JED'S COMPREHENSIVE APPROACH TO MENTAL HEALTH PROMOTION AND SUICIDE PREVENTION FOR COLLEGES AND UNIVERSITIES

INTRODUCTION

In the years preceding 1996, the US Air Force experienced a significant increase in suicide by service members. To respond to this crisis, Air Force leadership worked with experts from the CDC, the Armed Forces Institute of Pathology and the Walter Reed Army Institute of Research to develop a suicide prevention plan. The plan was a multi-faceted community health model which sought to enhance protective factors, increase access and range of services, educate service members about mental health, and to improve screening, follow up and crisis services. The program was evaluated by Knox, Pflanz and their colleagues who found that the rates of suicide, homicide, domestic violence and accidental death decreased after the implementation of the program and went up during a single year in which the program had been less rigorously implemented.
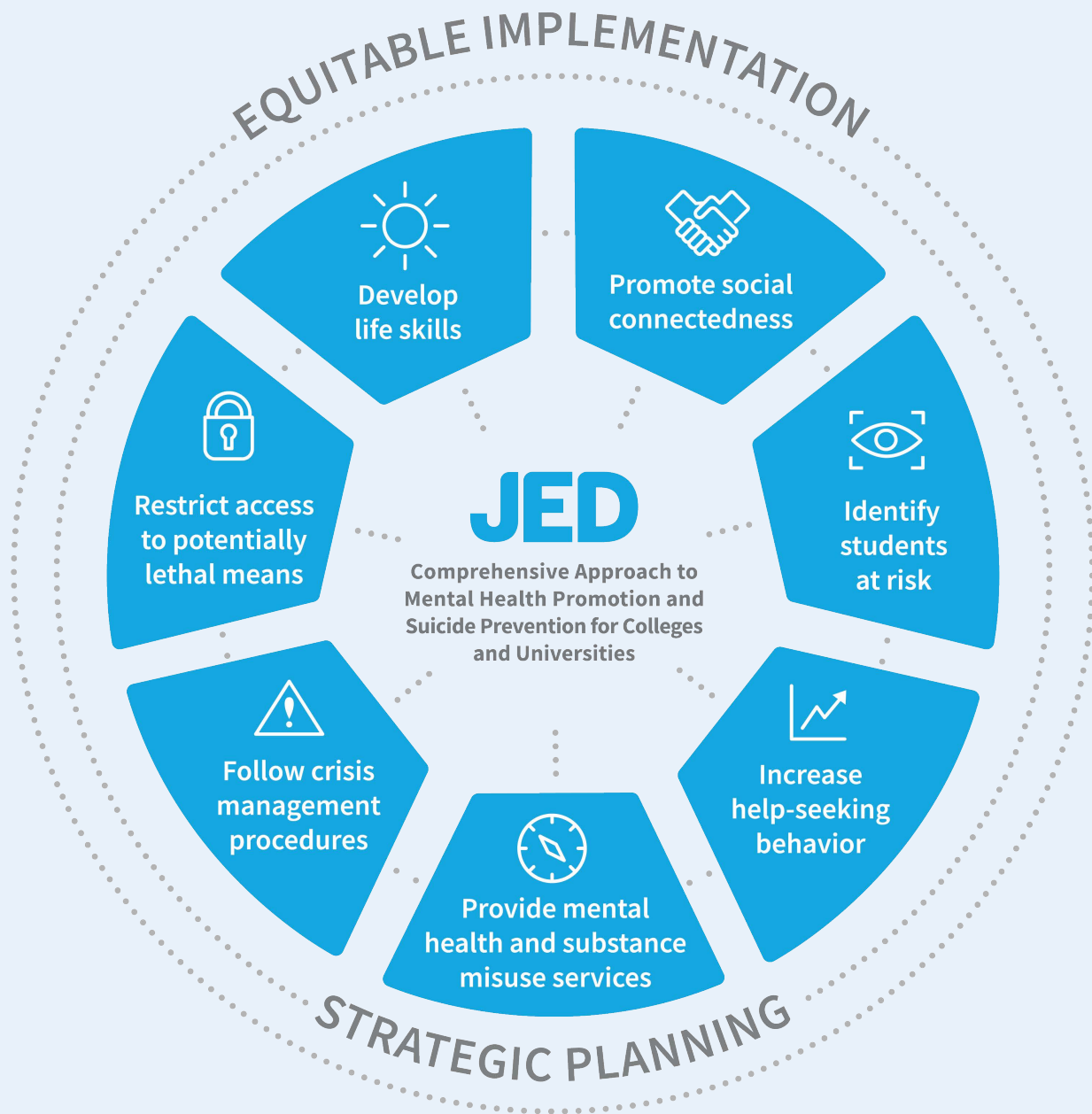
When The Jed Foundation (JED) was established in 2000, among its first priorities was an attempt to establish a plan, model or strategy for campus suicide prevention. The model developed by the Air Force appeared to be effective and while service members and Air Force bases were certainly different in some ways, there also appeared to be significant parallels between service members living on bases and students living and learning on college campuses. The two groups were also of similar age and were likely to share at least some overlapping life concerns and challenges. JED established a panel of advisers including several experts who had taken part in the development and assessment of the Air Force Model, suicide prevention researchers from the Suicide Prevention Resource Center and higher education based mental health clinicians and student service professionals to consider how the USAF Model might be adjusted to the needs and contours of college life.

In 2017, JED built upon its Comprehensive Approach by developing the Equity in Mental Health Framework, in partnership with The Steve Fund, which provides ten recommendations and implementation strategies to help colleges and universities better support the mental health of students of color.

We would like to thank Dr. David Davar (director of the Counseling Center at The Jewish Theological Seminary and past director of counseling at Fordham University, as well as University Director of Mental Health at City University of NY) for his work in researching and co-authoring this whitepaper.

JED'S COMPREHENSIVE APPROACH TO MENTAL HEALTH PROMOTION AND SUICIDE PREVENTION

EQUITABLE IMPLEMENTATION

Develop life skills

Promote social connectedness

Restrict access to potentially lethal means

JED
Comprehensive Approach to Mental Health Promotion and Suicide Prevention for Colleges and Universities

Identify students at risk

Increase help-seeking behavior

Follow crisis management procedures

Provide mental health and substance misuse services

STRATEGIC PLANNING

The Jed Foundation (JED) believes in a comprehensive public health approach to promoting mental health and preventing suicide. JED's programs are grounded in our Comprehensive Approach to Mental Health Promotion and Suicide Prevention for Colleges and Universities, developed in collaboration with the Suicide Prevention Resource Center (SPRC). This evidence-based model can be used to assess efforts currently being made on campus, identifying existing strengths and areas for improvement.

JED's Comprehensive Approach includes seven strategic areas that should be addressed in any community-wide effort to support mental health and to limit substance misuse and suicide. Within each strategic area, there are multiple tactical activities and efforts that colleges can implement to support student mental health. It is also central to this model that the engagement process should be approached through the lens of strategic planning. The particular structures, problems, needs and resources of each campus need to be examined and thoughtful decisions should be made around prioritizing and choosing specific tactics.

It is helpful to consider this model as broadly addressing four major thematic areas:

❯ *Enhancing protective/preventive factors and resilience (life skills and connectedness)*

❯ *Early intervention (identifying those at risk and increasing help seeking)*

❯ *Availability and access to clinical services*

❯ *Environmental safety and means restriction*

These four domains provide an organizing heuristic for understanding the logical underpinnings of this model. These elements demonstrate how the model addresses everything from prevention to aftercare and can serve as a basis for planning a mental health promotion and suicide prevention system for any boundaried community.

The balance of this whitepaper will focus on describing the research background and rationale for each of the Model's elements.

In addition, the strategies and resources recommended through the JED Higher Education programs have been developed with an equitable implementation lens that ensures that the needs of students who are potentially marginalized and/or underserved due to societal and structural inequities and school-specific community demographics are considered deliberately and intentionally. Well-documented inequities place many students at incremental risk for emotional distress and suicidality. Populations of young adults may face different—and often additive—mental health stressors due to bias, racism and related microaggressions, financial disparities, and other social determinants of mental health. These contribute to higher-than-average and/or rising mental health challenges and suicide rates for people of color and LGBTQ+ youth and young adults, among other groups. Therefore, to promote student mental health equitably and effectively, and to reduce risk, schools must take care to learn about, understand, and plan for the needs of students whose mental health may be impacted by bias, racism, and marginalization.

DEVELOP LIFE SKILLS

Writing in 1885, William Farr, the father of biostatistics, posited an association between educationally related adaptation and achievement, and suicidality (Farr, 2000; Wilcox et al., 2008). Emil Durkheim, in his work on suicide, wrote in 1897 that sociologically-speaking, there were different types of suicide. He coined the term "anomic suicide", a form of suicide which resulted from an absence of values and norms to guide appropriate behavior (Spaulding, Simpson, & Durkheim, 2010). Attainment of developmentally appropriate milestones such as self-regulation, empathy, and getting along with others is critical for psychological well-being in general as well as adaptive functioning in school settings. Children and adolescents lacking in the life skills fundamental to academic and social success are at greater risk for depression, substance abuse, anti-social behavior, and suicidality. Interventions targeting the development of fundamental skills for living have proven successful at reducing many of the antecedents of suicidality as well as suicidality itself.

The Evidence

Best practices articulated by the Collaborative for Social & Emotional Learning (CASEL), stipulate development of specific skills related to social and emotional development as well as the use of active learning techniques (Mark Brackett & Susan Rivers, 2014; *Safe and Sound*, 2005). Effective social and emotional learning (SEL) programs focus on skill building rather than problem avoidance and offer kids emotional skill building opportunities such as learning to identify, talk about, and regulate feelings (Brackett & Rivers, 2014).

