suicide resilience. The present study evaluates reasons for living within adolescents with and without suicidal ideation in the past month based on the presence of suicidal intent.
Methods: Participants included 334 adolescents (aged 12-15) recruited from mental health services of a metropolitan hospital. Study participation required a lifetime diagnosis of Major Depressive Disorder, IQ ≥ 70, and parent/legal guardian participation. Adolescents were divided into groups based on past month suicidal ideation: non-suicidal (n=231); suicidal ideation without intent (n=61); suicidal ideation with intent (n=42). ANCOVA and post-hoc comparisons were used to examine group differences in adolescent reasons for living while controlling for current depressive diagnoses and past suicidal thoughts and behavior.
Results: Reasons for living ($F = 7.705$, $p = .001$), current depressive diagnosis ($X2 = 10.873$, $p = .004$), and history of suicidal behavior ($X2 = 38.777$, $p < .001$) significantly differed between adolescents with and without past month suicidal ideation. Compared to non-suicidal participants, adolescents with suicidal ideation, but without intent, were less likely to report self-acceptance and future optimism as reasons for living. Additionally, adolescents with suicidal intent were less likely than non-suicidal adolescents to report self-acceptance and suicide-related concerns as reasons for living. No differences were found between suicidal adolescents with and without intent.
Discussion: Consistent with previous work, reasons for living differentiated between non-suicidal and suicidal adolescents. Results showed differences in reasons for living for adolescents with and without intent during past month suicidal ideation. These findings suggest that protective factors in suicidal adolescents differ based on the presence of suicidal intent. In addition to self-acceptance, focusing on factors specific to suicidal intent may assist in treatment and prevention of suicidal behavior.

M17. AFFECTIVE REACTIVITY MODERATES THE RELATION BETWEEN EMOTIONAL ABUSE, BUT NOT NEGLECT, AND SUICIDAL IDEATION

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Background: Suicidal ideation is a strong predictor of suicidal behavior. Emotional abuse (i.e., communication used to convey threat and rejection) and emotional neglect (i.e., lack of communication to address emotional needs) are two well-established predictors of SI. Though both represent painful experiences, not all adolescents who experience emotional abuse and emotional neglect go on to experience SI. Thus, it is important to improve understanding of factors that may strengthen these relationships to aid in suicide prevention efforts.

Affective reactivity is one factor that may moderate the association between hurtful communication patterns and SI. However, it may operate differently depending on the type of hurtful communication conveyed. The tendency to display affective reactivity in the face of direct threats to safety and clear rejection, or emotional abuse, could potentially worsen the abusive experience. Under such conditions, an adolescent may experience greater distress and SI. In comparison, affective reactivity is less likely to be evoked or worsen situations involving emotional neglect, or the absence of communication to address emotional needs. As such, an adolescent's tendency toward affective reactivity is less likely to affect suicidal thinking in the face of emotional neglect. The purpose of the present study is to examine the impact of affective reactivity on the relation between emotional abuse and SI and emotional neglect and SI. Specifically, we hypothesized that greater affective reactivity would strengthen the relation between emotional abuse and SI. We also hypothesized that affective reactivity would not impact the relation between emotional neglect and SI.

Methods: Participants included 107 adolescents (M age = 15.70, 57.0% male, 75.0% White) and their parent/guardian who consented to participate in a larger parent study. Families were recruited from a community-based mental health agency in the Northeastern United States that offers intensive home-based mental health services. Emotional abuse and neglect were measured using the respective subscales from the Childhood Trauma Questionnaire. Affective reactivity was measured using the Affective Reactivity Index. SI was measured using the Suicidal Ideation Questionnaire.

Results: Two separate hierarchical linear regression analyses were conducted. All variables were mean-centered. In the emotional abuse model, consistent with expectations, a significant main effect for the relation between emotional abuse and SI ($\beta = 1.83$, $p < .001$) and a significant synergistic interaction between emotional abuse and affective reactivity ($\beta = 0.21$, $p = .03$) were found. Simple slope analyses revealed that the association between emotional abuse and SI is significant at low, average, and high levels of affective reactivity. In the emotional neglect model, also consistent with expectations, a significant main effect for the relation between emotional neglect and SI ($\beta = 1.00$, $p = .01$) was found, but no significant interaction between emotional neglect and affective reactivity ($\beta = 0.12$, $p = .33$).

Discussion: These results suggest that the relation between emotional abuse and SI is strengthened in the presence of increased affective reactivity. That is, adolescents who experience more severe emotional abuse are at risk for elevated SI, particularly in the face of heightened affective reactivity. Though emotional neglect predicts SI, affective reactivity does not impact this relationship. Results suggest that it may be especially important to address affective reactivity in treatment for those adolescents with histories of significant emotional abuse.

M18. SUICIDAL IDEATION IN STUDENTS PRESENTING TO UNIVERSITY MENTAL HEALTH SERVICES

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Background: Suicide arises from complex interactions between demographic, psychiatric and social factors compounded with stressful life events (Overholser, Braden, & Dieter, 2012; Turecki & Brent, 2016). Young adults and adolescents are consistently identified in the literature as being a particularly vulnerable population, a finding consistent across at least 17 different countries (Nock et al., 2008). In fact, the first-year onset of suicidality is often the most risky, with this cross-national study finding that 60% of those experiencing suicidal ideation transitioned to a suicide attempt within the first year. The goal of the present study is to better understand the presentation of suicidality in young adults, specifically, university students; to improve identification of risk factors in treatment-seeking students; and to inform suicide prevention and treatment strategies, ultimately leading to better service quality and student outcomes. This study hypothesizes that there will be demographic, academic and clinical differences between students experiencing ideation at intake (ideator group) and students who had suicidal ideation emerge after intake (emergent group). Specifically, there will be more females than males presenting with suicidal ideation. It also hypothesizes that the ideator group is more likely to have poorer academic performance (e.g., lower grade point averages), higher psychological distress and be less aligned with their strengths. Additionally, these variables are hypothesized to impact improvement and deterioration in suicidal ideation: Specifically, better academic performance and lower psychological distress levels are expected to predict improvement whereas the inverse are expected to predict deterioration.

Methods: Subjects included a consecutive series of students seeking counselling services at a large Canadian University. Aside from these criteria, no inclusion/exclusion criteria were imposed. There were no restrictions based on academic level of study with both undergraduate and graduate students included. The population count amounts to 1,570 cases (termed "cases" in order to acknowledge that some students make multiple visits within the study's timeline). The ideator group and the emergent group were assessed using the Outcome Questionnaire (OQ).

Results: Bivariate analyses to identify variables significantly associated with current suicidal ideation, intake ideation versus emergent ideation, and suicidal ideation improvement and deterioration were done using chi-square tests and independent sample t-tests for categorical and continuous variables respectively. There were significant differences in clinical variables: The ideator group significantly differed from the emergent group on their reporting of lifetime history of self-harm (χ 2 [1,575] = 7.29, $p < .05$), lifetime history of suicidal ideation (χ 2 [1,561] = 16.69, $p < .05$) and lifetime history of suicide attempts (χ 2 [1,402] = 4.33, $p < .05$). Interestingly the emergent group was more likely to experience deterioration than the ideator group (t[197] = 3.19, $p < .05$). There were no differences on demographic or academic variables.

Discussion: There appears to be a distinction between cases who ideate right at intake and cases whose ideation do not emerge until the onset of counseling. The risk of suicidal ideation deterioration for this latter group is elevated. Future research should look into temporally sensitive predictors that can identify the emergent group earlier on in the student and mental health service interaction. Being able to identify this can significantly improve student outcomes and mental health service quality.

M19. EXPLORING THE ASSOCIATION BETWEEN PEER VICTIMIZATION AND SUICIDAL THOUGHTS THROUGH THEORETICAL FRAMEWORKS OF SUICIDE

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Background: While research has supported a relationship between peer victimization and suicidal thoughts and behaviors, little research has sought to explore how specifically peer victimization increases risk for suicidal thoughts. The present study sought to place experiences of peer victimization in the context of the Interpersonal-Psychological Theory of Suicide (IPTS), the Three-Step Model (3SM) and Social Pain Model (SPM), two theoretical frameworks for suicide. The SPM argues that suicide results as a byproduct of experiencing social pain, triggered by ostracism, social rejection, and various other social pain triggers.
Methods: Data was collected from 252 undergraduate students at a large doctoral level research university in the Northeastern United States. Participants were majority female (74.6%) and majority white (52.8%). Participants completed surveys on: relational, physical, and cyber victimization, loneliness, perceived burdensomeness, hopelessness, psychological pain, and suicidal thoughts. A hypothesized model, derived to test assumptions from the IPTS, 3SM, and SPM, was examined using path analysis.
Results: Model fit was good ($X2 = 9.90$, $df = 6$, $p = 0.13$; CFI = 0.99; RMSEA = 0.05) and explained 44.4% of the variance in suicidal thoughts. In line with our hypothesized model, cyber victimization and relational victimization had direct effects on perceived burdensomeness and relational victimization had a direct effect on loneliness. Also, in line with our hypothesized model, perceived burdensomeness and loneliness had direct effects on psychological pain which in turn had a direct effect on hopelessness. Finally, hopelessness had a direct effect on suicidal thoughts. Not in line with our hypothesized model was a direct effect of perceived burdensomeness on suicidal thoughts and a direct effect of perceived burdensomeness and loneliness on hopelessness. Additionally, there was a direct effect of relational victimization on psychological pain and no direct effects of physical victimization.
Discussion: The present study set out to explore the role of different forms of peer victimization in the experience of suicidal thoughts in the context of the SPM. Partial support was found for our hypothesized model, with relational and cyber victimization associated with increased experiences of perceived burdensomeness and relational victimization associated with increased experiences of loneliness. Both loneliness and perceived burdensomeness were also associated with increased psychological pain and hopelessness. However, a number of findings directly contradicted claims of the SPM, such as that psychological pain would have an indirect effect on suicidal thoughts mediated by hopelessness. Overall, the present study highlights ways in which experiences of peer victimization may contribute to suicidal thoughts via associations with a number of theoretically linked risk factors (e.g., perceived burdensomeness, loneliness, hopelessness).

M20. THE ASSOCIATION BETWEEN THE SUICIDE CRISIS SYNDROME AND SUICIDAL BEHAVIORS: THE MODERATING ROLE OF PERSONALITY TRAITS

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Background: The Narrative Crisis Model (NCM) posits that suicide is a multi-stage process that develops over time. The NCM posits a path in which a stressful life event in vulnerable individuals can trigger a psychological cascade, involving the suicidal narrative and the Suicide

Crisis Syndrome (SCS), and which ultimately results in Suicidal Behavior (SB). The SCS describes an intensely aroused negative affect state, characterized by a sense of entrapment, which has been shown to predict near-term suicidal behavior.
The Big 5 personality traits (openness, conscientiousness, extraversion, agreeableness, neuroticism) have been previously associated with SB. These five personality dimensions show clear heritable characteristics and have been associated with different psychiatric disorders such as anxiety, depression, substance use, and personality disorders. Studies show that high neuroticism and low extraversion are associated with suicidality, whereas conscientiousness and agreeableness are associated with lower suicidality, thus posing as protective factors. While the Big 5 personality traits associated with chronic risk of suicide are well defined, those specifically predisposing to the intensity of SCS have yet to be identified. In this study, we explore the moderating effect of personality traits on the relationship between the SCS and near-term suicidal behavior.

We hypothesized that high neuroticism and low extraversion will serve as risk factors for the severity of the SCS, whereas extraversion and conscientiousness will be protective against the severity of the SCS.

Methods: Patients seeking treatment at psychiatric outpatient centers serving urban populations in New York City were recruited as part of a larger suicide risk study. Adult participants (N = 422) were administered the SCI (a scale used to evaluate the intensity of the SCS), Big Five Inventory (BFI) for personality traits at intake and the Columbia Suicide Severity Rating Scale (CSSRS) for suicidal behavior (actual attempt, interrupted attempt, aborted attempt) at intake and at 1-month follow-up. The PROCESS macro in SPSS was used to test the moderation model. Covariates hypothesized to modulate the results were added: age, gender, ethnicity, years of education and depressive symptomatology at the Beck Depression Inventory (BDI).
Results: The SCI total score negatively correlated to extraversion ($r=-0.279$, $p<0.001$), agreeableness ($r=-0.177$, $p<0.001$), conscientiousness ($r=-0.340$, $p<0.001$), and openness ($r=-0.144$, $p<0.001$). On the other hand, the SCI total score positively correlated to neuroticism ($r=0.542$, $p<0.001$).
The moderation analysis showed significant interaction effects for extraversion ($b=-0.004$; $p=0.003$), agreeableness ($b=-0.004$; $p=0.01$), conscientiousness ($b=-0.004$; $p=0.017$), neuroticism ($b=0.002$; $p=0.03$) and openness ($b=-0.004$; $p=0.012$) on the relationship between the SCI and SB when controlling for covariates. Thus, for participants with low levels of extraversion, agreeableness, conscientiousness and openness, high scores on SCI were more likely to predict near-term SB; while for participants with high levels of neuroticism, high scores on SCI were more likely to predict near-term SB.

Discussion: Our results are supportive of our hypotheses and consistent with the NCM. High levels of extraversion, openness, and conscientiousness and low levels of neuroticism were protective factors against near-term suicidal behavior in the context of elevated suicide crisis symptoms.
Therefore, trait vulnerabilities could moderate the relationship between SCI and near-term suicidal behaviors. Further research is necessary to better identify and characterize the nature of these interactions.

M21. RISK OF SUICIDE IN PATIENTS WITH TRAUMATIC BRAIN INJURY

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Background: Traumatic brain injury (TBI) increases risk of suicide by nearly 9-fold. Certain patient characteristics may increase this risk further, guiding future interventions.
Methods: This case-control study aimed to determine what elevates suicide risk in people with TBI. The study was conducted at 8 Mental Health Research Network (MHRN)-affiliated healthcare systems serving 5 million patients across the U.S. Electronic health record, administrative data and state mortality records were organized into a Virtual Data Warehouse. Participants included 26 cases with TBI who died by suicide and their 30 matched controls with TBI who did not die by suicide between January 1, 2000 and December 31, 2013. The main outcome was suicide, identified using ICD-10 codes of X60-X84 and Y87.0. Descriptive statistics characterized the sample stratified by cases and controls, while conditional logistic regression models estimated the adjusted odds of suicide.
Results: Men with TBI had a nearly 10-fold increased risk of suicide compared to women with TBI (aOR=9.86, 95% CI: 1.18-83.33, p=0.034), above and beyond the baseline 9-fold increased risk for people with TBI compared to people without TBI. Trends for increased risk for older age or people with depression did not reach statistical significance. No associations were found with anxiety or alcohol use disorders, likely due to our relatively small sample sizes.
Discussion: Men with TBI are at significantly increased risk of suicide. Our findings can help clinicians and healthcare systems better target interventions for suicide risk in people with TBI.

M22. EXAMINING THE ASSOCIATIONS BETWEEN STATE AND TRAIT RELATIONSHIP QUALITY AND SUICIDAL IDEATION AMONG BIPOLAR YOUTH

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Background: Youth with bipolar disorder (BP) are at high risk for suicidal thoughts and behaviors (STBs) and frequently experience interpersonal impairment. Studies among youth with BP indicate poorer family and/or peer interpersonal functioning are associated with STBs. However, the cross-sectional nature of these studies do not allow for analyses of within- and between-person effects of relationship quality and STBs.
Within- and between-person variability is consistent with the differences between state and trait level differences—where traits reflect a characteristic that is more stable over time, while states reflect characteristics that are more situational. In a repeated measures design, state and trait components of relationship quality can be modeled using multilevel analysis that includes within-person (i.e. states) and between-person (i.e. traits) variation. Examining how these components of relationship quality are associated with SI among BP youth has important implications for research and clinical practice; to our knowledge, no prior study has examined this question.

Methods: We used data from the Course and Outcome of Bipolar Youth (COBY) study—an observational, longitudinal study of 446 youth with BP. Participants and their parent(s) completed intake and follow-up assessments (mean follow-up interval=8 months) with trained evaluators, who assessed participants' weekly SI and monthly peer and parent relationship quality from the time of the last follow-up to the current assessment using the ALIFE. Participants with at least 5 years of follow-up were included in this analysis (n=380).
Weekly SI scores were dichotomized (1=SI of at least slight severity), while monthly scores for peer and parent relationship quality were treated continuously (ranging from 1=very good to 5=very poor). Relationship quality variables were decomposed into state and trait components. The state component was created by subtracting participants' relationship quality scores at each time period from their overall averages, while the trait component was created by averaging peer/family relationship quality scores across all time points. Gender and age at intake were included as covariates.

To examine the state and trait effects of relationship quality on SI over time, we ran a multilevel logistic regression model with state relationship quality entered at level-1 and trait relationship quality at level-2. We utilized a slopes-as-outcomes model to examine how the associations between relationship quality and SI are moderated by gender and age.

Results: Overall, 57% of participants endorsed SI at some point over follow-up. Results indicate that trait relationship quality for both peers (OR=1.54, p<.001) and parents (OR=2.14, p<.001) were significant predictors of SI. State relationship quality for parents (OR=1.15, p>.10) was not significant, but approached statistical significance for peers (OR=1.31, p=.06). Neither age at intake nor gender significantly moderated the associations between state peer/parent relationship quality and SI.
Discussion: We examined how state and trait level relationship quality in family and parent domains are associated with SI among youth with BP. We found that trait-level relationship quality in both parent and friend domains are strongly associated with SI. With each unit increase (i.e., worsening) in state-level relationship quality, the probability of SI increases by 9% for parent relationships and 5% for peers. Although not significant at p<.05, for every unit that participants' trait-level peer relationship quality worsened, the probability of endorsing SI increased by 4%.

M23. VA SUICIDE RISK IDENTIFICATION STRATEGY: PRELIMINARY FINDINGS AND IMPLEMENTATION STRATEGIES IN AMBULATORY CARE SETTINGS

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Background: In October 2018, the Veterans Health Administration (VHA) implemented the VA Suicide Risk Identification Strategy (VA Risk ID), the largest population-based screening and evaluation strategy in any U.S. healthcare system. VA Risk ID is a critical first step towards a unified strategy to improve the detection and management of suicide risk among all Veterans presenting to VHA care.
A key focus of this strategy is identifying suicide risk among the cohort of patients who are eligible for annual mental health screening. This cohort comprises approximately 76.2% of all

Veterans receiving VHA care and represents an important opportunity to identify Veterans with unrecognized risk that may present to a wide range of ambulatory care settings, including primary care.

We will provide an overview of VA Risk ID, report preliminary findings on implementation of VA Risk ID in ambulatory care settings, and discuss strategies used to facilitate implementation in these settings.

Methods: VA Risk ID uses high quality, evidence-based tools to identify actionable suicide risk. Once risk is identified, providers gather information to form clinical impressions of risk (i.e., levels of acute and chronic risk), which informs the development of a risk management plan. This process occurs over three stages: primary screening to identify those who might be at risk, secondary screening to improve specificity and a Comprehensive Suicide Risk Evaluation (CSRE).

Results: To date, 1,573,063 Veterans have received the primary screen in ambulatory care settings. Associated ideation prevalence is 3.18% (n=50,093). The secondary suicide risk screen is positive 17.02% of the time (n= 6,073). We will report data on the number of Veterans in ambulatory care settings who progress on to the CSRE and describe the risk mitigation strategies utilized by providers for different levels of acute and chronic risk.

We will also discuss the implementation strategies (e.g., technical assistance) utilized to facilitate implementation in ambulatory care settings.

Discussion: Initial data highlights the feasibility of routine suicide screening and evaluation in ambulatory care settings. The associated prevalence of suicidal ideation in these settings underscores the importance of systematically implementing suicide risk screening and evaluation in non-mental health settings.

M24. DIFFERENTIATORS BETWEEN ADOLESCENTS WHO REPORT SUICIDAL IDEATION VS. NO IDEATION PRIOR TO ATTEMPTING OR DYING BY SUICIDE

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Background: To understand differences between adolescents who report suicidal ideation and those who don't report suicidal ideation, as assessed by the nine-item Patient Health Questionnaire (PHQ-9), prior to making an attempt or dying by suicide. The primary hypothesis explored is whether adolescents who are prone to impulsivity due to co-occurring "trait" conditions such as ADHD, autism spectrum disorders, and traumatic brain injuries, as well combination "trait" and "state" conditions such as substance abuse, will be more likely to have not reported ideation prior to making an attempt.

Methods: A retrospective case series study design using clinical data from six U.S. healthcare systems was used to identify differentiators between adolescents who report ideation, and those who don't report ideation, as measured by the PHQ-9 9th item, within 90 or 180 days prior to attempting or dying by suicide. Regression analyses were conducted at 90 days to enable examination of differences between the study groups during a relatively short and clinically relevant follow-up period.

Results: Many students at risk for STBs are not detected using the PHQ-9 9th item. Further, results of this study suggest that adolescents with ADD/ADHD, TBI and prior inpatient hospitalization for mental health are more likely to not report suicidal ideation on the PHQ9 prior to an attempt. After controlling for covariates, no association was found for drug use

disorders. The small sample size and lack of power precluded being able to identify significant associations for less prevalent conditions.
Discussion: Healthcare organizations may choose to substitute or supplement use of the PHQ-9 within the pediatric population with more sensitive screening tools, and follow-up positive screens with a complete assessment using the Columbia Suicide Severity Rating Scale (C-SSRS) or other assessment tool. For adolescents prone to sudden, extreme changes in moods and behaviors, pairing screening with predictive analytics may be the most promising approach for identifying short- and long-term risk for suicidal behaviors. In addition to clinical screening, providing adolescent and their families with education, skill building and resources to aid in recognizing and addressing signs and symptoms of suicidal thoughts and behaviors is another important measure. Proactive safety planning is another possible intervention that should be explored further.

M25. VALIDATION OF THE ASK SUICIDE-SCREENING QUESTIONS (ASQ) WITH YOUTH IN OUTPATIENT SPECIALTY AND PRIMARY CARE CLINICS

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Background: Many individuals who die by suicide present to medical settings prior to their death. However, elevated risk for suicide often goes undetected by medical providers. While the Joint Commission issued a Sentinel Event Alert in 2016 recommending all medical settings screen patients for suicide risk, medical providers are in need of setting and population specific, brief and psychometrically sound self-report instruments. However, no known, validated instruments that detect elevated risk for suicide with youth in outpatient specialty and primary care clinics exists.
Methods: This is a cross sectional, instrument validation study where the ASQ was validated using the standard criterion, Suicidal Ideation Questionnaire (SIQ/SIQ Jr.), with 515 English speaking youth ages 10-21 years old in outpatient specialty (diabetes/endocrinology and sports medicine/orthopedics) and primary care clinics. ASQ sensitivity, specificity, negative predictive value, positive predictive value, positive likelihood ratios, negative likelihood ratios, c statistic (area under the curve) and respective receiver operating characteristic curves were assessed. The aim of the study was to validate the Ask Suicide-Screening Questions (ASQ) with youth in outpatient specialty and primary care clinics.
Results: A total of 515 participants completed the study (335 outpatient specialty clinic and 180 primary care clinic). Seventeen of the outpatient specialty clinic participants (5.1%) and seven of the primary care clinic patients (3.9%) were screened at elevated suicide risk on the SIQ/SIQ Jr; while forty-five (13.4%) of the outpatient specialty clinic participants and 28 (15.6%) were screened at elevated suicide risk on the ASQ, respectively. The ASQ demonstrated good psychometrics with a sensitivity of 100.0% (95% CI, 85.8-100.0), specificity of 90.0% (95% CI, 87.0-92.5), positive predictive values 32.9% (95% CI, 22.3-44.9), negative predictive value of 100.0% (95% CI, 99.1-100.0) and c statistic of 95.0.
Discussion: Our findings suggest that the ASQ is an important screening tool for the detection of elevated suicide risk in clinical settings, especially when it wasn't the primary complaint of the office visit.

M26. IT TAKES A VILLAGE TO SAVE A LIFE IN NORTHERN UGANDA: RECOMMENDATIONS ON SUICIDE RISK MITIGATION IN DEPRESSED MOTHERS WITHIN A CLINICAL TRIAL

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Background: Suicidality in Uganda is a complex phenomenon, simultaneously apparent and obscured. Suicidality in females is particularly under-researched [1]. At the same time, information from local media and community leaders acknowledges a significant increase in suicide since the enduring civil war beginning in 1986 (ibid) [2]. Characterized by widespread human rights violations, torture, slavery, abduction of child soldiers and numerous massacres, the war led to transgenerational challenges affecting life at the individual, family, and community levels. In 2017, the Global Mental Health Lab (GMH Lab) (dir. Dr. Verdeli) Teachers College, Columbia University in partnership with Food for the Hungry Uganda (FHU), proposed a Cluster Randomized Controlled Trial (c-RCT) to study whether the treatment of maternal depression with Group-Interpersonal Psychotherapy (IPT-G) - a locally adapted and effective psychotherapy for major depression in Uganda [5,6] improves maternal health and nutrition behaviors and, concomitantly, various child outcomes.
Methods: One thousand two hundred forty-eight women and recent mothers were assessed for depression and were randomized to receive IPT-G treatment in addition to health promotion services through care groups (n=623), or care groups alone (n=625). Eleven IPT-G promoters, with prior experience providing mental health care services to the local communities were trained to screen for depression and suicide risk and to provide IPT-G to depressed mothers in the Kitgum district.
Results: During screening, 52 women endorsed suicidality in our trial (i.e., moderate or high suicide risk on the Columbia Suicide Severity Rating Scale). Although the research team was aware of the trauma and depression among women in the region, the significant prevalence of suicidality observed within our sample demonstrated need for a revised and enhanced suicide safety protocol that drew from local knowledge. The GMH lab team consulted with partners on the ground, including local research collaborators and IPT-promoters, to design an innovative, culturally valid plan for identifying and addressing suicidality.
Discussion: The adapted suicide safety protocol is a culmination of joint efforts of the research and implementation teams in Uganda and the GMH Lab. Techniques and resources outlined in the protocol center around community-based resources, including a strengthened partnership with the local clinic with formalized triage procedures, involvement of the Village Health Team, and the use of a "guardian angel," a community member who lives close to the participant and whom the participant considers trustworthy and reliable, to stay with them until help arrives. Such a collaborative effort among various health and lay teams simultaneously enhanced our understanding of local idioms of distress while building capacity by providing resources and training to promoters and clinical supervisors on the ground.

M27. AFTER DISCHARGE: THE CONCISE HEALTH RISK TRACKING SELF-REPORT (CHRT-SR) AS A PREDICTOR OF ADOLESCENT SUICIDE EVENTS FOLLOWING IOP

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Background: Each year, approximately one million youth attempt suicide (Nock et al., 2013). In the United States, suicide is now the 2nd leading cause of death among individuals between 15-24 years of age (CDC, 2016). As a result, there is need for effective prediction of which youth are at greatest risk for suicide.
The Concise Health Risk Tracking Self Report (CHRT-SR14) is a self-report rating scale that effectively predicted suicide attempts and events with acceptable sensitivity and specificity during an intensive outpatient (IOP) treatment program for youth in a large, urban hospital (Mayes et al., in prep; Kennard et al., 2018). However, it is not yet known whether the CHRT is effective at predicting suicidal events and attempts in the months after receiving treatment in an IOP. We hypothesized that participants' total score on the CHRT, as well as on the measure's three subscales, would predict future suicide events and attempts at 1- and 6-months following discharge from IOP.

Methods: Participants were 251 youth (204 females; 47 males), ages 12-18, who completed the SPARC program between Jan. 1, 2014 and Dec. 31, 2015. After treatment, youth completed the CHRT-SR14. Participants were called at 1 and 6 months after discharge to assess whether suicidal events or attempts had occurred. A suicide attempt was defined as a non-fatal, self-directed, potentially injurious behavior with intent to die. A suicide event was defined as a suicide attempt, emergency department visit, or inpatient hospitalization.
Univariate logistic regression models were used to predict event vs. no event, attempt vs. no attempt, and event vs. attempt at 1- and 6-months following treatment with the CHRT-SR14 Total score as the predictor. This was followed by similar analyses with the three subscales: CHRT-SR14 Propensity, CHRT-SR14 Impulsivity, and CHRT-SR14 Suicidal Thoughts as predictors. Follow up ROC Curve analyses were conducted when indicated.

Results: The model significantly predicted suicide events at 1 month: $X2(3)=11.233$, $p=.011$, and explained 14.7% of the variance. Of the predictor variables, only the impulsivity subscale was statistically significant OR=1.542, CI (1.132 - 2.096), p=.006. The area under the ROC curve was .739 95% CI (.628- .851), which is an acceptable level of discrimination (Hosmer et al., 2013).
The model was also statistically significant in predicting suicide attempts at 1 month, $X2(3)=10.977$, $p=.012$ and explained 21.5% of the variance. Again, the impulsivity subscale was the only statistically significant predictor, OR=1.750, 95% CI (1.097-2.791), p=.019. The area under the ROC curve was .793, 95% CI (.651- .936).

Neither the CHRT14sr total score nor any subscales were significant predictors at 6 months and did not differentiate suicidal events vs attempts at either time point.

Discussion: The CHRT-SR14 appears to be a useful measure in predicting future suicidal behaviors within a month following discharge from intensive outpatient care. Specifically, the impulsivity subscale was a significant predictor of suicide attempts and events at 1 month following treatment.

M28. PARENT AND ADOLESCENT THOUGHTS ABOUT SUICIDE SCREENING IN PEDIATRIC SPECIALTY CLINICS

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Background: Suicide is the second leading cause of death for children and adolescents between 10 and 19 years of age in the United States. As rates of suicide among adolescents continue to climb routine suicide screening has become a primary way to identify those at risk. The American Academy of Pediatrics and the Joint Commission recommend that pediatricians identify patients at risk for suicide. However, much of the routine screening has been limited to pediatric inpatient and emergency departments where 17% of U.S. children receive care rather than pediatric ambulatory settings which serve 94% of children and adolescents. Limited research has been done to assess parents' and adolescents' thoughts about suicide screening in pediatric specialty outpatient settings as well as whether or not routine screening in this setting can help identify adolescents at risk.

Methods: Adolescent (n=343; ages 10-21) patients at one of four pediatric specialty clinics (Sports Medicine, Orthopedic, Diabetes, Endocrine) at an academic hospital in the Midwest and their parent or guardian (n=303) shared their thoughts about suicide screening. Quantitative and qualitative data were entered on tablet computers and transcribed verbatim. Three members of the study team independently coded transcripts to identify qualitative themes. Interrater agreement was high (Fleiss' Kappa ranged 75%-86%).

Results: Between November 2015 and October 2016, 303 parents and 343 adolescents were enrolled in a validation study of a brief suicide screener. Parents (52% between 41-50 years of age, 17% male, 78% White) and adolescents (Mean age=14.4, 47% male, 77% White) overwhelmingly agreed that medical providers should screen adolescents for suicide risk (95% and 90% respectively). Forty-two percent of adolescents had been asked about suicide in the past and 39% reported prior mental health treatment. One major theme expressed by parents (46%) and adolescents (24%) included the important role of providers in identifying suicide risk, as children may be more likely to disclose to health care professionals than parents or teachers. Other parents (40%) and adolescents (47%) highlighted the potential for screening to prevent suicides and some suggested it should be a routine part of care. Other themes articulated concerns about iatrogenic risk, misdiagnosis, and general discomfort with the topic of suicide. Nevertheless, the majority of parents (89%) indicated the pediatric outpatient setting was appropriate for suicide screening and 71% of adolescents had a positive overall view of the questions.

Discussion: Parents and adolescents overwhelmingly support screening for suicide risk in pediatric outpatient settings. Although some have concerns about the screening process and implications, most are comfortable with screening and believe health care providers are a critical part of the process. As screening for suicide risk becomes standard practice in adolescent care, it will be essential to develop screening processes that are efficient, maximize comfort and address parent and patient concerns.

M29. EXAMINING THE PSYCHOMETRIC PROPERTIES OF THE REASONS FOR LIVING INVENTORY WITHIN A VETERAN CLINICAL SAMPLE

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Background: Military veterans are at elevated risk of death by suicide compared with the general population. Research shows that evaluating protective factors, clinical characteristics known to decrease suicide risk such as social connectedness and fear of death, is an important component of suicide risk assessment and management. However, current measures of protective factors have not been validated for veterans and are often lengthy, which limits feasibility for clinical practice. The current study evaluated validity and reliability of the Reasons for Living Inventory (RFL) among veterans and derived a shortened form for further research.

Methods: Participants consisted of male veterans (N = 421) with a diversity of ages, military experiences, and histories of suicidal behavior. Participants completed surveys containing the RFL and several other self-report measures as part of a larger, cross-sectional study evaluating suicide-related measures among veteran populations. We utilized confirmatory factor analysis (CFA) to determine if our factor structure replicated those of past studies. We then employed exploratory structural equation modeling (ESEM) to further evaluate factor structure. ESEM allows for more freedom in measurement modeling and can reveal other factor structures that would not be detected in CFA. Finally, exploratory bifactor analysis was utilized to derive a shorter form of the RFL. We evaluated each model using standardized fit indices from the literature (e.g., CFI, RMSEA).

Results: CFA results showed that the six-factor model from the literature demonstrated good fit (CFI = .920, TLI = .915, RMSEA = .07 [90% CI = .065, .070]). ESEM analysis also showed good fit but did not fully replicate CFA findings (CFI = .963, TLI = .951, RMSEA = .051 [90% CI = .048, .054]), as several items demonstrated cross-loadings or did not load on any factor. The majority of these items were from the RFL's original Survival and Coping Beliefs subscale (e.g., "I believe I can learn to adjust or cope with my problems.") Based on these findings, we further explored the factor structure using bifactor modeling which led to a derived shorter form consisting of 18 items. Additional ESEM analyses showed that this shorter form demonstrated excellent fit (CFI = .998, TLI = .994, RMSEA = .030 [90% CI = .003, .046]).

Discussion: Although CFA findings appeared to replicate factor solutions from the literature, ESEM analyses revealed a potential alternative factor structure with strong fit. It is possible that Survival and Coping Beliefs items did not replicate past relationships due to aspects of military culture that encourage maladaptive coping strategies, such as emotional suppression, to manage distress. Further research is needed to evaluate the reliability, validity, and clinical utility of the derived shorter form of the RFL. It could prove to be a useful clinical measure for use in clinical settings serving veterans.

M30. TRENDS BETWEEN CLINICIAN AND SELF-RATED ACUTE STRESSFUL LIFE EVENTS AND SUBSCALES OF THE SUICIDAL NARRATIVE INVENTORY IN PSYCHIATRIC INPATIENTS AND OUTPATIENTS

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Background: According to the Center for Disease Control and Prevention, suicide rates have increased in nearly every state in the last twenty years, many by over 30%, and remains a leading cause of death in the US (CDC, 2018). As such, innovative models of suicide risk are

urgently needed. The Narrative Crisis Model (NCM) of suicide (Galynker, 2017) proposes that, when triggered by acute stressful life events, individuals with predisposing vulnerabilities may come to perceive themselves as completely alienated and worthless, which can precipitate suicidal behavior. Various components of the NCM have been tested previously (Cohen et al., 2018; Galynker et al., 2017). Research has supported the concept that short-term, or acute, stressful life events (SLE) are a critical factor in both suicidal ideation and behaviors (Gradus et al., 2010; Coope et al., 2015). The aim of the present study was to investigate the relationships between different categories of SLE's and different components of the suicidal narrative in psychiatric inpatients and outpatients.

Methods: Adult participants (n=904) were recruited from psychiatric outpatient and inpatient services in New York City as part of a larger suicide risk research study. The Stressful Life Events Questionnaire was used to assess SLE's and included the following categories: harm to close person, relationship stressors, threat to role/identity, threat to personal safety. Severity of the suicidal narrative was measured with the Suicide Narrative Inventory (SNI). Six SNI scales were used: social defeat, humiliation, thwarted belongingness, perceived burdensomeness, goal disengagement, and goal reengagement. Bivariate Spearman rho correlations were calculated with 95% confidence intervals obtained by bootstrapping. Correlations were obtained for the total sample, for in- and outpatients and for retrospective clinician ratings vs. patient self-report.

Results: In the combined sample, eleven out of 30 correlations were statistically significant at $p<.05$, (rho =.085 to .132). Eight correlations involved relationship stressors or threat to role/identity SLE categories across the four interpersonally-related SNI subscales (social defeat, humiliation, thwarted belongingness, perceived burdensomeness). Goal oriented SNI scales had fewer correlations.

Among the outpatient group, eight correlations were significant, ranging from .108 to .142. Among the inpatient group, only three correlations were significant.

Among the self-report SLE group, there were 13 significant correlations ($p<.01$). All correlations were small and positive, ranging from .137 to .224. All SNI subscales except goal reengagement significantly correlated ($p<.01$) with total SLE score. Two SLE categories – relationship stressors and threat to role/identity – appeared to drive these results. Among the clinician-rated SLE categories, only four correlations were significant at $p<.01$.

Discussion: Overall, total SLE and two SLE categories, relationship stressors and threat to role/identity, appear to drive the relationship to the suicidal narrative. Additionally, SNI subscales that involve interpersonal factors appear to be more impacted by recent SLE's than goal-oriented scales. Inpatients may show stronger relationships between SLE's and the SNI than outpatients, perhaps due to greater acuity. Likewise, there was a trend for self-reported SLE's to be more strongly related to the SNI than clinician-rated SLE's. These results highlight the kinds of stressful life events that might drive a suicidal crisis narrative. They also suggest that clinicians should attend to both the objective and subjective nature of SLE's among suicidal patients.

M31. DELIBERATE SELF-HARM AND FOLLOW-UP CARE: INSIGHTS FROM THE SECONDARY HEALTH CARE SERVICES IN NORWAY

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Background: Deliberate self-harm (DSH) is a frequent cause of presentation to emergency clinics and denotes a strong predictor for self-harm repetition, suicide and premature mortality. Appropriate follow-up care and intervention of the patients after self-harm treatment is of great importance in clinical management and could have a profound influence on the patient's life in both short- and long-term. Although clinical guidelines for treatment of patients with self-harm have been available in a number of countries, the evidence-base to guide this management is sparse. The aim of this study is to profile patients being treated for DSH and to examine types of follow up care received by these patients.
Methods: The study is based on the entire national population of Norway with interlinked data from population registries. Medical treated deliberate self-harm incidents and associated clinical information were obtained from the Norwegian Patient Registry. Data were analysed with descriptive analyses and logistic regress.
Results: A total of 38 433 incidents were identified as possible incidents of DSH, i.e., that received a medical treatment in hospitals and associated emergent services during a 6-year period in Norway. Which corresponds to a yearly cumulative incidence rate of 121.0 (95% CI: 113.4-128.2) per 100 000 population over 10 years old, and 133.4/100 000 (95% CI: 121.7-145.1/100 000) for the females and 108.6/100 000 (100.6-116.6/100 000) for the males over 10 years old. Overall, 60.5% of these incidents were by females, 48.6% were by people under 35 years old, 57.8% occurred with a co-morbid psychiatric diagnosis, 33.3% were repeat DSH incidents and 88.9% involved poisoning with medication or other substances whilst 13.7% involved body injuries. After the somatic treatment of the injuries, 17.7% of the patients received a referral to a psychiatric service, 12. 6% were referred to somatic service for further treatment, and the rest were discharged to home with no referral. Significant factors associated with a referral for psychiatric treatment or intervention include female gender, young age, open injuries on hands or arms, repeat DSH episodes, with co-morbid personality or schizophrenic disorders, low income or education, etc., indicating a clear selection of severe DSH cases to follow with psychological consultation psychotherapy.
Discussion: Deliberate self-harm is common but referral for subsequent psychiatric or psychological treatment and intervention is insufficient and selective in routine practice. The study brings insightful details that could be taken into account in strategies to enhance the provision of follow-up care for patients with DSH.

M32. RUMINATIVE FLOODING AS A MEDIATOR OF THE RELATIONSHIP BETWEEN GOAL RE-ENGAGEMENT AND PROSPECTIVE SUICIDAL THOUGHTS & BEHAVIORS

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Background: Inability to disengage from unattainable life goals and to re-engage with more attainable ones have been linked to risk for suicide (O'Connor, Fraser, Whyte, MacHale, & Masterton, 2009). One possible mechanism for this association is lack of cognitive control required for this transition. Goal re-engagement and loss of cognitive control (i.e. ruminative flooding) are constituents of the Suicidal Narrative and Suicide Crisis Syndrome (SCS) components of the Narrative Crisis Model of Suicide (NCM), which are posited to precede imminent suicidal behavior. The aim of this study was to test this hypothesis.

Methods: Adult psychiatric patients (N=514) were recruited from outpatient services of a large mental health system in New York City. At intake, the participants completed the Suicidal Narrative Inventory (SNI), which included an assessment of goal re-engagement. The Suicide

Crisis Inventory (SCI) included an assessment of loss of cognitive control, together with its most severe form, ruminative flooding. At the one-month follow-up, suicidal thoughts and behaviors (STB) were assessed using the Columbia Suicide Severity Rating Scale (C-SSRS). Mediation analyses were conducted using PROCESS for SPSS.
Results: In the mediation analysis, the relationship between goal re-engagement and ruminative flooding was significant ($b = .18$, $p < .01$), as was the relationship between ruminative flooding and suicidal thoughts and behaviors ($b = .03$, $p < .001$). The direct relationship between goal re-engagement and prospective suicidal thoughts and behaviors was significant ($b = .04$, $p < .01$), and the indirect effect was significant (coeff = .006, 95% CI [.001, .01]) supporting the mediation hypothesis, suggesting that ruminative flooding is a partial mediator of this relationship.
Discussion: The results of this study suggest that, in agreement with the Narrative Crisis Model framework, loss of cognitive control in the form of ruminative flooding may be a mediator of the relationship between the inability to re-engage with attainable life goals and suicidal thoughts and behaviors. Future studies are needed to determine if and how treatments targeting ruminative flooding may reduce imminent risk for suicide.

M33. LETHAL MEANS ASSESSMENT IN PSYCHIATRIC EMERGENCY SERVICES: FREQUENCY OF ASSESSMENT AND POTENTIAL STRATEGIES TO IMPROVE IT

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Background: Lethal means restriction is an effective suicide prevention strategy with demonstrated international population-level results, yet individual-level uptake is less well understood. A recent study in the United States (US) among patients at high risk of suicide found documentation of lethal means assessment in only 18% of emergency department charts. Other research indicates clinicians may be unlikely to assess access to lethal means unless patients disclose a suicide plan involving firearms. These findings are particularly concerning given the lethality of firearms and their prevalence in the US.
Methods: We conducted a chart review of patient records from 1/1/2012 through 12/31/2017. Mental health evaluations were obtained from a psychiatric emergency service (PES) in a large urban, county emergency room in Washington state. The PES is located in one of the busiest emergency departments in the Pacific Northwest and is a critical safety net for patients with acute and chronic mental illness. All patients who were assessed by PES clinicians, regardless of chief complaint or diagnosis, were included in our sample. Every patient received a Suicide Risk Assessment (SRA) during which providers used an electronic template with standardized fields to record access to lethal means and other suicide risk factors. We used six data elements from the SRA regarding access to lethal means to define our primary outcome: any documentation of lethal means assessment. Any documentation was determined when there was a recorded response in at least one of the six fields; no documentation was determined when all six fields were blank.
Results: We reviewed 32,658 PES visit records belonging to 15,652 patients. The mean number of visits per patient was 2.1. Approximately two-thirds of patients were male (62.3%) or white (67.8%) and the median patient age was 37 years. Among all patient visits, 69.9% (n=22,824) had some documentation of lethal means assessment. Of those, 12.5% (n=2,857) indicated access to any lethal means for whom specific means availability was documented in

40.4% (n=1,155). Specific means indicated were firearms (n=392), pills (n=695), and firearms and pills (n=68). Among visits which indicated the patient had a previous near fatal suicide act, 68.9% (n=377) included some documentation of lethal means assessment. Among visits with no documentation, 46.9% (n=3,020) indicated the patient had a previous suicide attempt.
Discussion: Recent research suggests bolstering operations, such as using electronic templates, may improve lethal means assessment frequency. Standardization is a critical component of these recommendations. While it is possible that free text documentation also existed in PES patient records, our study deliberately assessed templated data elements only. We believe the high frequency of some lethal means documentation in our study was likely due to the existing infrastructure and nature of the study population. However, even with a standardized assessment tool, over one-half of all visits lacked some or all documentation. This finding suggests two key opportunities: 1) increase overall documentation frequency, and 2) increase detail in documentation. We identified multiple technological barriers which impacted providers' ability to document with the highest level of specificity. In our presentation, we will detail key learnings regarding barriers and facilitators, discuss recommendations applicable to a wide range of clinical settings, and equip and empower researchers, practitioners, and clinicians to identify current levels of documentation at their institutions as a first step toward building more robust suicide prevention systems.

M34. CORRELATES OF SUICIDE ATTEMPT AND INTENTIONAL SELF HARM AMONG MEDICAID MENTAL HEALTH CLINIC CLIENTS IN NEW YORK

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Background: Suicide rates in the United States are high, accounting for 45,000 deaths in 2016 alone, and non-fatal suicide attempts account for more than 500,000 emergency department visits annually. Outpatient behavioral health patients are at particularly high risk of suicidal behavior. Identifying individual or combinations of risk factors among information routinely collected in outpatient settings that could discriminate those at elevated risk for serious suicidal behavior would help in better screening and targeting of interventions.
Methods: The eligible population (N=248,491) included individuals, ages 10 to 64, from New York State, with a Medicaid mental health specialty clinic visit during one year, with continuous Medicaid eligibility during the period of observation. Episodes of suicide attempt and/or self-harm (SA/SH) were defined using ICD-10 codes. To identify SA/SH episodes of sufficient severity, only those episodes that indicated an emergency room visit or inpatient stay were included. Prevalence of individuals with suicide attempt/self-harm was estimated based on five demographic and five psychiatric diagnostic indicators, calculated retrospectively for timepoints at 3 months, 6 months, and 1 year before the suicide/self-harm event or the index date. Adjusted and unadjusted odds ratios (OR) were calculated for all other risk factors. Increasingly complex multipredictor logistic regression models were fit based on these predictors on a subsample of the data and compared based on discrimination performance (Area Under the Curve or AUC) on a testing sample.
Results: 4,224 patients out of N=248,491 (1.70%) had at least one episode of serious suicide attempt/self-harm during the year, 27% had a suicide attempt diagnosis (1,207 or 0.49% of the total sample), the rest were intentional self-harm diagnoses. There were significant differences

in the prevalence of suicidal/self-harm behavior between most demographic categories by age, sex, race, rural or urban region, and Medicaid eligibility category, and many persisted even after adjusting for all other factors. A diagnosis of depression (OR=4.3, 95%CI: 3.6-5.0), personality disorder (OR=4.2, 95%CI: 2.9-6.0), or substance related disorder (OR=3.4, 95%CI: 2.7-4.3) in the last 30 days was associated with the highest risk of single diagnostic category. When risk factor were entered into multipredictor logistic regression models, the model containing all demographics and the five diagnosis indicators within 1 to 90 days prior to episode/ report date had good discrimination and significantly outperformed all competitor models on a testing sample (AUC=0.86, 95%CI:0.85-0.87), followed by the model with diagnoses relating to the time period 3-6 months before the index date (AUC=0.83, 95% CI: 0.81-0.83). Even the combination of demographic characteristics significantly outperformed a classification by chance alone (OR=0.66, 95%CI: 0.64-0.67).

Discussion: We have shown that data routinely collected in outpatient behavioral clinics, namely demographic information and recent diagnosis, are significant indicators of risk and can be combined in relatively simple models to provide good discrimination of those who will go on to have a serious suicide attempt/self-harm episode. These models would be suitable to be implemented in online calculators for easy access and used by mental health providers in treatment settings to screen patients for more intensive intervention.

M35. THE ROLE OF MINDFUL PARENTING IN THE NONSUICIDAL SELF-INJURY RECOVERY PROCESS

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Background: Previous research suggests that, while adolescents with a history of nonsuicidal self-injury are uncertain of the role their parents play in supporting them, they are also likely to endorse the importance of non-judgmental parents in improving parent-child relationships and helping self-injurers (Berger, Hasking, & Martin, 2013). Developed by Duncan, Coatsworth & Greenberg (2009), a mindful parenting approach (listen to youth in the present moment, understand youth's underlying emotions as they are experienced, nonjudgmentally accept themselves and their child, self-regulate in the parenting context, and accept everything with as much compassion and equanimity as possible) may be pivotal in initiating a youth's NSSI recovery process.

Methods: A mixed-methods study of 22 parents (82% female; age range=36-65 years) and their 25 youth with a history of engaging in NSSI (90% female; Mage=19.85, range=15-26 years) was conducted. Each participant completed both a quantitative survey and individual qualitative interview. Analyses explored the relationship between parental mental health, youth suicidality, and dimensions of mindful parenting. Regression analysis examined the role of parent-level variables (social support, optimism, affective responsiveness, experiential avoidance, past 30-day distress) in predicting mindful parenting levels .

Results: Four dimensions of mindful parenting were identified: self-compassion, present-centered attention, non-judgmental acceptance, and low emotional reactivity. Nine (36%) of youth had attempted suicide. No differences were noted between parents with a teen having a history of suicide attempt and those without on dimensions of mindful parenting, optimism, parental mental health history, social support, past 30-day distress, familial affective responsiveness, and experiential avoidance. These predictors explained 70.1% of the variance in mindful parenting levels ($R=.84$, $F(6,13)=5.24$, $p<.01$). Affective responsiveness

significantly predicted mindful parenting (**β** = .60, p<.01), as well as experiential avoidance (**β** = .65, p<.05). Parental guilt was a common theme in interviews, with most parents reporting eventually learning to let go of feeling responsible for their child's behavior, to be more proactive in communicating with their child, and to express themselves more clearly. A large majority of youth interviewed reported feeling afraid of their parent's negative feelings, as well as feeling they needed to protect their parents from knowing about things that might hurt them. Youth reported they found it most helpful when parents were open to listening to them, remained calm, educated themselves on self-injury, were attentive and not dismissive of their child's perspective, and expressed unconditional love for them.
Discussion: Our findings underscore the need for practitioners who work with these families to facilitate open communication about emotions/feelings between parents and youth and grow mindful parenting techniques early in the treatment process. A nurturing environment coupled with open dialogue about NSSI may not only motivate youth to engage in help-seeking behaviors, but also encourage youth and parents to understand their own emotions, communicate more effectively, and identify alternative coping strategies. Lastly, studies linking mindful parenting dimensions to NSSI risk in youth are primarily correlational. Researchers should develop causal mechanisms in which mindful parenting dimensions may interact to protect against NSSI in youth.

M36. FREQUENT ED VISITS AMONG YOUTH IDENTIFIED AT RISK FOR SUICIDE

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Background: In recent years visits to the Emergency Department for youth experiencing psychiatric distress has been increasing rapidly. Particularly, repeat psychiatric based ED visits among youth can be costly for patients as well as for health service providers who may even suffer financial penalties for repeat admissions. Despite having clear evidence about the rapidly increasing rate of psychiatric based ED visits, there is little, if any, data on the rate of repeat youth psychiatric based ED visits and the demographic and clinical characteristics of these repeat visits. The current study aimed to identify the population of youth at risk for suicide, who frequently visit the ED. In addition, this study aimed to explore the rates of frequent ED visits and to determine whether different risk profiles exist among frequent ED users.
Methods: Suicide risk-screening as routine care was established at the Johns Hopkins Pediatric Emergency Department prior to the 2016 Joint Commission Sentinel Event Alert. Data on youth (ages 8-18) who presented to the Johns Hopkins Pediatric ED from March 2013-March 2019 and screened with the Ask Suicide-Screening Questions (ASQ) suicide risk screening tool was extracted from the Electronic Health Record. Youth who had at least one positive ASQ screen during the study period were included in the study. The sample included demographic data (Race, ethnicity, and age), date of ED visit, and ASQ screening results. Repeat visits were categorized into four categories: with one group having only one visit, a second group having two to five visits, a third group comprised of individuals with six to nine visits, and a fourth group of those with more than ten visits. Descriptive statistics were conducted to determine the general profile of our study population and to identify the rate of repeat visits. Further statistical analysis were performed to examine the demographic and clinical characteristics of frequent ED users.

Results: During the study period, 3,224 unique individuals presented to the Johns Hopkins Pediatric ED with at least one positive ASQ screen, which made up a total screening sample of 7,204 visits. A majority of the sample identified as African American (73.58%) and Female (64.88%). The range of total ED visits during the study was 1-35, with one visit being the most common (n=1,833; 56.85%) followed by two visits (n=598; 18.55%) and then three visits (n=315; 9.77%). Preliminary results indicate significant racial and gender differences among individuals with repeat ED visits. Fifteen percent of females as compared to 11% of males had ten or more ED visits within the study period ($X2 = 29.0978$ and $p>0.01$). Similarly, 16% of African Americans as compared to individuals who identified as White (6%) or another race (3%) had ten or more visits ED visits during the study period ($X2 = 517.01$ and $p > 0.01$).
Discussion: There is a unique population of youth that are at risk for suicide who frequently present to the ED. Understanding risk profiles are essential for preventing suicide and establishing efficient and sustainable long-term mental health care. Future research should focus on establishing and exploring the long-term trajectory of suicide risk among youth who frequently visit the ED.

M37. EFFECTIVENESS OF A SURVEILLANCE AND BRIEF CONTACT INTERVENTION (VIGILANS SYSTEM) IN PREVENTING SUICIDAL REPETITION IN YOUNG SUICIDE ATTEMPTERS: A CONTROLLED TRIAL

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Background: In France, about one adolescent out of ten has attempted suicide (Observatoire National du Suicide, 2018) and among them, about 15 % will reattempt suicide in the following year (Consoli et al., 2015). Suicide reattempts in young people significantly impact their vital, morbid and functional long-term prognosis (Goldman-Mellor et al., 2014).
More than half adolescents loose contact with healthcare services in the 6 months after a suicide attempt, which was shown to represent an independent risk factor for suicidal behaviors (Ligier et al., 2015).

VigilanS is an integrative surveillance and brief contact intervention system (SBCIS) proposed to every suicide attempter in the North of France since 2015. In addition to structuring and reinforcing the healthcare network around the patient, the system combines provision of crisis cards, active phone calls, and sending of postcards according to an algorithmic decision tree. VigilanS already proved its effectiveness in terms of reduction of suicidal behaviors in the adult population (Plancke et al, 2019).

We hypothesized that VigilanS could be more effective in youth since it could alleviate the distinctive adolescents' help-seeking barriers, due especially to their ambivalence between conquest of autonomy and need for help.

Our primary objective aimed at assessing the specific effectiveness of VigilanS in preventing suicidal repetition in young people up to 18 years old. Our secondary objective was to compare the effectiveness of VigilanS in youth versus in adults in terms of recurrence of suicidal attempt.

Methods: The effectiveness of VigilanS was assessed is a multicenter controlled trial comparing two prospective cohorts. Both cohorts received treatment as usual. The intervention

cohort consisted in all suicide attempters aged up to 18 years old receiving VigilanS as they were discharged in the North region where the system is implemented. The control cohort was extracted from the French Health Insurance databases. It consisted in all suicide attempters aged up to 18 years old discharged in an adjacent North region without VigilanS. Patients were included from January 2016 to December 2018.
The main outcome was the recurrence of at least one suicidal re-attempt and number of repeat episodes within 6 months after the index suicide attempt. In each cohort, data was collected for age, gender, method of suicide attempt, history of suicide attempt and length of stay in hospital, as potential cofounders.

Primary analysis consisted in adjusted linear and logistic regression models used to examine the association between outcomes and receiving VigilanS. Secondary analysis consisted in adjusted linear and logistic regression models, in intervention cohort only, used to examine the association between outcomes and categorical variable age (two categories: up to 18 years old and above 25 years old).

Results: 1681 patients were included in the intervention cohort and 1602 in the control cohort. Overall proportion of suicide reattempts in youth at 6 months was 9%. In the adjusted models, receiving VigilanS system was significantly and negatively associated with the recurrence of suicide attempts and the number of episodes of suicide re-attempts within the 6 months. Furthermore, effectiveness of VigilanS system was higher in youth than in adults.
Discussion: The SBCIS VigilanS appears to exert a significant preventive influence on repetition of suicidal attempt in youth for at least 6 months, even higher than in adult population. This system has a direct clinical application by providing evidence that BCIs are accessible, acceptable and cost-effective interventions that relevantly complement and potentiate already available prevention resources.

M38. THE RESILIENCE AND WELLNESS CENTER: A NOVEL APPROACH TO SUICIDE PREVENTION FOR AT-RISK US VETERANS

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Background: Suicide is over seven times more common amongst veterans than civilians, so suicide remains a key issue for the VA Healthcare System. In spite of these efforts, veteran suicide rates continued to climb between 2005 and 2016. While the veterans share many of the same risk factors for suicidal behavior as civilians (e.g. diagnosis of a mood disorder, social isolation), these risk factors often present with greater frequency and with more intense severity, with other comorbidities such as combat-related PTSD and medical illnesses. These findings highlight the urgency of developing novel approaches for treating veterans at risk for suicide to aid in suicide prevention and intervention.
Launched in October 2018, The Resilience and Wellness Center (RWC) was developed by a clinical and research team at the James J. Peters VAMC (in the Bronx, NY) towards the goal of finding alternative interventions for veterans at risk for suicide. This novel clinical intervention seeks to target vulnerable veterans by augmenting traditional medical treatments with a complementary and integrative health program. The mission of the RWC is to offer personalized care through strong treatment and programmatic components that include

physical activity, music and dance, diet and nutrition, sleep, enhanced peer support, and skills-based education classes on stress management and mindfulness towards the goal of reducing suicide risk and associated symptoms.

Methods: To overcome barriers related the stigma of mental health treatment, this program is open to veterans through a consult with a referring physician hospital-wide and is not restricted to mental health referrals. Veteran participants attend 14 different alternative health classes 3 hours/day, 5 days/week over 4 weeks. Assessment batteries are administered pre-post program attendance and include validated questionnaires on several key facets related to suicidal risk, including depression severity as measured by the Beck Depression Inventory (BDI), the Beck Hopelessness Scale (BHS), the Pittsburgh Sleep Quality Index (PSQI), and the Patient Health Questionnaire-9 (PHQ-9). Pre-post comparisons of outcome were performed across all subjects/cohorts using two sample t-tests, with Cohen's d to quantify treatment effect.

Results: To date, 7 Veteran cohorts have completed the program, totaling 61 participants (70.5% male, 29.5% female, with an average attendance rate of 87.5%. Although 7 cohorts have attended, data is presented here for 4 cohorts.

We examined different facets of depressive symptoms with measures of depression severity. For suicide attempters, significant improvements were observed in depression, measured by the BDI ($p \leq .005$, Cohen's $d = -1.44$) and the PHQ-9 ($p \leq .005$, Cohen's $d = -1.36$). We also assessed at hopelessness, an important risk factor for suicidal behavior, via the BHS, and found a large treatment effect ($p < .001$, Cohen's $d = -.98$). We also saw improvements in sleep quality amongst suicide attempters as measured by the PSQI ($p \leq .03$, Cohen's $d = -.89$). This is crucial as sleep problems are highly prevalent in veterans (more so than amongst civilians) due to high rates of mental health comorbidities, and improvement in sleep has been shown to reduce severity of depressive symptoms and improve wellbeing.

Discussion: These data underscore the importance of developing and sustaining novel interventions for engaging veterans at risk of suicide. The RWC provides an alternative treatment paradigm for at risk veterans who may struggle with traditional mental health treatments. This intervention is promising, showing significant improvements in health quality, and providing veterans with important healthy living skills may reduce the burden of mental health symptoms long term.

M39. EXAMINING THE RELATIONSHIP BETWEEN REFERRAL SOURCE AND SYMPTOM SEVERITY IN ADOLESCENTS PRESENTING TO AN IOP

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Background: Adolescent suicidal behavior is a public health problem, with more than 4,600 adolescents dying by suicide each year.1 Children's Health has developed a suicide-specific Intensive Outpatient Program (SPARC) using a Cognitive Behavioral approach with Dialectical Behavioral components. SPARC has been found to be both acceptable and feasible in treating this population and serves as both a step-down and first-line intervention, with teens referred from their outpatient providers, inpatient units, or directly from emergency departments (ED). With this variability in referral source, it is important to examine the differences in suicidal severity between these groups and the potential impact of referral source on outcomes.

Methods: Data was collected on youth ages 12 to 17 referred by an outpatient, inpatient, or an ED provider. As part of a larger battery at baseline, demographic information was collected on all patients, and patients were administered the QIDS-A and the CHRT to measure depression and suicidality (i.e., active suicidal ideation and propensity [cognitions related to suicidality]) respectively. Additionally, clinicians completed the C-SSRS with patients to look at their past and current suicide attempts and non-suicidal self-injury. These measures were repeated upon exit from the program, and information regarding attempts and suicidal events were collected at 1-month and 6-month follow-up.
Results: A total of 364 adolescents completed baseline measures as part of the SPARC program. Of these, 63.2% were referred from an inpatient unit (n=230), 12.4% were referred from an ED (n=45), and 24.0% were referred from an outpatient provider (n=87). A chi-square test was run to examine differences between the referral groups on presence of a recent suicide attempt. Patients who were referred from an ED were significantly less likely to have a suicide attempt within the two weeks prior to baseline than those referred from an inpatient unit, 55.7% vs. 28.9%,$X^2(1)=10.8$, $p=.001$. There were no significant differences found for those referred from an outpatient provider compared to those referred from inpatient or ED ($p>.05$). An ANOVA was run to evaluate the relationship between referral source and depression symptom severity, active suicidal ideation, and suicide propensity. Those who were referred from an inpatient unit had significantly lower depressive symptoms ($M=12.5\pm6.19$) than those referred from the ED ($M=15.9\pm5.6$), or outpatient provider, ($M=15.9\pm5.6$), $F(2,342)=13.0$, $p<.0001$. Additionally, those who were referred from inpatient had significantly lower active suicidal ideation ($M=4.3\pm3.7$) than those referred from outpatient ($M=6.15\pm3.5$), $F(2,350)=8.0$, $p<.000$, as well as significantly lower suicide propensity ($M=24.1\pm10.3$) than those referred from the other two sources (M outpatient = 28.7 ± 9.9 and M ED=30.1 ± 12.1), $F(2,349)=10.1$, $p<.0001$. No other differences were found among referral sources on baseline data.
Discussion: Patients stepping down from inpatient treatment were more likely to have had an attempt within the past two weeks than those referred directly from the ED. Yet, those referred from inpatient entered IOP with lower levels of depressive symptoms, active suicidal ideation, and propensity than those stepping up to a higher level of care. These findings suggest that initial stabilization may have occurred during psychiatric hospitalization. Further data will be analyzed to examine response to treatment and rates of attempt/events 6 months after treatment. This study cannot establish a causal relationship between referral source and baseline characteristics; however, it does suggest that those who first receive inpatient treatment enter the IOP with lower symptom severity.

M40. CLINICAL UPDATE: INVOLVING FAMILIES IN SUICIDE SAFETY PLANNING

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[1]James J. Peters Veterans Affairs Medical Center

Background: Suicide is the 10th leading cause of death in the United States and Veterans account for 18% of those suicide deaths. New data from the Veterans Administration (VA), examining over 55 million Veterans (Dept. of Veteran Affairs, 2016) suggest worsening suicide rates in spite of enhanced suicide prevention services. Specifically, 20 Veterans a day die from suicide. These very concerning numbers demonstrate an urgent need to develop additional, empirically validated interventions for suicidal Veterans. Despite the critical role of family factors in protecting against suicidality, families lack education on how their behaviour can help avert or unwittingly aggravate suicidal thoughts/ behaviour. Families worry about their relative but feel uncertain of how to help and need professional guidance. Currently,

there are no recommended guidelines for involving family members in the implementation, or use, of the VA Suicide Safety Plan (i.e., a written, prioritized list of coping strategies and resources for reducing suicide risk).
Methods: Dr. Goodman's research team conducted a qualitative study interviewing 25 suicidal Veterans, and 16 family members, which revealed a gap in current suicide prevention research. The qualitative interviews were designed to assess the extent of family members' involvement in Veterans' safety planning. Each transcript was coded by two doctoral level investigators. Multiple codes emerged and were grouped into five major themes for Veterans, and four themes for family members.
Results: While Veterans felt alone, isolated, and apprehensive about reaching out to family members, family members likewise did not know how to support and/or react to their Veteran's suicidality.

Veteran themes pertained to:

1) sadness, "I was in a black hole of sadness;"
2) isolation, "I have a big family but it's like I have none;"
3) shame, "Deep down a part of it is shame;"
4) perceived burden, "I felt like a burden, I wanted to reach out but didn't;" and
5) mistrust, "They'll flip out or won't understand."

Family themes revealed:

1) perceived inability to stop their loved one from hurting themselves, "it's hard for me to find out things that's going on with him; he keeps it to himself a lot;"
2) fear of triggering urges; "I never know how he'll react;"
3) feeling unsupported, "There's no real support;" and
4) feeling overwhelmed, "I didn't know what to do."

Family members felt they would benefit from psychoeducation regarding ways they could provide support and suicide symptomology in general.

Discussion: This qualitative data served as the basis for the Safe Actions for Families to Encourage Recovery (SAFER) which is a novel, 4-session manualized intervention. SAFER is unique as both the Veteran and the family member each create Safety Plans (shown below). Further, the dyad receives psychoeducation and communication skills (e.g., disclosure). Preliminary data on the effectiveness and feasibility of this treatment will be available at the time of this presentation.

M41. "PROJECT LIFE FORCE:" A NOVEL SUICIDE SAFETY PLANNING GROUP TREATMENT

Sarah Sullivan*[1], Angela Page Spears[1], Barbara Stanley[2], Gregory Brown[3], Michael Thase[4], Shari Jager-Hyman[3], Hanga Galfalvy[2], Marianne Goodman[1]

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Background: The Suicide Safety Plan (SSP) is a written, prioritized list of coping strategies and resources for reducing suicide risk. In 2008, the Department of Veterans Affairs (VA) mandated that clinicians oversee the construction of an SSP for every patient who is identified as "high risk" for suicide. While the SSP is a mandated "best practice" and vital component of the VA's coordinated effort at suicide prevention, there are currently no recommended guidelines for its augmentation in a group setting.
Methods: Forty-five subjects participated in an open-label trial of Project Life Force (PLF), a 10-session, group intervention, that combines cognitive behavior therapy and psychoeducational approaches, to maximize suicide safety planning development and implementation. Participants revise their plans over several weeks while learning coping, emotion regulation, and interpersonal skills. Sessions also include role plays, such as practicing asking for help and how best to share the SSP with family or friends. The content is augmented with training in the use of a SSP mobile App to promote accessibility and maximize implementation. Feasibility, acceptability and preliminary effectiveness measures were complete pre- and post-treatment.
Results: The results of the Beck Depression Inventory-II (BDI-II), the Beck Hopelessness Scale (BHS), and the Beck Scale for Suicide Ideation (BSS) were significantly lower at post-intervention than pre-intervention. A paired samples t-test was performed to compare pre- and post-intervention scores. Pre-post comparisons indicated that PLF decreased suicidal ideation [$t(20)=4.41$, $p=.0001$], decreased depressive symptoms [$t(20)=3.99$, $p=.001$], and reduced hopelessness [$t(20)=2.33$, $p=.030$]. Therefore, this open-label, novel treatment has been effective across multiple symptoms for this suicidal Veteran population.
Discussion: The PLF intervention was the recipient of a VA Small Projects in Rehabilitation Research (SPiRE) grant pilot where the manual was finalized. PLF had very encouraging results, and was well tolerated, feasible and effective in reducing suicidal thinking as well as increasing suicide related coping. It was recently awarded a Clinical Sciences Research & Development VA Merit Grant for a multi-site randomized clinical trial, which began in October 2018. By the conference, we will have 50+ participants' data to be discussed.

M42. INCORPORATING FAMILIES INTO SUICIDE PREVENTION AT THE VA

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Background: Families and caregivers often are also on the front lines and play an essential role in prevention and recovery. However, there has not been a specialized program for families of suicide attempters. This is a missing link and needs to become part of best practices for suicide prevention. In addition to depression, grief, burden, shame, isolation and helplessness, families and caregivers can develop distress that meets criteria for Acute Stress Disorder (ASD). Additionally, family members of suicide attempters are at increased risk of also having a suicide attempt.
Methods: Twenty-eight Veterans and fifteen family members/caregivers participated in qualitative interviews at the James J. Peters VA Medical Center. All veterans were receiving mental health services and had a history of suicidal attempts. Additionally, the qualitative interviews were designed to assess the extent of family members' involvement in Veterans' safety planning. Inclusion criteria for Veterans included: 1) able to give consent, 2) 18 years or older, 3) endorse a previous suicide attempt, and 4) English-speaking. Veterans responded to questions about disclosure of attempts, and experience or anticipation of family responses; family members responded to questions about ability to identify triggers, communicate salient concerns, and willingness to participate in a dyad treatment. Interviews were analyzed using

qualitative thematic content analysis. Two doctoral level investigators served as primary coders. Multiple codes emerged and were grouped into five major themes for Veterans, and four themes for family members.
Results: Veteran themes pertained to 1) sadness, "I was in a black hole of sadness;" 2) isolation, "I have a big family but it's like I have none;" 3) shame, "Deep down a part of it is shame;" 4) perceived burden, "I felt like a burden, I wanted to reach out but didn't;" and 5) mistrust, "They'll flip out or won't understand." Family themes revealed 1) perceived inability to stop their loved one from hurting themselves, "it's hard for me to find out things that's going on with him; he keeps it to himself a lot;" 2) fear of triggering urges; "I never know how he'll react;" 3) feeling unsupported, "There's no real support;" and 4) feeling overwhelmed, "I didn't know what to do."
Discussion: Thematic data identified existing perceptions, which may prevent successful communication about suicidality between patients and families. Overall, while Veterans felt alone, isolated, and apprehensive about reaching out to family members, family members likewise did not know how to support and/or react to their Veteran's suicidality. This qualitative work showed a potential gap in current suicide prevention research.

M43. TRANSCRANIAL DIRECT CURRENT STIMULATION (TDCS) PAIRED WITH A COGNITIVE TASK TO REDUCE THE RISK OF SUICIDE

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Background: Suicide is the 10th leading cause of death in the US across all ages, representing a significant financial cost to society and a great psychological cost to family and friends. However, effective interventions to reduce suicidal behavior remain elusive. Multiple factors underlie suicidal ideation and behavior, including biological vulnerability factors, adverse social conditions, and dysfunctional cognition. Different types of cognitive alterations are related to suicidal behavior, especially those resulting from changes in frontostriatal circuits, such as non-adaptive decision-making, risk-taking, and impulsivity. Due to the multidimensional nature of impulsivity, it has been shown to serve as both a moderator and mediator variable in the association between several clinical conditions and suicidal ideation and behavior. Thus, effective interventions to reduce impulsivity in clinical populations at higher risk for suicide could help efforts to reduce and prevent suicidal behavior.
Methods: We performed a randomized, single-blind, sham-controlled study to investigate the effects of tDCS paired with a decision-making task on risk-taking in Veterans with a clinical history of impulsive behavior. Participants were randomized to either active or sham tDCS, and completed two tDCS sessions per day for five days. During a session, participants trained on a Balloon Analogue Risk Task (BART), an interactive computer task in which subjects try to inflate a virtual balloon as large as possible without bursting it to gain points. tDCS was applied at 2 mA current with two 25 cm2 saline soaked electrode sponges, anode over right frontal cortex and cathode over left frontal cortex, for 25 minutes concurrent with performing the BART. To evaluate generalization, an untrained Risk Task was performed before and after the five days of training. To evaluate durability, the BART and Risk Task were administered again at one- and two-month follow-up sessions.
Results: Fifteen Veterans received active tDCS (mean age 60.4±6.6 years, 1 woman) and 15 received sham tDCS (mean age 58.3±7.6 years, 2 women). For the trained BART task, growth curve analysis (GCA) examining individual variation of the growth rates over time showed no

significant variations in individual trajectory changes. For the untrained Risk Task, GCA showed that the active tDCS group had a significant 46% decrease in risky choice from pre- to post-intervention, which persisted through the one- and two-month follow-up sessions. The sham tDCS group showed no significant change in risky choice from pre- to post-intervention. **Discussion:** Active tDCS over frontal cortex paired with a decision-making task effectively reduced risk-taking behavior in a group of Veterans with clinically-relevant impulsivity. Results suggest that this approach may be an effective non-pharmacological, neuroplasticity-based intervention for patients affected by impulsivity at risk for suicide.

M44. A COMPARISON OF SUICIDAL SOLDIERS WITH AND WITHOUT PTSD RECEIVING CAMS VERSUS E-CAU TREATMENT

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Background: Studies have found a positive correlation between suicidal behaviors and PTSD symptoms (Barr et al., 2018; Ramsawh et al., 2014; Stanley, Rogers, Hanson, Gutierrez, & Joiner, 2019). Operation Worth Living (OWL), a randomized controlled trial (RCT), compared Collaborative Assessment and Management of Suicidality (CAMS; Jobes, 2012) to enhanced care as usual (E-CAU) in the treatment of suicidal active duty Soldiers (Jobes et al, 2017). During this RCT results found both treatments reduced suicide with CAMS having a higher reduction of suicidal ideation at the three-month follow-up (Jobes et al. 2017).

Hypothesis 1: Controlling for time, Soldiers in the CAMS treatment condition with PTSD will have lower ideation scores, lower symptom distress, and less suicide attempts at assessment than those with PTSD in the E-CAU treatment condition.

Hypothesis 2: Controlling for time and treatment condition, Soldiers who screen for PTSD, will have higher ideation scores, higher symptom distress, and more suicide attempts at assessment than those without PTSD.

Methods: This study consisted of suicidal U.S. Army Soldiers (n=148). Measures include the Beck Scale for Suicide Ideation (SSI), the Outcome Questionnaire (OQ-45), the Suicide Attempt Self Injury Count - Recent (SASI-Count Recent). A repeated measures ANOVA was used to analyze the outcome variables.

Results: Averaging across treatment condition and PTSD diagnosis, only time indicated a significant difference in suicidal ideation, $F(1.83,177.80) = 278.77$, $p < .001$. Scores were significantly lower at 3 months ($M = 5.05$, $SE = .63$) than baseline ($M = 19.36$, $SE = .48$), $F(1,97) = 349.38$, $p < .001$. Scores were significantly lower at 12 months ($M = 4.10$, $SE = .66$) than baseline ($M = 19.36$, $SE = .48$), $F(1,97)=375.74$, $p < .001$.

Averaging across time and treatment condition, there was a significant difference in symptom distress, $F(1,79) = 8.09$, $p = .006$. Scores were significantly higher for Soldiers with PTSD ($M = 88.12$, $SE = 4.05$) than Soldiers without PTSD ($M = 71.60$, $SE = 4.16$).

Averaging across treatment condition and PTSD diagnosis, time indicated a significant change in symptom distress, $F(2,158) = 49.94$, $p < .001$. Scores were significantly lower at 3 months ($M = 74.90$, $SE = 3.80$) than baseline ($M = 97.71$, $SE = 2.71$), $F(1,97) = 57.10$, $p < .001$. Scores were significantly lower at 12 months ($M = 66.96$, $SE = 3.70$) than baseline ($M = 97.71$, $SE = 2.71$), $F(1,97) = 78.03$, $p < .001$.

None of the variables indicated a significant difference in suicide attempts at assessment.

Discussion: Although there was not a significant result between the two treatments (CAMS and E-CAU), there was a significant result across both treatment groups in the reduction of suicidal ideation and symptom distress at 3 months and 12 months. There was no evidence to suggest any significant differences between soldiers with PTSD in CAMS and their E-CAU counterparts. Other findings show that soldiers with PTSD showed more symptom distress than those without. This confirms part of our second hypothesis, but the rest of the hypothesis was unfounded.

Limitation: Care as usual was enhanced to make it standardized and a valid comparison to CAMS, however this may have enhanced it to the point it became less generalizable to real-world standard treatment.

Future direction: Observe whether this trend of non-significance between PTSD and treatment outcomes between the two treatment conditions still occurs in other studies of CAMS versus non-enhanced care as usual and with different populations.

M45. ASSOCIATION BETWEEN SUICIDE DEATH AND CONCORDANCE WITH BENZODIAZEPINE TREATMENT GUIDELINES FOR ANXIETY AND SLEEP DISORDERS

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Background: Benzodiazepines were formerly considered first line treatment for patients with anxiety and sleep disorders, but the emergence of safer, more effective treatments, has dramatically changed recommended use. Guidelines for management of anxiety and sleep disorders emphasize antidepressant medications and/or psychotherapy as first/second-line and benzodiazepines as third-line treatments. We evaluated the association between suicide death and concordance with prescribing guidelines for benzodiazepines in a large and diverse sample of patients.

Methods: Retrospective case-control study of patients with anxiety and/or sleep disorders who were members of health systems across 8 states in the U.S. within the Mental Health Research Network. Suicide death cases were matched to controls on year and health system. Controls were randomly selected from health system records who did not die by suicide but could have had prior attempts. Appropriate benzodiazepine prescribing was defined as meeting each of these criteria: no monotherapy (evidence of psychotherapy or antidepressant medication), no long benzodiazepine duration, and age <65 years. The association between guideline concordance and suicide death was evaluated in all patients with anxiety or sleep disorders who were prescribed benzodiazepines using a logistic regression model with a comprehensive set of covariates including: prior behavioral health utilization, mental health diagnoses, medical comorbidity, insurance status, education level, and demographic information.

Results: The sample included 6960 patients with anxiety disorders (2363 prescribed a benzodiazepine) and 6215 with a sleep disorder (1237 prescribed a benzodiazepine). Approximately 17.5% were discordant with anxiety or sleep disorder guidelines in each group. Benzodiazepine guideline concordance had a protective association in patients with anxiety disorders (OR=0.611, 95% CI=0.392-0.953, p=.03). Patients with anxiety disorders with 3-8 benzodiazepine fills in monotherapy (OR = 2.75, p<.01, 1.325 – 5.7) and those with long benzodiazepine duration (9+ fills) (1.67, p = .05, 1.0 – 2.78) had higher odds of suicide death compared to persons with 1-2 benzodiazepine fills plus evidence of other treatments. Guideline concordance did not reach statistical significance in the sleep disorder group (OR=0.413, 95% CI=0.154-1.11, p=.08).
Discussion: This study shows that about one fifth of individuals were prescribed benzodiazepines for sleep or anxiety outside recommended guidelines and this discordance was associated with suicide death. Specifically, we found a protective association against suicide in those with anxiety disorders who were prescribed benzodiazepines in short to moderate duration with concomitant psychotherapy or antidepressant treatment as specified in the guidelines. We hope that this study provides an impetus to physicians and health systems to carefully monitor benzodiazepine prescribing practices that are discordant per guidelines, particularly longer duration and monotherapy treatment with benzodiazepines.

M46. EXAMINING THE RELATIONSHIP BETWEEN ACTS OF AGGRESSION AND SUICIDAL BEHAVIORS IN VETERANS ENROLLED IN SUBSTANCE ABUSE TREATMENT PROGRAMS

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Background: Suicide rates remain high among Veterans who utilize VHA services, potentially due to the high prevalence of other physical and mental health issues seen in this population. Current literature suggests a relationship between Substance Use Disorders (SUD), Post-Traumatic Stress Disorder (PTSD), aggression and higher suicide risk. More recently, studies are examining OEF/OIF/OND service era Veterans and the connection between increased incidences of aggressive actions and suicidal behaviors.
Methods: The following results are from an ongoing multisite randomized controlled trial of Veterans who have experienced suicidal behaviors/ideation. Participants were recruited from SUD outpatient treatment clinics within VA Health Centers in Michigan and Colorado (N=1,064). Veterans completed a self-report screening survey which included measures of physical and mental health, substance use, physical aggression, and suicidal thoughts/behaviors. Participants provided information regarding lifetime suicidal behaviors using an item of the Beck Suicide Scale–Self Report (BSS-SR). Participants also answered questions regarding experiences with physical aggression using the Anger–Physical Aggression Short Form (PA-SF). This 5-item measure prompts the participant to rate how true the statements are for them regarding aggressive behaviors. Scale items include both interpersonal aggressive behaviors (e.g. “I have threatened people I know”) and physical expressions of anger (e.g. “I have gotten so mad I have broken things”). In addition, participants provided their Service Era. For the following analyses, participants were classified as OEF/OIF/OND Veterans if they reported serving from September, 2001 through the present.

Results: A total of 1,064 participants had data available on key variables included in these analyses. Out of those, 37% (n=395) reported their service era as OEF/OIF/OND. Thirty-seven percent of the sample (n=395) reported at least one previous lifetime suicide attempt, and those who served during the OEF/OIF/OND conflicts were significantly more likely to report at least one previous suicide attempt when compared to those who served during other service eras ($p<0.01$; OR 1.53, 95% CI [1.12, 2.11] for 1 prior attempt). Separate analyses estimate the odds of engaging in suicidal behaviors according to each item on the measure of aggression. For each item, those who endorsed a higher level of agreement with the aggressive behaviors (e.g. endorsing "Very to Extremely True") were significantly more likely to have reported prior suicide attempts.
Discussion: Participants who reported having more difficulty controlling anger/aggressive behaviors reported more lifetime suicide attempts than those who did not endorsed more control over aggressive behaviors. Serving during the OEF/OIF/OND conflicts also increased the likelihood of having at least 1 prior suicide attempt; 43.5% [n=172] of those identified as OEF/OIF/OND status reported a previous suicide attempt compared to 33.3% [n=223] of those who reported serving during other service eras. This data suggests that, among Veterans receiving SUD treatment, both services in recent conflicts as well as anger and aggression may play a role in increasing the risk for suicidal behaviors. Interventions for this population may have maximal impact if they target both anger/aggression and suicidal behaviors.

M47. YOUTH SUICIDE PREVENTION AND INTERVENTION IN PRIMARY CARE SETTINGS: AN EXPLORATION OF INTEGRATED BEHAVIORAL HEALTH STAKEHOLDER PERSPECTIVES

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Background: Preventing suicide is an immense public health challenge. Suicide is currently the 2nd leading cause of death in youth ages 10-24 (CDC, 2016). Research shows that nearly 90% of suicidal youths are seen in primary care during the 12 months preceding a suicide attempt (McCarty et al., 2011). Primary care providers who detect the presence of suicidality in patients typically refer them directly to the Emergency Department (ED), often resulting in extensive wait times followed by inpatient admission (Plemmons et al., 2018). While behavioral health integration within primary care settings presents an opportunity to expand access to evidence-based preventive mental health treatment for suicidal adolescents, possibly avoiding ED visits altogether, little is known about primary care providers' perspectives on suicide risk or their experiences of working with suicidal patients and their families.
Methods: Data are drawn from the first phase of a multiyear study designed to adapt and test the Family-Based Crisis Intervention for Suicidal Adolescents, a brief ED-based intervention for suicidal adolescents and their families, for use in Primary Care (FBCI-PC). In Phase 1, the investigative team conducted qualitative interviews with N=25 integrated behavioral health (IBH) stakeholders (primary care physicians, nurses, and social workers), all of whom are primary care providers, from four geographically unique primary care practices located across the state of Massachusetts to explore their experiences of working with suicidal patients in primary care settings, current practice protocols and processes related to suicide screening and assessment and intervention in the primary care setting). All interviews were audio recorded and transcribed verbatim. Data were analyzed using thematic analysis (Braun & Clarke, 2006), utilizing conceptually clustered matrices for comparative analyses (Miles, Huberman, & Saldana, 2014).

Results: Findings revealed variability in practices related to suicide screening, prevention and intervention across the four primary care settings. These approaches were influenced substantially by the following four domains: a) availability of internal and external resources (e.g., staffing, protected time allocated for crisis management, supervision, proximity to additional supports), b) stage of IBH rollout and quality of relationship with behavioral health team, c) IBH clinician experience and comfort with working with suicidal adolescents and their families, and d) the degree to which practice leadership, which in all cases were primary care physicians without behavioral health specialized training, were knowledgeable about suicide risk assessment and treatment.
Discussion: This study provides new knowledge about the experiences of primary care physicians, nurses and social workers in integrated behavioral health settings with respect to detecting and treating suicide risk in adolescents. Findings suggest intervention targets for providers (e.g., knowledge of best practice with suicidal adolescents) and primary care clinics (e.g., detection and referral to behavioral health) that would promote provider delivery of a primary-care setting-based intervention. Such considerations are critical to inform the adaptation of an existing EBP for suicidal adolescents for use in the primary care setting.

M48. EMOTION REGULATION DEFICITS THAT ASSOCIATE WITH NSSI AND SUICIDE RISK IN ADOLESCENTS

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Background: Nonsuicidal self-injury (NSSI) has high prevalence rates among non-clinical adolescents (average 20%), and suicide is the second leading cause of death in youth between 12-17 years old. The development of suicide risk in this age group remains poorly understood and identifying specific underlying deficits in emotion regulation may provide clinicians with a crucial tool for recognizing youth at increased suicide risk. Emotion regulation deficits are prominent in adolescents with NSSI and suicide ideation. Given that these deficits can underlie multiple health risk behaviors, identifying which dimensions of emotion regulation are specific to NSSI are critical for identifying suicide risk. This study aims to test which specific emotion regulation deficits are associated with NSSI and suicide risk using multi-method assessment in an unselected sample of community adolescents. It was expected that lack of emotional clarity, lack of access to emotion regulation strategies, and decreased cognitive control of emotions (measured by the Emotion Stroop) would be most salient to NSSI behavior.
Methods: Data were collected from 454 non-clinical adolescents from 9th -11th grades (mean age=15). The sample was about half female (57%) and the majority was white (84%) and heterosexual (86%). Close to 16% of the sample reported a lifetime history of NSSI. Adolescents completed self-report questionnaires at their schools which included measures assessing emotion regulation (Difficulties with Emotion Regulation Scale; Emotion Regulation Questionnaire for Children and Adolescents), NSSI and suicide behaviors (Self-Injurious Thoughts and Behaviors Interview), suicide ideation (Suicide Ideation Questionnaire-JR), and the Emotion Stroop Task (EST) which assesses cognitive control of emotions. The EST was administered via iPads. Adolescents received $5 for their participation.
Results: Logistic regression analyses tested which emotion regulation deficits would significantly associate with lifetime NSSI. The overall model was significant (Nagelkerke R^2=.23), and only lack of clarify (OR = 1.07) and lack of access to strategies (OR = 1.11) were significant predictors. Logistic regression was also used to test which deficits would significantly associate with lifetime suicide attempt status. The overall model was significant (Nagelkerke R^2=.27), and only lack of clarify (OR = 1.14) and bias to positive emotions on the

Stroop (OR = 1.01) were significant predictors. Linear regression was used to test which deficits would significantly associate with suicide ideation severity (SIQ scores). The overall model was significant (R^2=.36), and lack of clarity (b=.17) and access to strategies (b=.45), as well as emotion suppression (b=.11), were significant predictors.

Discussion: Among many emotion regulation deficits, lack of clarity and lack of access to emotion regulation strategies emerged as strong predictors of both NSSI and suicide risk in adolescents. These findings help pinpoint that these specific deficits are strongly associated with NSSI, suicide ideation severity, and suicide attempts. Interventions and prevention programs for youth may see a positive impact when focusing on skills related to identifying and labeling emotions (to address lack of clarity) and teaching emotion regulation strategies (to address lack of access). Future research with these data will test directionality of these relationships prospectively. Teaching these skills represent upstream efforts that could make a difference in the development of self-harm behaviors.

M49. SUICIDE RISK, NONSUICIDAL SELF-INJURY, AND REASONS FOR LIVING IN EMERGING ADULTS WHO HAVE EXPERIENCED LOSS OF A FAMILY MEMBER TO CANCER

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Background: Currently, there is a lack of research on young adults who have immediate or extended family members that have been diagnosed with terminal illness, except for in the areas of overall adjustment and resilience. Research has predominately focused on a parent's ability to cope with a terminally ill child; however, there is little to no research on young people who cope with a terminally ill parent or sibling. Specifically, research on risk for nonsuicidal self-injury (NSSI) and suicide within this population is non-existent. This study aims to identify what might be an unrecognized at-risk group for self-harm behavior. The study aims to determine if emerging adults who have lost a family member to cancer have higher rates of NSSI and suicide behaviors compared to those without such a loss. Other risk factors for suicide were also examined, including hopelessness and reasons for living. It was expected that young adults that had experienced cancer loss in their family would report greater lifetime NSSI, have greater and more severe suicide ideation, and be more likely to report suicide attempts than compared to those without cancer loss. Those who lost immediate family members to cancer were expected to report more NSSI and suicide risk than those who lost extended family members to cancer.

Methods: Data were collected from 543 college students enrolled at Western Kentucky University (mean age=23.16, SD=6.4). The sample was mostly female (78%) and the majority was white (90%) and heterosexual (78%). The sample consisted of 77 family cancer loss survivors with 56% reporting loss of an extended family member (n=43) and 44% reporting loss of an immediate family member (n=33). Participants completed self-report questionnaires through the use of Qualtrics which included measures assessing suicidal ideation and behaviors (SBQ-R), NSSI, reasons for living, hopelessness, and several questions about family terminal illness. Participants had the opportunity to enter into a raffle to win one of five $20 gift cards.

Results: Chi-square analyses found that there were similar rates of lifetime NSSI and suicide attempts when comparing loss (n=77) and no-loss groups (n=466). There were no differences in reasons for living, hopelessness, or overall suicidality between loss and no-loss participants. When comparing immediate family loss to extended family loss, there were also similar rates of NSSI and suicide attempts. However, the immediate family loss group had significantly lower scores on suicide-related concerns compared to the extended family loss group,

indicating the immediate loss group reported lower fear of death and suicide. There was also a trend towards significance with the immediate loss group having lower scores on family support compared to the extended loss group.
Discussion: The current study offers insight to a population that is often overlooked by the field. These results indicate that young adults that have experienced the loss of an immediate family member may experience less fear about death and suicide. The results also provide initial evidence that young adults with immediate family member loss to cancer might perceive less family support. Future research should attempt to replicate these findings with more participants that have experienced cancer loss in family members. More information is needed regarding cancer loss survivors in this age group to determine their overall risk and needs for support.

M50. PERFECTIONISM AS A MODERATOR OF THE RELATIONSHIP BETWEEN THERAPEUTIC ALLIANCE AND SUICIDAL THOGUHTS AND BEHAVIORS

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Background: The therapeutic alliance between patient and therapist is often a critical component of the treatment of suicidal individuals. Although maladaptive perfectionism has been identified as one trait vulnerability linked to long-term risk of suicidal thoughts and behaviors, little attention has been paid to examining links between perfectionistic tendencies and imminent suicide risk. While there has been evidence that patients' perfectionist traits can negatively impact the therapeutic alliance and treatment outcome, this relationship has not been well explored among acutely suicidal individuals. This study aimed to investigate if perfectionism could act as a moderator between patient's perceived therapeutic alliance and near-term suicidal thoughts and behaviors.
Methods: Adult psychiatric patients (N=443) were recruited from inpatient and outpatient clinics of the Mount Sinai Health System in New York City. Participants completed the Suicidal Narrative Inventory (SNI) subscale measuring perfectionism at intake, the Working Alliance Inventory (WAI) measuring patient-reported therapeutic alliance at intake or discharge, and the Columbia Suicide Severity Rating Scale (C-SSRS) measuring suicidal thoughts and behaviors (STB) at 1-month follow-up. Moderation analyses were conducted using PROCESS for SPSS.
Results: Patient-reported therapeutic alliance as measured by WAI was significantly negatively related to prospective STB ($b = -.10$, $p < .01$). Unexpectedly, perfectionism was, likewise, significantly negatively related to prospective STB ($b = -.12$, $p < .01$). Finally, there was a significant moderation effect of perfectionism on the relationship between patient-reported therapeutic alliance and STB ($b = .02$, $p < .01$).
Discussion: The results of this study suggest that perfectionism is a significant moderator of the relationship between patient-reported therapeutic alliance and prospective STB. Contrary to our hypothesis, when patients reported low levels of perfectionism, low patient-reported therapeutic alliance was associated with increased risk of future STB. These findings suggest that perfectionist traits may impact the therapeutic alliance, and this may be related to future STB. Further research is needed to examine the nature and direction of the relationship between maladaptive 1 2019 IASR / AFSP International Summit on Suicide Research perfectionism, therapeutic alliance, and imminent suicide risk in high-risk populations.

M51. INTERPERSONAL VIOLENCE, BELIEFS ABOUT VIOLENCE, AND SUICIDALITY AMONG YOUNG NIGERIAN WOMEN

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Background: Studies have shown that women in Western societies who report high levels of interpersonal violence victimization also report high levels of suicidality. Little is known about this relationship in non-Western cultures. An exploration of violent experiences and beliefs as correlates of suicidality is critical for understanding the risk of suicide within this understudied population and advancing knowledge about the universality of suicide predictors.
This study examines Nigerian women's beliefs about violence as a moderator of the association between interpersonal violence and suicidality. Nigerian community structures include a deep respect for elders. Sentiments and behaviors deemed "violent" in the US, may be more normative in Nigeria, thus influencing young women's' beliefs about acceptability. We hypothesized that women who reported interpersonal violence victimization and did not condone violence would report higher levels of suicidality.

Methods: Data came from the international Violence Against Children Survey, developed by UNICEF, WHO, and CDC using single-item indices. The sample included 1,766 Nigerian females age 13-24, representing 26 ethnicities (Hausa (22.8%), Ibo (18.6%), and Yoruba (24%)). Three forms of violence were assessed: physical (e.g., punched, kicked, whipped, beat, choked, smothered, drowned, and burned/threatened/victimized with a weapon), sexual (e.g., unwanted touching, attempted/pressured/forced sex), and emotional (i.e., told they were not loved, someone wished they were not born/dead, and being abandoned/forced to leave home). Mental health was controlled for by including items assessing anxiety, hopelessness, sadness, restlessness, and worthlessness. All reported presence or absence of suicidal ideation and attempts.
Results: Results revealed relatively high frequencies of women reported at least one incident of physical (60.1%), sexual (38.2%), or emotional abuse (22%). Correlates of violence included socioeconomic status, religion, and attitudes on violence. Hierarchical multiple regressions revealed that after accounting for mental health, a significant interaction effect existed between emotional violence and violence acceptability beliefs as a significant concurrent predictor of suicidal ideation and attempts. Posthoc probing revealed that, among women who reported that emotional violence was unacceptable, the experience of emotional violence was significantly associated with suicidal attempts and ideation.
Discussion: Results reveal that interpersonal violence is associated with suicidal thoughts and behavior among Nigerian women, similar to findings in Western cultures. The moderating effects of violence acceptability beliefs suggest that effects of emotional violence may be pernicious, because this type of victimization violates individuals' personal beliefs, which may be relevant to the experience of other stressors also associated with suicide.

M52. REPRODUCTIVE HEALTH CARE SETTINGS: A NOVEL APPROACH TO ENHANCING SUICIDE PREVENTION FOR WOMEN VETERANS

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Background: Women Veterans (WV) are at increased risk for suicide compared to non-Veteran adult women, dying at nearly twice the rate. Particular concern has been noted for younger WV (ages 18-39). As such, there is a critical need to identify optimal suicide prevention strategies for this population, including upstream strategies implemented outside of traditional mental health care settings. Reproductive health care (RHC) is the most frequent reason that younger women obtain medical services. Reproductive health conditions are also among the most commonly diagnosed and treated for WV using Veterans Health Administration (VHA) services. However, research examining the extent to which RHC settings are viable targets for upstream suicide prevention strategies among younger WV has been limited.

Methods: We conducted a mixed-methods study that aimed to estimate the prevalence of suicidal self-directed violence (S-SDV) and the magnitude of key suicide risk factors among WV using VHA RHC services by linking administrative records for a cohort of Operation Enduring Freedom (OEF)/ Operation Iraqi Freedom (OIF)/ and Operation New Dawn (OND) WV to primary survey data. For Aim 1, WV were eligible if they: (1) separated from active duty military service between October 1, 2009 – September 30, 2019; (2) were 18-44 years of age at separation; and (3) used VHA services at any point following their last separation. Eligible WV who used RHC-specific services provided or paid for by the Department of Veterans Affairs (VA) in the past year were also eligible for the survey potion of this study (Aim 2). Finally, to describe WVs' beliefs, attitudes, and preferences regarding suicide risk assessment and prevention within RHC settings (Aim 3), we conducted qualitative interviews with a subset of survey respondents.

Results: The administrative data cohort for this project included 200,791 WV. The survey and qualitative interview phases (Aims 2 and 3) are ongoing. To date, 244 women have completed the online survey, and 15 have participated in a follow-up qualitative interview. Participants ranged from 19 to 53 years of age at the time of survey completion. The majority of survey participants were white (66%) or black (16%) and non-Hispanic (84%). Preliminary survey findings indicate that approximately 80% of WV in our sample are experiencing ongoing mental health problems, 41% report experiencing active suicide ideation at some point during their life (9% within the past month), and 23% report a prior suicide attempt. Additionally, during qualitative interviews, many WV have described positive experiences with VHA RHC services, convey a trusting relationship with their RHC provider(s), and state that they would feel comfortable discussing suicide risk and prevention with their RHC provider(s) once rapport and trust are established.

Discussion: These preliminary findings suggest that a high proportion of WV seen in VHA RHC settings are at elevated risk for suicide and that VHA RHC settings may be acceptable for implementing upstream suicide prevention services for WV. Ensuring adequate patient-provider rapport and trust appears to be essential to such efforts. Continued research along this trajectory has the potential to directly inform advances in suicide prevention efforts tailored to reach and be effective for WV. Accordingly, we will discuss next steps (e.g., understanding provider perspectives) building upon these promising initial findings.

M53. UNDERSTANDING SUICIDE RISK AMONG IMMIGRANT-ORIGIN LATINX ADOLESCENTS: PARENT AND YOUTH PERSPECTIVES ON PRECIPITATING FACTORS AND OPPORTUNITIES FOR PREVENTION

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Background: This study emphasizes key risk factors for suicidal behavior affecting Latinx immigrant-origin youth, who constitute a large portion of the U.S. youth population but are underrepresented in suicide research. Latinxs are both the largest minority group and immigrant group in the U.S. (ChildTrends, 2014; US Census, 2013) and Latina adolescents have elevated suicide attempt rates compared to White and Black youth (Langhinrichsen-Rohling et al., 2009). Suicidal behavior is impacted by psychological vulnerability as well as the ecological context including interpersonal and contextual stressors. An increasingly restrictive and punitive immigration policy environment is a substantial stressor for immigrant-origin youth with effects on mental health (Rubio-Hernandez & Ayon, 2016; Gandara & Fe, 2018; Gulbas et al., 2016). At the same time, connectedness with caregivers and with communities is a key protective factor for immigrant-origin youth (Juang et al., 2018), consistent with research on suicide risk protective factors (Garcia et al., 2008). Research is needed to understand immigrant youth and parent perspectives on suicide risk and protective factors to develop promising culturally grounded prevention strategies.

Methods: The goal of the study was to understand immigrant-origin youth and parent perceptions of factors contributing to and protecting from suicidal behavior. Five focus groups were conducted with immigrant parents of adolescents (n=41) and seven with immigrant-origin adolescents (14 and up; n=56) in Baltimore, MD, an emerging immigrant community and Greater Boston, MA, a traditional immigrant destination. Transcripts were coded in an iterative process of open and closed descriptive coding by a six-person team and analyzed using thematic analysis (Braun & Clarke, 2006). Our study integrates an ecodevelopmental perspective on immigrant-origin youth adjustment (Suarez-Orozco et al., 2018) and Latinx youth suicide risk (Zayas, 2011) with the interpersonal-psychological theory of suicide (Van Orden et al., 2010; Van Orden & Conwell, 2011) in interpreting qualitative results.

Results: Thematic analysis resulted in identification of stressors related to the immigrant experience specifically and typical adolescent experiences generally. In many cases, parents and youth endorsed similar themes but with different interpretations (i.e. parents identified lack of communication as a parenting issue, whereas youth worried that disclosing their own stress would add to parents' existing stress).

An ecodevelopmental-interpersonal-psychological model specific to immigrant-origin youth was developed that highlighted macro- and microsystem-level influences on the constructs of thwarted belongingness, perceived burdensomeness and capability for suicide. Macro-level influences on thwarted belongingness included family separations, uncertain documentation status and exclusion from mainstream institutions, while micro-level influences included social exclusion and bullying, family conflict and lack of resources to navigate systems. Macro-level influences on perceived burdensomeness included the sociopolitical milieu, xenophobia and immigration policy; micro-level influences included family financial stress and living up to parental expectations. Traumatic experiences and exposure to violence were influences on capability for suicide.

Discussion: To advance suicide prevention and intervention strategies for Latinx immigrant-origin youth, it will be critical to increase attention to the impact of factors such as migration under adverse conditions, lack of documentation status, social exclusion and discrimination on the health and well-being of youth and families.

M54. HELP-SEEKING BEHAVIOR IN FIREARM OWNERS WITH PAST SUICIDAL IDEATION

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Background: Research has shown that specific groups of individuals (e.g., men, socially conservative individuals) are less likely to seek help for mental illness from a medical professional (Anestis & Green, 2015; Vogel, Webster, & Larson, 2007; Waitz-Kudla, Daruwala, Houtsma, & Anestis, in press). Research has also shown that firearms are the most lethal means of suicide, and those that identify as socially conservative are more likely to die by suicide utilizing a firearm than those who identify as socially moderate or liberal (Anestis, 2016; Butterworth, Houtsma, Anestis, & Anestis, 2017). Due to this overlap of demographics, specifically social conservatism relating to both dying by suicide with a firearm and low rates of help-seeking behavior, we sought to further examine the relationship between firearm ownership and help-seeking behavior. We anticipated that for those who have thought about dying by suicide, individuals who identify primarily as firearm owners were less likely to engage in help-seeking behavior than those who own firearms but have a different primary identification (i.e. someone who owns a firearm but identifies more strongly with being a doctor), and that both of these groups would be less likely to engage in help-seeking behavior than those who do not own firearms.

Methods: Data for our analyses were drawn from a sample of 444 individuals recruited to examine factors relating to suicide for multiple groups at high risk for suicide (i.e. doctors, military veterans, veterinarians). Participants were 54.6% female with a mean age of 33.16. Most participants identified as white (90.1%) and heterosexual (74.2%). The study was run utilizing Qualtrics software, and participants were recruited via social media platforms (i.e. Facebook). Out of all possible groups examined for the study, participants were first asked to list every group to which they belong, and then they were asked which group they primarily belong to. Participants then answered questions for their primary group and a series of common data elements, including whether they have ever sought help from a medical professional for mental health issues, lifetime suicidal ideation, and social policy beliefs. Analyses included only those whose help-seeking behavior was known and who reported having had suicidal ideation in their lifetime.

Results: As anticipated, we found that stronger identification with firearm ownership was negatively correlated with help-seeking behavior for this population ($r = -.202$, $p = .000$), and positively correlated with conservative social policy beliefs ($r = .189$, $p = .000$). We then found that stronger identification with firearm ownership had a significant negative effect on help-seeking behavior when accounting for age, gender, race, and social policy beliefs ($\chi 2$ (1) = 5.317, $p = 0.021$, OR = .633). This implies that firearm ownership has a unique relationship with help-seeking behavior outside of its correlation with socially conservative beliefs.

Discussion: The results that we found in this study emphasize that firearms are a unique issue in suicide prevention which merits intervention. Due to the unique influence firearm ownership has on help-seeking behavior, it is imperative to intervene with firearm owners outside of the mental health service system, through interventions that do not require seeing a medical professional, such as means safety. Future research would benefit from examining what interventions are most effective for firearm owners specifically and the best ways to implement those interventions on a large scale.

M55. EXAMINING RACIAL DISPARITY IN MENTAL HEALTH SERVICES UTILIZATION IN CHILDREN WITH A PARENTAL HISTORY OF SUICIDAL BEHAVIOR

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Background: Parental history of suicidal behavior is associated with a 4- to 6-fold increased risk of offspring suicidal behavior and a younger age of onset for first suicide attempt. Another risk factor is a lack engagement with mental health services. This is particularly true for racially diverse families. The psychosocial barriers preventing racially diverse families from seeking mental health services include: logistics (e.g. transportation), negative perceptions of mental health (e.g. denial of problem severity, mistrust of service providers), and general lack of knowledge surrounding mental health. For this study, we examined racial disparities in mental health service utilization in a high-risk group of children, 6-9 years, with a parental history of suicidal behavior.

Methods: Eighty families were recruited from four Primary Care Facilities and the Emergency Department at a metropolitan children's hospital in Columbus, OH. Families were in the PH+ group (parental history of suicidal behavior) or PH- group (no parental history but mood symptomology in the past month). Consent/assent were obtained for all families. Families completed clinical interview questions and self-report forms. Families were compensated for their time. Chart reviews were performed to compare mental health service utilization of children the year prior to the families' study appointment and any services received afterwards up to mid-May 2019. The chart review examined number of encounters, type of encounter (e.g., in-person vs. telephone), treating practitioner (e.g., psychologist), and current medications. Using IBM SPSS v25, data analyses included group comparisons via Chi-square or independent t-tests, and moderation analyses using the macro Process.

Results: There were no demographic differences found. PH+ children were more likely to have mental health diagnoses in their chart ($\chi2=5.4,p=.02$) and more likely to have telephone encounters ($\chi2=7.2,p=.01$) in the year prior to their study appointment. PH+ children were more often prescribed psychotropic medicines ($\chi2=4.5,p=.003$), had higher depression scores ($\mu=26.8$vs.$\mu=21.5,p=.05$), and more thoughts about wishing they were dead ($\chi2=22.8,p=<.001$) and killing oneself ($\chi2=5.4,p=.02$). Differences in exposure to suicide were found in Black/multiracial youth with suicide deaths reported more frequently in Black/multiracial families ($\chi2=4.0,p=.05$) and suicide attempts were higher, but at trend level ($\chi2=2.8,p=.09$). Analyses examining racial differences for mental health service utilization were not significant.