A meta-analysis of 213 studies in schools across the US found strong evidence for the efficacy of social and emotional learning interventions at improving mental health, increasing pro-social attitudes (e.g., beliefs about helping others, social justice and violence) & behavior, improving students social and emotional skills (e.g., getting along with others and identifying emotions), as well as improving academic achievement (Durlak, Weissberg, Roger, Dymnicki, Allison, Taylor, Rebecca, & Schellinger, 2011). Across the 213 studies evaluated, an 11 percentile point average increase in academic achievement was observed. Zalsman & colleagues (2016) conducted a meta-analysis of 1797 studies of various suicide prevention approaches and concluded that school-based awareness programs are effective at suicide prevention (Zalsman et al., 2016).

Promoting Alternative Thinking Strategies (PATHS) is a preschool and elementary school SEL program designed to increase social and emotional competencies, reduce aggression and violence, improve critical thinking skills, and enhance

classroom climate. Teachers trained on PATH typically teach three 20-30 minute classes per week focusing on guiding kids to improved self-control, social problem solving, and emotional awareness and understanding (Domitrovich, Cortes, & Greenberg, 2007; Mark Brackett & Susan Rivers, 2014). Children learning SEL competencies from participation in PATHS evidence multiple improvements including understanding of their own and others' feelings, inhibitory control, reduced behavioral problems, decreased social withdrawal, and increased social competence (Domitrovich et al., 2007; Mark Brackett & Susan Rivers, 2014). Illustratively, all 3 and 4 year olds participating in Head Start in two Pennsylvania cities were recruited for a randomized PATHS study. Mean annual family income of children participating in the study was $7039. Two hundred and forty-six children were assigned to either ten PATHS group classes or ten control group classes. Teachers in the ten intervention classrooms implemented the PATHS curriculum over a 9-month period. Child, teacher and parent reports were assessed at the beginning and end of the school year. Results showed that children receiving PATHS instruction had significant gains in social and emotional competencies including increased emotional knowledge skills and social competence as well as decreased social withdrawal (Domitrovich et al., 2007).

The Good Behavior Game (GBG) is designed to promote shared values, norms, and appropriate classroom behaviors. Using the game, children work in teams to help one another with emotional regulation and reduce disruptive behavior. Mastery learning (ML) is a teaching strategy with demonstrated efficacy at improving achievement (Wilcox et al., 2008). Wilcox & colleagues utilized a randomized clinical trial targeting 41 classrooms in 19 different schools with the entire cohort of children beginning first grade in the Baltimore public school system in 1985 & 1986. Fifteen years later, the same children (now adolescents) were assessed for suicidality. Controlling for disruptive

behavior, first graders were randomly assigned to either the GBG, the ML, or the no intervention control condition. The authors found robust evidence of an association between the children in the Good Behavior Game classrooms and lower risk of developing suicidality by age 19. Wilcox & colleagues note that in the absence of targeted interventions, children with disruptive and aggressive behavior tend to struggle academically, are disliked by both teachers and peers, and also limit their friends to other disruptive children (Wilcox et al., 2008). In the absence of effective interventions, these children are at higher risk for academic failure, substance abuse, impulsivity, anti-social behavior, and suicidality (Gould, Greenberg, Velting, & Shaffer, 2003; Reid, Patterson, & Snyder, 2002). Wilcox & colleagues concluded that the study results provide evidence for setting the stage early on in the first grade classroom for acquisition of appropriate classroom behavioral norms and values. The authors also note that the results resonate with Durkheim's work, namely that anomie -- the absence of shared values, may be associated with increased risk of suicidality (Wilcox et al., 2008).

Strategies & Tools to Embrace Prevention with Upstream Programs (STEP UP) is a social and emotional learning curriculum created for middle school students (Fuller, Haboush-Deloye, Goldberg, & Grob, 2015). The program uses evidence-based strategies to bolster protective factors for the specific purpose of preventing aggressive and self-destructive behaviors, including suicide. STEP UP includes eight key concepts and skill sets: 1) social connections, 2) identifying and expressing feelings safely, 3) respecting boundaries, 4) building empathy, 5) mood control, 6) stopping manipulation, 7) self-regulation, and 8) self-motivation and emotional intelligence. These concepts are typically taught over 16, 25-minute lessons, delivered once or twice per week (Fuller et al., 2015). In one example of STEP UP, 59 seventh-grade students from an urban private middle school were assigned to either the

STEP UP intervention group or a control group. The two teachers assigned to the intervention group provided the STEP UP curriculum to their students once or twice a week for 25 minutes each during the advisory period. The entire STEP UP curriculum was delivered for each of two years. In the first year, the STEP UP curriculum was implemented for eight weeks. In the second year, The STEP UP curriculum was implemented for twelve weeks. From pre-test to post-test after the two-year program, statistically significant improvements were found in self-regulation, as well as teacher-rated social competence, empathy and responsibility. Fuller & colleagues (2015) concluded that the results provide evidence that the STEP UP program is an effective way to enhance social & emotional skills in middle school youth and also provide tools for youth to learn prosocial attitudes and lifelong positive coping skills. Thereby these tools increase overall protective factors, promote positive mental health, and help mitigate negative situations.

Developed by Mark Brackett at the Yale Center for Emotional Intelligence, the RULER approach is a particularly thorough and comprehensive multiyear program aimed at positive youth development ("Yale Center for Emotional Intelligence," 2013). RULER includes skill-building lessons and activities for Recognizing emotions in oneself and others, Understanding the causes and consequences of emotions, Labeling emotions with an accurate and diverse vocabulary, and Expressing and Regulating emotions in socially appropriate ways (i.e., the RULER skills) (Rivers, S.E & Brackett, 2013). RULER is grounded in both emotional intelligence theory which targets the emotional competencies of individual children and ecological theory which recognizes the critical impact of the school and classroom & home environments on young individuals (Mark Brackett & Susan Rivers, 2014). According to Rivers & colleagues, "RULER is a setting-level program designed to modify the quality of classroom social interactions so that the climate

becomes more supportive, empowering, and engaging. This is accomplished by integrating skill-building lessons and tools so that teachers and students develop their "emotional literacy" (Rivers, Brackett, Reyes, Elbertson, & Salovey, 2013). To evaluate the effect of RULER on classroom climate, a randomized trial was conducted involving 3,824 students and 105 teachers at 62 schools in the Catholic Schools of Brooklyn and Queens, New York. Teachers were provided intensive training on RULER as well as ongoing coaching opportunities. Teachers then implemented an average of 7 RULER units in their classrooms spending two weeks on each unit. Assessments conducted after 8 months of program implementation showed that classrooms randomized to the RULER intervention were significantly higher on positive classroom climate (e.g., the presence of positive interactions and personal connection) & teacher regard for student perspective as compared to classrooms randomized to the control condition (Rivers et al., 2013). Students using RULER have better academic performance, improved emotional and social skills, and less anxiety and depression ("Yale Center for Emotional Intelligence," 2013).

In addition, students using RULER are less likely to bully other students, and have better leadership skills and attention. Moreover, teachers have better relationships with students, less burnout, better relationships with administration, and are more positive about teaching ("Yale Center for Emotional Intelligence," 2013).

Camille Farrington, a scholar at the University of Chicago Consortium on School Research, provides a somewhat different SEL perspective. Farrington doubts that resilience can be taught in the same was as English and algebra are taught (Farrington, Roderick, Allensworth, Nagaoka, & Keyes, 2012; Tough, 2016). She nevertheless recognizes the key impact of SEL on academic functioning and suggests that even if kids cannot be taught to *be* resilient, they can be taught to *act* resilient. Farrington coined the term *academic perseverance* to denote the tendency to maintain positive academic behaviors despite setbacks (Farrington et al., 2012; Tough, 2016). (Academic perseverance is built from the non-academic character traits of grit, tenacity, delayed gratification, self-discipline, & self-control (Farrington et al., 2012). Farrington identified four key beliefs which together form a mind-set which can inoculate students against setbacks and help them to act resilient and persevere through academic hardship. Echoing the critical role of the school environment and ecology as critical to the SEL approach it is the function of the school and its teachers to instill the four key beliefs (Farrington et al., 2012):

1. *I belong in this academic community*
2. *My ability and competence grow with my effort*
3. *I can succeed at this*
4. *This work has value for me*

Evidence from the SEL Education network of 150 schools suggest that emphasis on belonging, supportive relationships, and positive mindset is effective at raising academic achievement even in the most poverty-stricken schools. SEL schools are guided by the premise that character is built by persevering through challenging academic work and by the premise that a sense of belonging is critical to success (Tough, 2016). SEL schools use the CREW approach to foster belonging. In his article, *How kids learn resilience* in The Atlantic, Paul Tough states "*On the relationship side, the most important institution in SEL schools is CREW, an ongoing multiyear discussion and advisory group for students. Each SEL student belongs to a CREW which typically meets every day for a half an hour or so, to discuss matters important to the students, both academic and personal. In middle school and high school, the groups are relatively intimate - 10 or 15 kids -and students generally stay in the same crew for three years or longer, with the same teacher leading the group year after year. Many SEL students will tell you that their crew meeting is the place where they most feel a sense of belonging at school; for some of them, it's the place where they most feel a sense of belonging, period".* Tough cites a 2013 study of five urban SEL middle schools by Mathematica Policy Research. Over three years, students in the five SEL schools advanced a full ten months ahead of their peers in math, and seven months ahead of their peers in reading, when compared to students in non-SEL schools (Tough, 2016).

Thompson & colleagues (2001) investigated 460 potential high school dropouts identified as at risk for suicide in 7 schools in the Pacific Northwest. Students were randomly assigned to either a brief assessment and crisis intervention (CARE) condition, a coping and support training (CAST) condition focusing on skill building and social support, or a brief "usual care" control condition. The CARE condition comprised 4 hours of assessment and counseling, the CAST condition comprised assessment followed by 12 weeks of skills building and social support in a group setting, and the control condition was a brief 30-minute assessment and counseling session (Thompson, Eggert, Randell, & Pike, 2001). Pre-and post-intervention tests as well as nine month follow up tests were administered. Results showed significant rates of decline in both

problematic attitudes toward suicide and in suicidal ideation in both experimental interventions. CARE & CAST were also effective at reducing depression and hopelessness. The CAST intervention proved most effective at enhancing and sustaining personal control and problem solving coping skills (Thompson et al., 2001). The authors concluded that school based interventions are effective at reducing suicidal behaviors and related emotional distress as well as enhancing protective factors.

SUMMARY

Numerous studies show that social and emotional learning approaches are effective at building social and emotional skills. These core skills for living not only improve social, emotional and academic functioning, but also serve as powerful protective and coping tools modulating tough times and keeping potentially suicidal youth, adolescents, and adults safe. There is also evidence to suggest that anomie -- the breakdown of shared values -- may contribute to suicidality, whereas shared values and behavioral norms contribute to prosocial behaviors and a sense of belonging, and are thereby important protective factors. While there is a dearth of research on SEL skill building and competencies among college students, the evidence for the impact of SEL approaches from the kindergarten to the high school level is strong. The strong evidence for SEL efficacy suggests that SEL approaches implemented with college students may well prove to enhance academic perseverance, self-esteem, connectedness and belonging, and thereby also play a modulating and protective role during tough times. ◼

CONNECTEDNESS

In 1897 Emil Durkheim observed that higher social cohesiveness and integration is associated with lower suicidality (Spaulding, Simpson, & Durkheim, 2010). Connectedness is now known to be a powerful protective factor undergirding both physical and emotional well-being. And the absence of connectedness just as surely erodes physical and mental health and is strongly implicated in suicidality. Good relationships contribute to well-being, but the absence of connection and social support triggers physiological, cognitive, and emotional changes highly detrimental to effective coping. Human beings are hard-wired for connection. Attachment theorist John Bowlby documented the critical role of good enough early attachments and the tears in the fabric of well-being when we are not securely attached (Bowlby, 1969). The body of research accumulated across multiple disciplines and countries clearly delineates connectedness as a critical protective factor, and loneliness and isolation as a powerful factor contributing to suicidality.

The Evidence

SOCIAL ISOLATION AND LONELINESS IS A DETRIMENTAL CONDITION.

Loneliness is a multi-faceted condition with highly detrimental effects on physiological, emotional & cognitive functioning. Paradoxically, lonely people may also become harder to be around as chronic loneliness is associated with negativity and defensiveness (Mental Heath Foundation, 2010). Lonely people also die sooner. In a study of nearly 3000 nurses with breast cancer, women who had no close relatives had a two-fold increased risk of breast cancer mortality as compared to the nurses who reported ten or more close relatives. Nurses who had no close friends had a four-fold increased risk of breast cancer mortality as compared to the nurses who reported ten or more close friends (Kroenke, Kubzansky, Schernhammer, Holmes, & Kawachi, 2006). A meta-analysis of 148 prospective studies investigating mortality as a function of social relationships found that people with stronger social relationships had a 50% increased likelihood of survival than those with weaker social relationships (Holt-Lunstad, Smith, & Layton, 2010).

THE LONELY SOCIETY

Studies indicate that we are becoming more isolated and lonely. There is evidence that in Western societies this is occurring throughout the life span. A British study found the number of lonely children calling Childline in the UK for help with their loneliness tripled in just five years (Mental Heath

Foundation, 2010). In the US, chronic loneliness among middle aged men has spiked from one in five to one in three over just ten years (AARP, 2010; "The Lethality of Loneliness," 2013). Since 2000, rates of death by suicide have risen by 30% among Americans aged 35-54, but for men in their 50s, rates of death by suicide rose nearly fifty percent. Writing in The Atlantic, Sociologist W Bradford Wilcox cites the strong link between death by suicide and weakened social ties and decreased community engagement. Wilcox cites Durkheim's work on "anomie suicide", and notes that men without a college education are more likely to be unmarried and unemployed and therefore much less tied to the community. This cohort of unmarried middle aged men is particularly at risk with a 240 percent increased likelihood of taking their own lives when compared to their married peers (Wilcox, 2013).

More Americans are living alone then at any time in the last century (Henderson, 2014). Sociologists McPherson, Smith-Lovin & Brashears investigated data from both the 2004 and the 1985 General Social Survey, a large survey exploring social and economic trends. They reported a three-fold increase since 1985 in the number of Americans who say they have no close confidants. Remarkably, having no close confidants is now the modal response (McPherson, Smith-Lovin, & Brashears, 2006). Social isolation and living alone were found to increase risk of death by 29% and 32% respectively (Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015). On college campuses, 52% of male students and 62% of female students report feeling very lonely at some point in the past twelve months (ACHA-NCHA, 2016).

Beyond personal connections, participation in groups and organizations is also protective. Students belonging to campus organizations and sports teams which increase the sense of belonging to a caring community are less likely to have suicidal thoughts (Brown & Blanton, 2002; Drum, Brownson, Denmark, & Smith, 2009).   Participation in sports on campus

is protective against suicidality. In a survey of 4728 students, male students who did not participate in sports were 2.5 times more likely to report suicidal thoughts or behavior when compared to male peers who were sports participants. Female students not participating in sports were 1.67 times more likely to report suicidality than their female peers who were sports participants (Brown & Blanton, 2002). Investigators explored a potential association between religious service attendance and deaths by suicide in a sample of approximately 90,000 nurses across the US. Data from the Nurses' Health Study found a five-fold increase in deaths by suicide among nurses with little or no religious attendance when compared to nurses attending services at least weekly. Therefore, beyond personal connections, connection to the community through participation in and belonging to various groups and organizations is also protective (VanderWeele, Li, Tsai, & Kawachi, 2016).

THE LONELY BRAIN & BODY

Writing in the New Republic, Judith Shulevitz states "psychobiologists can now show that loneliness sends misleading hormonal signals, rejiggers the

molecules on genes that govern behavior, and wrenches a slew of other systems out of whack. They have proved that long-lasting loneliness not only makes you sick; it can kill you" (Shulevitz, 2013). Amy Ellis Nut, reviewing the research on the noxious effects of loneliness on health, writes that the potential damage caused by loneliness appears to be comparable to the injuries to health from smoking, diabetes, and obesity (Nutt, 2016). Researchers are now discovering the physiology of loneliness and beginning to understand why lonely people are at higher risk for heart attacks, cancer and dementia (Nutt, 2016).

Researchers have identified a pattern of gene expression in the immune cells of people who are chronically lonely. Social isolation triggers fight or flight stress signaling and increases the activity of monocytes — genes that drive inflammation, the first response of the immune system, and decreases the activity of infection fighting genes (Cole et al., 2007). Cole (2007) states "the biological impact of social isolation reaches down into some of our most basic internal process - the activity of our genes*."* Connectedness on the other hand, appears to promote health. Researchers in North Carolina and China found that every positive increase in social relationships brought a parallel improvement in physiological bio-markers such as blood pressure and BMI (Yang et al., 2016). Social isolation is increasingly seen as a public health hazard (Nutt, 2016) and is best understood therefore as not just an artifact of the absence of meaningful and close connections, but rather as a complex condition with powerful detrimental cognitive, emotional, and physiological impacts.

THE LONELY PERSONALITY

In her 1959 essay - Loneliness - Psychoanalyst Frieda Fromm-Reichmann wrote about "the naked horror" of loneliness and stated "the longing for interpersonal intimacy stays with every human being from infancy throughout life, and there is no human being who is not threatened by its loss" (Fromm-Reichmann, 1990). In a white paper entitled The Lonely Society, the British Mental Health Foundation states "Once loneliness becomes chronic, it can be difficult to treat. People who are chronically lonely can get stuck in a loop of negative behavior, and might push others away" (Mental Heath Foundation, 2010). Lonely people and those who feel socially excluded have difficulty with self-regulation and will power, can withdraw from social interaction, exhibit less pro-social behavior, are more aggressive, and are less likely to seek emotional support, further entrenching their isolation (Mental Heath Foundation, 2010; J. M. Twenge, Baumeister, Tice, & Stucke, 2001; Jean M. Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007).

SOCIAL SUPPORT

An extensive body of literature has documented the strong association between social support and mental health (Berkman, Glass, Brissette, & Seeman, 2000; Buote et al., 2007; Hefner & Eisenberg, 2009; Leung, Chen, Lue, & Hsu, 2007). Social support is particularly important on college campuses where students have left home and frequently experience homesickness, "friendsickness", and isolation (Buote et al., 2007; Hefner & Eisenberg, 2009). Hefner & Eisenberg surveyed 1378 students at a large public university and found that students with lower quality social support had more mental health problems in general as well as a six-fold increase in depressive symptoms. Furthermore, students with low social support had a ten-fold increase in suicidal thoughts in the prior month when compared to students with high perceived social support (Hefner & Eisenberg, 2009). While researchers of social support differentiate between structural support (the quantity of relationships) and functional support (the quality of relationships), both are associated with mental health. Hefner & Eisenberg also found both structural and functional social support to be independently associated with mental health, although they found

that perceived quality of support was most strongly and persistently associated with mental health in general and self-injury and suicidality in particular (Hefner & Eisenberg, 2009).