Discussion: Racial disparities were not found in mental health service utilization; but, differences in exposure to suicide were found. Black/multiracial children had increased exposure to suicide attempts and deaths when compared to White counterparts. Overall, only 37% of Black/multiracial youth were utilizing mental health services. This is concerning as exposure to suicide is a major risk factor associated with suicidal behavior. Denial and lack of knowledge about suicide risk factors may be a barrier for treatment even if parents are aware of their familial history of suicidal behaviors. Limitations include: small sample size (n=80) and charts were only reviewed for the year prior to their baseline date. Future research should continue to examine mental health service utilization among racially diverse families and

investigate how parental history of suicidal behavior influences mental health services received for their children.

M56. EXAMINING MATERNAL ATTACHMENT SECURITY, PERCEIVED BURDENSOMENESS, AND SUICIDAL IDEATION IN HISPANIC, AFRICAN AMERICAN, AND NON-HISPANIC WHITE ADOLESCENTS

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Background: Perceived burdensomeness (PB), or beliefs that an individual is a tax on their loved ones/society at large (K. A. Van Orden, Lynam, Hollar, & Joiner, 2006), is a key risk factor for suicidal ideation (SI) in the Interpersonal Theory of Suicide (IPTS; Joiner, 2007). Attachment security has also been identified as a potential risk factor for suicidal ideation (Lessard & Moretti, 1998), and targeted in interventions for suicidal thoughts and behaviors (e.g., Attachment Based Family Therapy; Diamond et al., 2010). In contrast, when youth have secure relationships with their caregivers (i.e., relationships that are trusting and reliable), attachment security promotes adolescent socioemotional development (Laible, 2007; Larose & Boivin, 1998) and can protect against adverse mental health outcomes (Formoso, Gonzales, & Aiken, 2000). Despite foundational research in attachment and the IPTS, little research has considered how attachment processes can compound or mitigate other known risk-relations for suicidal thinking (e.g., the link between PB and suicidal thoughts). Further, to our knowledge, none have examined these relations by race and ethnicity in a sample of clinically-high risk youth. The current study aims to examine the effect of maternal attachment security on the link between PB and suicidal ideation in psychiatric adolescents and do so by differing ethnoracial groups.

Methods: The full sample included N= 204 youth (62% female; Mean age = 14.83 years). The youth identified as 22% African American, 26% Non-Hispanic White, 39% Hispanic, and 13% multiracial/other-identified. Measures included: the Interpersonal Needs Questionnaire (INQ-10; Van Orden, 2009;Van Orden et al.,2012) the Modified Scale for Suicidal Ideation (MSSI; Miller, Norman, Bishop, & Dow, 1986), and the Kerns Security Scale (KSS; Kerns, Klepac, & Cole, 1996). The Process Macro was used to test the moderating effect of maternal attachment security on the relationship between PB and suicidal ideation in Non-Hispanic White, Hispanic, and African American participants, covarying for the effects of gender and BDI-II depressive symptoms.

Results: The moderating effect of maternal attachment security on the relation between PB and suicidal ideation was only evidenced in Non-Hispanic White youth ($b = .01$, $SE = .005$, $p = .03$), while covarying for gender and depressive symptoms. This indicates that greater attachment security appears to exacerbate or intensify the relationship between PB and suicidal ideation in non-Hispanic White youth only.

Discussion: Our cross-sectional study broadly indicated that maternal attachment security amplifies the risk relation between PB and suicidal ideation, but this is only indicated in Non-Hispanic White youth, and not African American nor Hispanic psychiatric adolescents. Although highly tentative and in need of further exploration, one potential explanation is that PB may be particularly distressing when adolescents perceive their caregiver relationships as close, confiding, and trusting. In other words, close attachment security can paradoxically amplify PB and its impact on concurrent suicidal ideation/desire in Non-Hispanic White youth. Continued research on the role of attachment processes on the IPTS, by race and ethnicity, is indicated.

M57. ASSESSING CLINICIAN ATTITUDES AND NEEDS IN ZERO SUICIDE IMPLEMENTATION: THE SYSTEM OF SAFETY STUDY

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Background: Many clinicians in general medical settings report lacking confidence and skills in identifying and responding to suicide risk. The Zero Suicide model includes training as a key component to improve clinicians' identification, engagement, treatment and transitions of patients with suicide risk. Training in real-world health care settings needs to be concise, competency-oriented, case-based, flexible, and scalable. We present data on clinicians' self-reported needs and attitudes around suicide risk management, as well as training experiences of a large system-wide implementation of the Zero Suicide model.

Methods: We conducted a baseline electronic survey of knowledge, attitudes and practices of clinicians at five hospitals and seven clinics, including medical and behavioral units for children and adults. Thereafter, we developed multiple training modules on primary and secondary screening, environmental safety, risk assessment, and safety planning. In line with our stepped wedge study design and continuous quality improvement (CQI) principles, trainings were implemented and improved iteratively and were comprised of online modules, academic detailing, and in-person workshops.

Results: Out of 5557 clinicians, 1528 responded to the baseline survey, of whom 1224 completed the survey in full. The respondents were primarily nurses (53.3%), attending physicians (15.4%), advanced practice providers (7.9%), and patient care assistants (6.0%); 19.0% had an administrative role. Respondents worked in emergency departments (20.9%), inpatient (65.0%) and outpatient (32.6%) settings, often spanning multiple settings; 44.2% disagreed with the statement that most or all suicides are preventable and 72.1% disagreed or were uncertain that departmental leadership had provided the tools and training needed to manage suicidal patients. Clinicians' disagreement and uncertainty around their own confidence increased with complexity of the process: screening (34.3%) to risk assessment (49.6%) through brief counseling (62.0%) and safety planning (70.4%). Only 16.9% of respondents felt that universal suicide screening would slow down clinical care and 54.1% had received formal CQI training in a classroom setting.

Discussion: The survey revealed important gaps and opportunities in workforce development and training. Overall, respondents had a positive attitude towards suicide screening but doubted that all suicides were preventable. They had prior CQI training but reported a lack of practical support from leadership and personal shortfalls in confidence around suicide care practices. Our implementation efforts therefore sought to engage leadership on an ongoing basis while tailoring training to clinician and departmental constraints. Additional EHR and survey data on the trainings themselves are showing improvements in screening delivery after academic detailing, as well as positive reception of in-person workshops on suicide care protocols and safety planning.

M58. SUICIDE DEATH BY PESTICIDE INGESTION AMONG ADULTS AND YOUTH: AN INVESTIGATION OF COUNTRY-LEVEL AGRICULTURAL ACTIVITY

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Background: Pesticides are toxic and pose alarming threats to public health. Approximately 20% of suicide deaths around the world are due to pesticide ingestion—most of which occur in rural agricultural areas in the low-and middle-income countries (WHO, 2018). Prior efforts have linked accessibility to pesticides with suicide death (via self-poisoning) among adults and have highlighted cases of pesticide-ingestion among farmers in specific countries. This phenomenon, however, has been explored less among youth—who may in fact have similar access to pesticides and have also been shown to die by pesticide ingestion. To address this gap, the current study explores the degree to which agricultural activity within a given country is associated with pesticide-ingestion suicide rates among adults (20-95 years) and youth (10-19 years). We expect that greater agricultural activity within a given country would relate to pesticide-ingestion suicide rates within both age groups. We also expect a stronger association in middle-to-low income countries, given that youth in these countries often join the workforce earlier and may be more readily involved in agricultural activity and direct pesticide use.
Methods: Country-level adult and youth suicide rates, specifically for pesticide ingestion, were extracted from the World Health Organization (WHO). Agricultural activity was selected based on the assumption that it is primarily farming communities that are vulnerable to pesticide ingestion. Country-level data on agricultural activity were drawn from the World Bank and captured in two ways: (1) Proportion of each country's land dedicated to farming and agriculture; and (2) Proportion of each country's gross domestic product (GDP) drawing from farming and agriculture. Ultimately, the sample consisted of 40 countries: 5 lower-middle income, 16 upper-middle income, and 19 high-income countries.
Results: Across all countries, pesticide-ingestion suicide rates for youth and adults corresponded with one another (r=.34, p=.03). But counter to expectations, suicide rates due to pesticide ingestion were not associated with degree of agricultural activity within a given country, whether that was assessed via proportion of country's land dedicated to agricultural activity (rs=-.16-.02, ps=.32-.92), or via proportion of the country's gross GDP based on agricultural activity (rs=.01-.21, ps=.95-.20). This was true across adults and youth. This pattern also remained consistent across countries when broken down by income level, again regardless of whether agricultural activity was captured via percentage of country's land (rs=-.36-.08, ps=.13-.86) or country's GDP (rs=.20-09, ps=.43-.88).
Discussion: Rates of pesticide-ingestion suicide death among adults and youth correspond with one another, but do not relate to degrees of agricultural activity. This suggests that pesticide ingestion as a method of suicide is not limited to individuals directly involved in farming. Non-farming adults and youth may have access to pesticides outside of large-scale agricultural contexts, especially in countries with fewer regulations around pesticide distribution (e.g., local stores may sell pesticides in under-regulated countries). Future research is encouraged to examine the impact of such regulations on pesticide-ingestion suicide rates among adults and youth. Beyond this, in the present investigation, low-income countries had the greatest amount of missing and/or low-quality suicide data. This is a critical limitation as low-income countries are most greatly affected by pesticide ingestion. Future work is therefore encouraged to acquire higher quality adult and youth suicide method data from low-income countries.

M59. EXPANDING RESOURCES AND SUPPORT FOLLOWING SUICIDE LOSS: UNITING FOR SUICIDE POSTVENTION (USPV)

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Background: United States public health initiatives have led to improved development and implementation of suicide prevention programming across health and community settings.

Critical to these efforts is the inclusion of policies and practices that reduce risk and promote healing after a suicide death, commonly referred to as suicide postvention. Despite the identified need to support suicide loss survivors, empirical and loss survivor-informed suicide postvention resources are limited. Moreover, there is a paucity of resources to support suicide loss survivors in the workplace, especially those specifically geared towards providers. Uniting for Suicide Postvention (USPV) was created to expand VA suicide postvention resources, offering guidance, resources, and support for family members, friends, co-workers, providers, and workplace supervisors. USPV joins the VA National Suicide Risk Management (SRM) Consultation Program, which provides suicide prevention consultation to providers serving Veterans, to further enhance the VA's comprehensive suicide prevention program. During this presentation, USPV development and resources will be showcased. Additionally, to further improve the understanding of provider suicide postvention needs, descriptive analyses of suicide postvention consultations from the SRM Consultation Program will be featured.
Methods: To ensure a comprehensive understanding of the current state of suicide postvention literature and resources, initial steps in creating USPV included a canvassing of the literature and existing resources, discussions with suicide postvention subject matter experts and individuals with lived experience, and informal collection of feedback from providers to inform website development. Guided by educational and marketing strategies, a multimedia approach was utilized for resource development to improve dissemination effectiveness and to assist the USPV consumer in experiencing an enhanced connection to, and impact from, each USPV product (Ibrahim et al., 2017). Suicide postvention consultation data from the SRM Consultation Program was obtained from: 1) staff descriptive databases that track consultation requests; and, 2) consultee satisfaction survey data.
Results: USPV includes cinematic films, interviews, podcasts, and educational infographics on the experience of suicide loss and how to help those impacted. Provider-specific resources showcase the personal and professional impacts following a suicide loss (Ellis & Patel, 2012). The workplace section of USPV offers videos detailing suggested suicide postvention practices and guidelines on how to establish, train, and utilize suicide postvention teams. Since January 2017, the SRM Consultation Program has completed 31 consultations focused specifically on suicide postvention. 68% of consultations focused on specific suicide losses and 39% involved program development consultation. A total of 19 satisfaction surveys have been received. 100% of consultees were satisfied or very satisfied with the consultation experience and 63% of consultees indicated that the suicide postvention consultation they received would not be readily available at their facility.
Discussion: By offering a website that is inclusive to all suicide loss survivors, USPV aims to facilitate a community of shared healing. Discussion will center on how multimedia resources can be used to unite suicide loss survivors, including providers who may not be readily receiving support following a patient suicide. Suggestions for suicide loss survivor research, and how this empirical data could assist with improved suicide postvention resources, will be offered.

M60. ADAPTATION OF GROUP-BASED SUICIDE INTERVENTION TO ADOLESCENTS RECEIVING TREATMENT IN A COMMUNITY MENTAL HEALTH CENTER

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Background: Suicidality is increasing in youth and it is the second leading cause of death in this age group. Programs that target reduction in suicidal risk are limited, and access to services is particularly difficult for underserved youth living at the poverty level. This is concerning because youth affected by poverty are twice as likely to have ideation and four times more likely to attempt suicide than those not affected by poverty.
The SPARC (Suicide Prevention and Resilience at Children's) intensive outpatient program (IOP) was developed to reduce risk for suicidal behaviors in adolescents. Initial program outcomes indicate that the program is acceptable and feasible as either a step-down from or an alternative to inpatient treatment. The goal of this poster is to present the preliminary outcomes of the adapted SPARC IOP's dissemination into the community mental health setting (Dallas Metrocare Services).

Methods: Data was collected on youth ages 12 to 17 referred by their Metrocare provider. English speaking adolescents with suicidal ideation and/or behaviors were eligible for enrollment. Assessment of suicidality, safety planning, and a review of home safety measures were also conducted at intake. Depressive symptoms and suicidality were assessed at baseline and discharge from the following measures:
Quick Inventory of Depressive Symptomatology – Adolescents (QIDS-A), a 17- item instrument that measures the presence and severity of depressive symptoms within the last seven days.

Concise Health Risk Tracking (CHRT)4, this 16-item measure presents the propensity and risk scores associated with active suicidal ideation.

Columbia Suicide Severity Rating Scale (C-SSRS)5, CSSRS is a clinician rated measure utilized to assess history of suicide attempt and NSSI at treatment entry.

Client Satisfaction Questionnaire (CSQ-8) was also obtained at discharge. The CSQ is an eight-item scale on which patients and parents rate their satisfaction with treatment.

The program includes 8 weeks of skills-based group sessions focused on reducing suicidality (e.g. reasons for living, behavioral activation, family communication, etc.) across three clinics. Apart from youth group, parents attend 4 of the 8 weeks for psychoeducation and multifamily treatment.

Results: A total of 45 adolescents have been enrolled in the program across three sites. Of the 24 eligible for completion, 21 have completed the program so far. Youth were predominantly Hispanic (61.9%) and female (76.2%) with the average age of 15.14 ± 1.53. When given the C-SSRS, 71.4% of the adolescents reported a previous suicide attempt and 75% reported non-suicidal self-injury during their lifetime. Paired samples t tests were conducted to analyze the changes in suicidal thoughts and behaviors. At treatment exit, youth reported a decrease in depressive symptoms (entry $M = 13.81 \pm 5.51$ vs. exit $M = 10.62 \pm 6.27$, $t(20) = 2.54$, $p = .02$), risk (entry $M = 4.38 \pm 2.75$ vs. exit $M = 2.57 \pm 2.62$, $t(20) = 2.87$), $p = .01$) , and propensity (entry $M = 21.67 \pm 8.95$ vs. exit $M = 16.19 \pm 10.15$), $t(20) = 3.48$), $p = .002$). Youth also rated a high level of satisfaction with the program [$M = 27.62 \pm 3.60$ (maximum score=32)].
Discussion: The vast majority of eligible youth (87.5%) completed the program, indicating feasibility. Youth also reported high levels of satisfaction, indicating acceptability. Youth also had significant reductions in depressive symptoms, propensity, and risk (active suicidal ideation) over the course of treatment. Initial outcomes indicate support for the adaptability of a skills-based suicide prevention program for adolescents in underserved communities. The curriculum for the program and future directions will be presented.

M61. TOGETHER WITH VETERANS, A COMMUNITY-BASED SUICIDE PREVENTION INITIATIVE FOR RURAL VETERANS

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Background: Together With Veterans (TWV) is an innovative model for suicide prevention that empowers local Veterans to be leaders for change in their communities. Rural Veterans are at a 20% increased risk of suicide compared to urban dwelling Veterans. The National Strategy for Preventing Veteran Suicide emphasizes collaborating across systems to implement multiple strategies from universal to indicated. However, implementing public health suicide prevention in rural places is challenged by a pervasive lack of resources and health care workforce shortages. Within this context, bridging the gap between national best practices and local rural communities is critical to implementing complex multicomponent public health initiatives. This paper will present the process by which TWV supports rural Veterans in building local suicide prevention programs and report results from three demonstrations sites.

Methods: TWV builds partnerships for suicide prevention by emphasizing local Veteran leadership, building community capacity, and providing evaluation and quality improvement support. The TWV toolkit provides the tools and guidance for a 5-phase process: 1) Build Your Team; 2) Learn About Suicide Prevention; 3) Learn About Your Community; 4) Plan for Action; and 5) Implement and Evaluate. In addition to the toolkit, TWV provides a three-day training for community leaders and technical assistance and implementation coaching. We are currently supporting 3 rural communities, at different stages of implementation. We are evaluating TWV using the REAIM framework for implementation, with data from monthly activity reports; annual community readiness and social network assessments; biannual qualitative stakeholder interviews; and secondary analysis of deaths and health care utilization.

Results: Results to date show strong feasibility and acceptability of the model, as well as robust program reach. All three communities have formed veteran-run non-profits—Veterans fill 85% of community leadership roles. TWV has served 1,288 Veterans including 966 rural Veteran encounters. One community has trained 22 primary care providers and distributed resources to 75% of practices. Social network analysis shows strong centrality, high trust, and high value in this same community, with the Veterans Coalition having the greatest number of connections. In a second community, 27 Veterans have been certified as QPR trainers, and within 1-month post certification 48 community members were trained—this all occurred within 2 months after starting the action plan. In the third community, still in the planning phase, 30-60 community members attend every monthly planning session. Further implementation data will be presented, including resources distributed and community sectors engaged. First wave follow-up will begin in May 2019, and we expect to have outcomes related to use of services, community readiness, and community capacity prepared to present.

Discussion: The next phase of TWV will be a comparative outcomes trial with up to 30 communities, employing a stepped-wedge design. We have begun recruitment for this roll-out study and will train the first cohort of communities in September 2019. This presentation will highlight how to build local community suicide prevention efforts in alignment with national priorities, including presentation of the implementation toolkit that we use to teach community teams. Furthermore, this presentation will review implementation and outcome results from demonstration sites and the research design for the community trial. Together With Veterans is a VA program and a mission that we live by—together we can reduce Veteran suicide deaths.

M62. EMOTION REGULATION STRATEGIES AMONG ADOLESCENTS WITH SUICIDE RISK

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Background: Suicide is a serious public health problem among adolescents. It is the second leading cause of death among U.S. adolescents and an estimated 100-200 suicide attempts occur for every death by suicide among youth (CDC, 2017; Maris, 2002). It is therefore important to identify factors that help predict who is at risk, and when their risk may increase. Emotion regulation deficits have been associated with increased depressive symptom severity and suicide risk, but differences in utilization of specific emotion regulation strategies across varying suicide risk severity is understudied among adolescents (Berking et al., 2014; Pisani et al., 2013). This study aimed to assess differences in use of emotion regulation strategies in an epidemiological sample of adolescents with varying levels of suicide risk.
Methods: The study utilized data from the National Comorbidity Survey – Adolescent Supplement, a cross-sectional survey of 10,148 U.S. adolescents aged 13-18 years. Groups were classified as adolescents with: 1) active suicide ideation in the past 12 months; 2) a suicide attempt in the past 12 months; or 3) neither suicide ideation or attempts in the past 12 months. Multivariate analysis of variance (MANOVA) was conducted to assess differences in use of maladaptive (rumination, behavioral isolation, cognitive suppression) and adaptive (cognitive reappraisal, distraction, emotional acceptance) emotion regulation strategies across the three groups.
Results: Though no significant differences in emotion regulation strategies emerged between suicide ideation and attempt groups, results showed that the suicide ideation and suicide attempt groups each engaged in significantly more rumination and behavioral isolation than the group with neither suicide ideation nor attempts. Individuals without past-year suicide ideation or attempts also engaged in more cognitive reappraisal than those with past-year suicide ideation.
Discussion: These findings highlight the importance of specific emotion regulation strategies as an area for future research that could inform treatments for adolescents at risk for suicide.

M63. IMPLEMENTING SUICIDE PREVENTION TRAINING IN A HEALTHCARE SETTING: CAN WE CHANGE PROVIDER ATTITUDES AND PERCEPTIONS?

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Background: Approximately 11% of patients who enter an emergency department (ED) experience suicidal ideation, yet only 3% will disclose it (Allen et al., 2013). Despite this, most professionals in ED settings do not have the knowledge or skills to identify suicide risk and feel uncomfortable in conversations about mental health and suicide (Sørensen & Talseth, 2006). This could be due to the prevalence of myths and stigma regarding suicidality in the United States, resulting in negative perceptions and attitudes. Suicide prevention gatekeeper training, such as Question, Persuade, Refer (QPR) has been shown to be useful in increasing knowledge of suicide warning signs and risk factors, as well as confidence in talking to suicidal individuals (Hangartner, Totura, Labouliere, Gryglewicz, & Karver, 2018). Although proven effective, many studies have focused on training outcomes with professionals working in social service and educational settings, looking at individual work roles (Wyman et. al., 2009). It is unclear how effective suicide prevention gatekeeper training is for professionals working in

ED settings, across diverse work roles. Therefore, this study examined whether participation in QPR would influence attitudinal beliefs and perceptions among medical and non-medical professionals and if changes in these domains would differ between groups.
Methods: In a 12-month period, staff (medical N = 73, non-medical N = 164) from an ED attended 1.5-hour suicide gatekeeper trainings (QPR). Training curriculum included content on suicide statistics, warning signs and risk factors, and strategies for identifying and intervening with individuals at-risk of suicide. Myths about suicide were reviewed and participants were encouraged to talk openly about individual experiences and beliefs. Prior to and immediately following the training, participants were asked to complete surveys that measured an array of theoretical and training variables, including scales evaluating perceived attitudes and perceptions towards working with patients who experience suicidal ideation.
Results: Results indicated that providers who participated in the QPR training had changes in attitudes and perceptions. This shows that gatekeeper trainings may be effective for ED staff who work with patients who experience suicidal ideation. Differences between medical (e.g. nurses, physical therapists, physicians, psychiatry) and non-medical roles (e.g. administration, management, care managers, outreach, technicians) were found at both baseline scores and increases in positive attitudes.
Discussion: These results suggest that suicide prevention gatekeeper trainings may be an effective means to change workplace attitudes among all healthcare professionals working in non-behavioral healthcare settings. Implementing QPR in a fast-pace environment was found to be feasible and effective in shifting attitudes among professionals with limited training in suicide prevention. Changing the climate of a workplace as a whole can create a safe space for patients to report suicide ideation and behavior. Future research is needed to examine whether provider attitudes and beliefs impact the use of proper screening, assessment, and treatment strategies within healthcare settings.

M64. ATTITUDES ABOUT FIREARMS AND PERCEIVED EFFECTIVENESS OF LEGISLATION TO PREVENT SUICIDE

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Background: Firearms accounted for 51% of all US suicide deaths in 2016, a figure which is commensurate with previous years (CDC, 2018). Firearms are the most lethal suicide attempt method with a fatality rate of 82.5% (Speicer & Miller, 2000). Given the high lethality associated with suicide attempts which utilize a firearm, research examining firearm owners' beliefs, particularly their beliefs related to firearms, is particularly important. Additionally, given there has been much recent discussion about potential laws to prevent suicide (wait periods, background checks, and extreme risk protection orders), it is necessary to understand firearm owners' opinions of these potential laws. The goal of this project was to examine the relationship between firearm owners' attitudes towards firearms and beliefs about the effectiveness of different laws to prevent suicide.
Methods: Data were collected from 270 firearm owners using Mechanical Turk and participants were paid for their time and effort. Participants were predominantly White (78.1%), male (64.8%), and had a mean age of 35.64 (SD=9.86). A previously established measure was used to assess firearm owners' attitudes towards firearms (Branscome, Weir, Crosby, 1991) such that three subscales were derived: it is someone's right to own a firearm, firearms are useful for personal protection, and firearms are not associated with crime. Views of different laws were assessed using three yes/no questions acting if people thought

background checks, wait periods, and extreme risk protection orders (ERPO) could prevent suicide.
Results: Results indicated that attitudes towards firearms was a significant predictor of firearm owners' beliefs on the effectiveness of different laws to prevent suicide. Individuals who more strongly felt that owning a firearm is a right were less likely to believe in the effectiveness of wait period (B=-.05, p<.01) and background checks (B=-.04, p<.01) as effective methods of suicide prevention. Individuals who endorsed greater beliefs about firearms being associated with personal protection were significantly less likely to believe in the effectiveness of wait periods (B=-.05, p<.01) and ERPO's (B=-.06, p<.01) as effective methods of suicide prevention. Finally, individuals who endorsed greater beliefs that firearms are not associated with crime were significantly less likely to be believe in the effectiveness of wait periods (B=-.1, p<.01), background checks (B=-.11, p<.01), and ERPO's (B=-.08, p<.01) as methods of suicide prevention.
Discussion: Our results suggest that firearm owners' attitudes about firearms significantly influences their belief in different laws' ability to prevent suicide. These findings suggest that for firearm owners, the way in which they perceive firearms plays an important role in their favorability toward different laws. This provides important insight going forward as discussions about these laws become more frequent. Future research should continue examining how firearm owners view firearms, how firearm owner view suicide prevention laws, and what can be done to work more collaboratively with firearm owners on such topics.

M65. AN OBSERVATIONAL STUDY OF SUICIDALITY IN MIDDLE SCHOOLERS IN EASTERN ONTARIO

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Background: This study aimed to characterize suicidality (ideation and attempts) in a cohort of middle school students in Eastern Ontario.
Methods: This work represents a baseline sub-analysis derived from a larger study examining whether a teacher-led cognitive behavioural therapy (CBT) intervention embedded within an English literacy novel study curriculum could diminish suicidality and presentations to emergency services for self-harm/suicide attempts in middle schoolers. As part of that study, 85 grade 7 and 8 students at a large public schoolboard in Eastern Ontario were given the Life Problem Inventory (LPI) and Revised Children's Anxiety and Depression Scale (RCADS), validated 5 and 4 point Likert Scales respectively.
Results: Secondary objectives will determine whether the Harry-Potter based mental health literacy curriculum decreases depression and anxiety symptoms and improves well-being immediately following the curriculum and approximately 6 months later in addition to ascertaining student and teacher satisfaction with the curriculum. 85 students from an urban school completed baseline measures. The following are preliminary pre-intervention results with the percentages of the population that endorsed these suicide related self-report items within the past 6 months: "I sometimes get so upset that I want to hurt myself seriously" mean= 3.38 ± 1.42 (28% of students endorsed), "Killing myself may be the easiest way of solving my problems" mean=2.67 ±1.2 (23.5%), "More and more often I think of ending my own life," mean=3.36 ±1.9 (20%), "I have deliberately hurt myself without meaning to kill myself (such as, cutting or scratching myself) mean=3 ±1.17 (27%) and "I have made at least one suicide attempt" mean=3.25 ±1.48 (9.4%). Furthermore, there was a high prevalence rate for symptoms suggestive of Major Depressive Disorder (MDD, 16.5%).

Discussion: This study showed very high rates of suicidal ideation and recent suicide attempts in a middle school population, higher than have been identified previously. Urgent efforts to mitigate suicide risk in this population including mental health literacy curricula are warranted.

M66. SUICIDES IN YOUNG PEOPLE IN ONTARIO FOLLOWING THE RELEASE OF "13 REASONS WHY"

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Background: '13 Reasons Why', a Netflix series, included a controversial depiction of suicide that has raised fears about possible contagion. Studies in the US have shown an increase in subsequent suicide rates, however to date there have been no international studies examining the show's impact on suicides. This study aims to begin to address that gap by examining the relationship between the show's release and youth suicide in Canada's most populous province.
Methods: Suicides in young people (under the age of 30) in the province of Ontario following the show's release on March 31, 2017 were the outcome of interest. Time-series analyses were performed using data from January 2013 to March 2017 to predict expected deaths from April-December 2017 with a simple seasonal model (Stationary R-Squared = 0.732, Ljung-Box Q = 15.1, df = 16, p = 0.52, BIC = 3.09) providing the best fit/used for the primary analysis.
Results: Modeling predicted 224 suicides, however 264 were observed corresponding to 40 more deaths or an 18% increase. In the primary analysis, monthly suicides exceeded the 95% confidence limit for three of the nine months (May, July, and October).
Discussion: The statistical strength of the findings here are limited by small numbers, however the results are in line with what would be expected if contagion were occurring as well as observations in the US. This suggests that contagion may have occurred more widely than previously known. Further research in other locations is needed to increase confidence that the associations found here are causal.

M67. THE ASSOCIATION BETWEEN ALTITUDE AND VETERAN SUICIDE

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Background: Suicide is a significant problem among military Veterans, whose rate of suicide is more than twice that of the general population. A positive association between suicide rates and altitude has been observed consistently in the U.S., as well as in countries across the globe. To determine if this association is replicated in Veterans, we examined the relationship between Veteran state-level suicide rates and altitude.
Methods: We analyzed suicide rates for 2014, including both firearm-related and non-firearm related rates. Pearson coefficients were calculated for altitude and each outcome. Generalized linear models were used to determine the association between suicide rate and altitude, while adjusting for potential confounding variables.

Results: State mean altitude was significantly correlated with total suicide rate ($r = 0.678$, $p < 0.0001$), firearm-related suicides ($r= 0.578$, $p < 0.0001$), and non-firearm suicides ($r = 0.609$, $p < 0.0001$). In multivariable analysis, altitude was significantly correlated with total Veteran suicide rate ($\beta=0.412$, $p=<0.05$) and Veteran firearm-related suicide ($\beta=.397$, $p=<.00001$).
Discussion: These results add to the evidence linking altitude and suicide. One potential contributor to this association, is the hypobaric hypoxia found in persons living at even moderate altitude. This may place hypoxic, oxidative and inflammatory stress on the brain, particularly among those at risk for psychiatric disorders or suicide. If hypoxia and suicide are linked, this could have importance for Veterans, because many VHA patients suffer from hypoxic medical conditions such as COPD, cardiovascular illness and/or sleep apnea. Further research into the epidemiology of suicide and altitude among Veterans is warranted.

M68. AGGRESSION DIFFERENTIATES SUICIDE BY ETHNICITY

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Background: Suicide deaths among African Americans (AA) are an understudied phenomenon. Further, no study exists on the accuracy of cinematic portrayals of AA suicide in feature films. The present study has three aims. Aim1: it explores which social, psychiatric and other factors differentiate real AA suicides from suicides of other ethnicities. Aim 2: it explores which social, psychiatric and other factors distinguish AA from non AA suicide in American feature films. Third, to what extent do factors that distinguish AA from non AA suicide in the real world also do so in feature films? Are films a reflection of reality or a cultural construction? To the extent that the media communicates misunderstandings, it can promote cultural misunderstandings of African American suicide. This, in turn, can lower the odds of effective suicide prevention.
Methods: For aim 1, data on 27,824 real cases of suicide are drawn from National Violent Death Reporting System (NVDRS). These include 2,280 African American (AA) suicides. Factors that might distinguish AA from other suicides include psychiatric, social strain, economic strain, and physical health. For aim 2, the sample of feature films draws on the database developed by Stack and Bowman (2011) Suicide Movies: Social patterns, 1900-2009, and extends the database through 2014. 42 depictions of AA suicides were found. These portrayals are compared to those of non AA (N=1,762). Factors that might distinguish AA from other suicides include psychiatric, social strain, economic strain, and physical health. For both aim 1 and aim 2, the dependent variable is a dichotomy where AA suicide=1, other suicide=0. Since the dependent variable is a dichotomy, logistic regression techniques are appropriate.
Results: Aim 1: 15 of 16 risk factors distinguished real AA suicides from non AA ones. Selected significant results include: psychiatric factors: AA suicides were 39% less apt to be marked by depression, 130% more apt to include cocaine use; social factors: AA 20% less apt to report job problems; AA 21% more apt to be involved in trouble with the criminal justice system, but 22% less likely to be in trouble with the civil justice system; AA 218% more apt to have been aggression perpetrators. The model correctly classified 91.81% of cases.
Aim 2. Only 1 of 8 factors distinguished AA from other suicides in feature films. Social strain: aggression perpetration was 2.62 times (OR=2.62, CI: 1.33 to 5.16) more apt to characterize AA suicides than other suicides. Case analyses include a Man on Fire staring Denzel Washington, Cider House Rules, and the Last Boy Scout. Psychiatric, social strain, economic strain and other factors failed to differentiate AA from other cinematic suicides. The model correctly classified 97.7% of cases.

Discussion: Factors differentiating AA from non AA suicides in the real world generally, when available, did not do so for cases in the cinema (Aim 3). However, a leading factor which differentiated AA suicides from non AA suicides in both society (OR=3.18) and film (OR=2.62) was aggression involvement as a perpetrator. Cinematic presentations largely mis-represent AA suicide and contribute to cultural mis understandings of AA suicide.

M69. SOCIAL SUPPORT NETWORKS AND SUICIDE IDEATION AMONG INNER-CITY DRUG USERS

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Background: Suicide and drug overdose deaths have risen dramatically in the United States since the turn of the century. There is increasing interest in the role that economic distress might play in the these so called "diseases of despair." This interest has been disproportionately directed at middle-aged white non-Hispanic populations where the change has perhaps been most dramatic. However, conditions of economic distress remain more pronounced in the United States among minority communities, especially those in areas of concentrated deprivation. This study adds to research on suicide and social support by examining the sociodemographic, drug use, and social support network characteristics of inner-city drug users with suicide ideation.

Methods: Data for the study comes from the "Workshop study," a community sample of Baltimore City, MD, residents between 18 to 55 years of age, that engaged in injected drug use three or more times in the past week and engaged in at least one sex risk behavior. This study selects a subsample of 265 participants that responded to the baseline questions on suicide included between February 2010 and February 2011. Data includes an inventory of the participant's social network and whether each member provides six types of social support: 1) emotional; 2) physical assistance; 3) monetary aid; 4) financial trust; 5) social participation, and 6) health advice. Chi-square tests were used to compare sociodemographic characteristics across ideation status. A series of multinomial logistic regressions were run to compare ideation status with social support network. Analyses adjust for potential effects due to sociodemographic socioeconomic factors, depression symptoms, and drug use.

Results: Monetary aid and financial trust were significantly different across drug users who reported and did not report past-year suicidal ideation. Specifically, drug users with past-year suicidal ideation named fewer people in their social network that could provide material aid or be trusted financially than drug users who have not thought about suicide in the past year. Drug users who reported a larger network of people who could provide monetary aid were less likely to report suicidal ideation in the past year than never (Relative Risk Ratio (RRR) = 0.67). Drug users who reported a larger network of people to trust financially were less likely to report past year suicidal ideation than never (RRR=0.52) and this remained significant after adjusting for other covariates (RRR = 0.48). No significant associations were found between lifetime suicidal ideation and having a larger monetary aid network or financial trust network. This suggests that access to financial support from network members differentiates between acute and long-term risk and reinforces the notion that this is a causal relationship.

Discussion: Deaths from suicide and drug use have increased dramatically in the United States since the turn of the century. These deaths have been called "deaths from despair" and it is argued the current trend is fundamentally caused by worsening economic conditions. Social support processes may be especially important in mitigating the effects of economic distress during times of prolonged and widespread economic decline- such as witnessed in the

economic recession- as well as that experienced by minority populations living conditions of concentrated deprivation. Social support, especially instrumental and financial social support, can help alleviate acute economic distress that might otherwise result a downward spiral towards ever despair inducing experiences, a fall into extreme poverty or a lapse into homelessness.

M70. EFFECTIVENESS OF SUICIDE PREVENTIONS OFFERING SOCIAL SUPPORT: A SYSTEMATIC REVIEW

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Background: Suicide presents a public health problem with a worldwide concern. Lack of social support is closely correlated with suicide. There are various kinds of intervention approaches to offer social support. The objective of this systematic review is to describe and summarize the suicide preventions offering social support, and to analysis the effectiveness of these interventions.

Methods: The electronic databases were searched systematically, then the duplicate articles were removed. The title and abstract of each article was screened, therefore all related, possible related articles, and other articles identified from the lists of references of the systematic reviews and meta-analyses were included in the further full-text analysis. There were two stages of this review with different purposes. The inclusion criteria for the review of intervention approaches (stage one) were that: (a) one of the objectives of the program was to prevent suicide, (b) the program was using at least one approach to offer social support directly, and (c) social support or social connectedness must be mentioned in the article. Further evaluation of effectiveness analysis (stage two) was also based on the criteria above. Besides, additional inclusion criteria for stage two were that: (a) suicidal outcome (suicide ideation, attempt or completion) was a primary or a secondary outcome measure for the trial, and (b) the study was a randomized controlled trial, a cluster randomized control trial, or a quasi-trial.

Results: 17645 articles were identified by literature search, 72 articles were obtained from reference list searches of previous systematic reviews and meta-analyses and other sources. 927 articles were reviewed in full-text. 68 articles were included in stage one review. Most of the interventions were comprehensive programs. They were divided into two categories according to the direction of social support offered towards, namely "Unidirectional" and "Reciprocal" interventions respectively, providing social support by postcards, letters, short messages(SMS), face-to-face, telephone or online communication. Reciprocal interventions were to organize a group and implement different kinds of activities. In the second stage, 34 articles were included in the effectiveness analysis, indicating: 7 of 12 studies were effective for suicide ideation; 6 of 17 were effective for suicide attempt; and 6 of 11 were effective when measuring suicide deaths or suicide rates.

Discussion: There were various forms of suicide preventions offering social support, most of which were comprehensive intervention programs. Professionals may choose the appropriate intervention approach based on the actual context. Current evidence did not allow us to get a conclusive result on the effectiveness of suicide preventions offering social support. More randomization control trials of high quality should be conducted in future studies mearing social support indexes.

M71. SUICIDE PREVENTION THROUGH VETERAN PEER SUPPORT: A COLLABORATIVE EFFORT TO BUILD A PEER SUPPORT MODEL FOR RURAL COMMUNITIES

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Background: Rural veterans have higher rates of suicide than their urban counterparts. Further, they have less access to professional mental health resources, are older, and more likely to own firearms than their nonrural counterparts. However, Veterans frequently identify peer support as a preferred resource when coping with mental health challenges and suicidal thoughts and rural communities offer unique opportunities for providing peer support. Peer networks, formal and informal, appear to protect veterans from suicide despite a lack of standardized models or guides to support their work. The VA's National Strategy for Preventing Veteran Suicide public health approach identifies the importance of collaborating with communities and sharing best practices. The purpose of this study was to collect, synthesize, and share the knowledge already held by groups doing peer veteran suicide prevention work with rural communities.

Methods: Researchers conducted qualitative semi-structured interviews with leaders from 8 organizations meeting the following criteria: 1) target population – military veterans, 2) health problem – mental health, 3) intervention mechanism – peer support; and focus on 4) suicide prevention, AND/OR 5) rural communities. Interview transcripts were analyzed to identify an overarching program theory and theory of change. The synthesized program model was then shared with key stakeholders at a focus group meeting where feedback and revisions were solicited.

Results: Primary services provided by peer veteran suicide prevention programs in rural communities included outreach, training, and crisis intervention. The majority of programs developed their own training requirements and materials as they went, often incorporating evidence-based trainings with modules they developed internally. The importance of protecting peers and staff from burnout was a critical component of the work. Further, the clear delineation of peer roles and the coordination of mental health and other professionals was emphasized. Strong relationships with these helping professionals and other supportive resources in the veteran community were commonly-cited as keys to success.

Discussion: Veterans are leading peer support efforts to combat suicide among their comrades across the country. These groups work to reduce suicide through varied organizational structures, operating procedures, and affiliations with government agencies. The working model we identified suggest several areas for future research, including testing the model, developing a manual, training, support, and relationships critical for peer work to be sustainable. Autonomy and flexibility to be responsive to local needs and leverage local strengths were important to each organization's success.

M72. MEDICALLY SERIOUS SELF-HARM IN YOUTH REQUIRING INTENSIVE CARE UNIT ADMISSION

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Background: For every adolescent that dies by suicide, it is estimated there are 20 to 40 suicide attempts. However, there is little information available regarding the suicide attempts. Youth who make near-fatal suicide attempts – such as those requiring intensive care unit (ICU) level care – may closely approximate those who die by suicide, highlighting the need to further understand these suicide attempts. The purpose of this study was to evaluate the incidence rate and patterns of presentation of youth (under 18 years of age) admitted to the ICU for medically serious self-inflicted injury.

Methods: From January 2017 to December 2018, over 2,700 paediatricians/subspecialist members of the Canadian Paediatric Surveillance Program were electronically surveyed on a monthly basis regarding cases of medically serious self-harm. Participants completed a detailed questionnaire about the reported case and descriptive statistics were used for analyses. $p \leq 0.05$ was considered statistically significant

Results: Ninety-four cases (71 female; mean age 15.2 years) of confirmed (n=87) and suspected/probable (n=7) medically serious self-harm were reported. The majority (87%) of cases were reported from 4 out of 13 provinces and territories in Canada (Alberta, British Columbia, Ontario, Quebec). There were 11 deaths by suicide (35% female [F] vs. 65% male [M]; $p<.05$). Medication ingestion was the most common method of self-harm among females (76% F vs. 52% M; p=.03) compared with hanging among males (14% F vs. 39% M; p=.009). More females than males had a prior suicide attempt (62% F vs. 32% M; p=.07) and a history of non-suicidal self-injury (NSSI) (65% F vs. 14% M; $p<.05$). More females than males had a past psychiatric diagnosis (77% F vs. 55% M; p=.05), and past use of mental health services (69% F vs. 30% M; $p<.001$). Half of the youth left evidence of intent (54%) and 33% of parents of included youth were aware that their child was considering suicide. Family conflict was the most common precipitating factor for suicide attempt in both females and males (46%).

Discussion: These Canadian findings are consistent with broader international epidemiologic data that observes a gender paradox in which females demonstrate a higher rate of suicide attempts and greater mental health care engagement whereas males display increased suicide mortality and decreased involvement with mental health care. This study suggests that family conflict is a potential target for suicide prevention interventions among youth. Future research focusing on gender-specificity in risk factor identification and effectiveness of primary prevention interventions among youth is warranted.

M73. CONNECTOME-BASED PREDICTIVE MODELING OF SUICIDAL BEHAVIOR IN ADOLESCENTS

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Background: Non-suicidal self-injury (NSSI) is a common problem in adolescents and is associated with an increased risk of future suicide attempts. Suicide prevention efforts stand in need of addressing this issue. Both suicidal and non-suicidal thoughts and behaviors are associated with rigid thinking, getting "stuck" on negative thoughts, and having a limited capacity for imagining alternative strategies to finding relief of suffering other than self-harm.

Connectome-based predictive modeling is a data-driven method that has been developed to identify brain-behavior relationships from resting-state functional connectivity data using predictive modeling (Shen et al, 2017). We adopted this approach to explore whether resting-state functional connectivity could predict suicide risk at the individual level.
Methods: Adolescent girls aged 12-16 with and without NSSI were recruited into a neuroimaging study. The brain imaging protocol included a 10-minute resting-state fMRI scan with the following parameters: voxel size 2x2x2mm3, TR=0.8, multiband factor=8. Preprocessing steps utilized the Human Connectome Project minimal processing pipeline (motion correction, geometric distortion correction, removal of noise from physiological signals) in order to output connectivity matrices. Steps of the connectome-based predictive modeling protocol include (1) feature selection, (2) feature summarization, (3) model building, and (4) assessment of the prediction significance. We explored brain-behavior relationships using three different clinical measures, which were selected to capture suicide risk: the Beck Scale for Suicidal Ideation (BSSI), the Urgency, Premeditation (lack of), Perseverance (lack of), Sensation Seeking, Positive Urgency, Impulsive Behavior Scale (UPPSP) (specifically the emotion-based action scale which was selected based on its broad distribution in the sample), and the Personality Assessment Inventory - Adolescent, Borderline scale.
Results: Data from 21 adolescents (11 with NSSI) were analyzed. Across the clinical measures examined, a trend was observed with UPPSP ($p < 0.05$), whereas BSSI and Personality Assessment Inventory - Adolescent, Borderline scale were non-significant with this analysis.
Discussion: These are preliminary results which showcase that brain connectivity measures may predict suicide or self-harm behavior in unseen cases.

M74. META-ANALYSIS OF NTRK2 IN SUICIDAL BEHAVIOUR

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Background: Suicide is a major public health concern. Genome-wide association studies have implicated neurodevelopmental pathways to be associated with suicide. Our meta-analysis of the Brain-derived Neurotrophic Factor (BDNF) gene Val66Met (rs6265) supported the neurodevelopmental hypothesis of suicide (Zai et al, 2012). A number of genetic studies have examined the NTRK2 gene, which codes for the Tyrosine Kinase Receptor B receptor for BDNF.
Methods: We aim to summarize the genetic findings of NTRK2 in the suicide literature and add additional data from additional samples. We conducted a meta-analysis of NTRK2 single-nucleotide polymorphisms where we have data for more than six studies.
Results: We found five datasets from four studies with available genotype counts for NTRK2 rs10868235. We added data from five additional samples and conducted a meta-analysis of this marker in suicidal behaviour (three studies on suicide completion and seven on suicide attempt). We found significant heterogeneity across the studies ($p=0.0011$), thus we used random-effects model for our meta-analysis. We did not find rs10868235 to be associated with suicidal behaviour ($p=0.2496$).
Discussion: Our findings with NTRK2 rs10868235 suggest that NTRK2 may not play a major role in the mechanism of suicidal behaviour. However, we found enough data for only this marker, and additional markers need to be investigated in additional, larger samples before the role of NTRK2 in suicidal behaviour can be dismissed.

M75. FAMILIAL COAGGREGATION OF CHRONOTYPE AND SUICIDE

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Background: Research has shown that greater eveningness, having one's peak alertness occur later in the day, is associated with increased suicidal ideation and attempt, particularly among those with major depressive disorders and bipolar disorders. In addition, suicide attempt and chronotype have each been shown to be moderately heritable. However, the possibility that their association is driven by an underlying familial pathway has not been studied in the existing literature.

Methods: Data from the NIMH Family Study of Affective Spectrum Disorder was used to assess familial aggregation of, and cross-aggregation between, chronotype and lifetime suicidal attempt. The sample included 473 probands and 746 relatives. Chronotype was assessed using the Morningness-Eveningness Questionnaire, which has a range of 16-86, with a high score indicating greater morningness. Lifetime suicide attempt (SA) was assessed during a semi-structured diagnostic interview based on DSM-IV criteria. Covariates, which included age, sex, and lifetime mental disorders, were also assessed during the interview. Logistic regression was used to estimate the association between chronotype and suicide in the total sample. Linear and logistic regression were used to estimate the familial aggregation of chronotype and the cross-aggregation of chronotype and suicide.

Results: In the total sample, 9.6% had a lifetime SA, which included 15.6% of probands and 5.8% of relatives. After adjusting for age, sex, and lifetime mental disorders, chronotype was associated with lifetime SA in the total analytic sample (odds ratio [OR] = 0.73, p = .004). For familial aggregation, there was a modest association between proband and relative chronotype ($\beta = 0.09$, p = .059). For cross-aggregation, both the association between proband chronotype and relative SA (OR = 1.38, p = 0.137) and proband SA and relative chronotype ($\beta = 0.07$, p = .619) were not statistically significant.

Discussion: There is evidence for modest, trend level familial transmission of chronotype. However, this is no evidence of cross-aggregation of chronotype and SA in families, which is inconsistent with the existence of an underlying familial pathway. Continued research into individual-level factors such as sleep disturbance, irregular circadian rhythm, or impulsivity that are associated with eveningness may inform suicide prevention.

M76. HOW CHILDHOOD AND ADULT STRESSORS CAN IMPACT THE INFLAMMATORY MILIEU IN MAJOR DEPRESSIVE DISORDER WITH AND WITHOUT A HISTORY OF SUICIDE ATTEMPT IN U.S. VETERANS

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Background: Suicide is the tenth leading cause of death in the United States. Alarmingly, rates of suicide are seven-fold higher in Veterans populations (U.S. Department of Veterans Affairs, 2018), underscoring the importance of studies of suicide in the Veterans Affairs community. Converging evidence has revealed that inflammation and aberrations in immune system

function are associated with suicidality, in that changes in circulating inflammatory mediators are associated with depression and suicidal ideation (Buter et al, 1993; Brundin et al, 2017).
Methods: We have recruited U.S. Veterans from the James J. Peters VA Medical Center (Bronx, NY) that have depression (diagnosis of Major Depressive Disorder, MDD) and a lifetime history of suicide attempt (MDD/SA). We also recruited Veterans with MDD and no history of suicide attempt, in addition to psychiatrically healthy Veterans. Participants complete baseline, 3-month, and 6-month assessments including the following demographic and stress measures: Columbia Suicide History Form, Beck Depression Inventory-II (BDI-II), Childhood Trauma Questionnaire, Combat Exposure Scale, and the Mississippi Scale for Combat-Related PTSD.
Each visit also includes blood draws in order to collect blood plasma samples from each participant in a longitudinal fashion and a Milliplex Human Luminex platform (EMD Millipore) was used in order to assess 41 inflammatory chemokines and cytokines.

Results: We obtained clinical data and blood samples for 90 individuals. 53 participants (25 MDD/SA and 28 psychiatrically healthy) completed three month follow ups and 31 participants (13 MDD/SA and 18 psychiatrically healthy) completed 6 month follow up assessments.
In this study we systematically investigated the role of stress in regard to suicide attempt and we observed a significant difference in a variety of stress measures, including measures related to childhood adversity and adult stressors associated with military service. The MDD/SA group reported significantly higher scores of adult combat-related stress and trauma relative to MDD non-attempters ($p < .01$) and controls ($p < .001$). We also observed trendwise ($p = .08$) increases in childhood trauma in MDD/SA relative to MDD non-attempter groups. MDD/SA groups show higher scores of depression severity as measured by the BDI-II compared to the MDD non-attempter ($p = .02$) and psychiatrically healthy groups ($p < .01$).

Data will be presented on levels of inflammatory mediators from 41-plex immunoassays that have been conducted across these three groups, both at baseline and longitudinally (over 6-months).

Discussion: We have conducted inflammatory assays to delineate how plasma levels of 41 chemokines and cytokines vary in MDD groups with and without a history of suicide attempt, relative to psychiatrically healthy controls. We further investigate levels of inflammatory mediators in a longitudinal fashion in order to determine if these biomarkers can be used as stable markers of suicide symptomology in VA populations. Our comprehensive stress analyses will be used to determine how levels of inflammatory mediators are impacted by lifetime history of stress, with the overarching goal of identifying novel biomarkers for suicide risk and prevention in Veterans populations.

M77. POTENTIAL INTEREST OF EYE MOVEMENT PERFORMANCES FOR THE DETECTION OF SUICIDAL BEHAVIOR IN THE ELDERLY DEPRESSED PERSON

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Background: Elders, especially those with depression, represent the population most at risk for suicide. In addition to commonly used neuropsychological, psychiatric and biological tests, ocular saccadic analysis can be an interesting tool for identifying suicidal (SB) behaviors. These SBs could be associated with an alteration of the cortical structures involved in the executive functions. This alteration is manifested in particular by a decrease in the ability to control eye movements (EM). Aging is also known to decrease saccadic eye movement (SEM) performances. Depressed elderly people with SB may have a greater impairment of oculomotor performance than those without SB. Few research has been conducted on EM and suicidal behaviors. This study aimed to better understand the nature of aging effects and executive dysfunction on suicidal vulnerability and eye movement parameters.

Methods: We compared eye movement performance in 36 participants over 65 years old with the diagnosis of major depression. Patients were recruited in the psychiatry unit of the University Hospital of Besançon, France.

Case group consisted of depressed patients with suicidal behaviour and control group was depressed patients without suicidal behaviour.

Diagnosis was made by a psychiatrist and was based on the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV: American Psychiatric Association, 2004) criteria for Major Depression. All patients had to have a Montgomery and Asberg Depression Rating Scale score > 25 (MADRS: Montgomery & Asberg, 1979).

All patients completed a neuropsychological evaluation. We used the eye tracking paradigm in order to characterize eye movement parameters.

Saccadic eye movement tasks (in both prosaccade (PS) and antisaccade (AS) paradigms) and the influence of emotional facial expressions (fixation parameters during the presentation of happy, neutral and negative portraits) on the analysis of facial features were measured.

Results: Préliminary results show progressive age-related alterations of processing speed and executive attention which were highlighted by PS and AS tasks.

In both groups depressed older adults spent less time and had fewer fixations on emotional features than healthy older adults, but only for sad and neutral portraits. There was no significant difference for happy portraits.

Cognitive inhibition was more important in depressed patients with suicidal behaviour.

Discussion: First AS parameters are powerful continuous indexes of controlled attention component of working memory.

We also suggest that aging and associated emotional regulation change may explain the expression of depression-related biases. These results favor a disengagement from sad and neutral faces in depressed older adults, which is not consistent with standard theoretical proposals on congruence biases in depression.

M78. INTERACTION BETWEEN PSYCHACHE, PHYSICAL PAIN, REWARD RESPONSIVITY, ANHEDONIA, AND SUICIDALITY IN DEPRESSION

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Background: Suicidal ideation occurs in over 50% of patients with Major Depressive Disorder (MDD), while approximately 20% of these individuals have a history of suicide attempt. Anhedonia, impaired reward processing, psychological pain (i.e. psychache), and physical pain have all been implicated in suicidality, but it is unclear how these factors interact to confer suicide risk. This preliminary analysis from the Canadian Biomarker Integration Network in Depression (CAN-BIND) suicide biomarker study aims to examine the associations between pain (psychological and physical), reward processing, and anhedonia among suicidal and non-suicidal individuals.
Methods: Participants with MDD, current suicidal ideation, and a history of suicide attempt (n=3), ideation and no attempt history (n=3), no ideation and a lifetime attempt (n=2), and healthy controls (n=1) completed a reward response bias task during functional magnetic resonance imaging (fMRI) acquisition. This task measures reward engagement by manipulating reward conditions and assessing participants' bias to respond to the more frequently rewarded stimulus. Stronger response bias demonstrates intact reward engagement. Psychache was measured using the Psychache Scale, while physical pain tolerance was assessed using the cold pressor task.
Results: The patterns across all participants showed that psychache had a negative correlation with anhedonia (i.e. higher psychache, less hedonic response) (r=-0.69) and was negatively correlated with response bias on the behavioural task (r=-0.20). Physical pain tolerance was also negatively correlated with response bias (r=-0.27).
Discussion: These proof-of-concept data demonstrate the possibility of associations between physical pain, psychache, and reward processing, such that individuals with higher levels of psychological pain, physical pain tolerance, and greater levels of anhedonia demonstrate lower reward engagement. These findings have implications for development of targeted interventions in this population.

M79. LOW MOCA PERFORMANCES ASSOCIATED WITH SUICIDAL IDEATIONS IN LATE-LIFE DEPRESSION

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Background: Late-life depression remains an underdiagnosed clinical entity, mainly because the presence of cognitive impairment in elderlies brings clinicians to suspect dementia rather than depression. Likewise, suicidal ideation in the elderly is also underexplored. The objective of this study is to analyze the cognitive abilities of elderly depressed patients over the age of 60 using a cognitive screening test (Montreal Cognitive Assessment (MoCA)) in relation to the presence or absence of suicidal ideation.
Methods: The MoCA, the Columbia Suicide Severity Scale, the Beck Scale of Suicidal Ideations, and the Hamilton Depression Scale were administered to 43 depressed individuals with suicidal ideation and 29 non-suicidal depressed controls.
Results: The groups were statistically equivalent in age, gender, education level, and MMSE score. Suicidal elderly depressed patients demonstrated poorer performance on the MoCA total score ($P < 0.001$), the trail making subtest ($P = 0.041$), and the delayed recall subtest ($P < 0.001$) in comparison to non-suicidal elderly depressed patients. Poorer performance on the MoCA

total score also correlated to the presence of suicidal ideation (adjusted Odds Ratio = -0.36 [95CI = -0.12 --0.03], P <0.001), after adjusting for age, depression level, and MMSE score.
Discussion: Depressed elderly patients with suicidal ideation demonstrated lower cognitive performance than those without suicidal ideation. As late-life depression is already established as a potential prodrome of dementia, longitudinal follow-up may determine whether depressed individuals with suicidal ideations are at higher risk of converting.

M80. TEMPORAL ARCHITECTURE OF SUICIDAL BEHAVIOR: INTERACTIONS OF IMMEDIATE AND LONG-TERM REGULATION

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Background: While many risk factors for suicidal behavior and suicide have been identified, suicide is notoriously hard to predict. This may result from interactions of neurobehavioral mechanisms with differing time courses. We will focus on evidence for interactions between immediate behavior dysregulation, exemplified by impulsivity, and long-term dysregulation, exemplified by behavioral sensitization to stressful/traumatic and/or addictive stimuli. Sensitization may be a central factor in suicide risk, but sensitization to sensitization varies widely across individuals and there are no validated markers for it. Impaired regulation of stress-related arousal may integrate these factors, by increasing susceptibility to both impulsivity and sensitization. We will review evidence for a model for sensitization-impulsivity interactions, using data from high-risk and comparison populations.
Methods: We will use recent medically severe suicide attempt as a marker for high suicide risk. Based on our previous data we will use 1) neurophysiological (event-related potentials, error-related negativity), and human behavioral laboratory markers as markers for impulsivity, 2) quantitative measures of traumatic and addictive stimulus exposure, and 3) potentiated startle and relevant MRI resting state functional connectivity as measures of susceptibility to stress-induced arousal. Our statistical model is based on a two-step mediator-moderator model where sensitizing stimulus exposure moderates' effects of impulsivity measures, which in turn is moderated by stress-induced hyperarousal, on high suicide risk.
Results: Measures of noradrenergic function, and neurophysiological measures of impaired response inhibition as early as 50 ms after a stimulus, were associated with behavioral measures of impulsivity and with history of medically severe suicide attempt. Neurophysiological measures of increased glutamate receptor function were also related to rapid-response impulsivity. In terms of long-term behavior regulation, elevated childhood trauma questionnaire scores were related to impulsivity and suicide attempt history. Increased fear-potentiated startle was related to history of PTSD and to high risk for suicide. These data are consistent with a model where increased impulsivity, moderated positively by stress or additive sensitization, predispose to high suicide risk in a manner that depends on increased stress-related arousal (fear-potentiated startle).
Discussion: These data are consistent with a model whereby impulsivity, associated with stress- or addiction-sensitization, may predispose to risk for suicidal behavior. Measures of stress-related hyperarousal (such as fear-potentiated startle) may be readily accessible markers for this susceptibility, especially in people previously exposed to sensitizing stimuli such as addictive drugs or severe stressors. Measures of stress-related arousal may be short-term indicators of severe risk for suicide. The time course of these mechanisms, and their possible pharmacology, will be discussed but require further investigation.

M81. SUICIDE RISK AMONG SEXUAL AND GENDER MINORITY COLLEGE STUDENTS: THE ROLES OF VICTIMIZATION, DISCRIMINATION, CONNECTEDNESS, AND IDENTITY AFFIRMATION

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Background: Suicide and suicidal behavior are more prevalent for sexual (i.e., same-sex attracted or identifying as lesbian, gay, or bisexual) and gender (i.e., transgender, gender non-binary) minority (SGM) populations (Hatzenbuehler et al., 2013). For many SGM college students, attending college is an experience that includes increased awareness of, and encounters with, victimization and discrimination (Blosnich and Bossarte, 2012; Kelleher, 2009). Yet, little is known about the link between these stressors, and clinical risk characteristics among SGM college students, protective factors for this group, or if there are differences among SGM college students based on the intersectionality of racial/ethnic minority status. Thus, the current study will: 1.) Determine the extent to which victimization and discrimination are associated with clinical risk characteristics in college students who self-identify as SGM; 2.) Examine which associations described in aim #1 are moderated by: a) identity affirmation, and b) social connectedness; and 3.) Identify differences for self-identified SGM students who also identify as a racial/ethnic minority relative to SGM students who do not identify as a racial/ethnic minority.

Methods: Participants were 869 college students (63.5% female) at four US universities who self-identified as a sexual (45% bisexual) and/or gender minority (10% transgender), endorsed at least one clinical risk characteristic (i.e., current depression, current alcohol misuse, past-year suicidal ideation, lifetime history of suicide attempt, past-year non-suicidal self-injury [NSSI]), and were not currently receiving mental health services (MHS). Participants were invited by email (obtained from each university registrar's database) to participate in the eBridge study. The eBridge study examines the effectiveness of an online screening and brief counseling intervention aimed at facilitating treatment linkage for students at elevated risk for suicide. Participants were enrolled in undergraduate (75.0%), graduate (21.1%), or professional (3.9%) studies, with 76.8% of the sample reporting being ages 18-22, 12.3% being ages 23-25, and 10.9% being ages 26 and older. Participants completed measures of: demographics, clinical risk characteristics, victimization, discrimination, connectedness, and SGM identity affirmation.

Results: Victimization had significant associations with depression, alcohol misuse, suicide ideation, suicide attempt history, and NSSI, whereas discrimination was associated with depression, suicide attempt history, and NSSI. Connectedness was inversely associated with depression, suicidal ideation, suicide attempts, and NSSI, but did not moderate the effects of victimization or discrimination on clinical characteristics. SGM identity affirmation moderated the link between victimization and depression. Black SGM students reported significantly more discrimination than peers of other racial/ethnic groups.

Discussion: Minority stress theory posits that stress related to marginalized status is linked to psychological distress (Meyer, 2003), and that coping and social support buffer the effect of these stressors. Results suggest efforts to decrease victimization and discrimination and increase connectedness are needed, given their links with clinical characteristics. Further, increasing SGM identity affirmation, or the extent to which students feel affirmed in their SGM identity, may buffer the impacts of victimization on depression. Black college students who

self-identify as SGM experience especially high levels of discrimination and may require specialized support in this area.

M82. PROMISES AND CHALLENGES OF NEW TECHNOLOGIES FOR MENTAL HEALTH RELATED RISK DETECTION, MONITORING, AND INTERVENTION IN A SCHOOL POPULATION

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Background: Early detection of suicidal risk in students promises to be an important step toward suicide prevention. We present the promises and challenges of using an informatics platform interfaced through a smartphone app (app) for early detection in an at-risk population of students ages 8-21 shown to be previously effective in multiple published clinical trials. Our hypothesis is that an app along with an interview process can be seamlessly integrated into the workflow of a school-based therapy session, with the app recording acoustical information of sufficient quality for text translation and analysis. The text was used to train a machine learning model to detect thought markers of suicidal ideation, violence or self-harm. The overall goal of the study was to utilize technologies including machine learning and artificial intelligence for identification of risk for aggression, self-harm, and suicide.

Methods: In this IRB approved study, conducted in collaboration with The Children's Home of Cincinnati (TCH), a large behavioral health services group, we have conducted mental health interviews of students ages 8-21, with a plan to enroll up to 100 participants with up to 200 interviews. Licensed mental health therapists serving as study staff conducted weekly therapy sessions with ongoing student mental health clients. The sessions were recorded using the app on a variety of smartphones. The PHQ-9 and GAD-7 were administered, along with the MH-SAFE probes. The C-SSRS or C-SSRS Since Last Visit was used at the therapist's discretion for all participants expressing suicidal ideation. The therapists used the app to provide concurrent critical assessment of the student's mental health status, rating each student's likelihood for imminent suicidality, aggression, or self-harm. Actionable reports were managed using a standardized safety plan. The recordings were transcribed using various software, then compared to manual transcription text for accuracy. Data captured were used to train a machine learning model for early detection of language suggestive of suicidal ideation, violence or self-harm. Therapists also rated the app for ease of use and acceptability in a school based therapeutic setting.

Results: More than 150 interviews have been recorded from students during mental health therapy sessions at 11 schools in 3 school districts in addition to the TCH Day Treatment and Upper and Lower Schools. Feedback was obtained from 20 mental health therapists in the form of a survey and focus groups to capture their impression of the app's usability, experience and value. Challenges involved acceptance of the research project in school settings, remote electronic consent using REDCap and SMS technology, followed by in-person assent of student participants. Additional challenges resolved in this study were voice capture with the single smartphone microphone and capturing voice prints from two speakers. The rating of a student's self-harm, aggression and suicidality risk by the mental health therapist was used as the gold standard against the model's scoring. Evaluable data was obtained from this group of interviews allowing for training of machine learning model to identify students with risk.

Discussion: Early data suggest that study methodologies were successful in obtaining evaluable data, suggesting that with refinements the app can be successful in providing a point of care tool for use in a school setting. Therapist acceptance was strong, after the initial learning period. Future advances will provide additional opportunities for app deployment to support early detection of risk and prevention of harm in a student population.

M83. TEXT MESSAGING INTERVENTION FOR SUICIDALITY IN ADOLESCENTS: A PILOT STUDY

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Background: Short Message Service (SMS) text messages have arisen as a potential strategy for post-discharge follow-up for suicide attempts and ideation. The period following discharge from the hospital is an especially high-risk period for suicide in patients and it is critical to maintain contact with patients during this time. In a study conducted in China, Chen et al. (2010) utilized text messaging to follow up with patients after discharge from the ED following a suicide attempt.
The intervention was shown to be acceptable for patients; however, researchers were unable to manage the number of patients as messages were sent individually from a cellular phone.

To address this limitation, our collaborators (Berrouiguet et al., 2014) developed an intranet program designed for sending automated text messages to adult patients after discharge from the hospital following a suicide attempt. This automated program allows a large number of patients to be contacted simultaneously, thus obviating the need to manage individual text messages from a cellular phone. This study demonstrated that using this technology was both feasible and acceptable for adult suicide attempters.

Using an update to this technology platform, we applied a similar method in adolescent patients. This project is especially valuable because this is a novel approach that has not been utilized in adolescent populations for suicide prevention.

Methods: We enrolled 35 participants between the ages of 12-20, who were seen in the Johns Hopkins Pediatric Emergency Department for suicidal ideation or suicide attempt OR screened positive on the ASQ suicide risk screener. Participants received automated text messages at the following schedule for a total of 4 text messages: days 1, 7, 14 and 30 post-discharge from the emergency department or psychiatric inpatient unit. Text messages were customized to address each patient by name and included validating statements; the messages also encouraged patients to contact providers in case of crisis. Out of the 35 enrolled participants 22 have successfully completed the study follow up questions.
The technical feasibility of this technology was explored by analyzing the text message status reports and the transmission rates issued by the web server engine (Berrouiguet et al, 2014). Acceptability of the intervention was assessed during the pilot study using a standardized questionnaire devised for participants to assess acceptability of the technology (Berrouiguet et al, 2014).

Results: All text messages were sent successfully as determined by analyzing the text message status reports.

86.4% (n=19/22) participants indicated that the intervention was beneficial overall.

77.3% (n =17/22) participants indicated that the intervention stopped them from engaging in self-injurious behavior.

72.7% (n=16/22) participants indicated that the intervention had a positive impact on their mental health.

Responses to survey items indicated that the timing and the content of the text messages were satisfactory. Also, the majority of participants felt that intervention was unobtrusive.

Discussion: The overarching aim of this line of research is to find low cost interventions that can reduce the number of suicide attempts, hospital readmissions, and suicide deaths in adolescents.
These results show promise for this intervention in terms of technical feasibility and acceptability for patients. This pilot study will provide useful data that can be used to design a randomized trial that will test the efficacy of text messaging to reduce the risk of youth suicide following acute psychiatric hospitalization for a suicide attempt and/or suicidal ideation.

M84. IMPLICIT SUICIDAL COGNITIONS: AN EXAMINATION OF A NEW APPROACH TO THE DEATH IMPLICIT ASSOCIATION TEST (D-IAT)

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Background: Measuring suicidal ideation is critical to providing care to those suffering from suicidal thoughts, but many that die by suicide after being discharged from psychiatric care deny thoughts of suicide in their last communication with a clinician (Busch, Fawcett, & Jacobs, 2003). To address this issue, Nock and colleagues (2010) developed the death implicit association test (D-IAT), a behavioral task that designed to measure implicit suicidal thoughts. The D-IAT was found to predict reattempt at a 6-month follow-up, above and beyond other relevant risk factors (Nock et al., 2010). These findings are promising, but because the D-IAT uses simple reaction time, it misses important cognitive processes. Indeed, research suggests that cognitive processing occurs throughout the motor response when an individual makes a decision (like in the D-IAT), making reaction times rough measures of an individual's thought process (Cisek & Kalaska, 2005; Goodale, Pelisson, & Prablanc, 1986). Computer mousetracking technology addresses this issue and has the potential to reveal important insights into thought processes otherwise hidden from reaction time measures (Freeman, 2018; Freeman, Dale, & Farmer, 2011). We developed the death mousetracking implicit association test (D-MIAT), a mousetracking version of the D-IAT. We hypothesized that the D-MIAT would predict history of a suicide attempt, above and beyond the D-IAT and other relevant correlates.
Methods: The current sample consists of 46 undergraduate students oversampled for individuals with a previous suicide attempt as measured by the SITBI-SF (Nock, Holmberg, Photos, & Michel, 2007). Most (54.35%) of our participants endorsed a previous suicide attempt, were female (78.26%), and identified their race as White or European American (82.61%). Participants came into the lab and completed the D-IAT and D-MIAT in a randomized order. Participants then completed a battery of self-report questionnaires, including the Depressive Symptom Inventory-Suicidality Subscale (DSI-SS), a measure of suicidal ideation over the past two weeks. Last, participants were interviewed using the SITBI-SF. For the D-IAT, the score D was used with positive values indicating an implicit association between Me-Death, and negative values indicating an implicit association between Me-Life. For the D-

MIAT, area under the curve measures were used for all four word-pairs in the task (i.e., Me-Death, Me-Life, Not Me-Death, Not Me-Life). To test our hypothesis, we conducted a hierarchical logistic regression predicting SITBI-SF with the following steps: (1) consisting of lifetime suicidal ideation (SITBI-SF) and current suicidal ideation symptoms (DSI-SS); (2) D-IAT D score; (3) Me-Life AUC (D-MIAT), Me-Death AUC (D-MIAT), Not Me-Life AUC (D-MIAT), and Not Me-Death AUC (D-MIAT).
Results: Our results revealed that the first step, with current suicidal ideation (DSI-SS) and lifetime ideation status entered as predictors, was the best model: step 2 with D (D-IAT) entered did not improve the model $\chi 2(1) = 1.31$, $p = .253$. In step 3, with the D-MIAT AUCs entered, no predictor was significantly associated with lifetime suicide attempt status, including the D-IAT D (OR = 4.98, p = .265).
Discussion: The results of our study suggest that the D-MIAT may not be related to lifetime suicide attempt status, and that the D-IAT is also not related to lifetime suicide attempt status, but larger samples are needed. Future work is needed to if other mousetracking measures from the D-MIAT are related to suicide attempt history. Particularly, a version of the D-IAT D measure, should be considered for the D-MIAT.

M85. IMPLICIT AND RISK-TAKING ATTITUDES AND THEIR TEMPORAL RELATIONSHIP TO NSSI

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Background: Non-suicidal self-injurious behaviors (NSSI; e.g., harming oneself without the intent to die) is a leading health concern with grave implications (e.g., significant tissue damage, death). Unfortunately, to date the identification of individuals who may be experiencing thoughts of self-injurious behaviors has relied solely on self-report. Self-report may be unreliable when probing thoughts and attitudes towards behaviors that individuals may be motivated to conceal, such as NSSI. However, use of computerized behavioral tasks may offer insight into identification of individuals who are most at risk for NSSI.
One such task that may provide insight into those at the highest risk for NSSI is the Self-Injury Implicit Association Test (SI-IAT; Nock & Banaji, 2007). Evidence suggests that the SI-IAT can identify individuals with histories of NSSI in both adolescent and adult (e.g., Glenn et al., 2017) populations. To date, however, only one study has examined how these cognitions might relate temporally to engagement in NSSI and no studies have investigated how the SI-IAT might be used in combination with other computerized behavioral tasks to assess risk for NSSI. In addition to implicit attitudes, NSSI has been associated with self-reported impulsivity (e.g., Claes et al., 2014). Impulsivity may be measured behaviorally using the Balloon Analogue Risk Task (BART; Lejuez et al., 2002). Scores on the BART have been shown to be linked with substance use and risky behaviors, but its relation to NSSI has not been fully explored. This study sought to investigate (1) whether the SI-IAT could identify college students with histories of NSSI, (2) how implicit attitudes towards NSSI relate temporally to engagement in NSSI, and (3) whether the addition of a computerized task of risk-taking (BART) could provide incremental validity in identifying those most at risk for NSSI.

Methods: Participants (N = 115, M age = 18.87, 49% female) responded to measures of socioemotional adjustment and were asked about their lifetime involvement with NSSI in the past month, year, and lifetime before completing the SI-IAT and the BART.

Results: An independent samples t-test revealed that scores on the SI-IAT alone did not distinguish between those with and without histories of NSSI (t (93) = 1.82, p = .75). When examined temporally as a moderator between reported thoughts of NSSI and reported history of NSSI, this interaction was significant for lifetime (F(3,91) = 91.89, p < .001, □R2 =.75) and past month NSSI (F(3.91) = 48.42, p < .001, □R2 =.61); however, this interaction was not significant for past year NSSI (F(3, 91) = 12.40, p = .10).
Next, scores on the BART were added to the model. The three-way interaction among reported thoughts of NSSI, scores on the SI-IAT, and scores on the BART with reported history of NSSI was not significant for lifetime NSSI (F(7,87) = 40.89, p = .85) or past year NSSI (F(7,87) = 16.39, p = .36); however, this interaction was significant for past month NSSI (F(7,87) = 205.84, p < .001, □R2 = .94), with higher levels of identification with NSSI and higher levels of impulsivity leading to more reported NSSI.

Discussion: Results indicate that implicit association with NSSI alone may not be able to predict those at current risk for NSSI. The addition of a behavioral measure of risk taking, however, may provide incremental validity to the SI-IAT, especially for those who have most recently engaged in NSSI. Using computerized tasks such as the SI-IAT and the BART may be able to identify those at risk in ways that fixed, self-report risk factors may not. Although this current study is limited by the concurrent nature of the data, a follow-up assessment that aims to shed further light on these relationships is being conducted.

M86. THE CHALLENGES OF EDUCATION IN SUICIDE PREVENTION AND POSTVENTION IN BRAZIL

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Background: What are the needs and difficulties encountered by students and professionals from different areas of knowledge when they seek to learn about suicide prevention and suicide prevention in Brazil? Is this topic addressed and taught in higher education or is it necessary to seek outside training? These are some questions that permeated this research.
We perceive a lack of studies and preparation for dealing with the context of suicide and would like to know if there were courses offered on the subject during graduation, the challenges encountered or feared in practice and what people would like to have available in that area to help them in the prevention, intervention and suicide prevention. Since we understand that suicide care training also involves ethical and humanized involvement, we will also investigate how people approached the subject (from the professional context, personal interest or striking experience), and what skills they consider important in relation to the theme.

Methods: An online questionnaire for students of suicide prevention courses and for people who visit a suicide prevention page, who have agreed to the TCLE (Free and Informed Consent Form), guaranteeing the principles of confidentiality and anonymity.
Results: The results point to the importance of prevention and postvention education since undergraduate courses, especially in the health area.
The majority of the participants are up to 15 years since graduation, which allows us to infer that the Yellow September campaigns and the intensification of the communication on the subject seem to have had an effect, both for those who are starting their professional career and for a greater awareness importance of the theme.

A significant part of the participants considered theoretical knowledge as the main skill that the health professional should have, although few had access to this content during graduation. Despite this, only 36% of the people who participated in the study considered themselves to be unprepared or poorly prepared to manage the suicidal crisis.

Discussion: It is important to emphasize that, according to our experience, in addition to the theoretical part, training for this practice must also be based on experiences, sensitization and empathy, as well as approximations to the experience of people with suicidal behavior or suicide loss survivors.

M87. GENETICS AND BRAIN FUNCTION IN SUICIDE ATTEMPT

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[1]Rice University, [2]Universidad de Buenos Aires, [3]Baylor College of Medicine

Background: Several groups are investigating either genetics or brain function in suicide, but the integration between these two fields is still lacking (in suicide and in psychiatry in general), slowing progress. A major gap in knowledge is the lack of understanding of the associations between gene variants and brain function that result in increased suicide risk. Process Genes List (PGL) is a novel approach to link genetics and brain imaging data. We applied PGL to suicide attempt.

Methods: We used a list of genes possibly associated with suicide from a genome-wide association (GWAS) study. With a relaxed statistical significance setting, we obtained a list of genes and gene variants likely associated with suicidality. Next, we used the human Allen Brain Atlas to find in which regions of the brain are those genes expressed the most. The hypothesis is that genes that are indeed associated with suicide should be expressed in brain regions important for suicide while false positive genes (those that appear as possibly positive in the GWAS but were simply chance) will be expressed in no particular pattern in the brain and when finding where in the brain is the list of genes co-expressed the most, will have little to no effect. Next, we used a resting state functional connectivity study of psychiatric patients with and without suicide attempt (N=425), focusing only on those regions highlighted as possibly important according to gene expression levels. Finally, we genotyped a small number of single nucleotide polymorphisms in genes with highest expression in the brain regions shown to be altered in patients with past suicide attempt.

Results: First, we showed that the functional connectivity between the subiculum (part of the hippocampal formation, involved in contextual memory) and both the habenula ("disappointment" circuit) and the medial prefrontal cortex (important in decision making) were altered in patients with past attempt. In addition, we found two genetic variants that interact with the connectivity of the subiculum and past suicide attempt: GRIK1, a glutamatergic receptor, interacts with subiculum/raphe nucleus connectivity; AKAP7, a protein kinase important in hippocampal function, interacts with subiculum/medial prefrontal cortex connectivity.

Discussion: Genetics typically asks the question “which genes are associated with a certain disease” while brain imaging typically asks the question “which brain regions are associated with a certain disease”. With PGL, we may be able to answer the question “which genes, by altering which brain function and where, are associated with a certain disease”. The PGL method diminishes the multiple comparison problem in both brain imaging (by focusing only on genetically-determined brain regions) and in genetics (by focusing only on subsets of genes highly expressed in the brain regions discovered to be important for the studied phenotype). Using this iterative approach, we uncovered both brain functionality altered in past suicide

attempt and gene variants associated with such functions. The subiculum is involved in contextual memory, and we hypothesize that the connectivity with the habenula (which signals negative events) may be involved in suicidality by stressing the connection between negative events and contextual memory retrieval. In addition, the medial prefrontal cortex is involved in memory and decision making, and risky decision making has been linked to suicide. Finally, we found two genes highly expressed in the subiculum that interact with subicular functional connectivity in the setting of past suicide attempt. This could in the future allow for the rational design of personalized treatment and prevention, both using genetics and brain function alterations specific to each patient.

M88. EXPLORATION OF KNOWLEDGE AND SKILLS THAT CONTRIBUTE TO SUPPORT FOR SUICIDE ATTEMPTERS BY CLINICAL PSYCHOLOGISTS

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Background: Japan has faced a problematic suicide epidemic for the past decade. In 1998, the number of suicide deaths increased rapidly by more than 30% in the previous year, the Japanese government expressed a clear need to develop a national suicide prevention policy. The Basic Act for Suicide Prevention was signed into legislation in 2006, and the General Principles of Suicide Prevention Policy was enacted in 2007. One of the most important measures developed was "to prevent the re-attempting of suicide by suicide attempters." Today, many clinical psychologists are engaged in the fields of medical and health care, and they could play a significant role in the prevention of suicide re-attempts among suicide attempters. However, there is no research on the appropriate knowledge and skills required for clinical psychologists in supporting suicide attempters has not been sufficiently clarified.
Methods: We conducted semi-structured interview to 11 professionals in the field of mental health (5 men, 6 women; Mean age=45.5 years, SD=7.8 years; 3 psychiatric social workers, 2 psychiatrists, 2 liaison nurses, 2 administrative officers in the mental health department, a high school teacher, a high school nurse), who have worked with clinical psychologists in supporting suicide attempters. We qualitatively analyzed descriptive data regarding the knowledge, skills, and roles of clinical psychologists necessary for supporting suicide attempters using the content analysis method. The study protocol was reviewed and approved by the IRB of the Saitama Medical University, School of Medicine.
Results: We found that clinical psychologists are expected to have a broad knowledge beyond the framework of clinical psychology such as medicine, pharmacology, and social resources. In addition to actively communicating with other professionals, supporting individuals with high suicide risk by making full use of skills specialized in suicide prevention, such as risk assessment and crisis intervention.
Discussion: Our findings highlighted the necessity for the development of training programs for clinical psychologists, as well as for a system to evaluate the training system for clinical psychologists to improve the knowledge and skills that contribute to the prevention of suicide re-attempts among suicide attempters.

M89. ENHANCING RECRUITMENT OF WOMEN VETERANS INTO SUICIDE PREVENTION RESEARCH

Laurel Gaeddert*[1], Alexandra Schneider[1], Lindsey Monteith[1], Lisa Brenner[1], Christin Miller[1], Claire Hoffmire[1]

[1]Rocky Mountain MIRECC for Suicide Prevention (VA)

Background: Suicide rates among women Veterans (WV), the fastest growing subpopulation of Veterans, are nearly twice as high as those observed among adult civilian women and have risen substantially in recent years. The Department of Veterans Affairs (VA) recognizes that selective (i.e., targeted) suicide prevention efforts for WV are warranted. However, as women constitute only 9% of the Veteran population, most suicide-focused studies to date have not included sufficient numbers of WV to rigorously assess for gender differences. As such, future studies that focus on or oversample WV are needed to inform evidence-based suicide prevention strategies for this high-risk population. Unfortunately, recruitment of this population into research can be challenging. Thus, research is needed to improve our understanding of how best to recruit and retain WV in suicide-focused research studies, particularly when addressing sensitive topics such as suicide risk assessment, mental health, substance use, and traumatic life experiences.

Methods: We will report findings from a recruitment sub-study conducted within a larger mixed-methods study that assessed the potential for upstream suicide prevention efforts for WV in VA reproductive health care settings. The larger study aimed to recruit 225 post-9/11 women Veterans (18-55 yrs.) who used reproductive health care services paid for, or provided by, the VA in the past year to participate in an online survey. However, initial recruitment efforts (n=750, Wave 1: entailed an invitation letter, postcard consent, and instructions for completing an online survey) yielded a lower than expected response rate. As such, an enhanced, personalized, multi-mode recruitment strategy was developed based, in part, on qualitative interview findings with a subset of participants. The enhanced recruitment strategy was implemented with a second, independent wave of eligible WV (n=1,500; Wave 2) to evaluate response rates across the two groups: 1) addition of a personalized study flyer introducing the study team (n=750); and 2) addition of a personalized flyer, with the additional option to complete the survey on paper (n=750). WV in all three groups received up to three mailings inviting participation.

Results: Wave 1 recruitment efforts yielded an overall response rate of 10.4% after all three mailings (5.0% after the first mailing). Wave 2 is ongoing, but the preliminary response rate after only the initial, enhanced mailing (10.5% overall; Group 1: 8.9%, Group 2: 12.1%, 34.0% of whom responded by paper survey) was nearly double that observed for the Wave 1 first mailing. All three mailings for Wave 2 will be completed by June 2019. Differences in the final recruitment rates will be reported across the two waves and within Wave 2, across groups. Demographic characteristics and history of a known and VHA-documented suicide attempt will be compared between responders and non-responders in both waves.

Discussion: Preliminary results suggest that enhanced, personalized recruitment materials improve response rates in suicide related surveys among WV. This finding aligns with findings from the qualitative interviews used to design the enhanced recruitment strategy, in which WV expressed a desire to feel a connection with their healthcare providers before discussing sensitive or suicide related topics. These findings are important for determining optimal means of increasing recruitment and engagement of WV in research, which is essential for comprehensively addressing Veteran suicide. Tailoring recruitment strategies based on experiences and recommendations (e.g., personalizing materials or providing multiple modes of survey response) may enhance future research to increase engagement and participation by WV.

M90. RECRUITMENT OF ADOLESCENTS WITH SUICIDAL IDEATION IN THE PEDIATRIC EMERGENCY DEPARTMENT: LESSONS FROM A RANDOMIZED CONTROLLED TRIAL OF YOUTH SUICIDE PREVENTION

Matthew Tracey*[1], Yaron Finkelstein[1], Mathew Mathew[1], Melanie Barwick[1], Gloria Chaim[2], Kristin Cleverley[3], Joanna Henderson[2], Suneeta Monga[1], Myla Moretti[1], Peter Szatmari[1], Daphne Korczak[1]

[1]Hospital for Sick Children, [2]Centre for Addiction and Mental Health, [3]University of Toronto

Background: Emergency Departments (EDs) are a first point-of-contact for many youth with mental health (MH) and suicidality concerns and can serve as an effective recruitment source for randomized controlled trials (RCTs) of MH interventions. We present on a paediatric hospital-based youth suicide prevention (YSP) clinical trial which recruited adolescents aged 12 to 18 years who presented to the ED with suicide related-ideation or behaviors. Participants were randomized to receive a brief outpatient YSP intervention or case navigation support. In the months following study initiation we experienced several challenges to participant recruitment and explored innovative methods to refine and enhance the recruitment strategy.
Methods: The recruitment protocol was reviewed and challenges were identified based on the initial recruitment experience for the YSP study. Our main challenges included timing of ED presentations, parental concerns regarding conflicts with existing MH services, youth capacity for informed consent during a vulnerable time, and concerns regarding randomization to the control arm of the study. A novel ED-centered recruitment strategy was developed to address these challenges by engaging a wider network of ED staff including physicians, nurses, nurse practitioners and social workers. Study pamphlets were made available in multiple areas of the ED, to be handed out to potential participants during hours when the research staff was unavailable, so that they may be later approached by phone. Concerns regarding randomization were addressed pro-actively and explicitly at the time of approach for recruitment. Patients scheduled for a psychiatric follow-up appointment were also approached at that time, after discussion with the involved physician. The ratio of approached to recruited youth prior to the introduction of the enhanced recruitment strategy was compared with that following its implementation.
Results: In the time between study initiation (March 2018) and April 2019, research staff approached at total of 120 patients for the study, screened 76 (63%) and consented 45 (37%) participants. The approach to recruitment ratio for the study period prior to the introduction of the recruitment strategy was 3.8:1, which decreased to 2.6:1 following implementation of enhanced recruitment strategies.
Discussion: Emergency Departments are important sites for the recruitment of participants in RCTs examining new interventions for acute mental health problems, particularly suicidality. Engaging multi-disciplinary ED staff to support recruitment for such studies, proactively addressing anticipated concerns, and creating a robust recruitment pathway that includes approach at follow-up appointments can optimize recruitment. This highlights the importance of interdepartmental collaboration for clinical trials.

M91. USING A SEQUENTIAL MULTIPLE ASSIGNMENT RANDOMIZED TRIAL TO STUDY INTERVENTIONS TO REDUCE RISKS AND PROMOTE STRENGTHS: EXAMPLE FROM THE SOUTHWEST HUB FOR AMERICAN INDIAN YOUTH SUICIDE PREVENTION

Mary Cwik*[1], Cindy Kaytaoggy[1], Victoria O'Keefe[2]

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Background: The Johns Hopkins Center for American Indian Health (CAIH) has worked collaboratively with the White Mountain Apache Tribe (WMAT) since 2001 to develop a

comprehensive public health approach to suicide prevention that includes community-based surveillance and follow-up, a culturally adapted evidence-based brief risk reduction intervention ("New Hope"), and an upstream ground-up prevention intervention harnessing Apache culture and strengths ("Elders' Resilience Curriculum"). CAIH and WMAT are now conducting a Sequential Multiple Assignment Randomized Trial (SMART) to evaluate which sequence of interventions will have greater effects on suicide ideation and resilience (NIMH 1U19MH113136-01, PIs: Cwik and Barlow, "Southwest Hub for American Indian Youth Suicide Prevention Research").

Methods: We are using a SMART design to evaluate different sequences of New Hope, Elders' Resilience Curriculum, and Case Management. Participants are American Indian adolescents ages 10-24 with suicide ideation, suicide attempt, or binge substance use during the past 30 days. Youth will be stratified by age and event type (ideation, attempt, binge substance use) using a blocked randomized design into Case Management only, Case Management plus New Hope, Case Management plus Elders' Resilience Curriculum, and Case Management plus New Hope plus Elders' Resilience Curriculum. Our primary outcome of interest is suicide ideation and secondary outcomes include resiliency measures.

Results: The present study is ongoing in the field. Here, we focus our discussion on the relationship between community-based participatory research (CBPR), intervention selection, and scientific rigor that informed the current study design. The CBPR paradigm shifts the power dynamics from a "top down" perspective to a more equitable balance of power and co-learning between community and researcher. This balanced approach has drawn greater attention to the the implementation and selection of prevention programs. We will outline the benefits and costs in terms of meeting community needs, program fidelity, and cultural integration.

Discussion: The CAIH and WMAT partnership to evaluate suicide ideation and resiliency using a SMART design is a product of decades of collaboration based on CBPR principles. The SMART design will allow us to understand what works, for whom and when, which is an important question for the suicide prevention field, especially in communities with fewer resources.

M92. EMBEDDED SYSTEMS: HOW FAITH COMMUNITIES INFLUENCE COMMUNITY SUICIDE PREVENTION

Ann Marie White*[1], Rev. Phyllis Jackson[2]

[1]University of Rochester Medical Center/Children's Institute, [2]Interdenominational Health Ministry Coalition

Background: Creating a collaborative process to foster interactions across community response systems can help move the needle on rising suicide deaths in the U.S. Yet, the majority of evidence currently focuses on single-pronged, uncoordinated interventions that alone carry small effects on this complex and dynamic problem. Efforts tested to date often strive to reach individuals in or near crisis, further limiting the scope of understanding how to best collaborate across systems. It has not yet been possible to implement carefully designed and broadly conceived public health programs.

System thinking can advance complementary and integrated practices to promote more efficient and far-reaching prevention. Collaborative engagement with systems science tools can help align public health, community and health care based services. In this study, we examined causal loop diagramming as a method for discerning integrative actions within faith settings. Drawing upon system dynamics approaches, we adapted group model building scripts to assess

causal mental models among faith leaders working to serve congregants as suicide prevention agents.

Methods: We applied community-based system dynamics methods. We conducted group model building with a group of local clergy who serve African American congregants and who were involved in an academic-community partnership in a northeastern city in 2018. We developed the reference modes, elicited causal structures through model building, and presented the resulting causal loop diagrams (CLDs; qualitative models) for evaluation. Structured facilitation guides were adapted and evaluated by participants in the context of a community-based participatory research process. We examined synergies or leverage points with other community settings such as behavioral health care based upon resulting causal loop diagrams.

Results: It was feasible and acceptable to adapt system dynamics (SD) methods with faith leaders seeking to select, plan, and implement synergistic best practices to reduce suicide. The process of developing the reference mode guided stakeholders in identifying critical patterns and explaining dynamic behavior through annotation of trend lines or verbal storytelling. CLDs drew out and integrated stakeholder hypotheses about key dynamics underpinning such trends. Stock and flow diagrams captured how local clergy perceived the “physics of the system." CLDs permitted participants to discern how their culturally ensconced efforts connected to wider prevention system components. Participating clergy perceived these system dynamic methods to be helpful when seeking to learn how faith system components can affect suicide-relevant outcomes. A range of targets for action arose when these leaders considered how to embed functional components to deliver health, wellness and prevention capacity to prevent suicide and risk-related forms of injurious death.

Discussion: SD methods enhanced how these faith leaders worked through the numerous possibilities when seeking to combat suicide completion dynamics in their communities. CLDs aided faith leaders in identifying specific features of faith-centered prevention systems that holistically focus on collaborative and culturally responsive injury prevention, and complexities within faith communities. Dynamic hypotheses generated helped faith leaders learn how faith community-sited practices can affect suicide outcomes in wider communities. To further develop tools for integrative local prevention system development across multiple settings, we will discuss quantitative SD models for simulation of injury prevention systems inclusive of faith community perspectives within medically underserved communities.

Tuesday, October 29, 2019

11:30 AM – 1:30 PM

Americana Ballroom 3-4

T1. EXAMINING THE PSYCHOLOGICAL CORRELATES AMONG ADOLESCENTS ENGAGING IN DIRECT AND INDIRECT SELF-HARM

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Background: Self-harming behaviors have significant clinical implications for adolescents and serve as potential risk factors for subsequent suicide-related outcomes. The current study aims to help clarify the distinction and commonalities across direct and indirect forms of self-harm. Separate studies have shown that individuals who engage in direct self-harm (i.e., nonsuicidal self-injury; NSSI) experience greater internalizing disorders such as depressive symptomology, and may be at greater risk of suicide attempt, whereas those who engage in indirect self-harm (e.g., substance use) instead experience greater externalizing disorders such as aggressive behaviors. This current study directly compares adolescents engaging in direct vs. indirect self-harm and evaluate levels of impulsivity, depression, and aggression across these groups.

Methods: Participants for this study were 72 adolescents (12-19 years) recruited in the northeastern region of the United States through online advertisements and in-person recruitment events held in New York City. To capture the lifetime history of direct self-harm, NSSI was evaluated using the Self-Injurious Thoughts and Behaviors Interview (Nock et al., 2007). To capture lifetime history of indirect self-harm, substance use was determined through the Alcohol Use Disorder Identification Test (Babor et al., 2001) and the Drug Use Disorders Identification Test (Berman et al., 2003). The Urgency, Premeditation, Perseverance, Sensation Seeking, Positive Urgency, Impulsive Behavior Scale (Whiteside et al., 2001) was utilized to measure impulsivity. Depressive symptoms were measured using the Quick Inventory of Depressive Symptoms (Rush et al., 2003). Aggression was measured using the Child Behavior Checklist for School-Age Children (Achenbach et al., 2001).

Results: Overall, 23.6% (n=17) of adolescents were placed in the direct self-harm group, 33.3% (n=24) were placed in the indirect self-harm group, and 43.1% (n=31) were placed into the control group. Neither impulsivity nor aggression significantly varied across the three groups Fs=.370-.518, ps=.60-.69, ηp2s=.04-.07. However, depressive symptoms significantly differed across the groups, F=6.31, p=.003, η p2=.002. Direct self-injurers (i.e., those engaging in NSSI) reported higher levels of depressive symptoms than non-injurers and indirect self-injurers, p=.03. Scores from the Quick Inventory of Depressive Symptoms indicated direct self-injurers reported the greatest levels of depressive symptoms (M=10.8), followed by indirect self-injurers (M=6.7). This pattern appeared to be especially salient for the symptom of sleep disturbances (F=3.42, p=.038, η p2= .094). Finally, the three groups differed in their co-occurrence with suicidal ideation and suicide attempt, χ2s=14.99-15.80, ps<.01, such that a greater proportion of direct self-injurers (52-76%) had experienced these outcomes compared to indirect self-injurers (33-45%).

Discussion: This study found that direct and indirect self-harm may be distinct from one another and that depressive symptom—in particular, sleep disturbance—may be a distinguishing factor. Direct and indirect self-harm also differed in the degree of overlap with suicidal thoughts and behaviors, such that indirect self-harm was more closely linked to

suicidal ideation and suicide attempt. The present findings thereby confirm that direct self-harm, specifically nonsuicidal self-injury, is a potentially more severe outcome that warrants unique resources and tailored prevention and treatment techniques.

T2. A TWO-STUDY INVESTIGATION OF SUICIDE GESTURE: EXPLORING THE POTENTIAL ROLE OF INTERPERSONAL STRESS

Treva Kennedy-Pyers*[1], Christine B. Cha[1]

[1]Teachers College, Columbia University

Background: Some individuals engage in actions to make others believe that they want to kill themselves when in fact they have no suicidal intent. This suicide-related communicative behavior, historically referred to as suicide gesture, is a perplexing and understudied clinical outcome. While this behavior by definition occurs in the absence of suicidal intent, it remains a concerning and very likely sign of distress. Indeed, there are prior reports that negative interactions with family and friends are leading precipitants of suicide gesture (Nock et al., 2007). This association, however, has not been systematically tested. To address this gap, we aim to identify potential interpersonal stressors associated with suicide gesture in two samples involving adolescents and young adults: (1) a younger group of community-based adolescents; and (2) an older and nationally representative sample of adults. Interpersonal stressors are examined by setting: within the household (e.g., family stress), and out of the household (e.g., peer stress). We hypothesize that both types of interpersonal stress are associated with suicide gesture and explore which source of stress (if any) reveals a stronger association.

Methods: Study 1 involved 84 adolescents from the New York metropolitan area (M=16.1 years, SD=2.3). Within this sample, suicide gesture was measured via the Self-Injurious Thoughts and Behaviors Interview (Nock et al., 2007), featuring the question: "Have you ever said or done something to purposely lead someone to believe that you wanted to kill yourself when you really had no intention of dying?" Family stress was measured via the McMaster Family Assessment Device (Epstein et al., 1983), and peer stress was measured via the California Bullying Victimization Scale (Felix et al., 2011). Study 2 involved 5,647 adult respondents of the National Comorbidity Survey (M = 32.0 years, SD=10.6). Within this sample, suicide gesture was considered present if a respondent indicated that they had made a suicide attempt but that the attempt was a cry for help (i.e., no intent to die). Family stress was measured via endorsement of serious, ongoing tensions, conflicts, or arguments with at least one spouse/partner or relative. Peer stress was indicated comparably but with at least one friend or peer.

Results: Peer stress was associated with greater likelihood of endorsing suicide gesture. This was the case among the younger sample from Study 1 (OR=4.07; CI=1.12-19.54; p=.03), as well as the older sample from Study 2 (OR=2.25; CI=1.46-3.36; p<.001). Findings were less consistent for family stress. Whereas family stress was not associated with suicide gesture in Study 1 (OR=1.29; CI=0.41-4.50; p=.67), it was significantly associated in Study 2 (OR=2.33; CI=1.66-3.26; p< .001). Multivariate analyses compared peer and family stress from Study 2—revealing that each remain independently associated with suicide gesture (ORs=1.97-2.18, CI=1.27-3.06, ps=.00-.002).

Discussion: Interpersonal stress with peers is consistently associated with suicide gesture, across both adolescents and adults. Peer (vs. family) stress may be a more potent statistical predictor among younger individuals (e.g., adolescents), whereas among adults, both peer and family stress appear to be uniquely linked to this outcome. The present findings thereby demonstrate that suicide gesture does not occur in isolation and corresponds with interpersonal stressors across age groups.

T3. THE IMPACT OF EMOTION REGULATION DIFFICULTIES ON THE ASSOCIATION BETWEEN CALLOUS-UNEMOTIONAL TRAITS AND SUICIDAL IDEATION IN ADOLESCENTS

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[1]George Mason University

Background: Callous-unemotional (CU) traits are reflective of a pattern of behaviors demonstrating antisocial manners, including a lack of guilt and empathy, fearlessness, and shallow affect. Research suggests that 14%-50% of youth recruited from clinical samples endorse CU traits, and that these traits tend to be stable throughout childhood and adolescence. CU traits have been associated with multiple types of mental health difficulties among youth, one of which is suicidal ideation (SI). As SI predicts suicidal behavior, is important to improve understanding of factors that may strengthen this relationship to aid in suicide prevention efforts.

A potential moderator in the association between CU traits and SI is the ability to regulate emotions. Emotion regulation is a multifaceted construct and difficulties can be experienced across multiple facets of emotion regulation. For example, adolescents may show nonacceptance of emotional responses, difficulty engaging in goal-directed behavior, impulse control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. While literature has shown that impulse control difficulties impact the relation between CU traits and risk for SI, research has not yet examined difficulties in the other facets of emotion regulation as moderators of this association.

Adolescents who are high in CU traits generally show a lower intensity of emotion, and thus may have less need and opportunity to learn and practice healthy emotion regulation skills. Therefore, when situations arise that do cause significant emotional distress, these adolescents may experience difficulty using healthy emotion regulation skills and/or down regulating their emotions. This process, in turn, may increase internal distress and place them at greater risk for negative mental health outcomes, such as SI. Thus, we hypothesize that greater difficulties across the various facets of emotion regulation will strengthen the relation between CU traits and SI.

Methods: Participants included 111 psychiatrically hospitalized adolescents (Mage = 15.71, 57.7% female, 70.3% White) and their parent. Adolescents and parents completed a diagnostic interview and self-report instruments. CU traits, SI, and emotion regulation difficulties were measured using the Inventory of Callous and Unemotional Traits, Suicidal Ideation Questionnaire, and the Difficulties in Emotion Regulation Questionnaire subscales (i.e., emotional response, goal-directed behavior, impulse control, emotional awareness, regulation strategies, and emotional clarity), respectively.

Results: Six hierarchical linear regressions were conducted. Of the six facets of emotion regulation strategies examined, only use of regulation strategies ($\beta = .049$, $p = .025$) and impulse control ($\beta = .065$, $p = .021$) were found to moderate the association between CU traits and SI. Specifically, simple slope analyses suggested that the positive association between high CU traits and severity of SI was stronger among adolescents who reported poorer (versus better) use of emotion regulation strategies and impulse control.

Discussion: Assessing and addressing emotion regulation strategies and impulsivity among youth who are high on CU traits, as appropriate, in the context of intervention work may be indicated in preventing suicide risk.

T4. THE ROLE OF SEXUAL MINORITY STATUS IN THE RELATION BETWEEN PTSD SYMPTOMS AND PAST-YEAR NSSI

Ava Fergerson[1], Amy Brausch*[1]

[1]Western Kentucky University

Background: To date, empirical literature has established that sexual minority individuals are at greater risk for non-suicidal self injury (NSSI) and for sexual victimization than their heterosexual counterparts (Batejan, Jarvi, & Swenson, 2015; Walters, Chen, & Brieding, 2013). Moreover, both sexual minority status and history of sexual victimization have been identified as risk factors for NSSI engagement (Taliaferro & Muehlenkamp, 2014). Despite these empirically-supported relations, little research has investigated symptoms of post-traumatic stress disorder (PTSD) in relation to NSSI in a sexually victimized sexual minority sample. The current study aimed to examine this relationship. First, it was expected that the sexual minority group would demonstrate greater incidence of sexual victimization in adulthood than the straight group. Next, it was expected that sexuality would moderate the relationship between trauma symptoms and frequency of past year NSSI.
Methods: Participants in this convenience sample were 702 undergraduate women from a mid-sized university in the southcentral United States. The respondents had a mean age of 19.2 years (SD = 1.5), and the majority of participants identified as white (80.9%). Eighty-six percent of participants identified as straight (n = 612), 1.8% identified as lesbian/gay (n = 13), 7.9% identified as bisexual (n = 56), 1.0% identified as asexual (n = 7), 1.3% identified as not sure (n = 9), and 0.7% identified as other (n = 5). An online self-report survey was posted to the university's Study Board site and linked access to the survey was distributed via email list-servs for both the university Gender & Women's Studies department and the university Panhellenic sorority list-serv.
Results: Results supported both hypotheses. First, chi-square analysis demonstrated that those who identified as a sexual minority had significantly greater incidence of adulthood sexual victimization (56.3%), compared to those who identified as heterosexual (35.5%; $X2 = 17.5$, $p < .001$). Next, a moderation model using PROCESS for SPSS (Hayes, 2013) tested the hypothesis that sexuality would moderate the relation between trauma symptoms and frequency of NSSI in the past year, such that sexual minority status would be more strongly related to frequency of NSSI in the past year than would heterosexual status. The overall model was significant, $F(3, 698) = 38.1$, $p < .0001$, $R2 = .14$. Both trauma symptoms and sexuality were significant predictors of frequency of NSSI in the past year ($B = .09$, $p < .0001$, and $B = 2.66$, $p < .001$, respectively). The interaction effect of trauma symptoms and sexuality was also significant, $B = .12$, 95% CI [.049, .184], $t = 3.42$, $p < .001$, indicating that the relationship between trauma symptoms and frequency of past year NSSI was moderated by sexuality.
Discussion: The hypothesis that the sexual minority group would demonstrate greater incidence of adulthood sexual victimization than the heterosexual group was supported. Additionally, the moderation hypothesis was supported in that sexuality status (heterosexual vs. sexual minority status) moderated the relation between trauma symptoms and NSSI frequency in the past year such that the relationship between trauma symptoms and past year engagement in NSSI was stronger for sexual minority individuals. These results confer the importance of marginalized sexual identity as a risk factor for sexual victimization, heightened risk for PTSD, and for NSSI engagement. Next steps should include research on the unique

social contextual factors that 1) confer risk for PTSD following sexual victimization for sexual minority individuals, and 2) confer risk for NSSI engagement as related to PTSD symptoms.

T5. DIFFERENCES IN REASONS FOR LIVING AND SUICIDE RISK IN THOSE WITH NON-SUICIDAL SELF INJURY (NSSI) AND DISORDERED EATING

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Background: Non-suicidal self-injury (NSSI) is an identified predictor of suicide, and often co-occurs with disordered eating (DE). Both clinical behaviors have significant relationships with increased suicide attempts and deaths. Researchers have speculated that both NSSI and eating disorders have an influential relationship with an individual's perception of social bonds, self-worth, and suicidal behavior. Reasons for living, such as future optimism, self-acceptance, family bonds, peer acceptance, and suicide related concerns, may help differentiate between NSSI and disordered eating. The current study examined differences in reasons for living and overall suicide risk in individuals with past-year NSSI only, DE only, both (NSSI + DE), or neither. It was expected that the group with both behaviors would have the lowest scores on reasons for living and highest suicide risk, followed by the NSSI only group, then the DE only group, and the neither group was expected to have the highest scores on reasons for living and lowest suicide risk.

Methods: Data were collected from 1199 college students (70% women; 76% white) with a mean age of 19.74. Participants completed self-report questionnaires in a research setting, were debriefed and screened for suicide risk, and high-risk participants were referred to appropriate services. Relevant measures to the current study include the Reasons for Living Inventory for Adolescents, the Self-Harm Behavior Questionnaire, the Eating Attitudes Test-26 (EAT-26), and the Inventory of Statements About Self-Injury. Participants were separated into groups based on responses to NSSI questions and total EAT scores above or below the clinical cut-off: past-year NSSI + DE (n=84), past-year NSSI only (n=328), DE only (n=94), and neither (n=693).