Rodway investigated 145 suicides in children and adolescents under twenty between January 2014 and April 2015 in the UK and found that family problems, social isolation, bereavement, bullying, and academic pressures were prominent antecedents of the deaths by suicide (Rodway et al., 2016). Zhang & Jin (1996) investigated the impact of family cohesion on suicidal ideation on a sample of 320 Chinese students and another sample of 452 American students. The authors found the same protective effect across cultures, namely that students from more cohesive families were less likely to report suicidal ideation (Zhang & Jin, 1996). This and similar studies confirm Emil Durkheim's observation in 1897 that higher social integration is associated with lower suicidality and vice versa. Simply living on campus in a residence community appears to be protective of emotional well-being. In a study of 43210 undergraduates in 72 campuses across the U.S., students living off campus evidenced higher rates of depression, anxiety, suicidal ideation and non-suicidal self-injury as well as lower rates of help-seeking. Citing social interactions in residential communities, the authors concluded that having a strong residential community appears to be an important factor in student mental health and help seeking (Ketchen Lipson, Gaddis, Heinze, Beck, & Eisenberg, 2015).

A study on the impact of social support on perceptions of physical hardship among students is revealing. Researchers at the University of Virginia took 34 students to the base of a steep hill and fitted them with weighted backpacks. Some participants stood next to friends during the experiment while others stood alone. The students were then asked to estimate the steepness of the hill. Students who stood next to their friends gave lower estimates of the steepness of the hill (Schnall, Harber, Stefanucci, &

Proffitt, 2008). In addition, the longer the friends had known each other, the less steep the hill appeared. Moreover, relationship quality affected visual perception: The closer and more warmly participants felt toward their friends, the less steep the hill was perceived to be (Schnall et al., 2008). Studies such as these delineate the depth and breadth of the impact of connectedness and social support on human perception.

In a study of 26000 students from 70 colleges nationwide, Drum & colleagues focused on the nature of suicidal crises among college students and found that suicidal thinking is far more common than previously recognized, with over half of the students reporting some form of suicidal thinking at some point in their lives (Drum et al., 2009). The authors found clear evidence of the critical role of connectedness in periods of suicidality. Sadness, loneliness, and hopelessness were the most frequently endorsed moods during periods of suicidal ideation. Among students seriously considering suicide, the most prominent contributing antecedents were romantic problems, academic problems, family problems, and friend problems, further illustrating the strong association between connectedness -- be it romantic, social, or familial -- and suicidality (Drum et al., 2009). Drum & colleagues also investigated whether, and to whom, students reach out to during suicidal crises and found that when students do tell anyone about feeling suicidal, it is overwhelmingly peers such as roommates, romantic partners and friends, and almost never professors. The authors note that interventions such as gatekeeper training are more likely to be effective when training students how to respond to their peers (Drum et al., 2009).

The experience of suicidality is embedded within the social milieu. This is illustrated by the interpersonally-related reasons students gave for not sharing their thoughts with others. Prominent themes given for not reaching out to others were fear of being judged or stigmatized, not wanting to

burden others, and not having anyone to tell (Drum et al., 2009). Relationships with family, friends, romantic partners and even pets are among the most potent factors preventing suicide attempts. Seventy-seven percent of students stated disappointing/hurting their family had a large or very large impact on their decision to not attempt suicide. Similarly, approximately 50% cited friends, approximately 40% cited romantic partners, and 20% cited their pets. Students cite not wanting to hurt or disappoint their important others as well as the support obtained from their important others as powerful protective factors. Beyond individual relationships, the authors also found that connection to the larger campus community was an important protective factor. Students participating in student organizations as either leaders or members were less likely to have seriously considered suicide in the past 12 months (Drum et al., 2009). This finding of the importance of connection to the larger campus community echoes data showing that sports participation is associated with decreased suicidal behavior (Brown & Blanton, 2002).

For almost 80 years since 1938, the Harvard Grant study has been following the lives of 268 Harvard men. The best predictors of success and well-being among the Harvard men were a childhood where one felt nurtured, an empathic coping style in their 20s and 30s, and warm adult relationships (Vaillant, 2012). Reviewing data from the Grant study, psychiatrist Charles Barber (2013) concludes that the secret to a happy life is relationships, relationships, relationships (Barber, 2013).

SUMMARY

Human beings are hard-wired for attachment and connectedness. Empirical evidence clearly suggests that people need connection to others as well as a connected belonging to the community. This need for connection is particularly salient for college students who have often left family, friends, and community behind. Compelling research delineates the strong linkage between social isolation and loneliness and ruptures in physiological, cognitive, and emotional wellness. ■

The US Preventive Services Task Force (USPSTF) has noted the high rates of depression as well as the heavy costs including loss of life associated with untreated or inadequately treated depression (Thase, 2016). The USPSTF noted the availability of accurate and practical screening methodologies and recommended screenings to identify those in need of treatment and care (Siu et al., 2016). The USPSTF also noted that it is critical that such screenings be directly linked to mental health treatment resources so that those suffering from depression can be connected to effective treatments (Siu et al., 2016). Ketchen Lipson & colleagues (2015) note the high rate of mental health problems and the low rate of treatment utilization on college campuses. With respect to students taking their own lives, the situation is particularly troubling. Over 80% of those who die by suicide have never been seen by their campus mental health service(Ketchen Lipson, Gaddis, Heinze, Beck, & Eisenberg, 2015). Consequently, it is imperative to effectively identify those at risk for suicide, and link them to appropriate treatments.

Both universal screenings as well as targeted screenings of higher risk groups are effective at identifying those at risk for suicidality. When screenings are integrated with effective methods of linking identified persons to needed treatments, lives are saved and rates of death by suicide decline. Gatekeeper training is effective at increasing the ability of gatekeepers to recognize signs and symptoms of suicidality and also increases the confidence of gatekeepers in using their suicide prevention training. However, gatekeeper training conducted in isolation and without ongoing complementary suicide prevention efforts (such as repeated booster trainings, screenings, awareness campaigns, etc.) do not appear to result in increases in mental health utilization. It is vital therefore that gatekeeper training be conducted as one component of a comprehensive and ongoing suicide prevention program.

The Evidence

Signs of Suicide (SOS) is a school-based prevention program which combines awareness raising and screening into a single suicide prevention program. SOS participants learn that suicidality is directly related to mental illness, usually depression. Participants are taught about signs and symptoms of depression and suicidality and also take a depression screening. In addition, SOS participants are taught that suicide is not a normal reaction to stress and more adaptive coping such as help-seeking is prescribed. Students are taught the ACT action steps-- *Acknowledge* the signs of suicidality in others by taking the signs seriously; let the person know you *Care* & you want to help; and *Tell* a responsible adult. Aseltine & Demartino (2004) randomly assigned 2100 students in 5 high schools in Columbus, Georgia & Hartford, Connecticut to intervention (SOS) and control groups. Self-administered questionnaires

were completed by students approximately three months later. Students in the SOS group were 40% less likely to report suicide attempts (Aseltine & DeMartino, 2004). In addition, SOS students had greater knowledge as well as more adaptive attitudes about depression and suicide (Aseltine & DeMartino, 2004).

Gatekeeper programs have been shown to increase the knowledge and confidence of trainees in engaging distressed students. However, reviews of gatekeeper studies have noted the absence of any increase in mental health utilization subsequent to implementation of gatekeeper programs (Lipson, Speer, Brunwasser, Hahn, & Eisenberg, 2014). Kataoka & colleagues (2007) noted this limitation of gatekeeper interventions and conducted a study in order to investigate the impact of the gatekeeper intervention combined with linkage to care efforts -- on subsequent treatment utilization (Kataoka, Stein, Nadeem, & Wong, 2007). The Los Angeles Unified School district has a youth suicide prevention program utilizing gatekeeper training and education as outlined in the Center for Disease Control School Gatekeeper Training model. In this particular model, gatekeeper training is combined with effective psychoeducation and linkage (referral to treatment) efforts. During the 2001 - 2002 school year, 1062 elementary, middle, and high school students were identified as at risk and assessed. Where students had a positive screen for depression, suicidality or other disorder, parents were contacted to explain the need for treatment, and either school-based or community-based referrals were provided. Five months later, a random sample of 100 parents were contacted and participated in a structured telephone interview focused on the child's symptoms, the parents' perception of need for treatment for their child, and any treatment the child may have received. Seventy-two percent of parents indicated that their children had received treatment after being identified by the gatekeeper-based prevention program (Kataoka et al., 2007). Children whose parents did perceive a need for treatment were seven times

more likely to receive treatment when compared to children of parents who did not perceive a need for treatment. Kataoka & colleagues (2007) concluded that gatekeeper programs can in fact be effective at securing subsequent treatment in school settings. It seems likely that this gatekeeper program was effective at subsequent mental health utilization precisely because of the tight integration with timely efforts to engage the student's parents, explain the need for treatment, and provide referral options. Gatekeeper training without such tight integration with efforts to promote treatment utilization often fail to link at risk persons to care. Kataoka & colleagues (2007) also emphasized the critical role of parents' perceptions of treatment need on securing follow-up care. Moreover, they emphasized the need for engagement with parents to be done in a culturally sensitive way and in a manner which is meaningful to parents (Kataoka et al., 2007).

In 1983 and again in 1984, general practitioners in Gotland, Sweden were given a two-day training program on recognizing and treating depression. There had been 11 depression related suicides among Gotlanders in the 30 months prior to the training. In the 30 months after the training, only 2 depression-related deaths by suicide were recorded on Gotland (Rihmer, Rutz, & Pihlgren, 1995). Similar reductions in deaths by suicide were not evident on the Swedish mainland. The Gotland study shows that when gatekeeper training is effectively combined with linkage to treatment (in Gotland, the gatekeepers were the treatment providers), decreases in deaths by suicide may be substantial. The authors concluded that the early identification and treatment of depression was highly effective at preventing deaths by suicide (Rihmer et al., 1995). However, four years after the second and final training, rates of suicide returned to pre-intervention levels on Gotland. The authors concluded that the efficacy of suicide prevention training programs is time-limited (Rihmer et al., 1995). Effective suicide prevention cannot be sustained by one-off training

programs, but instead must be nurtured by a sustained and ongoing multi-dimensional suicide prevention program. Rutz & colleagues (1992) recognize this and recommended regular booster trainings in order to sustain decreases in deaths by suicide (W. Rutz, von Knorring, & Wålinder, 1992). While reductions in rates of death by suicide were impressive, subsequent analysis revealed that it was mostly women's lives saved (Wolfgang Rutz, von Knorring, Pihlgren, Rihmer, & Walinder, 1995). This result suggests that among groups such as men who may have higher internalized barriers preventing them from help-seeking, additional efforts are required to link them to needed treatments.