Results: ANOVA was used to test group differences on reasons for living and overall suicide risk. There were significant differences between groups on all reasons for living subscales and suicide risk. Post-hoc comparisons found the NSSI + DE group to have the lowest scores compared to all other groups on family support, self-acceptance, and future optimism, and the highest scores on suicide risk. The NSSI + DE group was not different from the NSSI only group on suicide-related concerns and peer acceptance. The NSSI only and DE only groups did not differ from each other on self-acceptance and future optimism. All groups were significantly different from each other on suicide risk, with NSSI + DE the highest, followed by NSSI only, DE only, and neither.

Discussion: The results suggest that individuals with both NSSI and DE and only NSSI report similar levels of suicide-related concerns and peer acceptance. This indicates that the combined presence of NSSI and DE may not increase fearlessness about death and suicide compared to those who only engage in NSSI. However, the NSSI + DE group had the highest suicide risk (combined ideation, plans, attempts) and the lowest scores on several reasons for living (family support, self-acceptance, future optimism) compared to other groups. It is possible that lack of social support and hopelessness are risk factors that may differentiate NSSI from DE. Future research should continue to examine how individuals with both NSSI and DE report more suicidal thoughts and attempts than those with NSSI or DE only, but do not seem to differ on fear of death or suicide.

T6. TESTING THE DIRECTIONALITY OF ASSOCIATIONS INVOLVING EMOTION DYSREGULATION, SLEEP DISTURBANCE, AND SUICIDAL IDEATION AMONG ADOLESCENTS

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Background: Emotion dysregulation and sleep disturbance have individually been linked to suicidal ideation among adolescents. A growing body of literature suggests that sleep and emotions are closely linked, and that the association between these two domains is complex and bidirectional. Empirical work has not explored this bidirectionality as it may pertain to suicidal ideation among adolescents. Furthermore, there have been conflicting reports on which specific features of emotion dysregulation and sleep disturbance are more potent than others. The present study addressed three research questions: (1) Which of the five dimensions of emotion dysregulation endorse suicidal ideation among adolescents? (2) Which subcomponents of sleep disturbance endorse suicidal ideation among adolescents? (3) Which is the more proximal correlate of this outcome: emotion dysregulation or sleep disturbance?
Methods: Participants (N = 74, 78.4% female, M = 16.34) were community-based adolescents who completed assessments of emotion dysregulation (i.e., subscales from the Modified-Difficulties in Emotion Regulation Scale; Bardeen et al., 2016), sleep disturbance (i.e., four items from the Quick Inventory of Depressive Symptomatology-Self Report; Rush et al., 2003), and recent severity of suicidal ideation (i.e., Suicide Ideation Questionnaire; Reynolds, 1988).
Results: Several features of emotion dysregulation including Nonacceptance (i.e., negative emotional responses to one's distress) ($\beta = .54$, SE = .46, $p < .001$), Strategies (i.e., limited access to effective emotion regulation strategies) ($\beta = .67$, SE = .04, $p < .001$), Impulse (i.e., impulse control difficulties when experiencing negative emotions) ($\beta = .51$, SE = .04, $p < .001$), and Goals (i.e., difficulty engaging in goal-directed behavior when experiencing negative emotions) ($\beta = .55$, SE = .04, $p < .001$) were significantly associated with suicidal ideation. Initial insomnia (vs. middle insomnia, terminal insomnia, hypersomnia) was the only feature of sleep disturbance associated with suicidal ideation ($\beta = .37$, SE = .27, $p = .001$). Emotion dysregulation fully mediated the association between initial insomnia and suicidal ideation (Sobel's $z = 2.63$, $p < 0.01$). When the reverse mediation model was tested, initial insomnia did not mediate the association between emotion dysregulation and suicidal ideation, as it was not significantly related to ideation after controlling for emotion dysregulation ($\beta = .17$, SE = .21, $p = .06$).
Discussion: The present tested whether sleep disturbance or emotion dysregulation is more proximally associated with suicidal ideation among youth. Results suggest that the association between sleep disturbance and emotion dysregulation may be unidirectional, rather than bidirectional, in nature, such that emotion dysregulation may help explain how sleep disturbance is linked to ideation severity. A notable limitation is that this was a cross-sectional investigation, and a more thorough assessment of temporal directionality is encouraged through future research. Beyond this, the present findings grant us a specialized understanding of which particular components of emotion dysregulation and sleep disturbance more saliently correlate of suicidal ideation among adolescents. This enhanced our understanding of exactly how and why these known correlates may contribute to suicidal ideation among adolescents and inform future treatment and prevention strategies.

T7. DISTAL VERSUS PROXIMAL PREDICTORS OF SUICIDE ATTEMPT: DIFFERENT AFTER ALL?

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Background: For decades, suicide researchers have assumed that proximal markers of imminent suicide risk differ from distal predictors of eventual suicide (e.g., Rudd et al., 2006; Stanley et al., 2016). Yet, limited data exists to support this assumption. Less than 1% of prospective studies of suicidal behavior examine risk intervals of one month or less, and only one study has directly compared risk markers over short- and long-term intervals within a sample (Franklin et al., 2017; Fawcett et al., 1990). Furthermore, studies examining suicide risk over time have primarily examined a limited number of risk factors combined in simplistic ways (Franklin et al., 2017). Recent research indicates that complex combinations of risk factors may instead be necessary for accurate suicide risk detection, regardless of prediction interval (e.g., Ribeiro et al., 2016). Taken together, this represents a major gap in our understanding of how the complex nature of suicide risk, and our predictive accuracy, may change as suicidal behavior becomes more imminent. The present study seeks to fill this critical research gap. In this study, we directly compare long-term (i.e., two year) and short-term (i.e., less than one month) predictive accuracy and relative predictor importance within machine learning algorithms constructed for the prediction of suicide attempts within a large, high-risk sample.
Methods: A sample of 1021 participants, recruited via mental health and self-injury related internet forums, completed a range of implicit and self-report tasks at baseline, 3-, 14-, and 28-days post-baseline, and 2-years post-baseline. Participant retention was strong, with over 90% retention across the first month and over 70% retention across the two-year interval. Sample severity was high, with 62.3% reporting a history of nonfatal suicide attempts at baseline and 8.2% reporting suicide attempts at 28 days post-baseline. Univariate associations between suicide attempts and other suicide-related variables (e.g., suicidal intent, fearlessness about death, hopelessness) were examined over the short-term and long-term. Risk algorithms were derived for the prediction of suicide attempts over the short-term and long-term. At each time point, a Random Forest algorithm was constructed to predict suicide attempt from a total of 51 predictors. Algorithm inputs included hopelessness, capability for suicide, prior self-injurious thoughts and behaviors, insomnia, social functioning, and agitation. The resulting algorithm performance and relative predictor importance was compared between algorithms developed for short-term and long-term suicide attempt prediction.
Results: Random Forest models demonstrated good predictive performance (AUCs: 0.80 - 0.83) across all time points. Additionally, all models demonstrated strong precision, with values approaching 1.00, and adequate recall (0.64 - 0.67). Contrary to our hypotheses, predictive accuracy over the long-term (i.e., two years) was comparable with short-term predictive accuracy (i.e., less than one month). No univariate predictors were especially strong predictors for any time point.
Discussion: Results indicate that our ability to accurately predict suicide attempt does not meaningfully differ between short-term and long-term periods. Univariate predictors were not strong at any follow-up time point. Taken together, results indicate that proximal and distal markers for suicide attempts may not meaningfully differ to the extent previously assumed by suicide scientists.

T8. RUMINATION MEDIATES THE RELATIONSHIP BETWEEN INTERPERSONAL FACTORS OF SUICIDAL NARRATIVE AND SUICIDAL IDEATION

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Background: The Interpersonal Theory of Suicide suggests that suicidal ideation (SI) can be explained by two interpersonal constructs - thwarted belongingness (unmet need for connectedness), and perceived burdensomeness (unmet need for social competence) (Van Orden et al., 2010). According to the Narrative-Crisis Model of Suicide, these two factors are components of the Suicidal Narrative, which raise the risk of suicide through triggering an acute Suicide Crisis Syndrome (SCS) (Galynker, 2017; Cohen et al., 2018). Rumination, which is one component of SCS, refers to a tendency to respond to distress by focusing on the causes and consequences of one's problems without moving into active problem solving (Hoeksema,1991). In this study, we hypothesize that when an individual is faced with thwarted belongingness and perceived burdensomeness, rumination is one of the possible mediators that might increase the risk of having SI concurrently and in near-term future.

Methods: Adult participants (N=570) were recruited from four psychiatric outpatient clinics in New York City. At the intake, these individuals were administered the Suicidal Narrative Inventory (SNI) for thwarted belongingness and perceived burdensomeness, Ruminative Response Scale (RSS) for rumination, and Columbia Suicide Severity Rating Scale (C-SSRS) for concurrent SI. At one-month follow-up, participants (N=435) were assessed with the CSSRS for SI in the past month. Mediation analyses were conducted using the bootstrap method (n=2000) in PROCESS macro, SPSS.

Results: The mediation analysis showed significant indirect effect for thwarted belongingness on concurrent SI (b=0.016, SE=0.004, 95% CI [0.01, 0.023]) and on SI at 1-month follow-up (b=0.007, SE=0.003, 95% CI [0.002, 0.013]), even after controlling for age, gender, ethnicity, years of education and primary diagnosis of depression. Further, after adding rumination into the models, the direct effect of thwarted belongingness on concurrent SI changed from 0.035 ($p<0.001$) to 0.019 ($p=0.047$), and the direct effect of thwarted belongingness on SI at 1-month follow up changed from 0.037 ($p<0.001$) to 0.03 ($p<0.001$), which both indicated a partially mediating effect of rumination.

For perceived burdensomeness, rumination only partially mediates the relationship between perceived burdensomeness and concurrent SI (b=0.026, SE=0.004, 95% CI [0.014, 0.039]), but insignificant for SI at 1-month follow-up. The direct effect of perceived burdensomeness on concurrent SI changed from 0.08 ($p<0.001$) to 0.055 ($p<0.001$) after adding rumination.

Discussion: Rumination partially mediates the relationship between thwarted belongingness/perceived burdensomeness and concurrent SI, as well as the relationship between thwarted belongingness and SI at 1-month follow up. Hence, when the individual faces interpersonal stress, rumination is one risk factor that can partially explain current and imminent suicidal ideation. These results suggest the importance of interventions focused on individuals' ruminative thoughts. Practicing self-compassion and mindfulness could decrease ruminative thoughts and thus to be protective against suicidal ideation in these individuals.

T9. INTERPLAY AMONG TRAUMA EXPOSURE, SOCIOECONOMIC STATUS AND SUICIDE IDEATION THROUGHOUT ADOLESCENCE: FINDINGS FROM THE PHILADELPHIA NEURODEVELOPMENTAL COHORT

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Background: Early life environmental adversities are associated with teen suicidal ideation (SI), yet limited data exists on the relationship among types of environmental adversities (such as trauma exposure and low socioeconomic status (SES)) and their association with SI in different stages of adolescence. The Philadelphia Neurodevelopmental Cohort (PNC) is an investigation of clinical and neurobehavioral phenotypes in a diverse (56% Caucasian, 33% African American, 11% other) US youth community population assessed between 2009-2011. Participants were non-mental-help-seeking youth ascertained through the Children's Hospital of Philadelphia (CHOP) general (non-mental) health system. Here we studied the interaction of early-life trauma exposure and SES in association with SI across adolescence in youths who were interviewed in the PNC (N=7,054, age range 11-21, mean 15.8).
Methods: Clinical phenotyping was conducted using a K-SADS based interview that assessed lifetime exposure to potential traumatic stressful events (TSE) including situations in which the participant (1) experienced a natural disaster or (2) experienced a bad accident; (3) thought that s/he or someone close to him/her could be killed or hurt badly; (4) witnessed someone getting killed, badly beaten, or die; (5) saw a dead body; or if s/he ever was a victim of one of the following assaults: (6) attacked or badly beaten, (7) threatened with a weapon, or (8) sexually forced (including but not limited to rape). Individual-level SES score was calculated based on participants' home addresses, that were geocoded and linked to US Census block-groups, and data from the Census' American Community Survey was used to characterize block-groups ("neighborhoods").
Statistical modeling was conducted using binary logistic regression models with SI as the dependent variable and trauma exposure, SES, and their interaction as independent variables. Models co-varied for age, gender, race and general psychopathology. Separate models evaluated interaction among environmental adversities and age.

Results: Trauma exposure (at least 1 TSE) was prevalent (n=3,490, 49.5% of the sample), with almost 10% of the sample reporting lifetime history of SI (n=671). Trauma was associated with SI (odds ratio (OR)=1.5, 95%CI 1.4-1.6, p<.001, for each additional TSE), while SES was not associated with SI (p=.237). In youths with high trauma exposure (3+ TSEs), low SES youths reported less SI compare to high SES counterparts (Trauma X SES interaction, Wald=14.3, p<.001, co-varying for age, gender and race). Evaluation of age effects showed that while trauma was associated with SI throughout adolescence (age 11-21), low SES was associated with SI only in early adolescence (under age 14, SES X age interaction, Wald=7.7, p=.006, co-varying for age, gender, race and general psychopathology).
Discussion: In a single large community youth sample, we show moderating effects of (1) SES on the association between trauma and SI; and (2) of age on the association between low SES with SI. Results point to specificity in the relationship of SI with different types of environmental adversities in different adolescence epochs. Specifically, youths from high SES might be particularly at risk for SI if they have high trauma exposure and coming from low SES might be associated with SI only in early adolescence. The cross-sectional study design limits causal inferences. Findings might inform risk stratification for youth SI.

T10. CIVILIAN SOCIAL REJECTION MEDIATES THE ASSOCIATION BETWEEN PTSD-RELATED BEHAVIOR AND SUICIDAL IDEATION IN VETERANS DIAGNOSED WITH POSTTRAUMATIC STRESS DISORDER

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Background: Veterans often describe difficulty reintegrating into civilian life (Ahern et al., 2015), however, specific mechanisms of this challenge are poorly understood. In its most extreme form, civilians may socially reject Veterans, which is concerning given the known buffering effects of social support in relation to suicidal ideation (DeBeer et al., 2014). However, there is no objective evidence regarding civilian rejection of veterans, particularly in Veterans diagnosed with PTSD, or whether rejection is associated with Veteran suicidal ideation. Further, there is no examination of the role of behavioral manifestations of PTSD, such as negative facial affect or guarded posture, and how these behaviors may evoke rejection from civilians. This research examined social rejection as a mediator of the association between PTSD-related behaviors and suicidal ideation.
Methods: Veterans (n = 100) diagnosed with PTSD completed clinical interviews and self-report measures of PTSD and suicidal ideation. The mean age of the final eligible sample was 42.75 years (SD = 9.49) and was primarily male (77.0%). Veterans with prior suicide attempts were over sampled (n = 50). To assess civilian social rejection, five civilian study team members watched 30-second video clips of veterans (i.e., a "thin slice method") and rated them using the Willingness to Interact Scale (Coyne, 1976). The Measure to Assess PTSD-related Social Behavior (MAPS), was used to assess PTSD-related behaviors. The measure was developed using DSM-5 PTSD symptoms and previous instruments that assess behavioral symptoms of mental health disorders. The 13-item MAPS is rated on 30 minutes of a clinical interview. Examples of items include guarded posture (e.g., facing the door, crossing arms) or lack of focus (e.g., difficulty staying on-topic, excessive latency before responding). The MAPS demonstrates excellent internal reliability and good inter-rater reliability, convergent and discriminant validity.
Results: Of the sample, 23 participants (23.0%) indicated experiencing suicidal thoughts in the past month, and 83 (83.0%) reported experiencing suicidal ideation in their lifetime. Analyses from a bootstrapped mediation test indicated that social rejection mediated the association between PTSD-related behaviors and past month suicidal ideation.
Discussion: Increased PTSD-related behaviors resulted in more rejection from civilians, which in turn resulted in increased suicidal ideation. Future research should seek to examine whether behaviors associated with PTSD (e.g., hypervigilance, avoidance, numbing, etc.) are modifiable through treatment.

T11. PEER SOCIALIZATION OF SELF-INJURIOUS THOUGHTS AND BEHAVIORS (SITBS): MODERATORS AND RECIPROCITY OF THE ASSOCIATIONS BETWEEN PEER GROUP SITB AND FUTURE SELF-INJURIOUS BEHAVIOR

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Background: Self-injurious thoughts and behaviors (SITBs) remain remarkably prevalent behaviors among adolescents, yet remarkably little longitudinal research has been conducted and few potent longitudinal predictors of nonsuicidal self-injury (NSSI) or SITB have been identified. One promising prospective predictor reflects peer influence effects. Specifically, prior work suggests that adolescents' friends' engagement in NSSI, for example, is a potent prospective predictor of adolescents' own increased engagement in NSSI. These peer

socialization effects are critical for two reasons. First, given adolescents heightened sensitivity to social rewards and under-developed inhibitory control, peer socialization effects may represent a powerful risk, perhaps especially among adolescents experiencing internalizing distress. Second, peers' favorable responses to SITB may provide social reinforcement among adolescents who engage in self-injurious thoughts and behaviors.
This large scale, two-wave longitudinal study offered a unique opportunity to examine reciprocal peer socialization effects in broader groups of friends in a school-based sample of adolescents. First, it was hypothesized that an adolescent's multiple friends' SITB would be associated longitudinally with their own future SITB behaviors, after controlling for gender, depressive symptoms, and their own past NSSI, perhaps especially among adolescents experiencing internalized distress. Second, this study examined a reciprocal hypothesis; it was expected an adolescent's own SITB would be associated significantly with increases in their friends' future SITB over time.

Methods: A sample of 646 adolescents (56% female; 53% non-White) from three schools in a lower middle class community participated at two annual time points. Participants completed well-established self-report measures of NSSI, suicidal ideation, depressive symptoms, loneliness, and friendship stress. In addition, adolescents nominated their closest friends from a gradewide roster. Because participants nominated friends who were also participants in the study, their multiple friends' average NSSI and SITB were computed using friends' actual reports. Hierarchical linear regressions were conducted to examine the prospective associations among an adolescent's multiple friends' NSSI, SITB, and their own future NSSI and SITB behavior, including product terms and post-hoc probing to examine hypothesized moderators. Data analyses were then conducted reciprocally to examine mirrored peer socialization effects.
Results: Findings revealed that after accounting for gender, depressive symptoms, and past SITB, an adolescent's multiple friends' SITB was associated longitudinally with the adolescent's later SITB. This effect was qualified by interaction effects, suggesting that effects were strongest when adolescents reported high levels of internalized distress. Additionally, findings indicated reciprocity of the main effect of peer socialization, whereby an adolescent's SITB was associated with future increases in their friends' SITB, suggesting powerful social reinforcement effects.
Discussion: Implications for further study of the unique conditions under which SITB may be most likely will be discussed.

T12. SOCIAL MEDIA USE IS INDIRECTLY ASSOCIATED WITH SUICIDE IDEATION

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Background: Social media use is pervasive and continues to increase with an estimated 2 billion active social media users in the world. Suicide deaths and ideation have also increased with over 40,000 Americans dying by suicide every year and 9.3 million Americans reporting suicidal thoughts every year. Social media use has been associated with a number of negative mental health outcomes including increased depressive symptoms, anxiety, self-esteem, and body image disturbance. Research examining the relationship between social media use and suicide has primarily focused on using social media to prevent suicide or to identify those at risk. There are no studies that have specifically examined the relationship between social media use and suicide ideation. The current study examined the association between the use of two social media platforms (Instagram, Twitter) and self-reported suicidal ideation. Given prior

research, we hypothesized that more Instagram and Twitter use would be associated with higher levels of suicide ideation and other negative mental health outcomes.
Methods: Participants were 296 undergraduate students (75% female, 76% Caucasian, 88% heterosexual) with a mean age of 19 (SD = 1.2) recruited from a large Midwestern university. Self-report measures included the Hopelessness Depression Symptom Questionnaire Suicide Subscale (HDSQ-SS), Interpersonal Needs Questionnaire (INQ) to measure perceived burdensomeness and thwarted belongingness, Rosenberg Self-Esteem Scale (RSES), and the Patient Health Questionnaire 9-item (PHQ-9) scale for depression symptoms. Instagram and Twitter use data were extracted directly from the participants' cell phones. We extracted the time (in minutes) participants used each application over the previous 24-hours and the mean daily use over the previous 7 or 10 days (depending on phone operating system software). We also extracted application usage time represented by percentage over the previous 24 hours and 7 or 10 days from the respective application.
Results: Mean daily Twitter use was positively associated with thwarted belongingness ($r = .17$, $p = .005$). Percent use of Instagram was negatively associated with perceived burdensomeness ($r = -.16$, $p = .009$) and depression symptoms ($r = -.12$, $p = .049$) and positively associated with self-esteem ($r = .19$, $p = .002$). All other direct associations were not statistically significant.
A bias corrected bootstrap model using 5000 resamples indicated an indirect effect of mean daily Twitter use on suicidal ideation through thwarted belongingness as indicted by a 95% confidence interval that did not include zero (LLCI = .0011, ULCI = .0071). There was a significant indirect effect of past week percent Instagram use on suicidal ideation through perceived burdensomeness (LLCI = -.0200, ULCI = -.0045). Both indirect effects models remained significant when controlling for depression symptoms.

Discussion: Instagram and Twitter use were not directly associated with suicidal ideation or most other negative outcomes. However, results indicated that increased Twitter use indirectly leads to increased suicidal ideation through increased thwarted belongingness. Surprisingly, Instagram use was associated with positive mental health outcomes, and an indirect effect indicated that increased Instagram use is associated with lower perceived burdensomeness which then leads to less suicidal ideation. Results are cross-sectional and the effects are small in magnitude, but this study provides initial evidence of effects of social media use on suicidal ideation. This has potential implications for suicide prevention and treatment efforts.

T13. THE RELATIONSHIP BETWEEN SUICIDE RISK AND PTSD SYMPTOMS IN TRAUMA-EXPOSED VETERANS

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Background: Traumatic experiences occur frequently with approximately 50% of adults experiencing at least one traumatic event in their lifetime. The development of PTSD, however, occurs less commonly, in approximately 7-8% of the US population. Both trauma exposure and PTSD occur more frequently in veteran populations with an estimate of 11-20% of veterans receiving a lifetime diagnosis of PTSD. Suicide risk is higher among individuals with PTSD; however, there is little research on the relationship between trauma exposure and suicide risk in individuals without a PTSD diagnosis. Therefore, the association between symptoms related to trauma exposure irrespective of PTSD diagnosis and suicide risk is largely unknown. Previous work by our group has examined PTSD symptoms clusters and their relationship to

suicide risk in veterans with PTSD. We found that negative alterations in cognitions and mood and arousal symptoms were related to suicide attempts. The current investigation seeks to extend previous findings to trauma-exposed veterans irrespective of PTSD diagnosis.
Methods: Fifty-one trauma-veterans (49% with PTSD) with a mean age of 38 (SD = 9.47) years completed diagnostic interviews with a licensed psychologist to determine presence of PTSD symptomology. Veterans also completed a self-report suicide measure, the Self Harm Behavior Questionnaire (SHBQ), which includes scales for suicidal ideation (SI) and suicide attempts (SA). In addition, veterans rated themselves on a PTSD symptom scale modeled after the PCL, which evaluated symptom frequency and symptoms interference with daily life.
Results: Bivariate correlations were utilized to examine the association between each PTSD symptom cluster and SI and SA in trauma-exposed veterans. Neither, the re-experiencing nor the avoidance clusters were related to SI or SA. Negative thinking was related to SI ($r = .380$, $p=.02$), but not to SA. In contrast arousal was related to SA ($r = .316$, $p=.04$) but not to SI.
Discussion: Consistent with previous results, we found that SA is related to arousal symptoms of PTSD; however, this finding is now extended to a group of trauma-exposed veterans irrespective of PTSD diagnosis. Further in this investigation we also found that negative thinking was related to SI in a group of trauma-exposed veterans. These findings suggest that individuals with trauma exposure may experience increased suicide risk. Further, certain symptoms presentations such as increased arousal symptoms are related to SA; while, mood symptoms are related to SI. More research is needed especially to further examine the differences between trauma-exposure and PTSD diagnosis and the relationship to suicide risk. However, data such as these may help clinician's identify patients who are trauma exposed that may have elevated suicide risk.

T14. RECENT HIGH-RISK MEDICATION USE AND POLYPHARMACY IN OLDER VETERANS WHO ATTEMPT SUICIDE

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Background: Despite the increase in suicides among younger veterans, older veterans have the highest number of lives lost to suicide. Given the association of certain medications and polypharmacy with behaviors and diagnoses associated with heightened risk for suicide, we sought to identify profiles of commonly prescribed medications and polypharmacy in older veterans that are potential markers for suicide risk (hereafter referred to as "high-risk" medications, including antidepressants, benzodiazepines, opioids, sedative-hypnotics, antipsychotics, and antiepileptics) preceding a suicide attempt. We then assessed the association of these profiles with demographic, diagnostic, utilization, and attempt-related factors.
Methods: 4,034 veterans over age 65 (mean age (SD) = 74.1 (7.9)) who had a first documented suicide attempt between 2012 and 2014 were included in analyses, using Veterans Health Administration (VHA) electronic medical record data, linked to data from the National Suicide Data Repository (SDR) and the National Suicide Prevention Applications Network (SPAN). Use of high-risk medications within 90 days prior to a suicide attempt (specifically, antidepressants, benzodiazepines, opioids, sedative-hypnotics, antipsychotics, and antiepileptics), as well as medical and psychiatric diagnoses, demographic, clinical and utilization variables were obtained from the VHA electronic medical record. Fatal and non-fatal suicide attempts were defined using SDR and SPAN data. Analyses included latent class analysis to identify latent profiles of high-risk medication use, and describe factors associated with those profiles.

Results: Four high-risk medication profiles were identified in the data from the best-fitting model. The profiles were Minimal Medication Use (70.7% of sample), Antidepressant Use (20.5%), Benzodiazepine and Opioid Use (3.7%), and High Medication Use (5.1%). Within 90 days of attempt, depression diagnosis ranged from 9.4% in the Minimal Medication to 39.1% in the Antidepressant Use profile, any substance use disorder ranged from 3.7% in Minimal Medication to 16% in the High Medication Use profile, and posttraumatic stress disorder ranged from 3.0% in the Minimal Medication to 17.0% in the High Medication Use profile. In terms of utilization, as few as 9.7% (Minimal Medication Use profile) and as many as 38.5% (Antidepressant Use profile) saw a mental health provider within 30 days of their attempt. The Minimal Medication group was significantly more likely to have a fatal first attempt compared to all other groups (61.4% of this class). Among fatal attempters, firearms were by far the most common method, regardless of class membership (81.7% of fatal attempters). Among non-fatal attempters, 15% had a repeat attempt within the next several years (from 5.4% to 11.2% in Minimal to High Medication Use profiles, respectively). Among repeat attempters, over 20% were fatal reattempts within 4 years of their first attempt.
Discussion: Distinct profiles of high-risk medication use with different diagnostic, utilization, and attempt-related characteristics are identifiable among older veterans who attempt suicide. The group comprising the majority of the sample with low high-risk medication use within 90 days of attempt (Minimal Medication Use) may represent individuals with other patterns of medication use (e.g., intermittent use or recent discontinuation), or individuals who truly don't use these medications. This requires further investigation, as the Minimal Medication Use group had the highest rate of fatal attempts. Regardless of polypharmacy, firearms were the predominant method of fatal attempt, with implications for screening and intervention.

T15. THE CAUSAL EFFECT OF SOCIAL NORMS ON VIRTUAL SUICIDE

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Background: Suicide is the tenth leading cause of death in the United States (Centers for Disease Control and Prevention, 2016). Unfortunately, there is not a strong consensus regarding causes of suicide, making this crisis difficult to address. Cross-sectional and longitudinal findings have indicated several associations between social attitudes and suicide, such that individuals who report higher acceptance/normalization of suicide or more exposure to suicidal behavior in others also display more suicidal behavior in themselves (Hom et al., 2018; Sun & Zhang 2018; Poijula, Wahlberg, & Dyregrov, 2001). However, a lack of experiments on this topic make it difficult to determine if these factors are causal risk factors for suicide. Understanding the causes of suicide requires the development of safe experiments on suicidal behavior. Virtual reality technology as a proxy for suicidal behavior has recently been proposed as a solution to the ethical and practical hurdles faced in suicide research (Franklin, Huang, & Bastidas, in press). This study therefore aimed to investigate whether establishing an acceptable social norm for suicide in a virtual reality environment would affect virtual suicide completion.
Methods: We recruited 53 undergraduate psychology students from Florida State University. Participants were randomized into a social norms and a control condition. All participants experienced two virtual reality scenarios in which they were offered a choice between virtual suicide and a safe alternative. Before making a decision, social norms participants were informed that the majority of other participants had chosen the suicide option.

Results: Participants in either condition did not differ significantly on any basic demographic measures. There was no significant difference in virtual suicide rates between the two conditions ($\chi 2=0.814$, $p=0.368$).
Discussion: The results from this study did not support a causal effect of social norms on virtual suicide. This could indicate that there is no causal effect of social norms on suicidal behavior. However, another possibility is that social norms exert a very small causal effect on suicidal behavior that this study was underpowered to detect. Furthermore, the relationship between these two factors may be more complex than was captured in this study. Social norms may exert a causal effect on suicidal behavior only in certain contexts, informed by findings that individuals are more likely to conform to norms in groups they identify with (Suhay, 2015). If participants do not feel any sense of association to previous participants, they may feel uninfluenced by the norm. Conformity to social norms is also often used as a deliberate tool to gain social approval (Cialdini & Goldstein, 2004). Without the presence of others to observe their behavior, individual participants possibly do not see any social rewards to engaging in a normalized behavior. Research on exposure to suicide has also indicated that exposure has a stronger effect on already vulnerable populations, such as those with depressed affect (Ma-Kellams, Baek, & Or, 2018). Future research should aim to collect larger samples and investigate the role of context and interactions with other factors in the relationship between social norms and suicide.

T16. CAPABILITY FOR SUICIDE: THE ROLE OF PAINFUL AND PROVOCATIVE EXPERIENCES

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Background: According to the Interpersonal-Psychological Theory of Suicide (IPTS), suicidal behaviors cannot occur unless an individual has developed the capacity to enact lethal self-injury. This capacity, also known as "acquired capability," is thought to emerge as a result of repeated exposure to painful and provocative experiences. The theory posits that as individuals habituate to the frightening and painful aspects of self-harm, it becomes easier for them to engage in increasingly lethal behaviors. In response to this theory, there has been an explosion of research in recent years exploring the relationship between acquired capability and suicide, but the existing body of literature has several limitations. First, the majority of the studies are cross-sectional in nature, which limits our understanding of how certain experiences may contribute to changes in capability over time. Second, many studies rely on retrospective reports of painful and provocative experiences, which could result in response and recall biases. Third, while the IPTS posits that the most direct pathway to acquired capability is through repeated suicide attempts, most studies rely on proxy measures of painful and provocative experiences rather than studying suicide attempts directly. Finally, to our knowledge, no studies have examined the link between suicide attempts and capability prospectively.
Methods: The current study aims to address these critical gaps. In this study, high-risk individuals (N = 1,021) were recruited from online web forums focusing on suicide and self-injury. Suicide and capability-related measures (i.e., ACSS-FAD, explicit image ratings, and AMP-Suicide) were collected at 4 timepoints: baseline, 3 days, 2 weeks, and 4 weeks. First, we used multivariate regressions to determine whether suicide attempt frequency significantly predicted capability at 4 weeks, controlling for baseline capability measures. Next, a mediation model with bootstrapping was used to test whether frequency of suicide attempts mediated changes in capability over time.

Results: We found that the frequency of suicide attempts between baseline and one month significantly, but weakly, predicted changes on the ACSS-FAD (β = .053, p =.004) and explicit image ratings (β = .089, p <.001). No significant effects of suicide attempt frequency were found for the AMP-Suicide. Frequency of suicide attempts were found to mediate changes in the ACSS-FAD (p <.005) and explicit image ratings (p<.001), but not changes in the AMP-Suicide (p=0.848).
Discussion: Taken together, our findings indicate that certain fundamental assumptions about the development of acquired capability may not be robustly supported.

T17. UNIVERSAL SUICIDE RISK SCREENING IN ADULT RURAL PRIMARY CARE: PATIENT OPINIONS ABOUT ACCEPTABILITY AND BEST PRACTICES

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Background: Universal suicide risk screening programs have the potential to reach underserved adult populations in rural communities because of the high level of stigma attached to mental health and limited access to behavioral health care services in these communities. However, providers have expressed concerns about the acceptability of suicide risk screening in the rural adult population and there is little evidence about the screening methods that are most acceptable to rural adults. This study aimed to gather preliminary data from a sample of adult patients in a rural primary care practice to describe patient opinions about suicide risk screening in rural primary care.
Methods: Survey data was collected from a sample of patients (N = 196) who participated in a pilot study of a universal suicide risk screening program using the Ask Suicide-Screening Questions (ASQ) Toolkit. As part of their participation in the pilot study, patients were asked to complete a Screening Opinions Questionnaire designed by the researchers that asked them whether primary care providers (PCP's) should ask patients about suicide, why or why not, to describe their experience of being screened for suicide, and two questions about what methods were most preferable for screening, and why. Descriptive statistics for the quantitative data were computed using SPSS 24 and data from the open-ended questions were analyzed with NVivo Pro 11 using a content analysis methodology.
Results: Of the 340 patients who were approached and asked to participate in the pilot study, 196 (57.6%) participated in the screening program and completed the survey. The final sample was 100.0% White, 50.5% male, and the mean age was 54.0 (SD = 15.8). The majority (95.9%) agreed that PCP's should ask patients about suicide and 67.6% reported a preference for being asked by medical professional directly. The majority of themes regarding the experience and acceptability of screening were either neutral or positive, such as "screening was not bothersome" (N = 103), "screening was acceptable because it's important" (N = 24), and "screening demonstrates provider caring" (N = 22). The most frequently occurring themes/reasons "for" screening included that screening: "eases disclosure" (N = 29), "prevents and saves lives" (N = 29), and "allows the PCP to provide help to patients" (N = 27). The most frequently occurring theme describing a negative experience of screening was that "screening caused discomfort" (N = 13). The most commonly coded theme/reason against screening was that "PCP's should engage in targeted suicide screening only for depression" (N = 7). In regard to screening methods, the most frequently occurring reason/theme for preference for the provider to ask screening questions directly was the opportunity for "one-to-one interaction" (N = 48). The most common theme/reason for preference for both the electronic device and

paper survey was the belief that each would allow for "increased honesty in responding" (N's = 19, and 3, respectively).

Discussion: This pilot study from a rural outpatient primary care clinic provides preliminary evidence that universal suicide risk screening using the ASQ/BSSA tools is feasible in the rural primary care setting and that screening is amenable to patients. Future research should incorporate more diverse samples from multiple practice settings in order to further evaluate the feasibility and effectiveness of the ASQ Tools in adult rural primary care.

T18. GUIDELINES FOR IMPLEMENTING FEASIBLE SUICIDE RISK SCREENING PROGRAMS IN MEDICAL SETTINGS: YOUTH SUICIDE RISK SCREENING CLINICAL PATHWAYS

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Background: Many medical settings have begun to implement suicide risk screening programs. Most young people who die by suicide visit a healthcare provider in the year prior to killing themselves, many within weeks preceding their death. Healthcare providers are uniquely positioned to detect suicide risk, especially in young patients and intervene accordingly. Many medical settings look toward suicide prevention research to guide them in choosing tools and programs, in order implement feasible detection and management screening programs without overburdening their systems. Without evidence-based guidelines, screening programs may become burdensome and difficult to maintain over time. Historically, hospitals have used multidisciplinary plans, known as clinical pathways (CP), to outline systematic clinical care steps to efficiently manage patients with medical conditions such as asthma, fever or neutropenia. Using these CP care models, suicidal thoughts and behaviors can also be managed effectively and efficiently in medical settings. This presentation will describe the first attempt to develop an evidence-informed suicide risk clinical pathway for pediatric patients presenting to emergency departments (EDs) and inpatient medical/surgical unit settings.

Methods: A workgroup funded by the American Academy of Child and Adolescent Psychiatry, Pathways of Clinical Care (PaCC) workgroup, was created and comprised of expert child and adolescent psychiatry consultation-liaison providers and health services researchers in suicide risk assessment. This workgroup reviewed available literature on suicide risk screening and intervention methods for medical and psychiatric settings. Existing clinical workflows from five workgroup-independent institutions and observations from many screening implementations were used to inform the develop the suicide risk clinical pathway. Initial drafts were reviewed by appropriate stakeholders and feedback was incorporated into the final pathways. The final result was the Youth Suicide Risk Screening Clinical Pathways: a series of steps for medical providers to follow when screening all medical patients and managing any patient that screened positive for suicide risk.

Results: Two clinical pathways that were created for managing suicide risk screening in 1) the pediatric ED and 2) the inpatient medical/surgical unit. The pathways outline a 3-tiered screening process utilizing the Ask Suicide-Screening Questions (ASQ) for initial screening, followed by a brief suicide safety assessment with either the ASQ Brief Suicide Safety Assessment (ASQ BSSA) or the Columbia Suicide Severity Rating Scale (C-SSRS) to

determine if a full suicide risk assessment is warranted. This intermediate step of a brief suicide safety assessment is critical to help conserve mental health resources and determine appropriate interventions for each patient deemed 'at risk.' Scripts for medical providers and detailed implementation guidelines are included alongside the pathways. Flexibility and institutional customization are key features of the pathways that allow hospitals to adapt their workflows based on their available resources, culture and other realities. Examples of hospital settings implementing the pathway will be provided.
Discussion: These Youth Suicide Risk Screening Clinical Pathways address a current lack of standardized procedures for hospital settings to maximize universal suicide risk screening of all medical patients. Using flexible, standardized methods for screening can help medical settings feasibly screen and manage patients at risk for suicide.

T19. IMPLEMENTING SUICIDE RISK SCREENING IN PEDIATRIC PRIMARY CARE: FROM RESEARCH TO PRACTICE

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Background: In the U.S., an estimated 70% of adolescents who died by suicide visited a primary care provider (PCP) in the year before death and 45% had contact within weeks of dying. Despite the potential for physicians to identify at risk youth, very few pediatric physicians regularly screen for suicide risk. In 2016, The Joint Commission Sentinel Event Alert 56 recommended all U.S. hospitals and medical settings to screen all patients for suicide risk. Barriers, such as physician concerns about disrupting office workflow and managing the patients who screen positive, prevent the integration of suicide risk screening into routine care. Implementation research can help alleviate PCP concerns and break down barriers that inhibit screening. The aim of this Quality Improvement Project (QIP) is to describe a real-world adaptation of implementing suicide risk screening in a pediatric primary care practice. Additional aims assess positive screen prevalence rates, ease of patient safety management, and patient, parent/guardian, and medical team acceptance of screening.
Methods: Suicide risk screening tools and management procedures were adopted by a pediatric primary care clinic in Richmond, VA. All patients ages 12 and older presenting to the primary care clinic for "well" visits were screened for suicide risk by nurses. Clinical judgment overrode age limitations and nurses were able to screen patients as young as 8 years if there was a reason for concern. All staff were trained to administer the Ask Suicide-Screening Questions (ASQ), a brief 4/5-item suicide risk screening instrument. The ASQ Brief Suicide Safety Assessment (ASQ BSSA) was used by physicians to further assess and operationalize the next steps for patients that screened positive for suicide risk. To assess feasibility of implementation, feedback surveys were administered to assess comfort, potential workflow disruption and opinions about screening. Physicians, nurses, patients and their parents/caregivers all received surveys about their experiences with suicide risk screening.
Results: A convenience sample of 271 pediatric patients ages 9 – 21 and their caregivers completed screening and feedback surveys. The patient sample was 54% female and 81% identified as White. For prevalence rates, 30 (11.44%) patients screened "non-acute" positive for suicide risk and 1 screened "acute" positive screen with current suicidal ideation. Of the patients who screened positive, half reported a past suicide attempt, the majority of which occurred in the past 1-3 years. The majority of patients completed the screening in less than 2

minutes. 65% of patients screened had never been asked about suicide before, including the patient who screened acutely positive. Most patients (91.14%) and parents (71.32%) believed that nurses should ask kids about suicidal thoughts in the pediatrician's office. Nurses (n = 11) and physicians (n = 3) overall felt comfortable screening and discussing suicidal thoughts with patients. Most nurses (91.9%) and all physicians (100%) believed that nurses should ask kids about suicidal thoughts at their health visits.
Discussion: Universal screening for suicide risk in the outpatient pediatric primary care setting is feasible and acceptable with standardized implementation guidelines. Once trained and educated about suicide risk, nurses and physicians were comfortable screening and discussing suicidal thoughts and behaviors with their patients. Given that the majority of American youth visit a PCP annually, suicide risk screening in primary care is a promising intervention for early detection and prevention.

T20. "WHAT WILL HAPPEN IF I SAY YES?" PERSPECTIVES AMONG ADULTS WITH DEPRESSIVE SYMPTOMS ON ROUTINE QUESTIONS ABOUT FIREARMS ACCESS IN PRIMARY CARE

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Background: Firearms are the most common and the most lethal method of suicide. Receipt of healthcare prior to suicide death is common. Interventions aimed at improving safe storage of firearms with patients at risk of suicide is a potentially important suicide prevention strategy. However, patient perspectives regarding how questions about firearm access should be asked or implemented in healthcare settings are unknown. Kaiser Permanente Washington recently implemented a self-administered monitoring tool to support routine mental health care across all primary care clinics, which includes a question about firearm access. As part of a broader interview study focused on understanding patients' experiences answering questions about suicidality (i.e. ideation, current intent/plans) during routine primary care, for this presentation, we sought to describe patients' perspectives regarding the standardized question about firearm access.
Methods: Electronic health record data was used to identify those who had completed the PHQ-9 at a primary care visit within 2 weeks of sampling. Criterion sampling was used to select a distribution of patients with current depressive symptoms who had answered the PHQ-9 ninth question about suicidal ideation across the full range of options and include some patients who had received the monitoring tool with the firearm question. Enrolled participants completed a 15 to 30-minute semi-structured telephone interview, which focused broadly on the experience answering suicidality-related questions and included specific probes to elicit beliefs and opinions about answering a routine firearm access question on a mental health monitoring questionnaire. Responses to the portion of the interview about firearms were analyzed using domain analysis for key themes.
Results: Twelve men and twenty-five women ages 20-95 completed the phone interview. Three organizing themes emerged from analysis, including descriptions of: 1) Apprehensions about disclosing access to firearms related to privacy, autonomy and firearm ownership rights; 2) Suggestions for connecting questions about firearms and other lethal means to suicide risk;

3) Opinions about the appropriateness of the firearm question, informed by beliefs and experience.
Discussion: Clarifying the purpose and use of a firearm access question, contextualizing firearm questions within injury prevention broadly, and discussing attitudinal beliefs and common misconceptions about suicide prevention may help to facilitate patient disclosure of firearm access and subsequent counseling for lethal means safety. Additional patient perspectives are needed to develop patient-centered recommendations for assessing firearm access.

T21. SEVERITY OF SUICIDE ATTEMPTS AND THE PREDICTION OF LONG TERM SUICIDE RISK

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Background: The severity of suicidal behavior has been suggested to include both a selection ofa method of suicide attempt, that is either lethal or violent, and high suicidal intention. Both aspects of higher severity in form of choice of a violent suicide attempt method and high intent to die have been associated with a higher risk of suicide death in certain follow-up studies regarding suicide attempters. In this clinical study of high-risk cohorts of suicide attempters, we had the following research question: does both the assessment of the reversibility of a suicide attempt and the interruption probability during a suicide attempt (measured with the Freeman scale) predict future suicide in a large clinical group of suicide attempters followed up between 4-21 years? Further, we wanted to assess the clinical utility of the scale using receiver operating characteristics and false discovery rate approach.
Methods: This study involved 209 suicide attempters (86 men and 123 women) that participated in three clinical studies between 1988 and 2005 with similar inclusion and exclusion criteria. The patients were assessed with the Freeman scale that measures reversibility of suicide method and probability for intervention. All deaths were investigated through the Swedish Cause of Death Register. Follow-up time was between 4 and 21 years.

Results: 17 patients committed suicide during the follow-up: six women (4.9%) and eleven men (12.8%). The suicide risk was significantly higher in male attempters vs. female attempters.
The major finding was that the mean Freeman total score differentiated between completed suicide (Mean + SD) (6.5 ± 1.3) and survivors (5.6 ± 1.5). The Freeman total score cut-off value of 6 points gave a sensitivity of 80% and a specificity of 47%. Positive predictive value for the

Freeman scale was 10.7%, false discovery rate was 89.3% and the Area under the Curve was 0.73.

Discussion: More severe suicide attempts evince higher suicide risk in the long term. However, due to low specificity and the relatively low base rates of suicide even applying high risk population approach, the clinically practical use of Freeman scale in the prediction of suicide on an individual level is limited.

T22. ACCURACY OF SUICIDE SCREENING: A POOLED ANALYSIS OF 16,136 PARTICIPANTS

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Background: Suicide screening is generally considered an effective way to identify individuals at risk for suicide to direct resources towards them (Posner et al., 2014). Admirable goals have been set to identify and intervene with individuals at risk for suicide at national and local levels. As such, there have been calls for increased suicide screening efforts in primary care, emergency departments, and other non-psychiatric settings. However, recent studies have called into question whether suicidal ideation (SI) and other commonly assessed risk factors are able to accurately assess risk (e.g., McHugh et al., 2019). Expanding on this recent work, we conducted the present study to determine the accuracy of suicide screening broadly, which typically incorporates SI among other purported risk factors.
Methods: As part of an ongoing pooled analysis study, a literature search was conducted using relevant databases (e.g., PsycINFO); keywords such as "suicide," "false," "accuracy," "false positive," and "suicide screening" were used to obtain 507 articles. A review of the abstracts of these articles narrowed the list to relevant studies, and a close examination of those studies yielded 8 that had sufficient data for a pooled analysis. Primary criteria for analysis were that the study (a) involved screening participants for suicide risk, (b) classified participants into high or low risk groups, and (c) reported suicide attempts or deaths as an outcome. We also extracted data relevant to time frame between screening and outcome, setting in which the screening was conducted, and demographic and other relevant participant data. Relevant data were extracted for a pooled analysis (i.e., "mega-analysis"). We chose the pooled analysis method as it avoids the assumptions of within-study normality and known variances of meta-analyses (Debray et al., 2013). Data were extracted to calculate overall correct classification, sensitivity, specificity, positive predictive value, and negative predictive value.
Results: Data were extracted for 16,136 participants from the 8 studies. The total number of participants classified as high risk for suicide was 4,735; of these, 496 attempted or died by suicide, while 4,239 did not. The total number of participants classified as low risk for suicide was 11,401; of these, 127 attempted or died by suicide, while 11,274 did not. The overall correct classification of suicide screening was 72%. The sensitivity of screening was 79% and the specificity was 72%. The positive predictive value was 10% and the negative predictive value was 98%. There was high variability in the length of follow-up.
Discussion: The overall accuracy of suicide screening was 72%, which is higher than some recent studies investigating the relationship between SI and suicide attempts (e.g., McHugh et al., 2019). Encouragingly, negative predictive value was 98% indicating that only 2% of individuals classified as low risk went on to attempt or die by suicide. However, positive predictive value was only 10% indicating that 90% of individuals classified as high risk did not go on to attempt or die by suicide. These results are limited in that they cannot identify potential differences between types of screening or setting. However, we provide evidence from a large sample that suicide screening results in a low proportion of false negatives but a high proportion of false positives. This calls for increased efforts to measure and understand the potential harms associated with false positives and misclassification of suicide risk – e.g., financial and psychological costs of unneeded treatment, involuntary hospitalization, and potential stigma associated with being labeled as high risk for suicide.

T23. ITEM RESPONSE THEORY ANALYSIS OF THE COLUMBIA SUICIDE SEVERITY RATING SCALE

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Background: The Columbia Suicide Severity Rating Scale (CSSRS) is widely used across clinical and research settings to measure suicidal ideation and behaviors. However, research on the validity of this measure is mixed. Some researchers claim the CSSRS has adequate psychometric properties (e.g., convergent and discriminant validity, sensitivity and specificity, predictive validity, internal consistency; Posner et al., 2011), whereas others describe the CSSRS as "conceptually and psychometrically flawed" (Giddens et al., 2014). The goal of this study is to psychometrically examine whether the CSSRS corresponds with extant theories and research findings regarding suicidal ideation and behaviors.
Methods: 802 racially diverse participants ages 10 to 24 completed the CSSRS. We first used confirmatory factor analysis to determine the dimensionality of the measure. Based on the design of the CSSRS that divides ideation from behaviors, as well as Klonsky and May's (2015) ideation-to-action framework, which argues that factors that predict ideation are distinct from those that predict attempt, we hypothesized that a two-factor solution would have at least adequate fit. Second, we employed a multidimensional item response theory analysis to examine item difficulty and discrimination parameters. Previous CSSRS (Mundt et al., 2013) and related studies (Borges, Angst, Nock, Ruscio, & Kessler, 2008; Oquendo et al., 2004) found that planning and history of previous attempts predict subsequent attempts beyond suicidal ideation. Therefore, we hypothesized that the items "suicidal ideation with specific plan and intent" and "actual attempt" would emerge as the most discriminating within their respective factors.
Results: Results indicated that a two-factor model of suicidal ideation and suicidal behaviors had adequate fit ($X2 = 1195.95$, $p < .001$; RMSEA = 0.08 [0.08, 0.09]; CFI = 0.97; TLI = 0.97). Inconsistent with our hypothesis, "suicidal ideation with some intent" and "interrupted attempt" emerged as the most discriminating items within their respective factors.
Discussion: These results have either implication: 1) Some of the CSSRS items are not performing as expected or 2) It is important to monitor risk among individuals who endorse the items that were found to be highly discriminating. Implications for a short form of the CSSRS are also discussed. Further investigation of specific CSSRS items may provide evidence for future improved adaptations of the CSSRS.

T24. DESIRE TO MAKE A PASSIVE SUICIDE ATTEMPT AND ITS ASSOCIATED RISK

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Background: Passive suicide ideation (SI) has been found to matter for risk determination. Even if one is not at high risk for making an active suicide attempt (i.e., the typical focus of most assessment and interventions), those who experience passive SI also deserve attention. The methodology varies greatly in what "passive SI" truly means. One way to understand passive SI is examining the desire to make a passive suicide attempt (i.e., not caring if you lived or died or deliberating not taking precautions to save or maintain life). There is a paucity of research on the desire to make a passive suicide attempt. The current study aimed to examine the desires to make a passive or active suicide attempt among a sample of U.S. actively suicidal Soldiers (N=148) from a larger randomized controlled trial.
Methods: The Scale for Suicide Ideation (current and worst versions) was used to assess suicide ideation and The Outcome Questionnaire-45 was used to assess overall psychiatric distress; both were collected at baseline and one, three, six, and twelve months. The Suicide

Attempt Self-Injury Count (SASI-Count) was used to collect a count of self-inflicted injuries (SII). The SASI-Count was collected at baseline for the last six months and across the follow-up year.

Results: Aim 1

In terms of a current to make a passive suicide attempt (SA), 71.6% (n = 106) would take precautions, 24.3% (n = 36) would leave life and death to chance, and 4.1% (n = 6) would avoid steps necessary to save or maintain life. For the desire to make a passive SA in the worst time point in their life, 56.8% (n = 84) would take precautions 29.7% (n = 44) would leave life and death to chance, and 13.5% (n = 20) would avoid steps necessary to save or maintain life.

Aim 2

For Soldier participants that currently would leave life or death to chance, the median SII at baseline was 0 (IQR = 0 to 1) and 0 (IQR = 0 to 0) for across the follow-up year. The average total score of SI at one month was 9.5 (SD = 8.1), at three months was 6.5 (SD = 7.7), at six months was 3.6 (SD = 6.3), and at 12 months was 2.7 (SD = 5.0). The average total score of overall psychiatric distress at baseline was 105.3 (SD = 28.3), at one month was 88.9 (SD = 33.4), at three months was 87.8 (SD = 35.5), at six months was 87.4 (SD = 33.7), and at 12 months was 73.4 (SD = 31.9).

For Soldier participants that would currently avoid steps necessary to maintain life, the median SII at baseline and across the follow-up year was 0 (IQR = 0 to 0.25). The average total score of SI at one month was 14.2 (SD = 5.3), at three months was 9.2 (SD = 7.0), at six months was 11.8 (SD = 7.2), and at 12 months was 8.5 (SD = 6.6). The average total score of overall psychiatric distress at baseline was 92.1 (SD = 28.3), at one month was 95.7 (SD = 28.9), at three months was 66.5 (SD = 45.1), at six months was 84.0 (SD = 36.7), and at 12 months was 81.3 (SD = 29.2).

Aim 3

There was a significant association between current desires in making a passive suicide attempt and making a SII in the past six months ($X2(1) = 11.868$, $p = .018$). SI at one month had a statistically significant difference between groups of the severity of the desire to make a passive suicide attempt in the worst time in their lifetime as determined by one-way ANOVA ($F(2,135) = 5.589$, $p = .030$). SI at six months had a statistically significant difference between groups of the severity of the desire to make a current passive suicide attempt as determined by one-way ANOVA ($F(2,145) = 5.964$, $p = .003$).

Discussion: Overall, having the desire to make a passive suicide attempt is relevant within a sample of actively suicidal Soldiers. Researchers and clinicians should consider the impact of passive suicidal ideation and the desire to make a passive suicide attempt in their assessments and interventions.

T25. COPING WITH SUICIDAL URGES: AN IMPORTANT FACTOR FOR SUICIDE RISK ASSESSMENT AND INTERVENTION

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Background: Suicide-related coping refers to strategies used by individuals to manage suicidal urges without escalating into a suicidal crisis. These strategies include using activities to distract oneself, seeking social contact, and reaching out to personal and professional supports. Suicide-related coping is targeted by several suicide-specific interventions, especially brief interventions often implemented in emergency settings. Assessment of suicide-related coping may enhance suicide prevention efforts by serving as a factor for predicting suicide risk and for targeting intervention. Also, a measure of suicide-related coping may serve as an outcome in clinical trials of services designed to prevent suicide. The current study therefore evaluated the utility of assessing suicide-related coping. The first research question examined whether suicide-related coping predicted a suicidal event in the subsequent 90-days. The second research question examined whether suicide-related coping predicted a suicidal event, independently of other known suicide risk factors.
Methods: Veterans at high-risk for suicide (N=64) were evaluated shortly after a suicidal crisis and completed several assessments, including a measure of suicide-related coping—Suicide Related Coping Scale (SRCS; 17 items with score range of 17-85). The SRCS also has two subscales assessing internal and external coping strategies. Each subscale contains seven items yielding a score between 7-35. Higher SRCS scores indicated more adaptive responses to suicidal thoughts and urges. The primary outcome was the occurrence of a suicidal event during the next 90 days, defined as the occurrence of suicidal behavior, or suicidal ideation that resulted in acute inpatient hospitalization. Suicidal events were ascertained via follow-up interviews, using the Columbia Suicide Severity Rating Scale, and review of Veterans Health Administration electronic medical records
Results: A total of 17 (26.6%) participants experienced a suicidal event within 90 days. Suicidal events by type were: actual attempt - 9 (52.9%); aborted/interrupted attempt - 2 (11.7%); preparatory behavior - 3 (17.6%); and suicidal ideation resulting in acute psychiatric hospitalization - 3 (17.6%). Univariate results showed that participants reporting more adaptive suicide-related coping were significantly less likely to have a suicidal event in the next 90 days (p=.004). Specifically, participants without a suicidal event at 90 days produced a mean SRCS score of 67.4, compared to 57.5 among those with a suicidal event. Results for the internal (p=.006) and external (p=.017) scales were also statistically significant and showed the same pattern. Multivariate analyses showed that more adaptive suicide-related coping remained predictive of a suicidal event, after adjusting for suicidal ideation, previous suicidal attempts, mood disorder, and distress tolerance (p=.046). Each SRCS unit increase was associated with a 6% lower likelihood of a subsequent suicidal event.
Discussion: Suicide-related coping is predictive of a suicidal event and may augment clinical factors commonly used in suicide risk assessment. Notably, suicide-related coping is a factor that is modifiable through interventions, such as safety planning and crisis response planning. Assessment of suicide-related coping can also serve as an outcome measure for evaluating the success of suicide prevention interventions.

T26. MOBILIZING LEADERS FOR SUICIDE PREVENTION: RECOMMENDATIONS FROM A SYSTEMATIC SUICIDE AUDIT CATEGORY

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Background: Suicide is a global public health problem. Every year there are 14 suicides per 100 000 population in the United States, 10.1 in the United Kingdom and 11.5 in Canada. Critical incident analysis is a common method to prevent adverse events in many fields. Suicide cases can also be analyzed in such a manner to better understand leading events and formulate recommendations for suicide prevention. As an example, the National Confidential Inquiry into Suicide (NCIS) has been used in the United Kingdom since 1996 and has allowed to develop prevention recommendations to patients known by specialized mental health services. Another approach is the New Brunswick suicide audit, commissioned by the provincial government, which uses psychological autopsy methods, interviews with bereaved relatives to collect information on suicide cases and a multidisciplinary panel of clinicians and managers to review the cases. Similar suicide audits have also been used by the Canadian Armed Forces. The present audit was born from an initiative led by a Quebec hospital quality administrator (and Agreement Canada surveyor) to put in place a systematic method to assess quality of regional health care and social services in the context of suicide cases and was based on the New-Brunswick suicide audit methodology as well as an adapted version of the NCIS questionnaire.
Methods: An audit of all suicide cases in the east-end of Montreal that occurred in 2016 was conducted based on the New-Brunswick suicide audit methodology as well as an adapted version of the NCIS questionnaire. The life trajectory of each person who committed suicide was reconstructed from several sources, starting from the coroner's data. Cases included police reports, some medical records and results of toxicological and body examinations, medical and social records as well as interviews with one or two relatives. Recommendations for each case were formulated based on thorough panel discussion of vignette summary. The 10-person panel included clinicians, managers, provincial representatives of a non-governmental organization for suicide prevention and families bereaved by suicide.
Results: Multiple recommendations emerged from the audit process of 39 suicide cases that is expected to conclude in summer 2019. Preliminary results (14 cases) identified the following main recommendations: (1) improving the training of professionals and the population in relation to substance-related disorders, (2) deploying mobile crisis intervention teams from emergency departments and (3) providing and facilitating access to general practitioners and primary care nurses, especially for men. Preliminary results show similar findings to New Brunswick suicide audit. Deficits in case follow-ups and referrals are among the largest gaps. In many cases, recommendations aimed to increase the level of knowledge and awareness of the population and train professionals in improving treatment, detection and referral to specialized services. Better coordination and integration of mental health care and addictions was also identified to be beneficial for cases in both audits. Surprisingly, no recommendations were initially made by the coroner for any of the suicide cases analyzed.
Discussion: According to these results, suicide audits are a promising avenue to evaluate healthcare and social services deficiencies. The added value of considering the perspective of families burdened by suicide in the process allowed to guide this vulnerable population towards resources adapted to their needs. This complementary approach to the traditional coroner inquiry allowed to formulate recommendations that come from a community perspective and are therefore also more likely to be implemented through stakeholder outreach.

T27. IMPLEMENTATION OF ROUTINE SUICIDE RISK SCREENING ACROSS A NETWORK OF BEHAVIORAL HEALTH CLINICS

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Background: Screening for suicide risk is a core component of a Zero Suicide organization. The Cohen Veterans Network (CVN) is a growing network of outpatient behavioral health clinics that provides low or no cost evidence-based care to veterans and their families. It strives to be a Zero Suicide organization and thus implemented universal suicide screening at all its clinics for all of its clients. This study aims to describe CVN's experiences implementing suicide risk screening throughout its network, with a focus on lessons learned during implementation.
Methods: CVN clinicians, who are licensed psychiatrists, psychologists, social workers, and professional counselors were motivated to conduct standardized suicide risk screening using different versions of the Columbia-Suicide Severity Rating Scale Risk with each client at intake (recent version), during their initial biopsychosocial assessment (lifetime version) and for a select group at each subsequent treatment event (recent version). Themes gleaned from historical document review and interviews with CVN staff were synthesized to articulate lessons learned.
Results: Implementing C-SSRS screening within CVN required adaptations to existing practices, the electronic health record (EHR), and clinical culture. From a practice perspective, clinicians had to be motivated to address and ask about suicide risk directly. Multiple version of the C-SSRS complicated adaptations to the EHR: prompts to complete the scale needed to be tied to the type of visit and to past version scores. From a cultural perspective, a shift towards one of collective responsibility and support was needed to ensure clinicians and clinics were supported when clients were identified as "at-risk" or otherwise in need of further consultation.
Discussion: CVN's experience implementing universal screening across its network suggests that such practice is feasible. Data suggest that compliance with screening after implementation increased. However, clinical, technical, and cultural considerations should be considered in advance to ensure a smooth implementation process. CVN is currently in the process of developing a training in C-SSRS to help new clinical staff with screening and reinforce the behavior among existing staff.

T28. TESTING THE VALIDITY OF BRIEF SUICIDE AND CLINICAL SCREENERS FOR MILITARY PERSONNEL

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Background: Based on the U.S. Department of Defense Suicide Event Report System, suicide amongst military personnel and veterans has remained at a stable high from 2012 up to 2015 (Pruitt et al., 2019). This report implicates the critical need for screening of suicide and suicide-related factors. However, screening batteries often contain multiple long assessments, which may lead to survey fatigue, attrition, and subsequent effects on validity. Brief assessments provide the ability to screen for suicide and suicide-related factors with less fatigue. Yet, the extent to which the validity of brief suicide screeners compare to full assessments has not been examined within a military population. Therefore, the purpose of this study is to determine the validity of four brief assessments of suicide and suicide-related measures compared to their full measures.
Methods: Data from the Military Suicide Research Consortium (MSRC) were used for analysis. The MSRC maintains a database of aggregated deidentified data from researchers to assist in the development of military and Veteran health and safety and the promotion of military suicide prevention research. For the current project, a total of 4,487 active and non-active duty service members were used. Assessments included the full and brief versions (e.g., 2 – 5 items) of the Beck Scale for Suicidal Ideation (BSS; Beck, Kovacs, & Weissman, 1979),

the Interpersonal Needs Questionnaire (INQ-15; Joiner, Van Orden, Witte, & Rudd, 2009), the Alcohol Use Disorder Identification Tool (AUDIT; Babor, de la Fuente, Saunders, & Grant, 1989), and the Post-Traumatic Checklist for Military Personnel (PCL-M; Weathers, Litz, Huska, & Keane, 1994). Demographics included gender, race, ethnicity, education, relationship status, deployment status, service branch, active duty status, service status, and combat experience.

Results: Each of the brief assessments loaded onto the expected univariate factor with all items loading significantly and showed measurement invariance across demographic groups. Tests of dependent correlations were used to examine the differences between brief and full versions of each scale as they predict suicide (Acquired Capability for Suicide Scale [ACSS]; Smith, Cukrowicz, Poindexter, Hobson, & Cohen, 2010] and depression (the Beck Depression Inventory [BDI]; Beck, Ward, Mendelson, Mock & Erbaugh, 1961). The full and brief BSS both predicted similar variance in the BDI (.44 vs. .39) and the ACSS (.26 vs. .29). The full INQ predicted significantly more variance in BDI and the ACSS than the brief INQ (-.71 vs. -.55 and -.25 vs -.16, respectively). The full and brief Audit both predicted similar variance the ACSS (.15 vs. .12), but neither significantly predicted the BDI (|.03-.05|). The full PCLM predicted similar variance in the ACSS as the brief PCLM (.30 vs. .24).

Discussion: Overall, results suggest that the brief screeners demonstrated construct and criterion validity. The analyses indicated that the brief and full assessments, generally, showed similar patterns with the relationships with criterion variables (i.e., depression and suicide), particularly, when considering that a decrease in prediction is expected due to having fewer items. However, the full version of the INQ did show some improvement over the brief screener version, though the screener version did perform adequately. Implications for future research suggest that the use brief screeners may be warranted, when there is a need to decrease participant fatigue, as long as the researcher is aware of potential reduction in prediction.

T29. HOPELESSNESS, INTERPERSONAL, AND EMOTION REGULATION THEORIES OF SUICIDAL BEHAVIOR: SIMULATIONS IN A HIGH RISK CLINICAL SAMPLE

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Background: More than 47,000 Americans died by suicide in 2017, the fifteenth year in a row that has witnessed an increase, and clinicians are often tasked with assessing risk of suicide based on limited intake data. Theories of suicidal thoughts and behaviors (STBs) have long been proposed in efforts to organize treatment, research, and prevention. Some researchers have articulated theoretical perspectives which should have explanatory reach beyond status quo regarding STB outcomes, yet few studies have directly compared competing STB theories. The present study represents a direct comparison of three such theories.

Methods: Data were examined from 220 patients (79 with elevated risk for suicide) seeking care at a university-affiliated psychological clinic between November 2015 and February 2019. Patients completed questionnaires prior to intake. Analyses tested the ability of theoretically relevant constructs and combinations of these constructs to relate to STB outcomes.

Results: Constructs related to Hopelessness theory—depressive symptoms and hopelessness—were significantly correlated with overall suicidality ($r = .51$, $p < .01$; $r = -.45$, $p < .01$), suicide ideation ($r = .51$, $p < .01$; $r = -.43$, $p < .01$), and suicide desire ($r = .51$, $p < .01$). Hopelessness and depressive symptoms accounted for statistically significant amount of variance explained in suicidality ($r2 = .26$, $F = 38.41$, $p < .001$), ideation ($r2 = .27$, $F = 39.29$, $p < .001$), and desire ($r2 = .28$, $F = 42.78$, $p < .001$). TB ($r = .29$, $p < .01$) and PB ($r = .39$, $p < .01$) were significantly

correlated with suicide ideation. The combination of TB, PB, and hopelessness accounted for a statistically significant amount of variance in desire, ($r2 = .32$, $F = 34.19$, $p < .001$), ideation ($r2 = .22$. $F = 20.48$, $p < .001$), and general suicidality ($r2 = .26$, $F = 24.51$, $p < .001$). Borderline features, attention seeking, manipulative, risk taking, impulsive behaviors were not significantly correlated with overall suicidality, passive suicide ideation, or active suicide desire (see Table 1). However, in linear regression models these constructs accounted for a statistically significant amount of variance in suicide ideation ($r2= .122$, $F = 6.05$, $p < .001$), desire ($r2= .214$, $p < .001$), and general suicidality ($r2= .164$, $F = 8.49$, $p < .001$).

Discussion: Most theoretically relevant constructs were statistically significant correlates of STB outcomes, and combinations of constructs accounted for significant variability in suicidality, ideation, and desire; findings are consistent with previous investigations indicating statistically significant associations between general risk factors and STB outcomes. However, theoretically relevant constructs did not improve upon general risk factors in the overall outpatient population, and theories demonstrated suboptimal accuracy among participants with elevated suicide risk.

This project provides direct comparisons of theoretical constructs and suggests that suicide risk assessment is similarly accurate when informed by Hopelessness, Interpersonal, and Emotion Regulation theories of suicidal behavior. Importantly, a comprehensive meta-analysis of longitudinal effects predicting STB outcomes is needed to compare the predictive ability of these STB theories.

T30. SERVING PROVIDERS WHO SERVE VETERANS: THE IMPACT OF A CONSULTATION PROGRAM FOR PROVIDERS OF VETERANS AT RISK FOR SUICIDE

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Background: The Department of Veterans Affairs (VA)'s Suicide Risk Management Consultation Program (SRM) provides consultation to providers serving Veterans at risk for suicide. This program offers free phone or email-based consultation by suicide prevention experts to providers on topics including risk assessment and management, lethal means safety counseling, and postvention. It also serves as a vehicle for the dissemination of suicide prevention best practices.

Methods: The SRM team conducts program evaluation to explore program effectiveness as well as ensuring programmatic changes are data-informed and aimed at meeting the evolving needs of the providers served. Data are collected on the consultation question as well as descriptive information about the provider and Veteran. Additionally, the SRM team collects provider satisfaction survey data at the completion of and two months after the consultation. This presentation will present program evaluation data from the two-month follow-up surveys, including common SRM consultation characteristics and provider satisfaction data.

Results: Compelling data from the two-month follow-up surveys ($n = 47$) include: 87% of providers endorsed that consult recommendations led to enhanced risk assessment and/or management for the Veteran about whom the consultation occurred; 89% of providers reported improved documentation about risk assessment/management and 93% endorsed improved documentation overall; 95% have applied the recommendations or resources provided in the consultation to other Veterans; and 95% reported improved confidence in risk

assessment/management skills. Descriptive data about consultation questions and information about the provider and Veteran will be reviewed as will qualitative feedback.
Discussion: These data help provide us with insight into a novel consultation program for providers who serve Veterans at risk for suicide. Expanding the reach of SRM is worthwhile given the reported positive impact of consultation for both providers and Veterans. Limitations include the self-report and survey-based methods of data collection. Future objective data collection plans will be discussed time permitting.

T31. ATTACHMENT-BASED FAMILY THERAPY COMPARED TO TREATMENT AS USUAL FOR ADOLESCENTS WITH SUICIDAL IDEATION: A RANDOMIZED CONTROLLED STUDY

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Background: Commonly defined as ideas and thoughts about death and harming or killing oneself, suicidal ideation spans a spectrum of thoughts from passive wishes for death to serious and specific plans of taking one's life. Suicidal ideation is one of the strongest risk factors for suicide attempts and death by suicide, both in adolescence and adulthood. A large proportion of adolescents with depression report suicidal ideation. Attachment Based Family Therapy (ABFT) is one especially promising intervention to treat adolescents with suicidal ideation and depression. ABFT is a manualized family-based intervention developed for working with adolescents at risk for suicide, and their families. It is an empirically informed and supported treatment. ABFT is heavily informed by attachment theory and clinical roots in structural family therapy and emotion focused therapies. The objective of this study was to evaluate whether Attachment-Based Family Therapy (ABFT) is more effective than Treatment as Usual (TAU) in reducing suicidal ideation in adolescents with depression.
Methods: Data for this study came from a randomized controlled trial of adolescents with depression conducted at two Child and Adolescent Mental Health Service clinics in the county of Akershus, Norway. Of 276 screened, 60 adolescents, aged 12 to 17 years with primary DSM-IV diagnosis of major depressive disorder (MDD) were included and randomized to 16 weeks of ABFT or TAU. Assessment occurred at baseline, 4, 6, 8, 12, 16 weeks. Most data were collected electronically using a secure online platform. ABFT consisted of individual and family meetings and followed the treatment manual. The analyses were conducted using the Intention-to-treat-principle, Linear Mixed Model was used to estimate if ABFT was more efficacious than TAU in reducing suicidal ideation measured by Suicidal Ideation Questionnaire - JR.
Results: There were no significant difference between ABFT and TAU in the effectiveness of reducing suicidal ideation. Adolescents in both treatment groups showed some reduction in suicidal ideation. More detailed results will be provided later.
Discussion: In this study, there were no differences between ABFT and TAU at posttreatment in suicidal ideation. Suicidal ideation was reduced significantly in both groups from pre to post treatment. It is important to mention that the target of the study was not adolescents with suicidal ideation, but adolescents with MDD. ABFT has previously been studied in tightly controlled efficacy studies with highly trained and supervised therapists and showed very promising results with adolescents with suicidal ideation. Our study was set in a non-academic,

real world clinical setting. ABFT was compared to TAU, and not wait list control as many other treatment studies. All clinicians were regular staff, trained to effectively utilize the ABFT treatment protocol with depressed adolescent. There are many possible explanations for our results; small sample size, missing data and ABFT therapist may have needed more training to be a sufficiently skilled in ABFT to demonstrate an effect. Taken together with previous studies on ABFT, there is still not enough evidence to support the implementation ABFT in clinical setting. More randomized clinical trials are needed to create the necessary body of research to meet the standard for evidence-based treatments. The process of exporting empirically validated treatments to real-world clinical settings is challenging, but a necessity.

T32. CARRYING THE BURDEN: ARE CAREGIVERS OF SUICIDAL VETERANS AT RISK FOR SUICIDE THEMSELVES?

Angela Page Spears[1], Sarah Sullivan*[1], Marianne Goodman[1]

[1]James J. Peters Veterans Affairs Medical Center

Background: Suicide is the 10th leading cause of death in the United States. Despite increased recognition and enhanced safety measures within VA, such as suicide safety planning (SSP; Stanley et al., 2008), 20 Veterans a day die from suicide. The President's New Freedom Commission report funded 19 initiatives from 2005-2007 to implement family psychoeducation. However, with inclusion of family members to support Veterans in their care, novel research at the James J Peters VAMC has begun to explore family outcomes as well. Theory and research suggest that patients often feel burdensome to their families and family members (e.g., caregivers) may experience increased stress and burden due to their caregiver duties. Due to these risk factors, family members who care for those at risk for depression or suicide have begun to be screened for suicidality themselves. Therefore, we sought to explore the differences in caregiver burden amongst family members with and without suicidality in the past two weeks.

Methods: Twenty-eight caregivers of Veterans at risk for suicide consented to participate in a novel safety planning treatment with their Veteran counterpart at the James J. Peters VA Medical Center. All veterans were receiving mental health services and had a history of suicidal attempts or current suicidal ideation. Additionally, family members/friends must meet at least three (two for nonrelatives) of five criteria established by (Pollak & Perlick, 1991): Spouse, co-habiting significant other or parent; More frequent contact than any other caregiver; Helps to support the Veteran; Contacted by treatment staff for emergencies; Involvement in the patient's treatment (past or willingness in future). Caregivers completed the Caregiver Burden Inventory (CBI; Novak et al., 1989), a 24-item Likert- format scale, that is used to measure perceived caregiver burden and the Beck Depression Inventory- II (BDI-II; Beck et al., 1996) as part of their assessment battery. For the purpose of this poster, question 9 for the BDI-II was coded into binary yes/no responses to indicate the presence of any suicidal thoughts/actions.

Results: In this sample 25% of caregivers reported some level of suicidal ideation or behavior in the past two weeks. To address the levels of burden on the CBI, groups were compared with an independent samples t-test. Findings suggest, burden scores were higher in caregivers who endorsed any suicidality (M=37.71, SD=26.329) compared to non-suicidal caregivers (M=22.81, SD=14.959); however, this difference was not currently significant; $t(26)= -1.874$, $p = .072$.

Discussion: This research suggests the caregivers for Veterans at risk for suicide may be at greater risk for suicide themselves if they experience increased burden. A limitation in this data is the small sample size, as a larger sample may help us to better understand group differences. Data collection is ongoing and an updated dataset will be presented if accepted. This work

shows a potential gap in current suicide prevention research and suggests the need for future research and treatments to address these outcomes.

T33. RE-BUILDING THE MILITARY UNIT DOES A SUICIDE SAFETY PLANNING GROUP HELP PREVENT SUICIDE? PRELIMINARY RESULTS OF PROJECT LIFE FORCE VS. TREATMENT AS USUAL RCT

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Background: Our research laboratory developed Project Life Force (PLF), a novel 10-session, group intervention, that combines skills training, psychoeducational approaches, and social support to maximize suicide safety planning development and implementation. Participants revise their plans over several weeks while learning coping, emotion regulation, and interpersonal skills. Sessions also include role plays, such as practicing asking for help and how best to share the SSP with family or friends. The PLF intervention was first piloted after becoming a recipient of a VA Small Projects in Rehabilitation Research (SPiRE) grant pilot where the manual was finalized. PLF had very encouraging results and was awarded a Clinical Sciences Research & Development VA Merit Grant for a multi-site randomized clinical trial that began in October 2018. This poster will now examine whether the PLF group experienced significant clinical changes (as determined by our primary outcome assessments) and whether the intervention arm experienced group cohesion (measured during sessions 1, 5 and 10).

Methods: Veteran participants were assessed in-person at baseline and at months 3 (immediately post intervention). After the baseline assessment, our goal is to randomize 265 Veterans to either the PLF intervention or treatment-as-usual.

The effect of treatment on suicidal behavior is examined through a Cox Proportional Hazard Regression, with treatment condition (PLF vs. TAU) and baseline suicidal behavior level as predictors, and incidence and time to the first suicidal behavior during the study as the outcome variables. Random effects (cluster effects) are included for the treating clinician (TAU group subjects) or the PLF group (for the PLF subjects). Kaplan-Meier estimates of the cumulative hazard function for both groups and all clusters (clinician/PLF within site) are graphed and the proportionality assumption checked.A sensitivity analysis will test the effect of baseline suicidal behavior severity by splitting the treatment conditions by the two strata (presence/absence suicidal behavior). This analysis would not account for clustering by clinician/PLF group, and thus would be used in conjunction with a mixed effect logistic regression analysis with binary outcome measure, with subject- and clinician/PLF group-specific random effects.

Results: During the pilot study, three scales – Beck Depression Inventory-II (BDI-II), Beck Hopelessness Scale (BHS), Beck Scale for Suicide Ideation (BSS) – were examined pre-and post-treatment, and the results of the post-intervention were significantly lower than baseline results. A paired samples t-test was performed to compare pre- and post-intervention scores of depression, hopelessness, and suicidal thinking. Pre-post comparisons indicated that PLF decreased suicidal ideation [$t(20)=4.41$, $p=.0001$], decreased depressive symptoms [$t(20)=3.99$, $p=.001$], and reduced hopelessness [$t(20)=2.33$, $p=.030$]. Therefore, this open-

label, novel treatment has been effective for this suicidal Veteran population. Our team looks forward to presenting the preliminary findings of the RCT. To date, there are no baseline differences between those randomized to the intervention arm and those in the control arm.
Discussion: The PLF study recruitment has been excellent to date with many referrals from the inpatient unit staff and Suicide Prevention Coordinators. Thus far 43 Veterans have been consented, 38 have been randomized, and 15 follow ups have been completed. The goal for this poster is to compare changes from baseline to 3-month mark (post intervention for those in the PLF group), particularly understanding increases in group cohesion in those in the intervention arm.

T34. DBT-BASED SKILLS TRAINING FOR FAMILY MEMBERS OF SUICIDAL PATIENTS

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Background: The involvement of significant others is an objective in suicide prevention and there is a need for development of interventions for this group. The aim of this open naturalistic study was to evaluate the feasibility and the preliminary efficacy of Family Connections (FC) for significant others of suicidal patients, a nine-week manualized skills training program based on dialectical behavioral therapy (DBT) in a clinical context.
Methods: The intervention program aims to enhance the knowledge of symptoms and behaviors connected with attempted suicide. Furthermore, it introduces stress-coping strategies and emotion regulation skills. Out of 132 participants in total, 104 (79%) completed the program. Included in the analysis were the 86 (65%) participants who completed the program and also had both pre- and post-intervention assessments. The Burden assessment scale, BAS, the Questions About Family Members scale, QAFM, and the Five Facet Mindfulness Questionnaire, FFMQ, were used to assess perceived burden, relationship climate and five facets of mindfulness respectively.
Results: The results showed a significant reduction in perceived burden, measured by BAS and a significant change in the mindfulness scale FFMQ subscale Acting with Awareness, which indicates an enhanced ability to be present in the moment. None of the four subscales in QAFM showed significant changes between the pre- and post-intervention assessments.
Discussion: The results support the feasibility and potential value of the implementation of an intervention for family members and friends of suicidal patients in psychiatric care. Randomized controlled studies are needed to generate further evidence.

T35. ASPIRE-2: A PHASE 3 RANDOMIZED STUDY OF ESKETAMINE NASAL SPRAY FOR RAPID REDUCTION OF MAJOR DEPRESSIVE DISORDER SYMPTOMS IN ADULT PATIENTS AT IMMINENT RISK FOR SUICIDE

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Background: Major depressive disorder (MDD) is the psychiatric illness most commonly associated with suicide. Available antidepressants take weeks to exert efficacy and thus, fail to provide rapid relief of depressive symptoms, including suicidal ideation (SI), in acutely suicidal

patients with MDD; there are currently no approved treatments for this population. In 2016, esketamine (ESK) was granted breakthrough therapy designation by the US Food and Drug Administration for patients with MDD at imminent risk for suicide based on data suggesting rapid reduction in depressive symptoms, including SI, observed at 4 hours after an initial dose of ESK nasal spray in a phase 2 study. The efficacy and safety of ESK nasal spray is being further evaluated in ASPIRE-2, one of two phase 3 studies in the first global registration program in an understudied population of patients with MDD, assessed to be at imminent risk for suicide.

Methods: ASPIRE-2 (NCT03097133) is an ongoing double-blind (DB), randomized, placebo-controlled study being conducted in Argentina, Austria, Belgium, Brazil, Canada, Czech Republic, France, Lithuania, Poland, Spain, Turkey and the United States. Adult patients (18 to 64 years) with MDD (DSM-5 criteria, confirmed by Mini-International Neuropsychiatric Interview [MINI]), with active SI and intent and in need of psychiatric hospitalization were eligible. All patients received optimized standard-of-care (SoC: hospitalization and initiation/optimization of new oral antidepressant treatment). Patients were randomized (1:1) to ESK (84 mg) or placebo nasal spray twice weekly for 4 weeks, in addition to SoC. Change from baseline (day 1, predose) to 24 hours after first dose in Montgomery-Åsberg Depression Rating Scale (MADRS) total score (primary endpoint) and Clinical Global Impression–Severity of Suicidality–Revised (CGI-SS R) from the Suicide Ideation and Behavior Assessment Tool (SIBAT) were assessed for efficacy. Treatment-emergent adverse events (TEAEs), potential suicidal events from the SIBAT and dissociative effects (Clinician-Administered Dissociative States Scale [CADSS]) were monitored for safety.

Results: In total, 230 patients were randomized to ESK+SoC or placebo+SoC groups of which, 227 patients received either of the assigned medications. A total of 184/230 (80%) patients completed the DB treatment. Patients (n=227) had mean (SD) age of 40.8 (13.07) years and the majority were women (60%). The mean (SD) baseline MADRS score was 39.7 (5.48). Most patients had moderate (30%) to marked suicidal severity (40%) on the CGI SS R scale and had more frequent suicidal thoughts (often: 49%) that were moderate or severe (48%, each) in intensity as assessed by MINI. Of 227 patients, 150 (66%) had a prior suicide attempt and 60 (26%) attempted suicide within the last month of study start. Key efficacy and safety results will be presented.

Discussion: MDD patients with active suicidal ideation and intent represent a vulnerable group in need of rapid treatment of their symptoms. ASPIRE-2, along with ASPIRE-1, comprise a novel program that focuses on addressing depressive symptoms including SI in patients with MDD at imminent risk for suicide, and who are typically excluded from clinical studies of antidepressants.

T36. SOCIODEMOGRAPHIC DIFFERENCES IN BARRIERS TO MENTAL HEALTH CARE AMONG A DIVERSE SAMPLE OF SUICIDAL COLLEGE STUDENTS

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Background: Prevalence rates for mental health disorders and suicidal thoughts and behaviors are high among college students, yet a majority of individuals with a mental health disorder or

suicidal thoughts do not seek formal treatment. Few studies have made direct comparisons to determine the extent to which particular barriers are more prominent for at-risk individuals within different sociodemographic groups. The specific aims of our study were to 1) identify barriers to care among college students at elevated suicide risk who were not currently receiving treatment, and 2) determine the extent to which these barriers varied as a function of: age, gender, race/ethnicity, and sexual orientation.

Methods: Participants were 3,375 college students at four US universities who screened positive for elevated suicide risk (2 or more of: depression, alcohol misuse, suicidal ideation, suicide attempt) and were not currently receiving mental health treatment. The sample was 62.2% female, 59.1% White, 59.9% heterosexual, and 47.2% were young (18-19 years old) undergraduates (UG). Participants were able to check all that apply from a list of 24 barriers that included a range of different attitudes, beliefs, and experiences. Binary logistic regressions examined associations of demographic factors for seven barrier categories (perceived problem severity, privacy/stigma, questioning helpfulness, logistics, time, finances, cultural sensitivity), controlling for total barriers endorsed, past year treatment, depression, alcohol use, past year suicidal ideation, lifetime suicide attempt, and university site.

Results: The most commonly endorsed individual items included lack of time (66.7%), questioning seriousness of needs (65.1%), and feeling as though stress is a normal aspect of being a college/graduate student (57.6%). Other commonly endorsed individual barriers included financial concerns (49.2%), concerns about perception by others (41.0%), and questioning usefulness of treatment (40.5%). Young (18-19-year-old) UG students had greater odds of reporting barriers of perceived problem severity and privacy/stigma concerns. Young UGs had significantly lower odds than older (20-25-year-old) UGs and graduate/professional students of reporting barriers for time, finances, and logistical concerns. Women had greater odds of reporting barriers related to time and finances, whereas men had greater odds of reporting barriers regarding stigma and privacy. Transgender/genderqueer students had greater odds for barriers related to finances and cultural sensitivity. White students had greater odds of reporting barriers of perceived problem severity, questioning the usefulness of treatment, and lack of time. Relative to White students, Asian students had greater odds of reporting privacy/stigma concerns, Black students had greater odds of endorsing financial and logistical concerns, and all racial/ethnic minority groups had greater odds for cultural sensitivity barriers. Heterosexual students had greater odds of reporting barriers of perceived problem severity and were more likely than bisexual students to question the helpfulness of therapy. Bisexual and gay/lesbian students had greater odds of citing financial concerns, and all sexual minority groups had greater odds of endorsing cultural barriers relative to heterosexual students.

Discussion: Barriers to mental health care among suicidal college students vary as a function of sociodemographic differences. As such, efforts to increase treatment seeking among these at-risk students must be appropriately tailored to address the different barriers these individuals face as a function of age, gender, race, and sexuality.

T37. ELECTROCONVULSIVE THERAPY IN THE MANAGEMENT OF ANOREXIA NERVOSA WITH COMORBID TREATMENT RESISTANT DEPRESSION AND SUICIDALITY

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Background: Major depressive disorder (MDD) is common in anorexia nervosa (AN), associated with worse outcome and greater suicidal risk. Electroconvulsive therapy (ECT) is highly effective in the treatment of MDD refractory to anti-depressants. We describe a case

series of female adolescents with AN receiving ECT for treatment resistant MDD with severe suicidal risk.
Methods: We retrospectively analyzed the files of all 30 adolescent females hospitalized in our department due to AN between 1998-2017 and treated with ECT. Severity of eating disorder (ED) and depressive symptoms was retrospectively assessed using the Clinical Global Impression-Severity Scale.
Results: Patients were severely depressed, suicidal on admission and resistant to ant-depressants. A significant deterioration in depression, with severe suicidality, occurred from admission to pre-ECT time point, despite improvement in ED symptoms and increase in body mass index (BMI). Significant improvement in depressive and ED symptoms and increase in BMI occurred following ECT, continuing to discharge. Adverse effects were mostly minimal. Six patients discontinued the ECT for reasons unrelated to treatment efficacy and adverse effects.
Discussion: ECT is effective, safe, and well-tolerated in female AN inpatient with severe comorbid treatment resistant MDD and increased suicidal risk. Depressive and ED-related symptoms follow a different course before ECT, and a similar course post ECT.

T38. SUICIDE IDEATORS IN CBT-INFORMED DBT: EFFICACY AND MODERATING EFFECTS OF BORDERLINE STATUS AND LEVEL ONE BEHAVIOR

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Background: Developed to better aid suicidal patients with Borderline Personality Disorder (BPD), Dialectical Behavior Therapy (DBT) targets reduction of suicidal and nonsuicidal self-injury (NSSI) behaviors by enhancing patients' abilities to regulate emotion and tolerate distress (Miller, 1999). DBT has been shown to reduce patients' suicidal behavior and NSSI, but there is less support for its efficacy in reducing suicidal ideation; this discrepancy suggests DBT providers may underemphasize cognition in their emotion/behavior-focused training and treatment planning (DeCou, Comtois, and Landes, 2018).
Methods: The present study employed a multilevel model to analyze Diary Card self-reports of suicidal ideation completed by 42 adult participants (mean age: 27.64; 31 [73.81%] female; 21 [50%] White) during their first four weeks and last four weeks in CBT-informed DBT treatment at a Southern California outpatient private practice and training center: it was hypothesized that DBT treatment with clinicians also formally trained in CBT would lead to post-treatment reductions in participants' suicidal ideation. Due to DBT's classical association with BPD and focus on self-injury, it was also hypothesized that participants with BPD would experience greater post-treatment reductions in suicidal ideation than did participants without BPD, and that participants who reported Level 1 Behavior would experience greater post-treatment reductions in suicidal ideation than participants who did not.
Results: This analysis displayed significant reductions in suicidal ideation from pre-treatment (M=1.033, SE=.182) to post-treatment (M=.403, SE=.092) across all participants $F(1,41.732)=20.875$, $p< .001$, confirming the primary hypothesis. The model also demonstrated that participants with BPD experienced significantly greater post-treatment reductions in suicidal ideation $t(41.733)=-2.527$, $p=.015$, confirming the secondary hypothesis. However, the model displayed no moderating effects of Level 1 Behavior on changes in

suicidal ideation, nor any interaction effects between Level 1 Behavior and BPD status on changes in suicidal ideation.
Discussion: These findings indicate that CBT-informed DBT treatment, while most helpful for patients with BPD, can significantly reduce suicidal ideation in adult suicide ideators regardless of BPD status or prior Level 1 Behavior. Future research may evaluate mediators of change to suicidal ideation in CBT-informed DBT.

T39. VIGILANS: A BRIEF CONTACT INTERVENTION EFFECTIVE IN PREVENTING SUICIDAL BEHAVIORS

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Background: Attempted suicide is a major risk factor of further re-attempts and death. Suicide behaviors are related to multiple causes and treatment adherence is poor. Effective interventions can rely on a brief contact aimed at “stay in contact” program. The heterogeneity of this population is best taken into account with an algorithm to adapt this "stay in contact" strategy.
Methods: Vigilans is such a routine care program, built on ALGOS research program experience; it consists in (1) delivering a crisis card for all suicide attempters; (2) giving a phone call for re-attempters to re-assess their situation between the 10th and 21st day after their discharge, and to propose a new intervention if needed; (3) and in case of an unsuccessful call or a refusal of proposed care, sending personalized postcards for 6 months. All these informations are shared with the general practitioner of the patient. The aim is to enhance a “connectedness feeling” with the patient. The programs are delivered in ERs of Nord - Pas-de-Calais Region (4 million people).
Evolution of the number of suicide attempts was measured before and after implantation of VigilanS, using two types of analysis: a first from the national medical information systems in Medicine-Surgery-Obstetrics (PMSI-MCO) and a second from the collection of the ER stays for SA in the hospitals involved in the VigilanS program.

All the VigilanS activity is recorded in an homemade medical software (patient inclusion, incoming and outgoing phone calls, postcards sendings), that helps monitoring the case management.

Results: In 2014 (a year before VigilanS starts), a total of 10.119 ER stays for SA was observed (5.626 women and 4.463 men); in 2017, the total was 9.230 stays for SA (5.047 women and 3.839 men), representing a decrease of 13.5%. The reduction was balanced between men (−14%) and women (−10%). Based on the figures of PMSI, we see an acceleration of the reduction of stay for SA in the Nord-Pas-de-Calais after 2014 (16% instead of 6%), instead of the two Picardy departments the most comparable which show a degradation of the phenomenon (+13%), and opposed to the Department of the Oise which shows a stable maintenance of the current decline (−12%). This decrease was correlated with inclusion rate of the ER ; furthermore an increase was noticed (+ 11.7%) where the inclusion rate was low (< 25 %).
The first aim was to create a connectedness feeling by the patients. The responses we got by patients’ postcards show that this goal is achieved. The program has evolved since towards a

real new ability to create a crisis intervention by phone. We have seen an increase in incoming calls (1.059 in 2016, 2.426 in 2018), and an evolution on incoming calls characterization : "Everything is fine" calls 45%, "Crisis state" calls 45% in 2015, "Everything is fine" calls 14%, "Crisis state" calls 81% in 2018.

Discussion: There is a question about the extent with which the suicide behaviors are well coded. Are all suicide attempts well identified? Also, there was an effort to improve this coding at the same time, that could have lowered the measure of the efficacy of VigilanS. There is a question about the decrease in first attempters, who are not supposed to have beneficiated of VigilanS. Has VigilanS deployment been a stimulation over healthcare teams? Has there been, a better connection between ERs, psychiatrists and general practitioners?

T40. A COMPARISON OF TRICYCLIC ANTIDEPRESSANT PRESCRIPTIONS BETWEEN PATIENTS WITH AND WITHOUT IDENTIFIED SUICIDAL IDEATION

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Background: Research has demonstrated the toxicity of Tricyclic Antidepressants (TCAs) and has identified that TCAs are implicated in intentional self-poisoning deaths. Limited data exists on current trends in TCA prescribing, specifically among primary care providers and for patients with identified suicidal ideation (SI). This study aimed to fill this gap.

Methods: A retrospective secondary data analysis of electronic health record data for 6535 TCA prescription orders at a large Federally Qualified Health Center (FQHC) network was performed. Data included orders for 1805 patients who received TCA prescriptions between July 2013 to July 2016. Differences in prescriptions were compared between patients with and without identified Suicidal Ideation (SI) for indication, drug type, dose, quantity, number of refills, and specialty of provider. Analyses were completed using SPSS statistical software, and the Pearson Chi-Square Statistic or Test for Linear Trend was utilized as appropriate.

Results: In total, 127 patients with a history of SI received TCAs. Patients with identified SI were prescribed TCAs for mental health reasons 67% of the time, while non-suicidal patients were prescribed TCAs most often for pain (51%).

Patients with identified suicidal ideation received prescriptions that had fewer refills and were less likely to receive prescriptions written for 90 days or more. Overall, psychiatrists prescribed fewer refills and smaller quantities of TCAs than other providers (all comparisons, $P < 0.001$).

Discussion: Data on current TCA prescribing practices is quite limited. This work describes current trends in TCA prescribing at an integrated Federally Qualified Health Center (FQHC), providing a unique perspective by specifically focusing on prescriptions to patients with identified suicidal ideation.

Providers at a large FQHC network prescribe TCAs with fewer refills and reduced quantities when prescribing to patients with identified suicidal ideation. However, non-psychiatry providers seem to be less likely than psychiatrists to consider safety concerns when prescribing TCAs. These results suggest additional education may be needed for primary care providers around the dangers of prescribing TCAs to individuals with SI. Specific interventions that could be considered include reducing the number of refills to 1 and limiting prescriptions to less than 90 days for TCAs.

T41. REPORT OF 2 CASES OF MAGNESIUM OXIDE USE FOR THE TREATMENT OF CHRONIC SUICIDALITY IN PATIENTS WITH BIPOLAR I DISORDER

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Background: Magnesium Oxide (in daily doses of 500-1500 mg / day, distributed tid or qid) coupled with calcium intake restriction (< 30% of RDI), is reported to control suicidality in cases of Impulse Attack Suicidality Disorder (IASD).
Methods: We report 2 cases in mood chart format documenting the concurrent changes in mood states, suicidality phenomena, and pharmacological treatments and highlighting the disappearance of suicidal phenomena in response to magnesium oxide.
Results: Both cases were female (ages 31 and 46) with Bipolar I Disorder (BPI) and Impulse Attack Suicidality Disorder. The Bipolar Disorder episodes appeared years after the onset of the suicidality phenomena. Successful treatment to euthymia in both cases did not provide an improvement in suicidality. Much later, the regimen of magnesium oxide was associated with a rapid disappearance of suicidality (response in less than 14 days), maintained long-term for 2 years (case 1) and 6 months (case 2). The magnesium was well tolerated.
Discussion: These findings are consistent with a prior report of the value of magnesium oxide and calcium restriction, in controlling chronic suicidality in a subject with IASD, whose suicidality did not respond to lithium. We found a rapid response to magnesium in spite of prior lack of anti-suicidality efficacy of lithium in both cases, and clozapine in one of them. These are the first reported cases with BDI to respond in this way. The BDI and the suicidality evolved and responded in different ways suggesting that this IASD phenotype may be an independent suicidality disorder.

T42. ASSOCIATION OF SEXUAL MINORITY YOUTH AND SUICIDAL IDEATION: THE MODERATING ROLE OF GAY- STRAIGHT ALLIANCES

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Background: Suicide is the second leading cause of death among adolescents aged 10-25. Extensive research has identified that sexual and gender minorities are populations at a higher risk of suicidal thoughts and behaviors. It has been theorized that specific social stressors, such as experiences of discrimination and violence in school settings, interact with socio-interpersonal processes that place these populations at higher risk of suicidality. The presence of Gay-Straight Alliances (GSAs) in schools has been associated with better school experiences for sexual and gender minorities and has been linked with less suicidality amongst sexual minority students. Yet, little is known about the possible protective impact that GSAs have at a state level for sexual minority youth. The present study explores the impact that GSAs have on sexual minority youth reporting of suicidal ideation at a state level by; 1) estimating the association of sexual minority students and their likelihood to report suicidal ideation and 2) assessing the moderating effect that the percentage of GSAs per state have on this association.
Methods: The present study integrated data from the 2017 Youth Risk Behavior Surveillance Survey (YRBSS) (n=77436) and the 2016 School Health Profiles (SHPs), specifically, from the states of Arizona, Arkansas, California, Delaware, Florida, Hawaii, Illinois, Kentucky, Maine, Michigan, Nebraska, Nevada, New Hampshire, New York, North Carolina, North Dakota, Pennsylvania, Rhode Island, South Carolina, West Virginia, and Wisconsin. From the

YRBSS, we extracted data for sexual minority status (i.e., Gay or Lesbian, Bisexual, and Not Sure) and reporting of past year suicidal ideation. From the SHPs we draw the percentage of GSAs by state.
Results: Sexual minority students had a fourfold increase in odds of reporting suicidal ideation (OR= 4.00; p=.0001; 95% CI=3.83-4.18). Additionally, the percentage of GSAs per states moderated the association of being a sexual minority student and reporting suicidal ideation, such that sexual minority adolescents in states with a greater proportion of GSAs were less likely to report suicidal ideation (OR=0.60; p=.02; 95% CI= 0.40-0.91). For example, sexual minority students who lived in Arkansas and North Dakota, (i.e., states with lower proportions of GSAs) displayed a greater likelihood of having experienced suicidal ideation (OR= 3.35; p= .0001; 95% CI= 2.75-4.09) compared to those who lived in Rhode Island and New York (i.e., states with higher proportions of GSAs) (OR= 2.67; p=.0001; 95% CI= 2.41-2.95).
Discussion: The present study further explores the protective impact that GSAs have on sexual minority youth and their risk of suicidal ideation. As a limitation, because this is a cross-sectional study, inferences about prospective or causal associations are not possible. Beyond this, the percentage of GSA is aggregated to the state level and does not represent the individual school of where the participants attended. These limitations aside, promoting GSAs in school settings represent a feasible intervention to help prevent suicide among vulnerable adolescents.

T43. EXAMINING THE PERSONAL NETWORKS OF AMERICAN INDIANS AT RISK FOR SUICIDE TO BETTER UNDERSTAND SOCIAL RISK FACTORS

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Background: American Indian and Alaska Native (AI/AN) communities have the highest suicide rate compared to all other ethnic groups in the United States. While public health scholars have a history of working with social network scholars to understand and reduce suicide in the general population, similar efforts have not yet been made with AI/AN populations. Social relations (i.e., kinship, extended-kin, peers, and community) are a salient feature of AI/AN culture. Geographic isolation, shared historical trauma, and rich cultural practices establish a context in which social relationships are at the core of reservation life. The limitations of the current literature in exploring AI/AN suicide through a culturally congruent relational lens hinders interventions and prevention efforts.
Methods: This study uses personal networks collected among American Indians living on reservation in the Southwest. The primary aim of this study was to assess the social relationship characteristics that underlie the suicidal behavior of those who have attempted suicide compared to their network members that have not attempted suicide. The study population is a reservation-based tribe in the southwestern U.S. Participants were recruited through a tribally mandated suicide surveillance system and 13-24 years of age.
Results: First, univariate analyses will be presented to provide a description of demographic characteristics, suicide history and substance use history for both study groups (suicide ideation vs. suicide attempt). Second, we will also present networks differences by age and sex. Third, network characteristics including homophily and reciprocity will be presented. Finally, we will describe the types of social support networks these at-risk youth have (e.g., who do they go to for support).
Discussion: Documenting the processes that govern social connections among AI/AN that have recently attempted suicide can provide meaningful insight into the processes that may be unique to this high-risk group. Taking an empirically rigorous relational approach that is also

culturally appropriate, may provide a promising intervention and prevention programming route, not yet explored.

T44. AUTISM AND SUICIDE: A CASE REPORT

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Background: Individuals with autism spectrum disorder (ASD) experience higher rates of suicide when compared with general population; the majority of autistic adults score above the recommended psychiatric cut-off for suicide risk on the SBQ-R. However, there is a lack into why is the case and which are the risk markers.
Methods: A case report based in a male hospitalised in an acute Psychiatric unit from May to June 2018 affected with Autism spectrum disease.
-Bibliography review.

Results: Case description, considering risk factors and sociodemographic variables.
Discussion: Suicide is a public health crisis but individuals with high levels of autistic traits are more likely to experience depression and burdensomeness, thereby increasing the risk of attempting suicide. Nevertheless, studies report a wide range of self-harm thoughts and behaviours in ASD population.

T45. THE PSYCHOLOGY OF SUICIDE IN LAW ENFORCEMENT: SUBCULTURE AND STIGMA

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Background: The prevalence of mental illness within the law enforcement community is largely unknown. This may be due to distrust of mental health professionals and the stigma that comes from expressing a need for outside help. For many in law enforcement seeking outside help may indicate weakness and inability to effectively for their job. Additionally, the subculture of law enforcement professionals is a closed and non-inclusive one. It can be incredibly difficult for an "outsider" to be welcomed and trusted. This presents problems for mental health professionals seeking to help police officers and other law enforcement professionals through traumatic events they experience while on the job. Due to this exclusivity, it may inadvertently contribute to law enforcement suicide rates.
Methods: Current research shows that law enforcement are at a larger risk to develop serious, possibly debilitating, mental illnesses; such as Posttraumatic Stress Disorder (PTSD), depression, anxiety, and suicidal ideation. The development of these disorders is due in part to significant stress and repeated exposure to occupational trauma. The current research methodology for providing care to law enforcement include providing multiple suicide prevention and wellness programs in service of reducing stigma. There is little longitudinal research being done right now to indicate if these programs are reducing stigma and reinforcing reaching out for support from mental health professionals.
Results: The law enforcement subculture is closed and lacks trust of outsiders in service of providing a safe environment for its members. Acceptance into this culture is dependent upon the adherence to the cultural values and standards held by the group. Therefore, the respect and discretion that develops from "the thin blue line" and "blue curtain of silence" may deter police officers from seeking support from friends outside of law enforcement, family, and mental

health professionals. There are currently programs that are being developed to attempt to combat this stigma perpetuated by law enforcement subculture.
Discussion: Current research calls for greater training regarding mental health services and reducing the reinforced stigma of mental illness from the criminal justice administration. Research has been conducted on the stigma that law enforcement may feel toward the mental health system and clinical psychologists especially. This may cause potentially suicidal officers to suppress their emotional struggle, and further add to their reluctance to seek help. Additionally, they may attempt to hide or belittle the impact of their maladaptive coping strategies. Ultimately, this poster will highlight the common factors found in law enforcement suicidality and well as their level of distrust of mental health professionals, identifying potential, and providing trainings to aiming to reduce stigma.

T46. ALTRUISTIC SUICIDE: FINDINGS FROM THE PHYSICAL BRAVERY STUDY WITH UNITED STATES MILITARY PERSONNEL AND CIVILIANS

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Background: The United States' military and veteran populations have suicide rates that are markedly higher than the general population. These rates have remained elevated over the past two decades despite serious efforts from the Department of Defense (DoD) and Department of Veterans' Affairs (VA) to reduce suicide rates. One potential avenue by which to improve research and clinical interventions with this specific population is to better-understand aspects related to strengths and resilience within the military. Research on relationships between physical bravery and altruistic suicide has the potential to contribute to the literature of strengths and resilience and holds particular relevance to integrating considerations about the collectivist military culture into treatment approaches. This study seeks to examine whether individuals who do physically brave acts tend to do so altruistically (risking their own lives) or with their own interest in mind (avoiding repercussions). Further, characteristics associated with acting more altruistically are examined.
Methods: This study comprised a total of 124 participants (Mage = 30.11, 72.6% male, 51.6% white) from two separate samples: 89 participants were from the United States Army Psychological Operations (PSYOP), and 35 were non-military college students. All participants included in this study reported having done at least one act of physical bravery in the past. To examine the possible link between physical bravery and altruistic suicide, items from the Physical Bravery Survey (PBS) that examine mentality of individuals during acts of bravery were included. The PBS was developed by the Clinical Crises and Emergencies research group at Palo Alto University under the guidance of Dr. Bruce Bongar and consists of 47 multiple choice and free form questions aimed at collecting both qualitative and quantitative data from individuals who performed acts of physical bravery.
Results: Results demonstrated that, on average, participants had both recognized the amount of risk involved, and had known during the event that there was a significant possibility that they would not survive. Respondents did not tend to indicate that they acted bravely due to fear of repercussions that could result from not doing so. Correlation analyses demonstrated that those who indicated that they had recognized the amount of risk involved were more likely than those who had not to have higher levels of self-reported resilience and mental flexibility, and also tended to report having been encouraged to try new things as a child. Further, those who indicated that they recognized they may not survive during their act of bravery were more likely than those who had not to have higher levels of self-reported adventurousness, self-confidence, resilience, and mental flexibility. Hierarchical regression analysis demonstrated

that resilience remained significantly associated with having recognized the amount of risk at the time of a physically brave act when controlling for demographic factors.
Discussion: Those who report having done physically brave acts tend to report features of these acts that are similar to the concept of altruistic suicide. Of the associated factors explored in this analysis, resilience was most linked to having acted bravely despite awareness of risk to a person's own life. These findings will be discussed in light of conflicting perspectives in the literature about the nature of altruistic suicide. Finally, a model linking resilience, altruistic suicide, and aspects of military culture will be presented.