Yasuzuka is a small rural town in central Japan with a high rate of deaths by suicide among the elderly. A suicide prevention program featuring depression screening, psycho-education, and follow up linkage to treatment by general practitioners was implemented between 1991 and 1998 (Oyama, Fujita, Goto, Shibuya, & Sakashita, 2006). Prior to program implementation, the suicide rate among

the 4940 residents of Yasuzuka was 275 per 100,000 among women 65 and older, and 323 per 100,000 among men 65 and older. Following program implementation there was no change in suicide risk for men, but the risk of death by suicide for women dropped 64% (Oyama et al., 2006). The authors concluded that this screening and linkage intervention in conjunction with a public health education campaign was effective at reducing rates of suicide among elderly women. The authors cited insufficient sample size to detect any male risk reduction as well as "greater acceptance" among women, in explaining lack of observed rate reduction among the men (Oyama et al., 2006). The results from the Yasuzuka study echo those of the Gotland study in documenting that screening and linkage programs are highly effective, but that additional efforts may be required to link men and other groups with higher internalized barriers to needed treatments.

Many students suffering from depression do not utilize their college counseling centers (Shepardson & Funderburk, 2014). Since the majority of college students do utilize their college health service (Eisenberg, Golberstein, & Gollust, 2007), Shepherdson & Funderburk (2014) investigated whether universal mental health screenings for all students accessing the college health service could be effective at identifying depressed and suicidal students. During the Spring and Fall 2010 semesters, 4126 screening questionnaires were completed by students accessing care at the Syracuse University Health Service. Paper and pencil screenings were chosen as students are more likely to accurately disclose symptoms of depression and suicidal ideation on a paper and pencil screen as compared to an in-person interview(Bryan, Corso, Rudd, & Cordero, 2008; Shepardson & Funderburk, 2014). Each semester 9-13% of students screened positive for depression, 2.5-3% screened positive for suicidal ideation, & 33-38% screened positive for alcohol misuse (Shepardson & Funderburk,

2014). Shepherdson & Funderburk concluded that universal screening of students accessing the college health center is an effective means of identifying at-risk students. The authors caution however that screening is not an end in itself, but must be combined with effective techniques of linking identified students to appropriate treatments.

Eligible first year health sciences graduate students pursuing degrees in medicine, dentistry, nursing, veterinary medicine, and pharmacy, were recruited from 7 colleges in the Midwest and were screened for anxiety, depression, & suicidal thoughts. Of the 93 participants, 41% had elevated depression screens, 28% had elevated anxiety screens, and 4% had suicidal thoughts (Mazurek Melnyk et al., 2016). Mazurek Melnyk & colleagues concluded that screenings of students entering graduate study in the health professionals can effectively identify at risk students and facilitate the referral of such students to needed treatments.

Scott & colleagues (2009) conducted a comparison study to investigate whether screening instruments are more or less effective at identifying at-risk youth when compared to teacher and administrator evaluations of their student's well-being. Students from 7 high schools in the New York City metropolitan area participated and 489 students were found to have significant mental health problems (Scott et al., 2009). While 35% of the 489 students with significant mental health problems were identified by both the screening and the school professionals, and 13% were identified only by the school professionals, a full 34% of students were identified by the screening alone. This indicates the utility and reach of screenings at identifying at-risk youth not recognized by school professionals (Scott et al., 2009).

There is strong evidence for the efficacy of a comprehensive suicide prevention approach with identification of at risk individuals as one key component. Examples of comprehensive approaches include JED's Comprehensive Approach

as well as the Zero Suicide model (Hogan & Grumet, 2016). Preliminary data show that two years after implementing the Zero Suicide model, Centerstone, a large Tennessee based behavioral health non-profit organization, reported a 65% decline in deaths by suicide. The rate of suicides at Centerstone declined from 30 per 100,000 to 11 per 100,000 in two years (Hogan & Grumet, 2016). The US Air Force (USAF) implemented a comprehensive suicide prevention initiative starting in 1997 and attained a 33% reduction in deaths by suicide (Knox et al., 2010). This reduction has so far been sustained over 11 years. The rate of deaths by suicide in the USAF temporarily rose again in 2004. Knox & colleagues investigated this temporary increase and found that the program components were not rigorously followed and implemented in 2004, resulting in a temporary rise in deaths by suicide (Knox et al., 2010). These findings document the life-saving efficacy of comprehensive efforts relying on identification of those at risk, but also document the need for ongoing and sustained implementation of program components month after month, and year after year.

Gould & colleagues (2009) investigated treatment use among a group of adolescents with a positive suicide screen. From fall 2002 through spring 2004, 2342 adolescents aged 13-19 were screened and 317 were found to be at risk for suicidality (Gould et al., 2009). Approximately two years later, a follow up assessment was conducted to determine linkage to treatment following the positive screen. At the time of the initial screening, 227 of the 317 at risk adolescents (72%) were not receiving any treatment. Fifty one percent were assessed as needing treatment, and some 70% followed through with the referral recommendations (Gould et al., 2009). Gould & colleagues (2009) concluded that screening for suicidality is an effective means of linking at risk adolescents to needed mental health treatments. The authors noted that adolescents and/or parents perceptions that treatment was not needed in spite of the positive screen for suicidality, was an

important factor in not following through with the referral recommendation (Gould et al., 2009).

NEW TECHNOLOGIES

Williams & colleagues (2014) conducted a study to investigate the feasibility of a web-based screening and linkage model to identify depressed and suicidal students and connect them to care. Undergraduate and graduate students in Massachusetts were recruited via Facebook, Craigslist, and school-based flyers to participate in a web based screening for depression (Williams et al., 2014) including Skype, to screen and provide psychiatric consultation to depressed college students. Methods. Students completed the 9-item Patient Health Questionnaire (PHQ-9. A total of 972 students consented to the online screening and 285 students screened positive. All 972 students were immediately provided additional information and resources for depression and suicidality. Among the 285 positive screens, 69 students consented to a Skype psychiatric consultation and 17 students went on to complete the consultation. Of those completing the consultation, 13 students (77%) thought the Skype consultation was useful in helping to understand their depression, and 15 students (82%) thought clinicians could successfully see students via videoconferencing (Williams et al., 2014)including Skype, to screen and provide psychiatric consultation to depressed college students. Methods. Students completed the 9-item Patient Health Questionnaire (PHQ-9. Participating students reported positive experiences, and the authors concluded that online technologies can be an effective option for screening at risk students and linking them to video conference based consultation.

EFFORTS AT COLLEGES & UNIVERSITIES

Universities employ a range of approaches in attempting to identify students who may be at risk. Anonymous online screenings are offered on many college counseling center websites. ULifeline is an anonymous and confidential online mental health resource center for students provided by JED. ULifeline provided 31,847 screenings to college students in 2015. Females were far more likely to access ULifeline screenings compared to male students (70% vs. 30%) (Schwartz, Victor, 2016). ULifeline is provided at no charge to any college or university by JED with over 1500 colleges and universities participating (Schwartz, Victor, 2016). MentalHealthScreening.org partnered with 660 colleges and universities across the nation in the 2015 - 2016 academic year and screened 210,913 college students. Eighty-seven percent of students taking the depression screening screened consistent or highly consistent for depression, 89% of students taking the anxiety screening screened "suggestive" of generalized anxiety disorder, and 93% of students taking the substance use screening screened moderate or high risk for substance abuse (MentalHealthScreening.org, 2016) (email communication, mental health screening.org, August, 2016). These data suggest that online screenings are highly effective at identifying mental health issues among college students. When asked if they would seek help, 66% said they would (MentalHealthScreening.org, 2016).

Mental Health Awareness days featuring information campaigns, tabling, and paper and pencil screenings with a debriefing meeting, where a clinician goes over screening results and explains available treatment resources, are also commonly used on college campuses. Studies suggest that simple screening and linkage approaches may be more effective at linking groups such as women to care, and that those who have higher internalized barriers to care including men & black, Hispanic and Asian students (Eisenberg, Hunt, & Speer, 2012), may need additional prevention efforts in order to seek help for untreated mental health issues.

SUMMARY

The majority of those dying by suicide suffer from untreated depression and other mental health conditions. Expeditious identification of those at risk is critical in the effort to link people to needed treatments. Gatekeeper approaches when combined with effective linkage efforts have been demonstrated to increase mental health utilization. When gatekeeper approaches are employed as one-off trainings, evidence suggests they are not effective at linking at risk persons to care.

Both web-based and in-person screenings have been demonstrated to be highly effective at linking at risk persons to needed treatments. Studies suggest that groups such as men as well as blacks, Asians, & Hispanics have higher internalized stigma and other barriers to care, and may need additional outreach and prevention efforts before they seek help. Efforts to identify those at risk for suicidality are most effective when employed as part of a comprehensive and ongoing suicide prevention program. ◼

The overwhelming majority of students who die by suicide never attend counseling services. Studies show that barriers to help-seeking prevent adolescents and young adults from reaching out for support. Sadly, among adolescents with emotional problems, those experiencing a suicidal crisis are particularly unlikely to reach out to parents or mental health professionals for help. Promising strategies include SEL approaches, mantherapy.org, Surviving the Teens, and Sources of Strength. Engaging and educating the friend groups and peers to whom suicidal youth turn when going through a suicidal crisis, appears to be one effective strategy. Interventions recognizing the utility of the Internet also appear to be promising.