T47. OPERATION RESILIENCY REUNION PROGRAM

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Background: On average 20 U.S. Veterans a day die by suicide. The rate of suicide is 1.8 times higher among women Veterans compared with non-Veteran women. Similarly, the rate of suicide is 1.4 times higher among male Veterans compared with non-Veteran men. In the U.S., nearly 45,000 people die by suicide annually, including more than 6,000 Veterans.
Operation Resiliency is a collaborative effort sponsored by the VA and The Independence Fund, that begins by taking a pre-established group (company-sized units that have previously deployed into combat together), with pre-existing social bonds, and uses the existing group dynamics to serve in several hopefully protective ways. The retreats engage Veterans in a social setting that is presumably more natural and comfortable than they would encounter in a healthcare setting. The focus of the retreat is also to include specific suicide prevention efforts, providing educational and self-help resources to enhance resilience.

Methods: The first Operation Resiliency retreat took place in 2019, in North Carolina, U.S. and brought together nearly one hundred Veterans and active duty service members from a single Army Company. It included two days of group workshops as well as recreational activities and scheduled free time for participants to re-connect and interact with each other. Participants consisted of 96 men, ages 28–40.
The structured and educational reunion was designed to create an environment that conferred built-in protective factors such as connectedness, belonging, a sense of purpose and resiliency. Protective factors are critical to suicide prevention, and the retreat helped to establish or bolster these factors in the men. Group session workshops were designed with cumulative goals, building from one day to the next and ultimately providing these Veterans with useable, practical problem-solving skills.

Results: Results from the first retreat will be analyzed and presented in this poster (not yet analyzed). Data were gathered using pre and post-test and one month follow up surveys with a combination of quantitative and qualitative questions. The program evaluation plan and selected analyses will be conducted across the three time points to assess the impact of this innovative resilience training and results will be shared in the poster.
Discussion: An activity such as Operation Resiliency has a presumed benefit of increasing social connectedness and counteracting feelings of isolation. It helps them reconnect and re-establish that sense of belonging they had during active duty service and may support Veterans who have not yet decided to seek professional mental health services.
The reunion workshops included a series of nonclinical activities designed to be enjoyable and relaxing as well as to facilitate bonding. Participants focused on their unique bonds that were formed during their shared experiences in the service. We did not assume that these Veterans

had any specific stressors or symptoms that required treatment. The retreat workshops were educational, with open discussion of and practice of skills that anyone can use to maintain good mental health and well-being. When retreat participants showed signs of needing further support, we were able to guide them toward professionals as well as resources in their hometown, so they could receive ongoing care.

T48. UNANTICIPATED RESPONSES TO SUICIDE PREVENTION MESSAGING

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Background: Suicide is a critical public health problem among Veterans. Public education campaigns have been identified as a promising intervention to promote and support help seeking among those at risk for suicide; however, there is the potential for audiences to react unpredictably. If part of the message content is registered negatively by the Veteran, its value as a motivating tool may fail, or worse, lead to adverse outcomes. The current study begins to address this gap by describing findings from formative communicative research that captures characteristics of messages which Veterans delineated as likely to cause adverse responses.
Methods: 33 Veterans completed individual telephone interviews regarding message characteristics/qualities that may both encourage and discourage help seeking for mental health concerns. Interviews were recorded, transcribed verbatim, and analyzed using NVivo 8.0. Descriptive statistics were also tabulated.
Results: The majority of participants were while (84%), male (53%), and with an average age of 56 (SD=14). Several message domains emerged during analysis, including: (1) reasons for treatment avoidance independent of message content (e.g. "When I got diagnosed with PTSD, I went through my journey of denial … I don't need any help"); (2) specific message characteristics (e.g., words, images, persuasive appeals) that veterans reported would produce unintended effects (e.g., framing with fear and guilt); and finally (3) message source/senders that would evoke negative, reactive emotions (e.g., "Anything that smacks of government talk. That'll turn Veterans off").
Discussion: This presentation provides initial insights to inform the design of public messages including what not to do or include in campaigns and lends important data for the development of an evidence base for these intervention to increase the likelihood of help-seeking among those at risk for suicide.

T49. SUICIDE REDUCTION IN THE WORLD AND WHAT CAN BE LEARNED FROM CHINA

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Background: The overall suicide rates in the world are slightly on the rise 1, and the rates in the United States have rapidly increased by about 33%, from 10.5 per 100,000 population in 1999 to 14.0 in 2017 2, regardless of prevention efforts with affluent funding 3. In contrast, the overall suicide rate in China has decreased from 23/100,000 in 1999 to 8.61/100,000 in 2017, marking a 63% drop over past two decades 4. The most dramatic decrease has been observed in rural young women under 35 years of age, whose suicide rate appears to have dropped by as much as 90% 4.

Methods: This is a comparison study in the social and environmental conditions between the US and China with published statistics of economic development and suicide rates. Compared to the US, far less funding has been provided in China for suicide research and prevention and for a much larger population, but the suicide rates are still declining. Are we spending our efforts on the wrong targets? We may not know the answers until we know more clearly what has happened in China in the past 20 years and what China has been doing or not doing. Here we discuss six speculative reasons for the rapid drop of the Chinese suicide rates.
Results: We have found six areas of social, cultural, and economic conditions in China that are different from the USA and suggest that they may be the major reasons that have made the suicide rates in China dropped rapidly. The six conditions are as follows:

1. Fast economic development has rapidly improved the quality of life
2. Migration to urbanized areas reduced rural populations
3. Modernized and liberal social values liberated rural women
4. One-child one-family policies made young women more valued
5. Surveillance-based counseling monitored youths on campuses
6. The governmental media control curbed the contagion of suicide

Discussion: Reduction of psychological strains may reduce suicide risk. In the past two decades, Chinese strains have been lessened through rapid economic growth, social and cultural change, augmented rural-to-urban migration, and the increased life satisfaction brought about by the improved daily quality of life. The powerful and authoritarian government of China, which is efficient in disease control as well as in social control may also play a role, although many political problems may result from this. Examples of the effectiveness of this control include the control of the SARS epidemic in 2004 and the prevention of suicide among college students in China.

T50. SUICIDE RISK AMONG IMMIGRANT ADOLESCENTS IN ISRAEL: "TRYING TO FIT IN BUT ALWAYS BEING AN WUTSIDER"

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Background: Immigration provides opportunities for improving life circumstance, but it also presents major psycho-social challenges that can result in a suicidal crisis. Adolescence is a particularly sensitive developmental period for mental health difficulties that becomes even more challenging in light of immigration. This study provides a qualitative exploration of events and the state of mind of immigrant adolescents that have attempted suicide
Methods: Semi structured interviews were conducted with 12 immigrant adolescents, aged 15-18, exhibiting suicidal behavior. Content analysis reviled five main themes.
Results: Five main themes emerged from the interviews: (1) Changes in family structure and parental availability following the move to the new country significantly undermined parental authority. (2) Immigrant adolescents encounter negative stigma against their ethnic community and often faced peer harassment due to their origins. (3) Adolescents often experienced shame and attempted to conceal their ethnic origins. (4) High availability of alcohol and norms of alcohol consumption among adolescents in new country were precipitators of suicide behavior. (5) Acquaintance with peer immigrant adolescents that have attempted suicide.

Discussion: Immigration during adolescence as a risk factor in global and local context is discussed.

T51. LETTERS OF HOPE: A QUALITATIVE CASE STUDY AND CONTENT ANALYSIS OF LETTERS RECEIVED BY A VETERAN DURING OPERATION DESERT SHIELD AND OPERATION DESERT STORM

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Background: A qualitative case study and content analysis was conducted on the written text received by a soldier who was deployed in Operation Desert Shield and Operation Desert Storm. The soldier was a member of the United States Army Reserves and served as a Headquarters Detachment Commander for a Personnel and Administration Battalion in rural Alabama. He was very active in his community and served as a volunteer coach at his old high school and deacon in his local church back home prior to his deployment.
Methods: The methodology used was a bounded case study which included a systematic content analysis of the letters received during deployment. The soldier received a total of 125 letters within a six-month period. The letters came from four different groups during his deployment which included family, friends, co-workers, and students. Two sets of coding themes were identified to apply to the written text. One coding category was faith words/phrases and the second coding category was support words/phrases. The manifest coding method was applied to measure the indicators and themes in the text.
Results: The coding of the written text revealed that the soldier had family, friends, co-workers, and students that emphasized faith words and phrases while communicating with the soldier during war. It also revealed that the soldier had a great level of positive social support from individuals while being deployed in Operation Desert Shield and Operation Desert Storm. The three most frequently used faith words/phrases were hope (147 times), pray (110 times) and either God, Lord or Jesus (77 times). The three most frequently used social support words/phrases were home (79 times), love (74 times) and safe (41 times).
Discussion: After reviewing the coded text positive social support systems were identified which included family, friends, co-workers and students. The text revealed that the majority of those providing some level of social support and encouragement for the veteran had some measure of faith. Twenty-seven years after the soldier return from combat there are no criminal convictions or suicide attempts on his life. He has survived a failed relationship, failed marriage, death of love ones and friends and has met life challenges face-to-face. The letters of hope received during his deployment were filled with faith words and positive support words.

Keywords/Phrases: hope, pray, praying, God, Lord, Jesus, home, return home, love, safe, safe return, miss, and miss you

T52. RESULTS OF A MULTISITE TRANSPORTABILITY TRIAL OF A BRIEF EMERGENCY DEPARTMENT INTERVENTION FOR SUICIDAL ADOLESCENTS AND THEIR FAMILIES: IMPLICATIONS FOR IMPLEMENTATION

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Background: In emergency practice, usual care for suicidal adolescents is evaluation, with little or no treatment, and disposition, usually to an inpatient psychiatry unit. The authors believed this lack of treatment is a missed opportunity. They have observed that a breakdown in communication within the family was often a contributing factor to suicidality and that most caregivers wish to help their adolescent but may lack the skills and tools to do so. In response, the investigators developed the Family Based Crisis Intervention (FBCI) for suicidal adolescents and their families, a single-session intervention that is designed to stabilize adolescents within an ED visit and to provide training to empower the family to manage the adolescent safely at home. A randomized controlled trial (RCT) of FBCI (Wharff, Ginnis, Ross et al. 2019) showed feasibility and safety of the intervention, with significant differences in hospitalization rates between FBCI and treatment as usual (TAU) patients and showed that FBCI caregivers experienced significantly larger gains in family empowerment ($p=0.004$) and client satisfaction ($p=0.0005$) than the TAU group. The investigators recently completed a transportability trial to assess clinician uptake of FBCI, patient disposition, and generalizability of the intervention. This presentation will report on this pilot.
Methods: The study sample was comprised of a convenience sample of sites that had expressed an interest in FBCI and were diverse in geographical location, size of the ED, and patient/clinician mix: UNC-Chapel Hill (UNC) is a large ED with adult and adolescent patients; Children's Hospital of Orange County (CHOC) is a small, pediatric ED; and Boston Children's Hospital (BCH) is a large pediatric ED. All emergency mental health clinicians at these sites participated in a two-day training of FBCI followed by weekly consultation calls. During the study period, all clinicians were asked to complete a REDCap survey on each suicidal adolescent they saw. If they used FBCI, they were asked about patient/family demographics, use of the modules, clinician ratings of suicide risk, depression and anxiety, and disposition/follow-up services. If they did not use FBCI, they were asked the reason. Both surveys included clinician demographics and qualitative questions about the clinician's perception of the utility of FBCI.
Results: 240 patients received FBCI across the three sites (70%). Clinicians were multi-disciplinary. All five modules of FBCI were used and key components were discussed nearly 100% of the time. Reasons clinicians did not do FBCI were primarily no family member was present to participate or patient was intoxicated or cognitively delayed preventing discussion of FBCI. Overall rates of discharge home varied greatly: CHOC 89%, BCH 60%; UNC 45% overall; data showed that these proportions increased over time. Most clinicians responding felt FBCI was useful and could fit into their practice.
Discussion: Results of the transportability trial show that FBCI is both feasible and useful to a variety of mental health clinicians at diverse emergency departments. Facilitators to the use of FBCI were strong leadership to support change in practice, younger clinicians more open to practice innovation, availability of outpatient resources, smaller ED, universal health insurance. Barriers to use of FBCI were clinician resistance to change in practice, lack of outpatient resources, combined adult-pediatric ED, not having all child-trained clinicians, lack of systemic support. However, when used, FBCI was an intervention that clinicians felt was useful, fit into their practice, and that facilitated discharging patients' home with their families.

T53. FEASIBILITY OF A TEACHING MANUAL USED TO CONDUCT A SUICIDE PREVENTION TRAINING PROGRAM FOR UNDERGRADUATE SOCIAL WORK STUDENTS BY SOCIAL WORK TEACHERS

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Background: Suicide prevention training should be integrated into social work education curriculum (Feldman & Freedenthal, 2006). We previously developed a suicide prevention training program for undergraduate social work students, named "Suicide Prevention by Social Workers: A Program for Social Work Students," consisting of the following five sections: 1) Introduction, 2) Basic knowledge about suicide, 3) Basic skills to intervene with suicidal clients, 4) Networking social resources to support suicidal clients, and 5) Conclusion. The feasibility and preliminary effects of this program have been established (Kodaka et al., 2017). We also developed a teaching manual for social work faculty members to help them conduct the program with ease, even without any experience in teaching suicide prevention. The present study aimed to explore the feasibility of the teaching manual used to conduct the program by social work teachers.

Methods: Three social work faculty members at three different colleges and universities conducted the program during a 90-minute class. Students who agreed to participate in the study were asked to complete questionnaires regarding the program's feasibility and effects immediately before and after the class. The questionnaires comprised the following items: demographics (only before the program), knowledge about suicide/suicide prevention (before and after the program), attitudes toward suicide (before and after the program), and satisfaction with the program (only after the program). The student's t-test was used to examine differences in mean scores for knowledge and attitude items before and after the program. The study protocol was reviewed and approved by the IRB of the National Center of Neurology and Psychiatry.

Results: The students' knowledge about suicide/suicide prevention and attitudes toward suicide were significantly improved after participation in the program. Satisfaction with the program was high. No adverse effects were observed.

Discussion: Social work faculty members specializing in any field of social work could conduct the program using this teaching manual.

T54. AVAILABILITY AND EFFICACY OF CRISIS MANAGEMENT, ANTI-STIGMA, AND MENTAL HEALTH LITERACY PROGRAM FOR UNIVERSITY STUDENTS (CAMPUS)

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Background: Suicide is the leading cause of death among university students in Japan. Till date, there have been few researches that have evaluated a structured suicide prevention program for university students. In 2017, we developed the Crisis management, Anti-stigma, and Mental health literacy Program for University Students (CAMPUS), a short education program for suicide prevention. The purpose of this program is to acquire mental health

literacy, to understand how to cope with self-stigma, and to manage crisis linked to suicide. The present study evaluates the efficacy and availability of the CAMPUS by conducting the program for university medical students.
Methods: The CAMPUS is composed of a lecture, watching a gatekeeper movie, and role-play based on scripts that focus on situations involving suicidal students in conversation with their friends. This is a 3-4-hour program. The participants of this program were 140 sophomore medical students of the University of Tsukuba, Japan, aged between 18 and 29 yrs. (M=19.89, SD=1.48). Among them, 70 students attended the CAMPUS as a required class in the months of either July or August, 2018. Altogether, 134 students consented to answering questionnaires before and after the class on self-efficacy of the gatekeeper, help-seeking intentions, self-acceptance, self-concealment, risk of suicide, and depression. In addition, 25 students (17.9%) answered the same, one month later. The data obtained from the answered questionnaires were statistically analyzed.
Results: Although, the risk of suicide in the July group was higher than that of the August group before the class, self-efficacy of the gatekeeper, help-seeking intentions, and self-acceptance improved regardless of the group. As there were no differences between the results of the groups before or after the class, both groups were analyzed together. With the help of the classes, self-efficacy of the gatekeeper and the help-seeking intentions improved a month later. The risk of suicide as well as depression decreased but not significantly. Other factors did not change.
Discussion: The results indicate that the positive effects of CAMPUS had little to do with the months in which the students attended the program. The limitation of this study was that CAMPUS did not affect individuals` self-stigma. Future studies should evaluate the effectiveness of CAMPUS using large samples and meliorate its contents.

T55. SUICIDE PREVENTION CURRICULUM FOR HEALTH PROFESSIONALS: A PILOT

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Background: This presentation will focus on the preliminary evaluation of a multi-site Interprofessional Education Suicide Prevention course (Dr. Amanda La Guardia, University of Cincinnati). This presenter will discuss the implementation of a competency-based suicide prevention training delivered from an interprofessional education framework on two university campuses. The purpose of the course is to create and evaluate a program that can assist individuals in addressing suicide prevention from a team-based perspective in a variety of health and behavioral healthcare settings. Data will be presented summarizing one semester of course delivery (15-weeks) comparing a control group with students participating in both a blended and online-only training format.
Methods: Quasi-experimental design, gathering data from a control group and two intervention groups (blended learners and online-only learners). Baseline attitudes, beliefs, knowledge, and efficacy measures related to suicide prevention and intervention were taken at the start of the instructional/intervention period, directly following the instructional period (just prior to the completion of the course), and then three months after instruction was completed.
Results: Between group differences revealed students in blended course format rated some course components higher than those in fully online. Overall, students were in agreement with intent to use course content. Moderate-to-large positive gains were noted across measures (e.g. self-efficacy, suicide prevention knowledge, etc.). Results from time three analysis will be completed prior to and presented at the conference.

Discussion: Incorporating enhanced structure into the IPE suicide prevention project may assist in the development of greater gains in interprofessional valuing and self-efficacy as well as a clearer understanding of roles and responsibilities when engaging in interprofessional work. Dissemination of the final product to a larger community (as well as engagement from community stakeholders) may also enhance the sense of importance among student team members.

T56. YOUTH AWARE OF MENTAL HEALTH (YAM) IMPLEMENTATION IN THE US: DEVELOPING A BOOSTER SESSION MODEL

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Background: The Youth Aware of Mental Health (YAM) program is a universal, school-based mental health promotion program that has demonstrated prevention effects by reducing new incidence of suicidal ideation and behavior through the Saving and Empowering Young Lives in Europe (SEYLE) randomized-controlled clinical trial (Wasserman et al., 2015). Youth Aware of Mental health (YAM) is an interactive program for adolescents designed to promote mental health resilience through education and discussion about mental health, fostering the development of problem-solving skills and emotional intelligence. YAM brings different learning methods together with the fundamental components of the program being as follows: five interactive sessions, role-playing, informational reading materials and posters for display in the classroom. Adolescents learn from both a professional and each other through a mix of cognitive, emotional and experiential learning. The YAM program includes education on six themes: awareness about mental health; self-help advice; stress and crisis; depression and suicidal thoughts; helping a troubled friend; and getting advice: who to contact. This presentation describes the development of a comprehensive school-based prevention program, including YAM implementation and a pilot project to develop yearly booster sessions for high school students in the US.

Methods: To date, YAM curriculum has been delivered to nearly 12,000 students in grades 9-12 through our program in the US. The collection of program evaluation data informs the continuous quality improvement of this program. Feedback from participants, parents, and school stakeholders has been overwhelmingly positive. Students gave an average of 3.67 on a 5-point scale (5 being most satisfied) in response to the question "I liked/was pleased/satisfied with the YAM project that my school took part in". Given YAM implementation has continued over multiple school years, school partners have requested continued complementary programming for students in years following completion of YAM.

Results: Due to positive outcomes and school partners' inquiries for additional offerings, we have developed "booster" sessions to extend the YAM curriculum's impact, particularly in schools where YAM was delivered to 9th grade students. YAM trainers met to review the program evaluation data (qualitative and quantitative) student feedback from academic years 2016-2017 and 2017-2018. Based on this feedback, YAM trainers (n=3) developed the structure and content for the booster sessions. The booster sessions complement the original program and build upon concepts and knowledge gained through more advanced role-play examples (e.g., situation prompts related college, dating, etc.). These sessions aim to further reinforce resilience skills acquired and applied as adolescents continue to mature and be faced with new and challenging experiences. This new content was then reviewed with YAM

facilitators (n=5) with request for feedback. YAM booster session format and content has been developed and will be piloted in 3 schools in the 2018-2019 academic year. Participating students will be in 10th or 11th grade students who will have received the YAM program during 9th grade. Program evaluation data will be collected specific to the novel booster session model.
Discussion: In summary, the YAM intervention was feasible to adapt, implement, and evaluate in schools with a high degree of program satisfaction. This presentation will describe the development of a comprehensive prevention program, utilizing YAM as designed, with the addition of a novel booster session model. Program evaluation data will be presented.

T57. EXAMINING LATROGENIC EFFECTS ACROSS THREE VETERAN SUICIDE RESEARCH PROTOCOLS

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Background: Ethical and methodological concerns continue to function as formidable barriers to advancing suicide-related research. Concerns about employing intensive suicide research protocols often result in a tendency across disciplines to exclude individuals at risk for suicide and/or omit suicide-specific variables, significantly impeding scientific inquiry related to suicide. Despite civilian research that suggests that participation in non-treatment related suicide research does not produce iatrogenic effects (Cha et al., 2016; Gould et al., 2005; Smith et al., 2010), the impact of suicide-specific research has not been examined among Veterans seeking care at the Veterans Health Administration, a population at elevated risk for suicide. To address this need, we examined whether nontreatment research protocols with specific, comprehensive, and time-intensive inquiry about suicide and related risk factors increased risk for harm across three studies with different methodological designs.
Methods: Data was examined from three studies (Study A, N = 34; Study B, N = 18; Study C, N = 119) which included exposure to suicide-specific thoughts, images, and/or mood induction. In addition to these suicide-specific tasks, Veterans completed validated self-report and structured interview assessments. The University of Washington Risk Assessment Protocol-Revised (UWRAP; Linehan et al., 2000), recommended by the National Institute of Mental Health, was utilized to assess and monitor potential risks associated with participation in each study. Scores range from 1 to 7, with higher scores indicating greater distress. Two UWRAP questions were used to determine the effect of study participation: 1) urge to harm yourself now; and, 2) intent to kill yourself now. Additionally, all participants were instructed to contact the research team if delayed negative experiences occurred due to research participation (i.e., adverse events). It was hypothesized that participation in each protocol would not significantly increase risk.
Results: Secondary data analyses included paired t tests and Wilcoxon signed rank tests to compare pre- and post-UWRAP scores. Results indicated there were no significant differences in pre- and post-assessment variables (all ps > .05). Estimated mean change for "urge to harm self" was -0.24 (95% confidence interval [CI]: -0.60, 0.13), -0.28 (CI: -0.56, 0.01), and -0.01 (CI: -0.09, 0.07) and "intent to harm self" was -0.18 (95% CI: -0.45, 0.10), 0 (CI: -0.17, 0.17), and 0.01 (CI: -0.04, 0.06) for Studies A, B, and C, respectively. No participant scored above a five on the UWRAP at post-assessment, indicating that no participant required supplemental assessment or intervention. No adverse events were reported during or after participation.

Discussion: This is the first study to evaluate the potential for iatrogenic effects resulting from comprehensive assessments of psychopathology and suicide risk during nontreatment research among Veterans. Across three intensive suicide research studies, results indicated that participants did not endorse significant increases in suicide risk at post-assessment or report adverse events. Collectively, the results add to a body of research demonstrating the feasibility of conducting intensive, nontreatment suicide-specific research without doing harm to participants. Discussion will include recommendations for how to employ extant empirical literature to guide methodological design, exercise good ethical decision making, and utilize safety-monitoring techniques to assist with regulatory processes, including study management of intensive suicide-specific research protocols.

T58. BUILDING A 'SAFETY NET' OF COMMUNITY PROVIDERS: UTILIZING THE SYSTEMS OF CARE FRAMEWORK FOR DEVELOPING A COMMUNITY RESOURCE ASSET MAP FOR SUICIDE PREVENTION WITHIN A HEALTHCARE SETTING

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Background: The systems of care framework (Friedman, 2001) has been applied extensively in the field of childhood mental health to highlight available personal and community resources based around an individual child/adolescent. This framework utilizes a collaborative, community-based approach to meet the diverse needs of at-risk youth. Asset maps (Kretzmann & McKnight, 1993), visual and geographically accurate tools that depict the availability of community resources have been used by community planning agencies, non-profits, and schools to highlight the strengths and resources of a community. Community collaboration is vital in addressing community needs and social problems. Limited engagement with community partners may hinder the implementation of programs and initiatives that are designed to address community problems. To address this barrier, tenets from asset mapping and the systems of care framework were utilized to guide the development of a community resource asset map. Specifically, the map was developed to guide program planning for researchers working to build and strengthen community partnerships within and around a large healthcare system involved in implementing a suicide prevention initiative aimed to improve patient safety standards.

Methods: An extensive review of community directories, online websites, and other resources generated a detailed list of community agencies within the targeted area. The list was then synthesized and categorized into distinct categories based on delivery sector, services offered, and populations served. An iterative process was used to refine the community resource asset map in order to capture a holistic picture of the diverse delivery systems that could provide an array of services to address behavioral health, medical, social, economic, spiritual, and other needs commonly identified by patients at-risk of suicide. As a means to guide the development of a collaborative 'safety network' for patients within the targeted area, the community resource asset map was used to identify systems that could be part of the healthcare system's continuum of care for at-risk patients needing care post-discharge from emergency care. The map guided the team's effort in both forming and keeping track of partners gained throughout the project.

Results: Using the community resource asset map, program planners and researchers were able to strategically develop key partnerships with 15 community providers who represented diverse delivery sectors (health, medical, social, economic, and faith-based). Memorandums of understanding (MOU) were developed with providers who formally agreed to strengthen

continuity of care practices with the targeted healthcare site, as well as within their own internal system, specific to suicide prevention training. Across these partnerships, a total of 87 meetings and 72 training workshops were conducted, with over 700 professionals trained in evidence-based, suicide prevention and intervention strategies.
Discussion: This study showcases the usefulness of developing a community resource asset map to form and maintain a diverse collection of partnerships within a community that may otherwise be excluded. The use of this map can pinpoint advantages and strengths of community collaboration, providing an opportunity to diverge from traditional ways of addressing community problems, such a suicide. When devising a community resource asset map, many facets of needs should be considered to form a holistic collection of partnerships. Through this lens, various systems can be targeted, reducing the silo effect often observed across delivery systems. Future research in using this type of map centered around other delivery systems and/or community problems is needed.

T59. OPEN BOARD

T60. SUICIDAL RISK FACTORS ACROSS THE LIFESPAN: A CROSS-SECTIONAL STUDY OF MEDICOLEGAL DEATH INVESTIGATION RECORDS IN HARRIS COUNTY, TEXAS

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Background: The suicide rate in the United States across all ages has increased by 39%, from 10.4 to 14.5 suicides per 100,000 people between years 2000 to 2017 (Centers for Disease Control and Prevention, 2019). Adolescents ages 12 to 19 and adults ages 65 and older had a disproportionately higher risk of death by suicide than other age groups (Steele et al, 2018). Examining suicide risk characteristics across age groups is necessary to inform tailored intervention efforts to prevent these tragedies.
Methods: A retrospective review was conducted using medical examiner (ME) medicolegal death investigation records during 2014 in Harris County, Texas. The following categories were compared across four age groups (years 10-19 adolescents, 20-40 young adults, 41-64 middle aged, 65+ older adults): age, sex, race, mechanism of injury, presence of interpersonal violence (IPV), social support, prior suicide attempt, suicidal ideation, and mental health conditions (depression, bipolar, PTSD, and schizophrenia). Data were analyzed using descriptive statistics. Interpersonal violence was qualitatively coded using ME investigative report descriptions.
Results: Suicide deaths comprised 447/4,467 medical examiner cases in 2014. Suicides were consistently higher across age groups for males and non-Hispanic whites compared to females and other racial/ethnic groups. The most commonly used mechanism of injury was a firearm, accounting for 54.9%, 55.4%, and 75.8% of suicides in the young, middle, and older adult age groups. Adolescents used a hanging mechanism in 58.1% of cases. Interpersonal violence was reported most often in the adolescent group (51.7%) than in other age categories (44.0%, 24.7%, and 1.5% in young adults, middle aged, and older adults, respectively). In 62% of overall IPV reports, an argument or long-term stress with a romantic partner or spouse preceded the suicide. The majority of decedents cohabitated with at least one other individual, although cohabitation declined toward older age groups. Less than 25% of decedents in each age group

had previously documented suicide attempts, with a decline in reported suicide attempts towards older age groups. Suicidal ideation was less frequently reported in the older age categories. Of the mental illnesses, depression was reported most frequently.
Discussion: Sex, race, and mechanism of injury characteristics in suicides in Harris County, Texas were consistent with national trends in 2014. Adolescents who committed suicide more often had reports of IPV and cohabitation compared to other age categories. An area of future research includes measuring relationships of cohabitants, which may be toxic or supportive to the individual at risk of suicide. The presence of cohabitation declined steadily as the age groups increased, with relatively more older adults living alone and experiencing depression. A heightened awareness of risk and gun ownership is necessary for the 65 and older age group, when the frequency of depression increases and when suicide is comparatively less predictable than in younger age groups.

T61. EXPOSURE TO SUICIDE DEATHS AND ATTEMPTS AMONG ADOLESCENTS IN THE UNITED STATES

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Background: Previous studies in the US have found that approximately 4% of adolescents were exposed to a peer or family member's suicide death in the past year and 19% were exposed to a peer or family member's suicide attempt in the past year. Lifetime exposure to suicide deaths and attempts has not yet been quantified at a national level among adolescents in the US.
Methods: In 2018, using a probability-based survey panel that was representative of US households, 336 adolescents ages 15-17 were asked if they knew someone who died by suicide or attempted suicide. Those who were exposed to a suicide death or attempt reported on the impact that it had on their health and their life overall. They also reported on how they felt different domains of their life changed as a result of the suicide-related event.
Results: 44% of adolescents ages 15-17 knew someone who died by suicide and 61% knew someone who attempted or died by suicide. Among those exposed, just over a quarter of adolescents (26%) said that the attempt or death had a large or extreme effect on their life, and 37% said they considered themselves a survivor of suicide loss. 12% of the exposed, or approximately 7% of all the adolescents, said their overall health was currently affected by the suicide. The exposed adolescents most commonly said they felt permanently changed in their emotions (17%), goals and purpose in life (17%), and spirituality (17%). Many of them also said that they experienced temporary changes in their emotions (60%), mental focus (55%), social life (43%), and sleep (41%).
Discussion: Exposure to a suicide death or attempt is a common experience among adolescents and has substantial impacts in many aspects of their lives. Despite this common experience, there is still much stigma regarding talking about suicide, and teenagers may be limited in their opportunities to discuss their experience being exposed to a suicide death or attempt. There is an immediate need to identify and address the concerns of those who are currently experiencing health effects from exposure to a suicide death or attempt. Future studies can also explore what long-term impacts exposure to a suicide death or attempt can have on adolescents in the US.

T62. PSYCHIATRIC COMORBIDITY IN ADULT DELIBERATE SELF-HARM PATIENTS: A LITERATURE REVIEW AND NORWEGIAN OBSERVATION

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Background: Deliberate self-harm (DSH) undisputedly constitutes a major public health concern, and the vast majority of individuals seeking medical attention following self-harm suffer from a psychiatric illness. However, results on the prevalence of psychiatric comorbidity among DSH patients are discrepant due to differences in methodological approach. To enhance our understanding of the comorbidity of DSH and psychiatric illness, the present study aims to draw evidence from the literature linking DSH with various psychiatric disorders. Furthermore, we aim to explore clinical details of Norwegian DSH patients using national register data.

Methods: A literature search was performed between March 1st and April 30th 2019 using PubMed, psych Info and Medline together with reference lists. Pooled prevalences were calculated. The Norwegian study cohort was comprised by individuals treated for DSH (proxy variable) in Norwegian hospitals between January 1st, 2008 and January 1st, 2013 aged 18 years or older. Personal socioeconomic data and health records were extracted from Statistics Norway´s Events Database, the Norwegian Patient Register, the Cause of Death Register and the Central Population Register. Descriptive analysis was performed using SPSS 25. Overall difference in prevalence of psychiatric disorder by age and gender was assessed using chi square test.

Results: The literature review revealed that the most common psychiatric illness present in DSH patients is affective disorders with a prevalence of 38.3% largely made up by depression. The second most common psychiatric illness is substance use disorder (24.85%) where alcohol dependence displays the highest prevalence. The results regarding anxiety, personality disorder and adjustment disorder show discrepant results causing uncertainty regarding their true prevalence.

The Norwegian cohort consisted of 35 671 episodes of DSH (58.91% female) with an average age of 40.76 years (SD: 18.44). The preliminary analysis of the data revealed that the majority of the DSH patients were diagnosed with a psychiatric disorder (59.61%). Affective disorders displayed the highest prevalence (21.13%) with females displaying higher prevalence than males. Alcohol misuse disorder was the second most common disorder (16.99%) with a higher prevalence in males. Personality disorder was present in 8.68% of the patients and anxiety disorders in 6.09%, both with higher prevalence's in females. Schizophrenia and schizophrenia spectrum disorder was present in 3.23% of the cohort. Presence of psychiatric comorbidity was higher among DSH repeaters.

Discussion: The present study confirms, like previous research, that presence of psychiatric comorbidity is common among adult DSH patients. The relatively high prevalence of comorbidity emphasizes that both identification and treatment of mental illness is essential in preventing DSH repetition and suicide completion among adults.

T63. COGNITIVE BEHAVIOURAL THERAPY FOR SUICIDE PREVENTION IN YOUTH ADMITTED TO HOSPITAL FOLLOWING AN EPISODE OF DELIBERATE SELF-HARM: A PILOT TRIAL

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Background: Youth presenting with deliberate self-harm (DSH) are at an elevated suicide risk. Cognitive Behavioural Therapy (CBT) is an evidence-based intervention in the treatment of depression and suicidal ideation but there is limited data on its use in preventing youth DSH. This pilot study compares the efficacy of CBT for suicide prevention versus a minimally–directive supportive therapy (an attentional control) in youth who have been hospitalized following an episode of DSH.
Methods: Subjects were randomized in a 1:1 fashion to receive either the CBT or control condition for 10 sessions over 10-15 weeks with three booster sessions at the 6, 9, and 12-month follow-up respectively. Suicide attempts as well as scores at each visit on the Scale for Suicidal Ideation (SSI) and Montgomery Asberg Depression Rating Scale (MADRS) were also obtained. Chi-Squared and Mann Whitney U tests were used to test for between-group differences in categorical and continuous variables respectively.
Results: A total of 24 participants were enrolled of which 12 were randomized into each treatment arm. Mean age in both groups was 18 years. There were 10 females (83%) in the CBT group and seven (58.3%) in the control group. In the acute phase, the CBT group was followed for a total of 62 post-baseline weeks in which there were seven weeks with reported self-harm (11.2%) whereas the control group was followed for 79 post-baseline weeks with 24 weeks of reported self-harm (30.4%). There was a total of five suicide attempts by 3 people, which were all in the control group. No between-group differences were statistically significant in mean SSI and MADRS scores looking at the change from Week 1 to Week 10.
Discussion: In this pilot study, there was a clear signal in the direction of improvement in CBT for suicide prevention condition vs. the attentional control group in terms of self-harm and suicide attempts. A well-powered, full-scale trial is needed to further substantiate these findings.

T64. AN OBSERVATIONAL STUDY OF SUICIDE DEATHS BY SELF-POISONING WITH OPIOIDS IN TORONTO

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Background: Opioid self-poisoning is a common suicide method in North America. However, there is limited information about who dies by this method and whether legislation on opioid access has resulted in lower suicide rates by self-poisoning. The primary research question was whether the rate of suicides involving opioids diminished after implementation of Ontario's Narcotics Safety and Awareness Act (NSAA)(1998-2011 vs. 2012-2015).
Methods: This study examined all suicides by intentional self-poisoning with or without an opioid in Toronto (1998-2015), with mean change after NSAA tested by one-way ANOVA. Demographic and clinical characteristics as well as details surrounding the suicide were also compared for suicides by opioid and by non-opioid self-poisoning.
Results: There were 773 suicides in Toronto by self-poisoning where the substance used was known (19.0% of all suicides). Of these, 289 (37.4%) had an opioid present and in 249 (32.2%) the opioid was deemed to have been lethal. The mean number of yearly suicides involving opioids was 15.6 prior to and 17.5 after the Narcotics Safety and Awareness Act was

implemented (F 1.16, df 1, p=0.30) and neither the rate per population nor the proportion of suicides by this method changed between the two periods. People who died by suicide using an opioid had higher rates of pain, musculoskeletal, gastrointestinal/liver disorders and cancer. **Discussion:** This study confirms that opioids are a major contributor to suicide in Toronto with no change in rates after the NSAA. Physicians who prescribe opioids should monitor patients for elevated suicide risk and intervene where appropriate.

T65. SOCIAL CONSTRUCTION OF PRISON SUICIDE: NVDRS/BJS DATA VS. CINEMATIC PORTRAYALS

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Background: Fictional media depictions of suicide often are associated with changes in audience behavior & attitudes. For example, the depiction of a fictional 17 year old suicide in the Netflix series, 13 Reasons Why, was associated with a 21% increase in young female suicide in the month afterwards (April 2017). The power of fictional portrayals can shape public (mis) understandings of suicide. The present study focuses on media portrayals of prison suicide: are cinematic portrayals of prison suicide social constructions or do they accurately portray the phenomenon?
Methods: Four online film bibliographies (e.g., American Film Institute, Internet Movie Data Base) were searched for movies containing depictions of prison suicide. Inclusion criteria were: American film, feature film (at least 60 minutes)shown in theaters, & contains a depiction of prison suicide. 40 films met inclusion criteria. All were watched by two coders. Data on real life prison suicides (e.g., offense type, demographics, psychiatric, motives) are drawn from the National Violent Death Reporting System (N=437 cases) and Bureau of Justice Statistics (N=6,711 cases) (Noonan, 2005; 2015).
Results: Evidence tended to support a social construction hypothesis. Films over-represent prison suicide. NVDRS data show that 1.42% of suicides in society happen in prisons, vs. 2.21% in the cinema. In the BJS population, fully 50.8% of the prison suicides involved persons awaiting adjudication and not yet convicted of a crime, vs. only 32.5% of the cinematic cases. The BJS data show that fully 54% of prison suicides involve violent offenders vs. only 40% in the cinema. Whites and females are overrepresented in film. While 65.8% of real prison suicides are white, fully 97.5% are white in film. Women account for only 7.2% of suicides in prison reality vs. 40% in film. Using the NVDRS, motives for suicide differed: psychiatric: 21.1% in society vs. 17.5% in film, physical health issues: 5% society vs. 8% in film, death: 3.7% vs 8%, relationship strain: 22.7% vs. 45% and economic strain: 3.4% vs 8% in film. While no comparative societal data were available, fully 30% of cinematic prison suicides were for helping others (altruistic suicide). In addition, many cinematic suicides involved persons incarcerated for crimes they did not commit (5% of all prisoners are believed to be innocent).
Discussion: Generally, the cinema misrepresents prison suicide and contributes to public misunderstanding of the phenomenon. The emphasis on altruism (suicide for others) in prison suicides may be traced to literary traditions from the 19th century (Tale of Two Cities). Work is needed to explore the link between innocence and prison suicide, as suggested by some case analysis from the Innocence Project.

T66. PUBLIC-PRIVATE PARTNERSHIPS TO COMBAT SUICIDE: THE COLORADO NATIONAL COLLABORATIVE AND GOVERNOR'S CHALLENGE

TO PREVENT SUICIDE AMONG SERVICE MEMBERS, VETERANS, AND THEIR FAMILIES

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Background: Colorado has had among the highest suicide rates in the U.S. for many years. The most recent 5-year (2013-2017) age adjusted rate is 19.3/100,000. Rates vary based on geography, population density, and demographics within the state. Six counties representing some of the highest burdens of suicide (19.6-39.9) were selected to pilot a data driven, evidence-based public health approach to suicide prevention. Within each county we utilized a data visualization tool created by epidemiologists in the Colorado Department of Public Health and Environment to drill down into Colorado Violent Death Reporting System data to determine which segments of the population are driving the county suicide burden. For example, in Montezuma county which has the highest burden (39.9) the rates are driven by white non-Hispanic males using a firearm. At an even more granular level, looking at suicides between 2004 and 2017 we learned that the largest numbers of deaths are in individuals aged 55-64, individuals who are currently married, and not a veteran. These types of data are used to prioritize which segments of the county population to target with suicide prevention policies, programs, and interventions. This approach allows us to maximize limited resources to have the best opportunities to significantly decrease suicide rates.

Methods: Colorado has a strong suicide prevention infrastructure because of a long-funded Office of Suicide Prevention housed within the Department of Public Health and Environment. Prominent suicidologists work not only at several major universities in the state, but Colorado is also home to the VA's Rocky Mountain Mental Illness Research, Education and Clinical Center (MIRECC) for Suicide Prevention. MIRECC investigators and staff have a long history of building state and local partnerships on suicide prevention. This presentation focuses on two of these partnerships – The Colorado National Collaborative (CNC) and the Governor's Challenge to Prevent Suicide Among Service Members, Veterans, and Their Families. The CNC represents a national, state, and local effort bringing together VA, CDC, University of Rochester's Injury Control Research Center for Suicide Prevention, SAMHSA, AFSP, the Colorado Governor's Office, Colorado Behavioral Healthcare Council, Colorado School of Public Health, University of Colorado Depression Center, and others with the goal of reducing suicide 20% by 2024.

Results: Working with local partners, including veteran service organizations, VA suicide prevention coordinators, and VA Community Based Outpatient Clinics, CNC leverages cutting edge data on suicide burden, effective interventions, and best practices to build and support local coalitions, develop and implement strategies tailored to each local community. It seeks to build bridges between research and policy experts in the broad clinical and public health domains with "boots on the ground" efforts to tackle the problem of suicide at the local level. The Governor's Challenge team is working to integrate their efforts with CNC's to leverage resources, coordinate efforts, and ensure that service members, veterans, and their families benefit equally from statewide efforts to reduce the burden of suicide in Colorado.

Discussion: Once CNC effectiveness in the 6 pilot counties is established, the model will be rolled out to the rest of the state. Ultimately, the plan is to utilize what is learned through the Colorado experience to provide a model, toolkit, and customization process that can be used by every state. These two integrated, coordinated efforts in Colorado, have the potential to form a major component of the national effort to address the problem of suicide across the entire U.S. population.

T67. PREVALENCE OF SUICIDE-RELATED OUTCOMES AND CONCURRENT ASSOCIATIONS WITH COMMON MENTAL HEALTH PROBLEMS FROM 13 TO 20 YEARS: RESULTS FROM THE QUEBEC LONGITUDINAL STUDY OF CHILD DEVELOPMENT

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Background: While suicide-related outcomes are associated with a range of mental health problems throughout adolescence, to our knowledge, no prior study has examined the patterns of associations across different ages during this period. This study first aims to estimate prevalence of suicide-related outcomes in a population-based sample at 13, 15, 17 and 20y and second, to document patterns of associations with five common mental health problems throughout adolescence.

Methods: The Quebec Longitudinal Study of Child Development is an ongoing population-based cohort including 2120 participants born in 1997/98 in the Canadian province of Quebec and followed until 20y. We included 1618 participants with information on mental health and suicide outcomes at either 13, 15, 17 or 20y; missing information was imputed via multiple imputation. Information on five mental health problems were identified from validated self-report questionnaires (scores were converted into standardized scores to ease interpretation); depression, anxiety, oppositional/defiance, conduct and attention deficit and/or hyperactivity problems. Self-reported past year suicide measures were as follows: non-serious ideator, serious ideator and suicide attempter. Multinomial logistic regressions (e.g., non-serious, serious ideator and suicide attempts versus none) were used to characterize patterns of associations between each mental health problem and suicide-related outcomes across ages.

Results: The overall pattern of prevalence for non-serious ideation increased from 13y to 17y (11.80%-18.40%; 20y n/a); the prevalence for serious ideation increased from 13y to 20y (3.30%-9.50%); the prevalence for suicide attempt was approximately 4% from 13y to 20y (3.50%-3.80%). For non-serious ideation, the strongest associations were seen for depression with odds ratio (OR for each standard deviation increase) ranging from 2.57 to 3.10. For serious ideation, the strongest associations among all problems were also seen for depression, but strength of associations were stronger during mid-adolescence (ORs at 15 and 17y respectively: 4.68 and 3.00) than at 13y and 20y (ORs at 13 and 20y respectively: 2.99 and 2.42) adolescents. For suicide attempts, strong associations were seen for oppositional/defiant and conduct problems but in young adolescents only; at 13y respective ORs were 2.77 and 2.85. Associations between depression and suicide attempts were strongest in mid-adolescence (ORs were 4.36 and 3.17 at 15 and 17y respectively) than in early (13y: 2.93) and late (20y: 2.10) adolescence. A similar pattern of associations was observed for anxiety problems, but odds were smaller in magnitude (ORs ranging from 1.58-3.16). The strength of associations of ADHD with suicide-related outcomes were similar across ages and increased from non-serious to serious ideation to attempts (ORs ranging from 1.39-2.40). Overall, patterns of associations using standardized scores were similar while relying on scores greater than or equal to the 90th percentile on mental health problems and in maximum available samples.

Discussion: In our population-based sample of present-day adolescents, suicide ideations and attempts were common, with rates of suicide ideation increasing with age. All mental health problems were associated with suicide-related outcomes with strongest associations seen for

depression. Disruptive behaviours problems were strongly associated with suicide attempts in young adolescents only.

T68. IS INFERTILITY, FERTILITY TREATMENT, AND ABORTION LINKED TO SUICIDE ATTEMPT AND SUICIDE?

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Background: Although 8% of all births are due to fertility treatment, only 13% of initiated treatments result in a delivery. Also, 15-16,000 abortions are performed in Denmark, of which 39% were by women younger than 25 years. It is well established that distressing and critical life events are linked to higher risks of suicide and suicide behaviour, yet existing findings are ambiguous. This project explores: 1) whether people who experience fertility problems, i.e. infertility or fertility treatments, have higher risks of suicidal behaviour than people with no fertility problems; 2), whether women who have an abortion have higher risks of suicidal behaviour than those who have not.
Methods: A cohort design and the entire population aged 15 years or older living in Denmark during 1980 through 2016 are used for the analysis (N=7,650,740). Using register data, we identified persons who had been diagnosed or received treatment for infertility, fertility treatment, and abortions as well as their partners. We used Poisson regression model to obtain incidence rates ratios (IRRs) with 95% confidence intervals (CI-95%) and adjusted for period; age group; living status; children; socio-economic status; psychiatric hospitalization prior to exposure; and suicide attempt prior to exposure.
Results: Women diagnosed with infertility or recorded with an abortion during 1980-2016 were identified in National Patient Registry. Preliminary results showed a 1.6-fold (IRR: 1.64; CI- 95%: 1.56-1.71) higher IRR for suicide attempt among those with infertility compared to those with without in adjusted analysis. A significantly higher rate of suicide is also noted for women with infertility (IRR: 1.42; CI- 95%: 1.24-1.63). Abortion was linked to a 2-fold higher rate of suicide attempt (IRR: 2.00; CI- 95%: 1.96-2.05) while a 60% higher (IRR: 1.63; CI-95%: 1.53-1.73) suicide rate was noted among those who had an abortion.
Discussion: The preliminary results showed a significantly higher rate of suicide and suicide attempts for both abortion and infertility when compared to those with without in adjusted analysis. Strengths of the study include the large sample size, longitudinal, complete follow-up as well as rigorous adjusting for structural differences. A minor limitation pertains to the fact that information regarding infertility only is available for those persons who have been diagnosed. An important aspect is a potential direct causal relation between abortion and mental disorder, in relation to risk of suicide risk. Given that the studied groups see health care staff during diagnostic and medical procedures, there is an opportunity for screening and to provide information about potential future problems and where to seek help.

T69. CANNABIS USE, DEPRESSION, AND SUICIDAL IDEATION/ATTEMPT IN ADOLESCENCE: COMORBIDITY AND DIRECTION OF ASSOCIATIONS IN A CONTEMPORARY QUEBEC COHORT

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Background: Increased cannabis consumption may have consequences ranging from improvement to aggravation of mental health problems. To date, much of the research has focused on adult populations, limiting our knowledge on associations between cannabis use and mental health in young people. Youths aged 15 to 24 years have the highest rates of mood disorders and suicidal risk across the lifespan and represent the largest group of cannabis consumers in Canada, making adolescence a period of heightened vulnerability for comorbid mental health problems and substance use. Adolescents who use cannabis may be at increased risk for depression and suicidal ideation/attempt, but their use may result from an attempt at self-medicating existing symptomatology. Disentangling the timing of cannabis use and depression/suicidal ideation/attempt is vital to designing more targeted preventive interventions.
Methods: Participants were drawn from the Quebec Longitudinal Study of Child Development, a prospective birth cohort of individuals followed over 20 years. We investigated concurrent associations between validated self-report measures of frequency of cannabis use, depression, and severe suicidal ideation/attempt at ages 15, 17, and 20 years, using logistic regressions. Longitudinal associations were assessed using cross-lagged analysis.
Results: The prevalence of frequent cannabis use was 7.0% at age 15 years, 12.7% at age 17 years, and 15.6% at age 20 years. Adolescents who reported using cannabis frequently at one age were 11 to 15 times more likely to continue using cannabis over time. In our cross-lagged analysis, frequent cannabis use was associated with suicidal ideation/attempt, but not depression: Adolescents who frequently used cannabis at age 15 were at a higher risk of suicidal ideation/attempt at age 17 years (OR=2.19, 95% CI=1.04–4.58). However, this association was fully explained by comorbid alcohol and other substance use. Further, adolescents who reported having depression at 15 years were at higher risk of frequent cannabis use at 17 years, even after adjusting for comorbid alcohol and other substance use (OR=2.30, 95%CI=1.19–4.43). Adolescents who frequently used cannabis at 17 years remained frequent users at 20 years (OR=11.31, 95%CI=5.20–24.61).
Discussion: The results indicate that depression aggravated cannabis use, as suggested by the secondary cannabis use hypothesis. Evidence for the secondary cannabis use hypothesis has implications for the intervention plans of adolescents presenting with depression. Targeting depressive symptoms may prevent increases in cannabis use, which has been associated with more negative outcomes throughout the lifespan. The implementation of such strategies is especially timely given that depressive symptoms peak during mid-adolescence. The current findings suggest that the enhancement of affect regulation competencies should be included as part of tailored interventions among youth with depression; ultimately to achieve better mental health outcomes.

T70. SOCIAL SUPPORT AS A PROTECTIVE FACTOR FOR YOUTH SUICIDE: AN INTERSECTIONAL AND SOCIOECOLOGICAL APPROACH

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Background: Recently, suicide rates have reached a 30-year high in the United States with the sharpest increases occurring among youth (Curtin, Warner, & Hedegaard, 2016; Twenge, 2017). While these rising rates have resulted in increased research in suicidology, the majority of such research has approached this inquiry from the individual level of analysis focused exclusively on risk factors. This focus has resulted in the neglect of the social contexts and

ecological factors impacting youth suicide. The present study aims to address this issue and contribute to the existing literature in two major ways. Firstly, the study goes beyond the individual level of analysis to look at suicide and the role of social support as a protective factor through the lens of a socioecological framework. Secondly, it uses an intersectional approach to determine which youth are most at risk for suicide and how social support may be differentially effective based on intersectionality.

Methods: The present study involved secondary analysis of data from the Michigan Profile for Healthy Youth survey across three counties in mid-Michigan. Cluster analyses were used to determine the implications of intersectionality on youth suicide followed by a combination of stepwise and hierarchical moderated regression models to investigate the unique and compounding role of social support as a protective factor for youth suicide, as well as its role as a moderator in the relationship between intersectionality and suicide risk.

Results: Four key findings summarize the results of the present study. First, youth with multiple marginalized identities were significantly more likely to be classified as high-risk. Second, social support at the family, school, and community levels was found to be significantly associated with reduced suicide risk among youth. Third, the combination of multiple sources of social support is more protective than any one unique source of social support. Finally, social support was found to moderate the relationship between intersectionality and increased risk such that family support and school support mitigate the negative impacts of multiple marginalized identities on suicide risk.

Discussion: These findings highlight the importance of paying attention to protective factors in every context in which youth live, learn, and play. In addition, measuring and reporting social identities as well as their combinations and interactions adds to our understanding of both risk and prevention when it comes to youth suicide. Implications from the present study include an expanded research focus both on protective factors at multiple ecological levels as well as intersectionality, increased support for policies and strategies for place-based programming for youth, and transformations for the treatment of mental health conditions among youth. Ethical and methodological limitations are also discussed.

T71. INCIDENCE AND CHARACTERISTICS OF NURSE SUICIDE IN THE UNITED STATES

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Background: The United States (U.S.) incidence of nurse suicide is unknown. Outdated suicide data from over 20 years ago coupled with international data suggests that nurses may be at higher risk than the general public. We previously conducted a pilot study to test the methodology used in this study. In that San Diego County 10-year longitudinal retrospective study of nurse suicides, RN (18.51) incidence of suicide was higher than the general population excluding nurses (15.81), normalized to 100,000 person years. In 2014 (the only year with gender data available) female nurses were at a higher risk than the general female population (10.41 vs. 7.41 per 100,000 person years). A larger sample was needed to detect significance. Therefore, this study was conducted using the 2014 Center for Disease Control dataset.

Methods: Retrospective correlational analysis of pre-existing data in the National Violent Death Reporting System (NVDRS) dataset. Denominators and gender data were obtained. Nurse suicides were compared against suicides from the general population of people 20 years

and above. The 2014 NVDRS dataset contained suicides from 18 states coded by occupation. Characteristics of victims were compared. Incidence was calculated.
Results: Female nurse suicides were significantly higher (11.97/100,000) than the female population (7.58/100,000) ($p<0.001$). Male nurse suicides (39.8/100,000) were significantly higher than the male population (28.2/100,000) ($p<0.001$). The method of suicide differed between nurses (pharmaceuticals) and others (firearms). Opioids and benzodiazepines were the most frequently used substances in the suicides of nurses. A host of mental health and social risk factors were significantly greater than in the general population.
Discussion: These results suggest a public health imperative for future research and development of effective preventative strategies for nurses; a largely understudied population. A longitudinal study using a larger data set is planned to confirm generalizability of these findings.

T72. SUICIDE ATTEMPT AND SUICIDE IN REFUGEES IN SWEDEN – A NATIONWIDE POPULATION-BASED COHORT STUDY

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Background: Despite a reported high rate of mental disorders in refugees, scientific knowledge on their risk of suicide attempt and suicide is scarce. We aimed to investigate 1) the risk of suicide attempt and suicide in refugees in Sweden, according to their country of birth, compared Swedish-born individuals, and 2) to what extent time period effects, socio-demographics, labour market marginalisation (LMM) and morbidity explain these associations.
Methods: Three cohorts comprising the entire population of Sweden, 16-64 years at 31st December 1999, 2004 and 2009 (around 5 million each, of which 3·3-5·0% refugees), were followed for four years each through register linkage. Additionally, the 2004 cohort was followed for nine years, to allow analyses by refugees' country of birth. Crude and multivariate Hazard Ratios (HRs) with 95% Confidence Intervals (CIs) were computed. The multivariate models were adjusted for socio-demographic, LMM and morbidity factors.
Results: In the multivariate analyses, HRs regarding suicide attempt and suicide in refugees, compared with Swedish-born, ranged from 0·38-1·25 and 0·16-1·20 according to country of birth, respectively. Results were either non-significant or showed lower risks for refugees. Exceptions were refugees from Iran (HR 1·25; 95% CI 1·14-1·41) for suicide attempt. The risk for suicide attempt in refugees compared with the Swedish-born diminished slightly across time periods.
Discussion: Refugees seem to be protected from suicide attempt and suicide relative to Swedish-born, which calls for more studies to disentangle underlying risk and protective factors.

T73. GENETIC ASSOCIATION OF CYTOKINES WITH SUICIDAL BEHAVIOR IN INDIAN POPULATION: PRELIMINARY FINDINGS

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Background: Inflammation-associated depression models postulates that immune-mediated cytokines alter serotonin and glutamate biosynthesis leading to depression and suicidal behavior. Genes encoding cytokines are highly polymorphic. Single nucleotide polymorphisms, of these cytokine genes are significantly associated with depression and suicidal behavior. Our study aims to finds the molecular genetic pattern of the TNFα – 308 (A/G), TNFα -850 (C/T), IL-1β -31(T/C), IL-1β -511(C/T), IL-4 -33(C/T), IL-6 -174(C/ G), IL-10 -1082(G/A) SNPs in suicidal behavior with taking into consideration endophenotypes. We also aim to measure levels of cytokines in clinical subjects (suicide attempt and suicide ideation cases) to find out the correlation between genotypic polymorphism of cytokines with serum cytokine expression.
Methods: This is a hospital-based case-control study proposed to include 400 postmortem subjects (200 in each group) and 100 clinical cases (50suicidal attempt/suicidal ideation and 50 healthy volunteers) with a stringent exclusion criteria. After receipt of informed consent, 5 ml peripheral blood sample is taken from subjects. Psychological autopsy of deceased and different scales viz. MINI, SIS, HAM-D, BIS (if applicable) in suicidality clinical subjects is being used. PCR- RFLP technique is being used for genotyping. Quantitation of respective cytokines will be done for clinical samples using bioplex.
Results: Till now, 74 cases and 60 controls has been analyzed for genotyping in postmortem cases. The allele frequencies of the 4 SNPs genotyped in cases and controls are as follow: IL-1β -31(T/C) T= 25.7: 23 , C= 74.2: 77; IL-4 -33(C/T) C=11.6:15.7 T= 88.3: 84.2; IL-6 -174(C/ T) C=10.5:16.7; T= 89.4:83.3; IL-10 -1082(G/A) G=100:97.3, A=0:2.77.
Discussion: Inflammation causes dysregulation of HPA axis or immune system resulting in abnormal cytokine productions. Many studies tried to investigate the relation between the polymorphisms of key pro- and anti-inflammatory cytokines with suicidal behavior. These are only preliminary findings, as the study is still in midway, we hope that complete study will give a more validated data which will provide scientific lead about association of inflammatory markers and suicidal behavior.

T74. THE CRHR1 AND CRHR2 GENES INTERACT WITH CHILDHOOD TRAUMA INCREASING THE RISK OF HAVING AT LEAST ONE SUICIDE ATTEMPT IN PATIENTS WITH AFFECTIVE DISORDERS

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Background: Suicide behavior represents a worldwide public health problem, which translates to about 800,000 suicides per year and at least ten times more people attempt suicide. Family, twin, and adoption studies have suggested that genetic factors are involved in suicidal behavior. Corticotropin-releasing hormone receptor type 1 and 2 (CRHR1 and CRHR2) genes have an important role in activation and modulation of hypothalamic-pituitary-adrenal (HPA) axis,

which is considered major regulator of stress. Childhood trauma is considered an environmental risk factor in suicide attempt (SA) and it has been related with HPA axis dysregulation. The aim of this study was explored the interaction of CRHR1 and CRHR2 genes with childhood trauma in the development of SA.

Methods: We included 368 Mexican patients with affective disorder according to DSM-IV-RT diagnostic criteria using SCID I version 4. The sample was recruited from Affective Disorder Clinic of the INPRFM. There were 184 patients with at least one SA and 184 without SA. Information of SA and childhood trauma was obtained from medical records. Multifactor Dimensionality Reduction program was used to analyze gene-environment interactions between CRHR1 (rs110402, rs242924, rs1640665), CRHR2 (rs2190242, rs2284217, rs2014663) genes and childhood trauma in SA.

Results: The analysis showed significant interaction of CRHR1 and CRHR2 genes with childhood trauma, thus conferring increased risk of having presented at least one SA (OR=7.44; 95% CI, 4.58-12.07; $p<0.0001$). Also, we observed interaction in the analysis of trauma subtypes for physical negligence (OR=4.72; 95% CI, 3.01-7.40; $p<0.0001$), emotional abuse (OR=5.76; 95% CI, 3.67-9.05; $p<0.0001$), and sexual abuse (OR=5.70; 95% CI, 3.62-8.97; $p<0.0001$).

Discussion: SA is a heterogenous behavior due to a combination of multiple genes with a small effect. Furthermore, evidence showed that environmental factors play a fundamental role in modulating or triggering genetic predisposition to SA. The present study replicated the findings reporting interaction between CRHR1 gene and childhood trauma in affective disorders patients with SA. Moreover, our study included the analysis of CRHR2 gene showing in the analysis of childhood trauma subtypes interaction between the two CRH receptors genes and physical negligence, and emotional and sexual abuse. Therefore, our findings may suggest that CRHR1, CRHR2 genes and subtypes of childhood trauma interact in the susceptibility to present at least one SA in affective disorder patients. However, these findings should be analyzed in a larger sample size of affective disorders patients with SA including other neurobiological markers and the definition of personality traits, such as anxiety, aggressiveness, and impulsivity.

T75. SEXUAL ORIENTATION AND ADOLESCENT SUICIDE ATTEMPT AND SELF-HARM: A CO-TWIN CONTROL DESIGN

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Background: Adolescence is a development period characterized by an increase in suicidality, and youth who identify with a sexual orientation other than heterosexual are at two- to seven-fold increased risk for suicidality compared to heterosexual peers (Plöderl et al., 2013). Using an adolescent, Swedish twin study, we examined the: 1) strength of the association between self-reported sexual orientation and suicide attempt (SA) and self-harm (SH), 2) extent of genetic and environmental confounding using a co-twin control design, and 3) strength of the association after adjusting for potential confounding due to childhood psychopathology.

Methods: The Child and Adolescent Twin Study in Sweden (CATSS) is an ongoing, longitudinal study of nearly all adolescent twins living in Sweden (n=30,444). At age 15, participants reported their sexual orientation, with response options of “homosexual,” “bisexual,” “heterosexual,” “other,” (e.g., pansexual, asexual) or “do not know/want to

answer." At age 18, offspring completed assessment of three items indexing SA and SH. We combined all items into a dichotomous variable of any SA/SH versus none. For Aim 1, we conducted survey logistic regression and clustered by twin pair. For Aim 2 and 3, we conducted a fixed effect model that compared twins who differed on sexual orientation to account for genetic and environmental factors that make twins similar. For Aim 3, we also adjusted for eight domains of childhood psychopathology (concentration/attention, impulsivity/activity, opposition, conduct, eating, anxiety, emotion, and reality/psychosis).
Results: At age 15, the majority of adolescents identified as heterosexual (72.73%), whereas 1.94% identified as homosexual, 2.93% as bisexual, 1.26% as other, 6.44% as not knowing/wanting to answer, and 14.79% did not respond. By age 18, 27.13% of adolescents reported suicide attempt or self-harm. We dummy-coded the sexual orientation variable and combined bisexual and other, as the association with SA/SH did not statistically differ ($\chi 2$ (1)=1.32, p=0.25). Compared to heterosexual adolescents, adolescents who identified as homosexual (OR, 1.07 [95% CI, 0.66-1.72]), did not know/want to answer (OR, 0.96 [0.71-1.28]), or did not respond (OR, 1.03 [0.83-1.28]) were not at increased odds for any SA/SH. However, adolescents identifying as either bisexual or other were at a 3-fold increased odds for SA/SH (OR, 3.71 [2.73-5.04]). When adjusting for all factors that make twins similar, the association attenuated, but remained elevated (OR, 2.12 [1.24-3.62]). Finally, when additionally adjusting for childhood psychopathology, the association attenuated slightly (OR, 2.02 [1.08-3.79]).
Discussion: Compared to adolescents who reported being heterosexual, individuals who identified as homosexual were not at an increased odds for SA/SH, although adolescents who reported a sexual orientation of bisexual or "other" were at 3-fold increased odds of SA/SH. The study supported an association between bisexual or other sexual orientation and SA/SH independent of unmeasured genetic and environmental confounding, as well as childhood psychopathology. However, future studies need to examine the role of minority stress unique to these adolescents within a genetically informed perspective. This was the first study to examine sexual orientation and SA/SH within an adolescent twin sample. The results highlight the importance of intervening with subgroups of sexual minority youth who are at particularly high risk for suicidality.

T76. NOCICEPTIN RECEPTORS AND SELF-INJURIOUS BEHAVIORS: A PRELIMINARY POSITRON EMISSIONS TOMOGRAPHY INVESTIGATION

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Background: Suicide attempt history and non-suicidal self-injury (NSSI; deliberate destruction of one's body tissue without intent to die) are among the two strongest longitudinal predictors of future suicide attempts (Franklin et al., 2017; Ribeiro et al., 2016). NSSI, in particular, has received recent research attention as a particularly robust predictor of future attempts, increasing risk 4-7 fold (Franklin et al., Guan et al., 2017). However, the molecular mechanisms underlying NSSI and suicide attempts are yet to be established.
The nociceptive peptide receptor (NOP) and its ligand, nociceptin/ orphanin FQ peptide (N/OFQ) – a key component of the anti-stress system – have recently emerged as a potential molecular mechanism implicated in suicide behavior (Lutz et al., 2015), such that dysregulation of the N/OFQ-NOP system might contribute to the neurobiology of suicide. Here we extend these findings by investigating the association between in vivo status of NOP receptors and self-injurious behaviors, including history of attempts and NSSI.

Methods: [11C]NOP-1A and position emissions tomography (PET) were used to measure in vivo NOP binding in 14 unmedicated adults (79% female) ages 18-45 (M= 25.57) with a current primary diagnosis of major depressive disorder (MDD). [11C]NOP-1A distribution volume (VT) was measured in the ACC, given prior research linking N/OFQ in this region to suicide risk (Lutz et al. 2015). The Self-Injurious Thoughts and Behaviors Interview (SITBI; Nock et al., 2006) was used to assess for lifetime history of NSSI behavior, and history of suicide attempts was assessed with the Mini International Neuropsychiatric Interview (MINI).
Results: Approximately half of the sample endorsed a lifetime history of attempts (N=6), and also about half endorsed a history of NSSI (N=6). 21% of the sample endorsed both a history of suicide attempt and NSSI (N=3). T-test results showed that adults with a history of NSSI exhibited significantly higher [11C]NOP-1AVT in the ACC (M = 15.90, SD = 1.33) compared to adults with no lifetime history of NSSI (M = 12.88, SD = 2.44); $t(12)=2.73$, $p < .05$). We found no difference in [11C]NOP-1A VT in the ACC among adults with a history of suicide attempts (M = 14.08, SD = 3.23) compared to adults with no history of attempts (M = 14.24, SD = 2.05); $t(12) = .11$, $p = .92$.
Discussion: These results provide preliminary data showing an association between NSSI behavior and increased NOP receptor availability in the brain. We speculate that increased NOP may reflect lower N/OFQ resting levels in the ACC among adults who engage in NSSI. Additionally, we did not find evidence for an association between NOP receptor levels and history of attempts, suggesting that increased NOP receptor availability may be specific to NSSI. Findings provide initial evidence for the NOP- N/OFQ system as a potential treatment target for NSSI.

T77. SUICIDE BEHAVIORS AND AMYGDALA VOLUME IN FEMALE COMPARED TO MALE VETERANS: A PILOT STUDY

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Background: The Department of Veterans Affairs Office of Mental Health and Suicide Prevention has reported age- and sex- adjusted suicide rates suggesting that Veteran suicide mortality rates are 1.5 times higher than civilians. Moreover, these data showed that suicide mortality rates of female Veterans were 2 times higher than those of female civilians (Office of Mental Health and Suicide Prevention, 2018). As such, the Department of Veterans Affairs has made suicide prevention a primary focus. Many biological factors examined primarily in civilians have been related to suicide risk (van Heeringen & Mann, 2014). Changes in structure and functional connectivity of the amygdala have been found in individuals with suicide behavior (SB), yet few of these imaging studies have focused on Veterans and fewer still have examined sex differences. Therefore, the current pilot study examined the relationship between amygdala volume and SB in female compared to male Veterans.
Methods: Seventy-seven Veterans ages 18-55 completed a standardized protocol, which included the Columbia Suicide Severity Rating Scale (CSSRS) for a history of lifetime SB, Hamilton Rating Scale for Depression (HAM-D), Profile of Mood States (POMS), and high-resolution MRI scanning sequences on a 3T Siemens scanner. Structural imaging data were acquired using a T1-weighted 3D MPRAGE GRAPPA sequence acquired sagittally using a 12-channel head coil with TE/TR/TID3.38 ms/2.0 s/1.1 s, 8 °flip, 256_256 acquisition matrix, 256mm2 FOV, 160 slices, 1.0mm slice thickness. Left and right amygdala volume were divided by total brain segment volume to correct for differences in total brain volume. Participants were divided into SB groups with Veterans who reported a history of ideation and/or attempts being included in the +SB group.

Results: Participants were separated into four groups based on sex and history of SB: males+SB (n = 34), males-SB (n = 29), females+SB (n = 10), and females-SB (n = 4). For males who endorsed SB, total CSSRS score was related to left amygdala volume (r = 0.38, p = 0.03). Left and right amygdala volume did not differ by group and there were no significant associations between SB and right or left amygdala volume for the other groups. Moreover, neither HAM-D score nor POMS total score were related to right or left amygdala in any of the four groups.
Discussion: Results from this pilot study suggest that left amygdala volume is related to SB in males and may be independent of depressed mood. Further, no association was evident for female Veterans so if the findings are replicated in a larger sample, the data would suggest sex-related limbic attributions to SB. Prior research with civilians has shown changes in right amygdala volume in individuals with suicide attempts when compared to controls (Monkul et al., 2007; Spoletini et al., 2011). To our knowledge these are the first pilot data to show amygdala volume differences related to SB by sex in US Veterans. Results highlight the importance of further examination of limbic structures to better understand the neurobiology of suicide in female Veterans compared to male Veterans.

T78. IMPULSIVE PERSONALITY TRAITS AND ASSOCIATED BRAIN REGIONS IN SUICIDE ATTEMPT AND SUICIDAL IDEATION: A CONSOLIDATION OF VOXEL-BASED MORPHOMETRY AND ARTERIAL SPIN LABELING FINDINGS

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Background: The ideation-to-action framework describes the processes of thinking about suicide and attempting suicide as distinct. Though impulsivity is recognized as a risk factor for suicide, supporting evidence from self-report measures has been inconsistent within the ideation-to-action framework. Comparatively, evidence from cognitive measures of response inhibition and decision-making in individuals with suicidal ideation demonstrates potential to better discriminate between those who have and have not attempted suicide. Indeed, impulsivity is considered a multidimensional construct thought to comprise impulsive action, impulsive choice, and impulsive personality traits. To evince the neurobiological underpinnings of impulsivity, we examined whether brain regions associated with impulsive choice and impulsive action differ between individuals with current suicidal ideation based on their suicide attempt histories.
Methods: A 3.0T MRI scanner was used to acquire arterial spin labeling (ASL) and T1 structural images in inpatients diagnosed with personality disorders. Fourteen participants endorsed a history of at least one suicide attempt, and 20 participants denied a history of suicide attempt. All participants endorsed suicidal ideation in the past two weeks. Using an a priori region-of-interest approach for voxel-based morphometry (VBM) and ASL analyses, we examined the effect sizes of group differences in the gray matter volume (GMV) and cerebral perfusion (CP) of regions associated with impulsive choice (i.e., insula, orbitofrontal cortex) and impulsive action (i.e., inferior frontal gyrus, anterior cingulate cortex). We further examined the correlations among Barratt Impulsiveness Scale (BIS-11) subscales, regional GMV, and regional CP.
Results: Compared to participants without suicide attempt histories, those who attempted suicide exhibited lower GMV and greater CP in the insula (p=.05, d=0.79; p=.25, d=0.42), inferior frontal gyrus (p=.65, d=0.15; p=.07, d=0.73), orbitofrontal cortex (p=.29, d=0.39; p=.61, d=0.18), and anterior cingulate cortex (p=.29, d=0.37; p=.15, d=0.58). Groups differed significantly in terms of insula GMV. Across groups, BIS-11 Motor score and inferior frontal

gyrus GMV correlated significantly, r=-.40, 95% BCa CI [-.60, -.13], p=.03. All other correlations between BIS-11 subscales and GMV or CP were not significant (ps>.05; rs<|.3|).
Discussion: Although most structural and functional differences were nonsignificant, the magnitude of the effect sizes indicates a consistent pattern of moderate differences in regions associated with impulsive choice and impulsive action. As expected, most BIS-11 subscales did not correlate with GMV and CP in regions associated with impulsivity. These findings highlight the value of integrating a multi-method assessment of impulsivity that includes neuroimaging approaches to elucidate the role of impulsivity in suicide attempt.

T79. THALAMI SHAPE DIFFERENCES IN ELDERLY DEPRESSED PATIENTS AT-RISK FOR SUICIDE

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Background: Suicide in elderlies is three times higher than in younger populations, but no study examined its relationship to cerebral alterations. This study aims to identify cerebral correlates of suicidal behavior.
Methods: High-resolution magnetic resonance imaging was used to measure morphometric changes in 17 depressed suicide attempters (mean age=67.8□5.7 years old, 26.7 % male), 33 depressed patient controls with no personal or family history of suicidal behavior (mean age=67.6□6.4 years old, 53.3 % male), and 21 healthy controls (mean age=66.5□5.1 years old, 20% male). Standard T1-weighted MPRAGE images were processed using the MAGeTbrain pipeline. General linear modelling predicting volume, surface displacement and surface area to determine differences between groups were performed in R/3.4.0 with RMINC/1.5.0.0 co-varying for age, sex and Hamilton depression (Ham-D) index total score, multiple comparisons were corrected using FDR.
Results: Groups did not differ for age, sex, and education. Patient groups were equivalent on the Ham-D total score. No morphometric differences were found between groups, except in thalami. Suicide attempters exhibited morphometric differences in the medial posterior thalami regions, with highest differences in the pulvinar relative to both control groups. A significant difference was also found between suicide attempters and control groups in the anterior regions of the thalami, with strongest differences in the ventral-anterior nucleus.
Discussion: Medial-posterior portions of the thalami are known to be related to pain and visual processing, and emotional response whereas anterior regions are involved in memory and motor processing. Alterations in these regions may thus be associated with suicide vulnerability in elderlies.

T80. MEMORY DEFICIT IN ELDERLY HIGH-LETHALITY SUICIDE ATTEMPTERS

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Background: Suicidal older adults are a heterogeneous group with regard to clinical etiology and cognitive functioning. As such, it may be helpful to examine whether specific subgroups

of suicide attempters have different cognitive profiles, placing them at heightened dementia risk. In the present study, we examined whether cognitive profiles differ between depressed older adults with a history of high-lethality suicide attempt relative to those with a history of a low-lethality suicide attempt, non-suicidal depressed older adults, and non-depressed older adults. We were particularly interested in whether high-lethality attempters show greater memory deficits relative to the other groups, which may be indicative of a dementia prodrome.
Methods: 278 participants aged 60+ (56 psychiatrically healthy control subjects, 67 depressed control subjects, 63 suicide ideators, 40 low-, and 52 high-lethality suicide attempters, based on the Beck Lethality Scale) completed the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS). Linear regression models were conducted, regressing individual RBANS subtest scores and RBANS index scores onto dummy coded clinical group variables, after adjustment for age, sex, education, depression severity (i.e., Hamilton-16 score), and lifetime history of anxiety and substance use disorders.
Results: Suicide attempters collectively did not perform worse than non-suicidal depressed older adults on measures of learning and memory. However, high-lethality attempters performed worse than non-depressed older adults on an index of delayed memory performance (RBANS Delayed Memory Index: Beta= -0.22, p=0.03) and performed worse than low-lethality attempters on a measure of verbal memory (Percent Retention of Word List: Beta= -0.22, p=0.003).
Discussion: Older suicide attempters are a cognitively heterogeneous group. Depressed older adults with a history of high-lethality attempts may exhibit memory deficits. It is possible those with a history of more severe suicidal behavior (i.e., high-lethality attempts) are at heightened risk for dementia relative to those with a history of low-lethality attempts and non-suicidal older adults.

T81. SUICIDE IDEATION AND NEUROCOGNITION AMONG 9- AND 10-YEAR OLD CHILDREN: RESULTS FROM THE ADOLESCENT BRAIN COGNITIVE DEVELOPMENT (ABCD) STUDY

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Background: In the past decade, the incidence of suicide behavior and death by suicide among children has been increasing. A recent study of emergency room visits due to suicide behavior from 2007-2015 found that 43% of visits were for children under the age of 10 (Burstein et al., 2019). There is a critical need to better understand risk factors for suicide in order to implement targeted prevention efforts, especially for children. Recent findings have provided cumulative evidence that individuals with suicide ideation and attempts exhibit neurocognitive deficits (Richard-Devantoy, et al., 2014), but this relationship has not been examined in children.
Methods: The Adolescent Brain Cognitive Development (ABCD) Study is a longitudinal study that follows nine- and ten-year-old children through late adolescence to examine factors that influence developmental trajectories. Baseline data from 11,875 participants in the ABCD study (data release 2.0) were used to examine whether a history of suicide ideation was associated with neurocognitive performance. Suicidality was assessed by the Kiddie Schedule for Affective Disorder and Schizophrenia (KSADS) suicide module completed by the parent. Neurocognitive ability was assessed using the NIH Toolbox Cognition measures administered to the youth. General additive mixed models were used to examine suicide ideation and

neurocognitive performance controlling for age, sex, race/ethnicity, parent education, parent income, parent marital status, and current symptoms of depression.
Results: 370 parents reported that their child had history of active suicide ideation and 11,340 parents reported that their child did not have a history of active suicide ideation. Children with active suicide ideation demonstrated lower performance on the Picture Sequence Memory Test (p=.000004) and the Fluid Intelligence Composite (p=.018). After controlling for current symptoms of depression, only performance on the Picture Sequence Memory Test survived correction for multiple comparisons and was significantly lower for participants with a history of active suicide ideation (p=.0001).
Discussion: To our knowledge, this is the first study to identify decreased episodic memory in children with a history of active suicide ideation. These findings are similar to results from adult and adolescent studies that have reported decreased episodic memory performance among individuals with a history of suicide attempt(s) compared to patient controls and healthy controls (Arie et al., 2012; Richard-Devantoy, et al., 2015). Episodic memory plays a role in the extraction and combination of stored information to imagine future events (Martin-Ordas et al., 2014). Deficits in episodic memory may impact a child's ability to problem-solve and generate potential future outcomes, which may increase the risk for suicidal thoughts and behavior.

T82. IMPLICIT BIAS FOR SUICIDE PERSISTS AFTER IDEATION RESOLVES

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Background: Several studies have now demonstrated that suicidal ideation (SI) is associated with implicit bias for suicide-relevant stimuli (e.g., Cha et al., 2010; Nock et al., 2010; Tucker et al., 2018). These studies identify cognitive processes that are relevant to SI and provide evidence that the tasks may aid in the understanding and prediction of suicidal behavior. However, it is currently unclear whether these implicit biases are state-like processes that will resolve with the reduction of SI or whether they are more trait-like and enduring. We conducted the present study to better understand the state- or trait-like nature of implicit suicide bias.
Methods: Participants were 79 undergraduate students (M age = 20, 62% women, 78% White/Caucasian, 83% heterosexual) recruited as part of a larger study investigating indirect measures of suicidal ideation and behavior. Participants were administered the Colombia Suicide Severity Rating Scale (C-SSRS) interview to assess current and past suicidal ideation and behavior. Participants completed a modified version of the Affect Misattribution Procedure to assess implicit association with suicide (S-AMP; Tucker et al., 2018). In the traditional AMP, participants respond to ambiguous stimuli (Chinese pictograms) while attempting to ignore briefly (150 millisecond) presented affectively relevant primes. Participants misattribute their affect resulting from the prime onto the ambiguous stimulus. The S-AMP includes four types of prime stimuli: suicide-relevant, negative but not suicide relevant, positive, and neutral. Higher scores on the S-AMP represent greater self-identification with the prime stimuli.
Results: Of the 79 participants, 22 reported a history of suicidal ideation and/or behavior but no current ideation or behavior ("history of SI" group). The other 57 participants had no lifetime history of suicidal ideation or behavior. Participants with a history of SI demonstrated increased implicit bias for suicide (M = 27.2, SD = 9.5), t = 2.56, p = .012, Cohen's d = .48, compared to participants with no lifetime history (M = 23.3, SD = 6.8). The two groups did not

significantly differ in their responses to negative (p = .087), positive (p = .599), or neutral (p = .126) stimuli.
Discussion: Participants with a history of SI or behavior demonstrate an implicit bias for suicide-relevant stimuli compared to participants without a history of SI. Importantly, this bias was specific to the suicide-relevant stimuli; the groups did not differ significantly in their responses to affectively negative (but not suicide-relevant), positive, or neutral stimuli. These results indicate that implicit bias for suicide-relevant information may be a trait-like process that endures after resolution of suicidal ideation or may be relevant to a "scarring" process that results from prior suicidal thinking or behavior (c.f., Liu, 2019). Our sample of individuals with a history of suicidal ideation was small and our data were cross-sectional, but these results provide preliminary evidence of an enduring implicit bias for suicide and have important implications for the conceptualization of cognitive bias in suicide.

T83. THE USE OF SOCIAL MEDIA TO INCREASE AWARENESS AND PREVENT SUICIDE: THE "#EUESTOU" PROJECT

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Background: The "I am felling" campaign was developed to speak openly about suicide prevention with young people through Facebook and Instagram, having as actors a digital influencer, a filmmaker and a psychologist, believing that communicating with responsibility is fundamental and can promote mental health and prevent suicides. The Vita Alere Institute, a well-known Institute for suicide prevention and postvention in Brazil was sought to set up the themes and supervise the work, besides being the technical responsible of the campaign. The campaign was sponsored by the Facebook's safety team. A list of possible negative effects of the campaign has been developed and solutions have been proposed to lessen any adverse effect. The campaign's organic reach was 15 million young people, which showed that it is possible to talk about suicide in accessible, interesting and safe language for young people using social media. Campaign breakdowns are already in progress.
Methods: Videos were developed based on the themes chosen by the Vita Alere Institute and aiming to demystify, support and educate about suicide prevention and postvention.
Comic strips were made to complete the visual idea of the campaign, in addition to a live broadcast to launch the program. Two email addresses were created to receive messages from people who wanted to help someone and people who needed help. Crises hotlines numbers were displayed at the end of all videos. During the campaign period and after it, security protocols were followed.

Results: The campaign reached 15 million young people and was chosen as one of the most important campaigns of Facebook Safety Team Brazil last year.
The youth interaction was significant and showed that it is possible to speak securely about suicide in social media, promoting education, suicide awareness and a decrease of the taboo. A podcast was developed called #goodnews. A second phase of the campaign was recorded with the presence of survivors of the suicide and will be launched in May 2019. A guideline for digital influencers will be released along with the second phase of the campaign. A youth event will be held in September with the presence of the first and second phase team. The program format will be developed and adapted for Latin America.

Discussion: Talk openly about suicide is crucial, in addition to professional meetings and reaching young people is a challenge found in the area. The combination of expertise, like

Psychology, Art and Digital Influence could develop a unique format and bring information and education to teens, gathering scientific knowledge with communication strategies. Some precautions have been taken to secure the safety of the campaign, such as monitoring Facebook and Instagram comments, e-mail with automatic response and specialized technical support. The responsible of the technical leader of the campaign was developing the themes, security protocols, supervise the recordings, reviewing the videos and comic strips, writing the automatically e-mails and giving support during and after the campaign.

T84. CAN WE USE BIG DATASETS AND ARTIFICIAL INTELLIGENCE TO BUILD CHATBOTS FOR ADOLESCENTS?

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Background: Adolescents with access to the internet spends several hours per day on social media for both social and informational purposes. In Norway, for example, about 95% of young people over the age of 16 use Facebook Messenger and Snapchat.
Cross sectional large-scale surveys in Europe and US have shown that psychiatric problems and drug abuse in the age groups 16 -25 are increasing. Suicidal behavior is often used as a proxy measure of the public mental health status and associated with psychological and social problems. Internet-delivered health services may be particularly suitable to reach the present generation of young people. In order to accommodate the need for reliable information about health related- and psychosocial issues, we are researching the benefits of using chatbots, understood as machine agents that serve as natural language user interfaces to data and services through text or voice. Chatbots allow users to ask questions or make commands in their everyday language and to get the needed content or service in a conversational style.

Methods: In this project we use large-scale qualitative data gathered from more than 150,000 user inquiries from young people gathered from governmental driven online services in Norway. Adolescents ask questions based on their struggling with different everyday issues. The vast majority of the questions are related to sexual issues and mental health, hereby approximately n=7000 explicit about suicidality. Professionals provide written answers within 1-3 days. In the first step we have created a prototype, where parts of the dataset are used. In order to generate a chatbot to communicate with the user, we propose two models namely, Hybrid Code Network (HCN) and End-to-End Memory Network (MemN2N). The HCN model is efficient in the dialogue systems since it does not require a great amount of data. MemN2N has advantageous to be mentioned as relatively fast training as well as fewer parameters than other memory networks.
Results: 50 dialog data are constructed from divorce dataset and MemN2N is trained on them. Results reveal that MemN2N has good accuracy, but still, there are more works to improve the model to get better accuracy. Furthermore, HCN is tested on Dialog bAbI datasets [2], which attained decent precision. However, the test of HCN on the data is left which is our further step along with improving the model.
Discussion: There are several ethical considerations with the use of a chatbot that should be discussed. However positive effects could be that asking a chatbot represents low threshold and rapid answers. It might also be easier to seek help especially for stigmatic issues if the services are anonymous without humans. Opposite, asking a chatbot can hinder help seeking

and establishing human relations in spite of the chatbot advices users to contact appropriate health care services. Chatbots therefore needs a function to motivate young people to seek help when needed or that chatbots work in a network of human professionals.
The testing in a clinical setting is therefore the next step after all pre-known pit falls have been revealed and secured. It is difficult to measure whether a chatbot approach can decrease psychiatric symptoms or suicidal behaviors. Therefore, we think that the project needs to be further discussed with experts in the field of suicidology to ensure sustainable development.

T85. USING A VIRTUAL PATIENT INTERACTION TO CONNECT WITH PATIENTS AT RISK OF SUICIDE

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Background: Working with patients at risk for suicide is highly stressful for clinicians and often elicits intense negative emotional responses that may affect suicidal outcomes (1) Clinician training in emotional self-awareness when working with patients at risk for suicide can enhance effective and empathic care for such patients (1, 2, 3). Currently, teaching clinicians to interact with suicidal patients consists in lectures, workshops, discussion of videotaped patient interviews and role-play (4), which are expensive, provide mainly descriptive feedback and lack standardization (4). Virtual patients (VPs) are multimedia interactive tools which allow safe and repetitive practice and immediate feedback, help develop clinical skills and can simulate critical scenarios (e.g. suicide risk assessment) (4). We created and tested a VP which simulates the interaction with a suicidal patient and provides immediate feedback on participants' descriptive suicide risk assessment ("discoveries"). We evaluated participants' verbal empathic communication and negative emotional responses towards the VP.
Methods: The VP Bernie Cohen, created in Virtual People Factory (5) based on an interview with a suicidal patient (6), is a 53-year-old gay male who had suffered a catastrophic personal loss. Medicine, nursing, public health and mental health counseling trainees at Florida International University interacted anonymously with Bernie by typing to elicit history and perform suicide risk assessment. The assessment tools were: 1) descriptive criteria for suicide risk assessment (7), 2) the Therapist Response Questionnaire-Suicide Form (TRQ-SF) (1), a clinician self-assessment of emotional responses towards the patient that potentially indicates a patient's short-term suicide risk, 3) the Empathic Communication Coding System (ECCS) (8), an expert-rated scale that codes empathic opportunities expressed by the patient and clinicians' verbal responses to these opportunities and 4) a VP satisfaction survey.
Results: Of 54 participants (mean age 24.4, SD=6.4), 37(68.52%) recognized suicidal ideation and 31(57.41%) performed a full descriptive suicide risk assessment (7). This early version of the VP Bernie yielded a mean TRQ-SF total score of 13.64 (SD=5.47, range 3-26), which may indicate higher negative responses in comparison to clinicians' TRQ-SF total mean score of 9.12 (SD=5.2, range 0-33) after interactions with psychiatric outpatients (N=346) (1). Participants responded to Bernie with a mean empathy of 1.46 (SD=1.25) as coded with ECCS (scale 0-6) (by comparison, medical students' mean empathy in standardized patient interaction was of 2.27 and practicing physicians' mean empathy towards real patients was on of 2.67 (9, 10). This level of empathic response indicates that the trainees recognized but frequently did not acknowledge or invite elaboration on the empathic opportunities in the interview.

Participants' overall satisfaction with this early version of Bernie Cohen VHI was 3.11(SD=0.98) on a 1-5 scale and usefulness of discoveries was rated as 3.78 (SD+1.09).
Discussion: A VP portraying a patient in suicide crisis allows descriptive recognition of suicide risk and empathic communication. The VP also elicits trainees' negative emotional responses similar and even higher than those that occur in real patient interactions, as expected in interaction with acute suicidal patients. In the near future, we plan to refine the tool and add feedback on verbal empathic communication (to include response alternatives that reflect higher empathy) and feedback designed to increase awareness of the emotional reactions towards the patient, as the next step in the development of this scalable training intervention.

T86. EFFECTIVENESS AND ACCEPTABILITY OF A MOBILE HEALTH APPLICATION AS AN ACCESSORY TO THERAPY FOR REDUCTION OF NON-SUICIDAL AND SUICIDAL SELF-INJURY: A PILOT CLUSTER RANDOMIZED CONTROLLED TRIAL

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Background: Suicidal behavior is one of the leading causes of death worldwide. In Argentina, suicide rates among the population aged 15-24 have doubled in the last 15 years. To prevent suicide, it is necessary to intervene early. The time to intervene among at-risk individuals may be brief and not assessable; therefore, interventions delivered by smartphones may be a useful tool.
Methods: CALMA free download is an application designed for the prevention of suicide among adolescents and young adults by a group of researchers at the University of Buenos Aires, Argentina. It is based on tools of Dialectical Behavioral Therapy (DBT), a treatment proved effective in reducing suicidal behavior. CALMA offers strategies of emotional regulation an problem solving. In the present study, our objective was to evaluate the effectiveness and acceptability of CALMA as an accessory to therapy for reduction of non-suicidal and suicidal self-injury behaviors. For this, we designed a pilot exploratory study randomized by clusters. We design a clinical trial of two parallel branches: CALMA (intervention) vs. Treatment As Usual (TAU) randomized by clusters with 4 weeks of follow-up. Each cluster was represented by each of the 6 DBT Skill Training Groups that assist weekly to FORO Foundation for Mental Health.
Results: Preliminary results: for the group that received CALMA, the decrease in the presence of suicidal ideation was statistically significant. In the TAU group, the change in this behavior did not turn out to be statistically significant, nor the other behaviors for both groups.
Discussion: The app was released to the Android and IOS stores in May 2017. In October when the IASR congress will take place, we will have results related to the RTC in Argentina. "CALMA" is the first tool-based application developed in Spanish for Latin America by researchers in the field of suicide behavior from an Academic Institution. I addition, the use of the app will be free.

T87. CONTINUITY OF CARE REGIMENT FOR PEOPLE WHO ATTEMPTED SUICIDE AND WERE ARRIVED AT GENERAL HOSPITALS

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Background: Previous research suggests that improved continuity of care would likely reduce the number of subsequent suicidal attempts following a previous nonfatal attempt. Meuhedet Health Services (Meuhedet) developed a systematic and comprehensive care process for those patients to ensure continuity of care (CoC). We expect that this process will keep those high-risk patients in a tight follow up during this critical period and eventually may decrease recurrent suicide attempts.
Methods: We developed a computerized daily report of suicide attempts. It Includes persons who attempted suicide in the last 24 hours, treated in Emergency room (ER), and were then discharged or hospitalized. A Meuhedet liaison nurse, initiates intervention with those patients as soon as they are hospitalized. A report that includes clinical and psychiatric status is transmitted to the Meuhedets' transitional unit (TU). This unit coordinates the treatment of all complex patients who were discharged from hospital and require immediate and specific treatment in the community. The unit is in charge of keeping the chain of care between the hospital and the community health services (primary physician, nurse, social workers, mental health practitioners etc.). In 2016, we defined suicide attempters as "complex patients" so the TU assumes further treatment. We evaluated whether this procedure increased the number of medical visits among this group, which is an important factor to maintain adequate follow up.
Results: In 2015, 49% of suicide attempters visited a primary physician within 2 weeks of their hospital release, compared with 51% in 2016 and 52% in 2017. A more significant increase was observed in the number of mental health visits: 12% in 2015, 21% in 2016 and 48% in 2017.
Discussion: The suicide attempters COC process led to significant increase in mental health visits after hospital discharge following a suicide attempt. We need further investigation to evaluate if improving CoC led to the reduction of suicide rates. Closing the treatment gap between hospital admission and the follow up in the community for suicide high-risk group is an indicator for a good medical practice that may decrease suicide rates. We recommend other healthcare organizations to adopt this proactive preventive model.

T88. SUICIDE RISK ASSESSMENT TRAINING FOR PRACTITIONERS USING A VIRTUAL PATIENT SIMULATION: EVALUATING FEASIBILITY, ACCEPTABILITY, AND PRELIMINARY EFFECTIVENESS

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Background: Lack of expertise impacts the ability of practitioners to provide comprehensive quality care for individuals at risk for suicide. Research has shown that once providers receive evidence-based training in suicide prevention, they are more likely to report increased knowledge and confidence in working with people at risk for suicide. Virtual patient simulations (VPS) allow practitioners the opportunity to experience working with suicidal patients in a safe, risk-free environment. When used as a training modality, VPS can be particularly useful because they allow for repetition in practice with difficult scenarios a practitioner may face, which can help to develop critical knowledge and expertise. Simulation-based training has demonstrated feasibility in teaching suicide-related knowledge and skills and has been shown to increase the perceived ability to identify patients at risk for suicide and

engage them in treatment planning. The purpose of this study was to assess the feasibility and acceptability of a novel VPS that trains practitioners in suicide risk assessment, and to examine pre-post changes in suicide-related knowledge through a pilot test of the VPS training.
Methods: Practitioners (N=20) were recruited from a Federally Qualified Health Center in the northeastern United States. Participants were then trained in suicide risk assessment using the VPS, which consists of three components: a text-based introduction with scenario information and review materials, a simulated conversation with a virtual client that changes each time a new conversation begins, and integrated feedback that provides both in-the-moment and after-action guidance. To evaluate feasibility, we calculated the proportion of recruited participants who used the VPS. To evaluate acceptability, we asked participants to rate their experiences with the VPS using a Training Evaluation Questionnaire (TEQ) which included nine items rated on a 7-point Likert scale. To assess suicide-related knowledge, we developed two parallel knowledge assessments, each with ten multiple-choice questions. A paired samples t-test was conducted to compare mean differences in practitioners' suicide risk assessment knowledge scores from pre- to post-training, on a scale of 0 to 10.
Results: The VPS was feasible to implement, with 18 of 20 participants using the VPS for an average of 21 to 95 minutes. The VPS was acceptable to participants, with an average satisfaction rating of 5.82 out of 7 on the TEQ. Participants' suicide-related knowledge scores improved significantly by an average of 1.86 points from pre- to post-training.
Discussion: The VPS training was feasible and acceptable to this sample of practitioners, and significantly increased their suicide-related knowledge from pre- to post-training. Now that the use of evidence-based approaches for suicide prevention has become a priority among health care agencies, finding effective ways to train an optimal number of practitioners is essential. VPS represent one such training that is easily accessible and allows for repetition in skill building as well as a safe space to practice difficult interactions with patients. As evidenced by the findings of our pilot study, this novel VPS training holds promise as a technique to develop knowledge, confidence, and skills in suicide risk assessment among practitioners in health care settings.

T89. IN THEIR OWN WORDS: UNDERSTANDING SUICIDE MOTIVES IN ADOLESCENTS AND YOUNG ADULTS:A QUALITATIVE INQUIRY OF THE LIVED EXPERIENCE

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Background: In the quest to effectively understand what motivates adolescents and young adults to attempt suicide, it is imperative to examine the interplay between factors pertaining to suicide risk, suicidal ideation, and suicide attempt. While current psychological models of suicide have captured this interplay proficiently, they have predominantly been informed by research undertaken in adult populations. Further, these studies have largely been epidemiological and/or clinical in nature, with a diminutive focus on capturing the lived experience of suicide via qualitative methods.
Methods: The first study systematically reviewed and examined qualitative studies conducted between 1995 and 2015, which had investigated motives for suicide in individuals aged 12-25. The second – a rigorous, comprehensive qualitative study - directly resulted from the findings of the first. Robust theoretical underpinnings, rigorous analytical frameworks, and novel approaches to recruitment and data collection, were employed to explore the multiple complex factors which motivate young individuals to take their own lives.

Results: Results of the first study indicated disparity between current suicide models and participants' lived experience accounts of suicide. Additionally, qualitative research was found to be dis-proportionally represented, and further, lacked research rigor and comprehensiveness among studies which were identified.
An extensive thematic network analysis conducted in the second study revealed interpersonal dysfunction, environmental factors and compromised identity served as the highest risks for suicide in this population. Further investigation of thoughts, emotions and feelings present while ideating, and at the time of attempt, highlighted inconsistencies between existing suicide models and themes derived from the analysis of participant narratives, particularly regarding the linearity of the suicide trajectory endorsed by the models.

Discussion: The overall findings of this research suggest the frameworks of current suicide models -predominantly informed by quantitative studies and investigating adult populations - have failed to consider some vital themes regarding the representation of the suicide experience of younger populations. Further identified is the capacity of comprehensive qualitative inquiry to highlight richly detailed lived experience and contextual factors, not accessible via clinical and epidemiological studies. Drawing upon qualitative inquiry to inform both extant and future theoretical models, can provide important new insights into understanding suicide in adolescent and young adult populations.

T90. THE NORWEGIAN SURVEILLANCE SYSTEM FOR SUICIDE – COMBINING CLINICAL AND REGISTRY DATA

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Background: The National Centre for Suicide Research and Prevention was commissioned by the Directorate of Health to implement a surveillance system, which systematically collects data on all persons dying by suicide under or within one year after contact with secondary mental health services. The aim of the poster is to describe the development and structure of a nation-wide data collection system, which links registry data on suicides with clinical data.
Methods: The Norwegian Surveillance System for Suicide (NSSS) is based upon the National Confidential Inquiry into Suicide and Safety in Mental Health (NCI), which has collected data on suicides in mental health services in Great Britain for 20 years. In Norway, there has been a national strategy to increase access to and use of registry data, thus a prerequisite for the project was to use available registry data from the Cause of Death Registry and Norwegian Patient Registry when possible. In addition to data from mental health services, data on patients in contact with Substance Misuse Services and private mental health specialists are included in the system. By using the questionnaire developed by the NCI, we identified variables that could be retrieved from either the Cause of Death Registry or the Norwegian Patient Registry. Approximately half of the variables in the questionnaire were retrieved from the registries and the remaining variables were adapted to a Norwegian context.
Results: In order to collect the clinical data, was a data collection system where clinical data is linked with national registry data developed. All data is stored within a safe environment (Services for Sensitive Data at the University of Oslo) which has implemented granular access to directories. The clinical data is collected through an encrypted online questionnaire (www.nettskjema.no) where the unique 11-digit identification number is automatically

removed during submission to a directory where only authorized personnel in the Health registries to have access. The unique identification number is used as input to a cryptographic hash function, and the resulting hash is used as an identifier in the data set. This nature of cryptographic hash functions makes the identifier unique for each unique identification number and thus linkage with the registries possible.
Discussion: A large advantage of the data collection system is that it allows linkage between clinical and registry data without giving the researcher access to directly identifiable data such as the unique identification number. This is of particular value when informed consent is not possible to obtain. Important methodological innovations in suicide research the last decades have involved the use of registry data. A limitation of administrative registry data has however been that they often lack several variables which are important in suicide research. Adding clinical data to the registry data can make some of these clinical variables available. The use of registry data also makes reporting less time-consuming for the clinicians and gives an opportunity to use already reported administrative health care data.

T91. USING SCHOOL COUNSELING CENTER STUDENT SUICIDE CONCERN REPORTING DATA AS OUTCOME MEASURES TO STUDY PROGRAM EFFECTIVENESS

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Background: Many school-based suicide prevention programs use cross-sectional or repeated measure survey data to evaluate program effectiveness, instead of collecting ongoing, real-time student suicide concern data. The barriers to collecting these data can be daunting, especially with the number of other duties expected of school counselors, administration, and teachers. The Hope Squad program is a national, school-based, peer leader suicide prevention program that uses real-time, suicide concern data (student suicide thoughts, behaviors, attempts, and deaths) collected in school counseling centers across its over 500 programs in order to evaluate the impact of the program, and to identify trends related to the dosing of a Hope Squad program. Currently, we are at the end of Year 1 of an ongoing comparison study using these data to assess program impact and effectiveness. Additionally, we are in the first year of implementing our fidelity measure (program model adherence scale) and will speak to the facilitators and barriers to implementation and program adherence.
Methods: Suicide concern contact data (variables include NSSI, Self-injury with suicidal thoughts, suicidal thoughts without intent and plan, suicidal thoughts with intent and plan, suicide attempts, and suicide deaths) were collected with a number of other data points (student demographics, school demographics, referral source, disposition, and trauma/ACES) in school counseling centers in Hope Squad schools in 17 states. Data were analyzed to show 1) variable relationships between demographics, trauma, referrals, and suicide concerns, 2) impact of Hope Squad program on suicide concern variables with program dosing (length of time of program in school) as a moderator, and 3) how program fidelity (model adherence) scores relate to outcome variables.
Results: Collecting suicide concern data from schools is often a daunting task, considering all the other duties of school personnel. We have worked diligently with schools using both a school liaison model and a lead program lead advisor model in order to improve data collection. Results from data collection are being analyzed this summer and will be prepared for the October presentation. Results from past year pilot data show that dosing has a positive impact

on student self-referrals in years 2 and 3, which may indicate that school culture is changing regarding help-seeking.

Discussion: While there are a number of school-based suicide prevention programs, we have found no other programs that collect ongoing suicide concern data in schools. Although there are challenges in collecting these data, we continue to work on a system with schools in tandem with implementation of a peer leader suicide prevention program and have found increasing success in data collection numbers.

Initial outcomes from the first year of our comparison study are anticipated to align with our previous pilot data, that as Hope Squads persist in schools, school culture changes and more students seek help for themselves, and are willing to help each other, as evidenced by increasing self- and other- student referrals. Additionally, we see approximately 70% of children with these concerns being referred for the help they need from streamlined mental health referral processes with a community mental health partner.

T92. ASPIRE-1: A PHASE 3 RANDOMIZED STUDY OF ESKETAMINE NASAL SPRAY FOR RAPID REDUCTION OF MAJOR DEPRESSIVE DISORDER SYMPTOMS IN ADULT PATIENTS AT IMMINENT RISK FOR SUICIDE

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Background: The risk for suicide is increased in patients with major depressive disorder (MDD). Due to delayed onset of action, currently available antidepressants are of limited utility in depressed patients experiencing acute suicidal ideation (SI). In a phase-2 proof-of-concept study, esketamine nasal spray (ESK) plus comprehensive standard-of-care (SoC) treatment demonstrated rapid improvement in depressive symptoms, including SI, among patients with MDD at imminent risk for suicide. The aim of this phase 3 study was to evaluate efficacy and safety of ESK+SoC in patients with MDD at imminent risk for suicide.

Methods: ASPIRE-1 (NCT03039192) is one of two global phase 3, double-blind (DB), randomized, placebo-controlled studies comprising the first registration program of patients with MDD at imminent risk for suicide. The study was conducted in Bulgaria, Estonia, Germany, Hungary, Republic of Korea, Malaysia, South Africa, Spain, Taiwan, and United States, and recently completed enrolment. Adult patients (aged 18-64 years) with MDD (DSM-5 criteria and confirmed by Mini International Psychiatric Interview [MINI]) who have active SI and intent, and require psychiatric hospitalization, were enrolled. Patients were randomized (1:1) to ESK 84-mg or placebo twice-weekly for 4 weeks (DB-phase, days 1, 4, 8, 11, 15, 18, 22, and 25) along with newly initiated or optimized SoC oral antidepressants and inpatient hospitalization. Primary endpoint: Change from baseline in the Montgomery-Åsberg Depression Rating Scale (MADRS) total score at 24 h post first dose. Key secondary endpoint: change from baseline in the Clinical Global Impression–Severity of Suicidality–Revised (CGI-SS-R) using the Suicidal Ideation and Behaviour Assessment Tool (SIBAT) at 24 h post first dose. Treatment-emergent adverse events, dissociative symptoms, suicidal thinking and behavior were monitored.

Results: A total of 226 patients were randomized (placebo+SoC=112; ESK+SoC=114); 195 (86%) completed the DB phase. Overall, baseline characteristics were comparable between the two groups. The majority of patients were female (62%). The mean (SD) age (years) of patients in the placebo+SoC group was 37.9 (12.54) and in the ESK+SoC group was 40.8 (13.17). The

mean (SD) baseline MADRS score was 41.0 (6.29) for placebo+SoC and 41.3 (5.87) for ESK+SoC group. Most patients (89%) in both treatment groups were rated to be moderately to extremely suicidal at baseline, as measured by the CGI-SS-R scale; 60% had a prior suicide attempt and 28% had a suicide attempt within the last month. The efficacy and safety results from the DB period will be presented.

Discussion: ASPIRE-1 is one of two studies that evaluates ESK in this vulnerable and understudied MDD patient population at imminent risk for suicide, for whom there is no currently approved treatment. The key efficacy and safety findings will be presented alongside results of ASPIRE-2 study.