The Evidence

Nearly 80% of students who later die by suicide are never seen by counseling services (Drum, Brownson, Denmark, & Smith, 2009). Therefore, a clear understanding of the various barriers to help-seeking as well as promising strategies to increase help-seeking behavior is key.

Mental health literacy comprises knowledge about mental health problems as well as mental health treatments and where and how to find them. Emotional competence comprises the ability to recognize and describe feelings as well as the capacity to adaptively regulate emotions in a non-defensive manner. Poor mental health literacy and inadequate emotional competence both form barriers to help-seeking (Rickwood, Deane, & Wilson, 2007). On average, emotional competence appears to be less well developed among young men (Rickwood et al., 2007) and may help to explain why males are less likely to reach out for help. For example, in a study of 3092 adolescents and young adults aged 15-24 years in Queensland Australia, 39% of males and 22% of females reported that they would not seek help from formal sources for personal problems. When asked about help-seeking from informal sources such as peers, 30% of the males, compared to just 6% of the females stated they would not seek help from anyone (Donald, 2000; Rickwood et al., 2007).

Forty-nine cases were drawn from a sample of 151 consecutive youth suicide deaths in Utah from June 1996 to November 1998. Researchers conducted 270 interviews with parents, siblings, friends & relatives to retroactively evaluate barriers to help-

seeking and securing mental health treatment for the youths who died by suicide (Moskos, Olson, Halbern, & Gray, 2007). The same barriers to help-seeking and securing treatment were reported over and over. Seventy three percent of parents reported that their son or daughter believed nothing could help, 71% reported that seeking help was a sign of weakness or failure, 58% were reluctant to admit having problems, and 52% were too embarrassed to get help. Secondary barriers including affordability of treatment, absence of insurance coverage, not knowing where to go or unavailability of treatment resources in the community, were also frequently cited. Bad experience in previous efforts at help-seeking was reported by 23% of parents. The authors called for efforts to reduce the stigma surrounding mental illness. Noting the important role of parents in consenting to and financing treatments, the authors suggest educating parents about signs and symptoms and appropriate treatments as a way to reduce barriers to help-seeking (Moskos et al., 2007).

Evidence suggests that help-seeking behavior in adolescents is not a unitary construct but is mediated by three separate factors (Schmeelk-Cone, Pisani, Petrova, & Wyman, 2012). A large study of 6370 students in 22 rural and urban high schools in Georgia, North Dakota, and New York found that help-seeking incorporates the following three factors:

1. Perceptions of the acceptability of seeking help

2. Perceptions of the availability of trustworthy and capable adults to turn to

3. "Rejecting codes of silence" - i.e., attitudes about overcoming suicidal peers' secrecy requests

The first factor - acceptability of seeking help for their own distress, is further comprised of perceptions that their friends and family support their help-seeking efforts (Schmeelk-Cone et al., 2012). The second factor, perceptions of the availability of capable and trustworthy adults is an important mediator of help-

seeking behavior. The third factor - rejecting codes of silence - was connected to the perception that there were trustworthy and capable adults who could help their suicidal friends. The authors note that risk factors and protective factors are anchored in norms and attitudes of small friendship groups. This clustering of attitudes about mental health stigma and help-seeking in small peer affiliation groups may be a fruitful area for further research and prevention efforts (Schmeelk-Cone et al., 2012).

A review of the international literature on help-seeking among young people aged up to 26 who were experiencing either suicidality or self-harm behaviors, clearly suggests that self-harming and suicidal adolescents and young adults turn to informal peer and family networks in greater proportions then turning to mental health professionals (Michelmore & Hindley, 2012). Michelmore & Hindley identified 17 studies investigating either suicidality or self-harm and help-seeking. Rates of informal help-seeking varied from 40-68%, whereas help-seeking from mental health professionals was below 50%. Females were significantly more likely than males to seek help from their informal social networks, and males were more likely to turn to emergency services. Ethnicity also impacts on help-seeking behavior with minority groups less likely to reach out for help. One study found that parental detection of their child's self-harm behavior was higher among Whites, which led to increased help-seeking in this group (Mojtabai & Olfson, 2008). Better parent child relationships were also associated with increased help-seeking.

Expectations of self-reliance and being able to cope with problems without help was found to be a significant barrier to help-seeking (Michelmore & Hindley, 2012). Regarding self-harm behaviors, the perception that the behavior was not serious or that help would not be beneficial were important barriers to help-seeking. Data from the 17 studies reviewed show that expectations of self-reliance and the perception that therapy would not help, were far more significant barriers than practical barriers

such as lack of time. There is a dearth of research investigating why young people are reluctant to seek help for a suicidal peer. In studies utilizing hypothetical scenarios of intentions to seek help for a suicidal peer, barriers to help-seeking included worries that their friend would be hospitalized, that the friendship would be damaged, and that their friend would get angry (Michelmore & Hindley, 2012). Michelmore & Hindley (2012) concluded that interventions targeted at peers and families are needed to improve help-seeking in young people with suicidal ideation and self-harm.

Associations between extreme self-reliance, help-seeking, and mental health symptoms were investigated among a sample of 2342 adolescents in 6 New York high schools (Labouliere, Kleinman, & Gould, 2015). Extreme self-reliance was defined as solving problems entirely on your own, all the time. Of the original 2342 adolescents, 317 adolescents were identified as at risk for suicide and then followed for two years in order to determine the prospective predictive value of extreme self-reliance. While extreme self-reliance was endorsed by 16.6% of the total sample, it was endorsed by 29.1% of the suicidal youth. Youth endorsing extreme self-reliance were three times more likely to meet criteria for clinically significant levels of depression, and their odds of meeting criteria for clinically significant levels of suicidal ideation were nearly 2.5 times greater than for those not endorsing extreme self-reliance (Labouliere et al., 2015). Those who endorsed extreme self-reliance at baseline assessment had both significantly higher depressions scores and significantly higher levels of suicidal ideation at two year follow up. Despite their increased need for help, adolescents with extreme self-reliance reported reduced help-seeking behavior from informal sources such as family and friends. Youth with extreme self-reliance were more likely to turn to anonymous sources such as the Internet for help. The authors caution that turning to the Internet has been found to be unhelpful in general, may not provide timely

support in imminent situations, and is unlikely to result in a referral to treatment (Labouliere et al., 2015). Surprisingly, those with extreme self-reliance were more likely to be involved in treatment. The authors concluded that this finding was most likely an artifact of the higher levels of pathology in the extreme self-reliance group, and not attributable to their help-seeking attitudes and values. Adolescents with extreme self-reliance experience a "self-stigma" where their misguided and extreme independence prevents them from adaptive help-seeking even in the face of dangerously elevated mental health symptoms. Education about the risks of extreme self-reliance may be an important focus of suicide prevention programming (Labouliere et al., 2015).

HELP-NEGATION

The 2001-2002 national epidemiological survey of alcohol and related conditions included a nationally representative sample of 43,093 participants and revealed that among college students with a past year mental health condition, only 18% received any mental health treatment (Eisenberg, Hunt, &

Speer, 2012). Utilization of mental health services among graduate and professional students is likewise substantially lower than apparent needs (Eisenberg et al., 2012).

Help-negation refers to the observation that those going through a suicidal crisis and most in need of support are less likely to seek it. Students with emotional difficulties as well as those going through a suicidal crisis are particularly unlikely to seek help from adults (Schmeelk-Cone et al., 2012). To further understand help-negation, researchers gathered data on the help-seeking attitudes, stigma concerns, and perceptions of social support among 321 undergraduates at an urban Midwestern university. A negative association was found between suicidal ideation and intentions to seek help from either professionals or informal peer and family networks (Yakunina, Rogers, Waehler, & Werth, 2010).

Paradoxically, suicidal ideation itself may serve as a barrier to help-seeking (Yakunina et al., 2010). Yakunina & colleagues (2010) cite a cultural taboo against talking about suicide, which according to Shea is heavily stigmatized in American culture (Shea, 2002). Those feeling suicidal may therefore feel particularly ashamed and weak, and much less inclined to risk anticipated social judgment and reach out for help. The maladaptive attitudinal barriers reducing help-seeking behavior among suicidal youth are also present among adolescents and young adults with self-harm. A study of help-seeking among 26 year olds in New Zealand documented that 39% of the 144 participants with self-harm behaviors did not seek help because of attitudinal barriers including shame and the belief that one should cope with problems by yourself (Nada-Raja, Morrison, & Skegg, 2003). Both social stigma and internalized self-stigma are factors impeding adaptive help-seeking. Social stigma includes fears of being judged by or losing the respect of peers. Self-stigma includes internalized tendencies to perceive themselves as weak, inferior, or inadequate if they need help.

Finally, fears of involuntary hospitalization have also been cited as a barrier to help-seeking (Yakunina et al., 2010).

In their systematic review of the literature on help-seeking behavior and adolescent self-harm, Rowe et al. identified six interpersonal and three intrapsychic barriers to help-seeking (Rowe et al., 2014). The interpersonal barriers included:

1. The belief that others would not understand their self-harming behavior.
2. Fear of confidentiality being breached.
3. Fear of being seen to be 'attention-seeking'.
4. Uncertainty over whether parents or teachers could do anything to help.
5. Fear that others would react negatively if self-harm was disclosed.
6. Fear of being stigmatized.

The three intrapsychic barriers to help-seeking were:

1. The presence of depression, anxiety and suicidal ideation.
2. Minimization of self-harm as a problem.
3. The belief that one could or should be able to cope on one's own.

The barriers to help-seeking among adolescents and young adults with self-harm behavior are remarkably similar to barriers to help-seeking among suicidal youth.

WEB-BASED INTERVENTIONS

A recent review of web-based interventions targeting psychological distress among college students found 17 pertinent studies, and concluded that web-based and computer-delivered interventions can be effective at improving students' anxiety, depression and stress when compared to inactive controls (Davies, Morriss, & Glazebrook, 2014). The authors noted that web-based approaches may be an effective option for students with higher levels of internalized stigma around help-seeking, but caution

that the best improvements in mental health outcomes may be achieved by combining web-based approaches with face-to-face support (Davies et al., 2014).

Web-based interventions offer a range of advantages including cost, accessibility and availability. Due to their anonymity, web-based interventions may also appeal to those unlikely to engage in face-to-face help-seeking because of their internalized self-stigma. The National Health Service in the United Kingdom has endorsed The Big White Wall (BWW) which is an online community of anxious, depressed, and distressed adults offering anonymous support to one another and guided by professional guides. The website of the BWW states we are "A safe online community of people who are anxious, down or not coping who support and help each other by sharing what's troubling them, guided by trained professionals." BWW data, available on the BWW website states "In a survey of BWW members, 46% reported sharing an issue or feelings on BWW for the first time and 70% of members reported that using Big White Wall improved their well-being in at least one way". The BWW is being made available to students at some universities in the United Kingdom.

A review of web-based cognitive behavior therapy concluded that it can drastically increase accessibility, can be effective at treating anxiety and depression, and may be particularly useful at engaging people with high internalized stigma barriers (Hedman, 2014). Web-based approaches might be effective at introducing people with high self-stigma to mental health approaches with the additional hope that they might then be more likely to seek appropriate face-to-face mental health support for more serious conditions including suicidality. Internet delivered cognitive behavioral therapy has been implemented as part of regular healthcare in the Netherlands and Australia (Hedman, 2014).

INTERVENTIONS TO INCREASE HELP-SEEKING

ManTherapy.org is a free online, confidential resource, begun in Colorado, offering an interactive and humorous approach targeting men at risk for depression and suicide. A fictional online therapist, Dr. Rich Mahogany, cuts through the stigma of mental health with straight talk and practical advice (Colorado.gov, 2017). mantherapy.org works specifically to reduce stigma and increase help-seeking. Surveys of help-seeking intentions indicate that 51% of men utilizing resources stated they were more likely to reach out for help (CDC, 2015).

Sources of Strength is built on a universal school-based suicide prevention approach designed to build protective influences including help-seeking, across an entire student population. Youth opinion leaders from diverse social cliques, including at-risk adolescents, are trained to change the norms and behaviors of their peers by conducting well-defined messaging activities with adult mentoring (Wyman et al., 2010). The purpose is to modify the norms within peer groups to alter perceptions of what is typical behavior as well as to increase and legitimize positive coping behaviors. Peer leaders model and encourage friends to (1) name and engage "trusted adults" to increase youth–adult communication ties; (2) reinforce and create an expectancy that friends ask adults for help for suicidal friends (thereby also reducing implicit suicide acceptability); and (3) identify and use interpersonal as well as formal coping resources (Wyman et al., 2010). Changing these factors is designed to connect suicidal youths with capable adults and also to reduce the likelihood that lower-risk youths will enter a trajectory that includes suicidal ideation or behavior. An investigation of Sources Of Strength at 18 metropolitan and rural schools in Georgia, New York, and North Dakota assigned to either immediate intervention or waitlist control, found that after 3 months of messaging, Sources Of Strength

successfully improved school-wide norms pertaining to suicide (Wyman et al, 2010). Specifically, significant study gains were found in students' perceptions that adults in their school can provide help to suicidal students as well as the acceptability of seeking help from adults. In addition, peer leaders' referral of suicidal friends to adults was 4.12 times as great in the immediate intervention schools as in the untrained waitlist control schools (Wyman et al., 2010). The authors concluded that an intervention delivered by adolescent peer leaders can modify norms across the entire school population that are conceptually and empirically linked to reduced suicidal behavior (Wyman et al., 2010).

Signs of Suicide (SOS) is a school-based prevention program which combines awareness raising and screening into a single suicide prevention program. SOS participants learn that suicidality is directly related to mental illness, usually depression. Participants are taught about signs and symptoms of depression and suicidality and also take a depression screening (Aseltine & DeMartino, 2004). In addition, SOS participants are taught that suicide is not a normal reaction to stress and more adaptive coping such as help-seeking is prescribed. Students are taught the ACT action steps — *Acknowledge* the signs of suicidality in others by taking the signs seriously; let the person know you *Care* & you want to help; and *Tell* a responsible adult. Aseltine & Demartino (2004) randomly assigned 2100 students in 5 high schools in Columbus, Georgia & Hartford, Connecticut to intervention (SOS) and control groups. Self-administered questionnaires were completed by students approximately three months later. Students in the SOS group were 40% less likely to report suicide attempts. In addition, SOS students had greater knowledge as well as more adaptive attitudes about depression and suicide. However, despite the reduction in reported attempts, increases in help-seeking did not reach statistical significance (Aseltine & DeMartino, 2004).

The Surviving the Teens® Suicide Prevention and Depression Awareness Program is a school-based suicide prevention program developed by Catherine Strunk, RN. The program is presented in four 50-minute sessions. Students are presented with factual information regarding risk factors, warning signs, and common myths associated with depression & suicide (King, Strunk, & Sorter, 2011). The program also offers students effective strategies to cope with everyday life stressors as well as how to access referral sources if depressed and suicidal. The program provides students with a resources card listing available resources to turn to and specifically aims to increase students' self-efficacy in engaging in help-seeking behavior if they or their peers are suicidal (King et al., 2011). High school students in the Greater Cincinnati area were administered surveys of depression and suicidality as well as surveys of intentions to seek help. Of the 1030 participants, 919 completed the pretest surveys and the immediate post-intervention follow-up, and 416 completed pretests as well as three month follow-ups. Students who received the Surviving the Teens program were significantly less likely to be considering suicide, have made a plan, or a suicide attempt (King et al., 2011). In addition, students sense of self-efficacy regarding help-seeking as well as their help-seeking intentions increased, and students were also more likely to know an adult at school who they felt they could turn to with their problems. These gains were maintained at three-month follow-up (King et al., 2011).

Social & Emotional Learning (SEL) approaches specifically target coping strategies as well as both identifying and talking about feelings. Numerous studies document the utility of SEL approaches in improving academic performance, self-confidence, emotional literacy, classroom climate and student teacher interaction (Mark Brackett & Susan Rivers, 2014; "Yale Center for Emotional Intelligence," 2013). The RULER approach is one example and

stands for Recognize emotions in self and others; Understanding the causes and consequences of emotions; Labelling emotions correctly; Expressing emotions appropriately; and Regulating emotions effectively ("Yale Center for Emotional Intelligence," 2013). In a 2-year randomized controlled trial with 62 schools, including 155 classrooms, 105 teachers, and 3,824 students, schools were randomly assigned to either integrate the RULER SEL program into their fifth- and sixth-grade English language arts (ELA) classrooms or to serve as a comparison school, using their standard ELA curriculum (i.e., "business-as-usual"). Outcomes were measured using an observational coding rubric applied to video footage of ELA classrooms, and student and teacher reports. By the end of Year 1, observers rated classrooms in RULER schools as having greater warmth and connectedness between teachers and students, more positive climates, and higher regard for students' perspectives, relative to comparison classrooms (Rivers, Brackett, Reyes, Elbertson, & Salovey, 2013). Furthermore, teacher reports showed more emotion-focused interactions between teachers

and students and cooperative learning strategies in RULER classrooms (Rivers et al., 2013). While future research is needed to investigate the impact of SEL approaches specifically on help-seeking behavior, it is likely that the documented improvements in emotional literacy, talking about feelings, classroom climate, and teacher-student interaction, result as well in increased help-seeking behavior.

SUMMARY

Most adolescents and young adults do not receive care for suicidality or self-harm behaviors. When they do reach out for help, adolescents and young adults are far more likely to turn to informal friend and family groups then to mental health professionals. Attitudes and beliefs that one should solve problems on one's own, that it is weak to have problems, that one might be judged by others, and that friends and family may not see help-seeking as legitimate, are the barriers which reduce help-seeking behavior. Talking about suicide may be heavily stigmatized in American culture, forming an additional barrier.

Help-seeking intentions are culturally mediated and vary by age, sex, minority status, and rural vs. urban location. Consequently, interventions may be more effective when specifically targeted to particular groups. One promising intervention strategy may be targeting the small affiliation groups to whom suicidal individuals are most likely to turn. Interventions such as Sources of Strength, Surviving the Teens, as well as SEL approaches are promising interventions likely to increase help-seeking.

The Internet can drastically increase accessibility and due to its anonymity, can engage those for whom stigma is a barrier. Young people often turn to online sources where they self-disclose or seek support. However, reactions on the Internet are unpredictable and sometimes dangerous, and may not result in referrals to care. ■

A large majority of Americans with mental illness are not receiving professional care. Even among the minority who do receive treatment, most are not receiving minimally adequate care. On college campuses, most students needing care are not in treatment. Moreover, most students in higher risk categories including those with serious suicidality do not receive treatment and even if they do, too often do not receive minimally adequate treatment. Historically, suicidality has been seen as a symptom of an underlying condition with treatment directed at alleviating the underlying problem, not the suicidality. Best practice guidelines from organizations such as the National Action Alliance for Suicide Prevention now recommend that suicidality always be directly targeted in addition to treating the underlying condition. Targeting suicidality directly with evidence-based approaches ameliorates suicidal thinking and behavior and prevents deaths by suicide. Understanding of suicidality and its effective treatment has come a long way. It is now well established that effective care and treatment of suicidal persons includes a systematic and collaborative approach which incorporates thorough assessment, timely access to care, safety planning, evidenced based treatments, and caring follow up. Isolation and loneliness are understood to be prominent risk factors, and the need among suicidal persons for a sense of connectedness as well as caring follow up contacts guides effective care.

The Evidence

AVAILABILITY AND ADEQUACY OF CARE

A survey of 26,000 students at 70 campuses nationwide showed that fewer than half of students who had seriously considered suicide in the past year, had received any kind of professional care (Drum, Brownson, Denmark, & Smith, 2009). A second survey of over 13000 students at 26 campuses indicated that only 36% of participants were receiving mental health care for problems including anxiety, depression, and suicidal thoughts (Eisenberg, Hunt, & Speer, 2012). Among students receiving treatment for depression, only about half were receiving levels of care deemed minimally adequate according to evidence-based guidelines (Eisenberg et al., 2012; Wang et al., 2005). Unfortunately, students with higher levels of depression and greater suicide risk were not more likely to be receiving treatment. In fact, only 39% of students in these higher risk categories were in treatment (Eisenberg et al., 2012). From data provided by 40 universities among respondents to the annual counseling centers directors survey, Schwartz (2006) noted that the median number of sessions after intake is just 2.8, and that the modal number of sessions attended is only one. Half of all clients were seen just 4 or fewer sessions, and less than 10% were seen for 8 or more sessions (Schwartz, 2006).

A review of international studies investigating the treatment gap among adolescents, found that while 12-25% of adolescents have a mental disorder, only 34-56% of those adolescents access mental health services (Neufeld, Dunn, Jones, Croudace, & Goodyer, 2017). In the National Comorbidity Survey of 9282 English speaking respondents nationwide, 58.9% of those with mental disorders had not received any

treatment in the prior twelve months (Wang et al., 2005). Of the respondents who were receiving any treatment, only 32.7% were receiving minimally adequate treatment. The authors concluded that most people with mental health disorders in the United States are either untreated or poorly treated (Wang et al., 2005). Since studies in Finland (Pirkola, Sund, Sailas, & Wahlbeck, 2009) and Canada (Schaffer et al., 2016) have concluded that prominent availability of outpatient care is associated with lower suicide rates, the dearth of minimally adequate care to the majority of Americans is striking.

People at risk of death by suicide are at substantially greater risk in the twelve weeks following discharge from inpatient care and at elevated risk following new anti-depressant starts and dose changes (Kales, Kim, Austin, & Valenstein, 2010). The most commonly used guidelines for frequency and timing of monitoring visits for anti-depressant treatment are the National Committee for Quality Assurance (NCQA). In the NCQA Health Employer Data and Information Set (HEDIS), "optimal provider contact" is defined as a minimum of three follow-up visits for mental healthcare in the 12 weeks following a new antidepressant start (Kales et al., 2010). The FDA has made several monitoring recommendations for periods following antidepressant starts, with the most stringent recommendation being 7 visits in 12 weeks for children and adolescents. The authors note that a level of care far short of HEDIS & FDA recommendations is common (Kales et al., 2010).

CONTINUITY OF CARE

The risk of death by suicide is extremely high following discharge from inpatient psychiatric care. A study of 68,947 active duty US service members found that the risk of death by suicide in the 30 days following hospitalization was 8 times higher than the risk at more than one year following hospitalization (Luxton, Trofimovich, & Clark, 2013). A study of 887,859 US military veterans in treatment

for depression at VA hospitals between 1999 and 2004 found the suicide rate within the first 12 weeks after hospitalization to be 5 times the base rate for the treatment population and 54 times the rate for the general US population during the same period (Valenstein et al., 2009). Too often, active duty service members, military veterans, and ordinary citizens die by suicide before their first appointment following discharge from inpatient care. In a retrospective British study of 100 civilian inpatients who died by suicide within two weeks of discharge, 55% died within the first week, and 49% died before their first follow-up appointment (Bickley et al., 2013). Consequently, transitions from the hospital are critical: the first post-discharge appointment should ideally be scheduled within the first 48 hours after discharge (Suicide Prevention Resource Center, 2016).

PHARMACOLOGICAL APPROACHES

There is a dearth of studies investigating the efficacy of psychoactive medication in the treatment of suicidal behavior (Leonardo Tondo & Baldessarini, 2016). Tondo & Baldessarini (2016) reviewed the literature pertaining to the long-term impact of medicinal treatment on suicidal behavior. They note that only one drug - clozapine - has regulatory recognition for reducing suicide risk, and only for those diagnosed with schizophrenia. Tondo & Baldessarini (2016) note that in bipolar disorder, and possibly also unipolar major depression, an under-prescribed medical intervention with substantial evidence of preventive effects on suicidal behavior is long-term treatment with lithium carbonate.

As many as 90% of suicides occur in people diagnosed with mental illness, and nearly half involve people with diagnosed mood disorders. The standardized mortality ratio is highest in mood disorders and is 20 to 40 times greater than in the general population. The strong association between suicide and dysphoric and agitated mood, suggests that treatment with anti-depressant medications

might be critical in reducing suicidality (Leonardo Tondo & Baldessarini, 2016). And in fact, substantial evidence in numerous studies document the efficacy of anti-depressant medications (Leonardo Tondo & Baldessarini, 2016). In one study of anti-depressant treatment of 789 Sardinian patients with major affective disorder, 81 percent of those considered suicidal at intake became non-suicidal based on monthly assessments (L. Tondo, Lepri, & Baldessarini, 2008). While anti-depressants are clearly effective in reducing depression, Tondo & Baldessarini note that suicidal thinking and behavior are usually not specifically investigated as an outcome variable. The authors call for future research, particularly randomized clinical trials, to more clearly document the impact of anti-depressants on suicidal thinking and behavior (Leonardo Tondo & Baldessarini, 2016).

There is currently no quick-acting medicine suitable for the outpatient treatment of suicidal ideation and behavior (Yovell et al., 2016). Yovel & colleagues (2016) postulated that suicidality is linked to mental pain which is often triggered by the separation-distress system and modulated through the body's endogenous opioids. According to the separation-distress model, it is the abrupt cessation of endogenous opioid release upon separation from attachment figures, which contributes to the mental pain underlying suicidality. Consequently, administration of ultra-low-dose buprenorphine (an opiate) rapidly alleviates suicidal ideation (Yovell et al., 2016). In an Israeli study conducted at 4 different medical centers, 88 seriously suicidal patients were randomly assigned to either ultra-low-dose buprenorphrine or placebo in an investigation of the medicinal treatment of serious suicidal ideation. Patients were given either buprenorphine lozenges or identical placebo lozenges and the Beck Scale for Suicidal Ideation was administered weekly over the 4-week study period. Patients in the buprenorphine group had a greater reduction in suicidal ideation than patients in the placebo group, both at the end of week 2 and at the end of week 4.   Patients in the

buprenorphine group also had lower scores on scales of hopelessness, worthlessness, mental pain and suicide probability (Yovell et al., 2016).

Reinstatler & Youssef (2015) reviewed the literature on ketamine and concluded that the preliminary evidence suggests ketamine is an effective medicinal option for the reduction of suicidal ideation with minimal short term side effects. Nine studies were identified comprising 137 patients treated for suicidal ideation, and each study demonstrated rapid and clinically significant reduction in suicidal ideation (Reinstatler & Youssef, 2015). Ketamine has for decades been recognized as an anesthetic and is administered via infusion. The earliest significant results were observed within 40 minutes of infusion, and the longest results were observed up to ten days post-infusion. Reinstatler & Youssef (2015) note that lithium and clozapine are not rapid acting options for suicidality, and suggest that ketamine is gaining substantial evidence for the fast onset treatment of depression and suicidal ideation. The authors caution that the evidence is preliminary and further research is needed. Given the high rates of suicide in groups such as soldiers and veterans, there is an urgent need for faster therapeutics, and ketamine is a promising medicinal option (Reinstatler & Youssef, 2015).

Suicide prevention organizations caution that there is limited evidence to support the efficacy of medication-only approaches to suicidality, and call instead for medication to be combined with evidence-based approaches which specifically target suicidality.

ENGAGEMENT WITH TREATMENT VERSUS DROPPING OUT.

In their review of help-seeking for suicidal thoughts and behavior as well as non-suicidal self-injury among adolescents and young adults up to 26 years, Michelmore & Hindley (2012) note that the majority of young people do not seek professional help and, - if they do obtain treatment - drop out after only

4 or fewer sessions (Michelmore & Hindley, 2012). Noting that treatment for suicidality is only effective if the patient is active, involved, and invested, Rudd, Cukrowicz & Bryan (2008) call for treatment compliance, engagement, and motivation to be targeted in specific and consistent fashion. According to the authors, effective treatments of suicidality have specific interventions and techniques that target poor compliance and motivation for treatment (Rudd, Cukrowicz, & Bryan, 2008).

COLLEGE COUNSELING CENTER EFFICACY AT REDUCING DEATHS BY SUICIDE

Alan Schwartz (2006) from the University of Rochester has argued cogently that university counseling centers are highly effective at reducing deaths by suicide among students who attend counseling. Schwartz utilized data among hundreds of four-year colleges for the 14-year period culminating in 2004, and estimated that while the risk of suicide among students attending counseling services is 18 times greater than the risk of students in the student body as a whole, actual deaths by suicide among counseling center clients are far lower. Schwartz posits that if counseling centers were completely ineffectual at reducing deaths by suicide, then the rate of deaths by suicide among those attending counseling services would actually be 18 times greater than the student body as a whole. Since the rate of deaths by suicide is only three times greater among students attending counseling services when compared to the student population as a whole, Schwartz (2006) has therefore concluded that college counseling centers are highly successful at reducing the rate of death by suicide -- by a factor of six (Schwartz, 2006).

Another study strongly suggests the efficacy of accessing mental health services among adolescents with mental health disorders as compared to adolescents who do not receive treatment. British researchers utilized a longitudinal repeated measures design to evaluate changes in adolescent depressive symptoms from ages 14 years to 17 years following contact with mental health services (Neufeld et al., 2017). 1238 adolescents from 18 secondary schools in Cambridgeshire, UK participated in the study and their depressive symptoms were repeatedly assessed between ages 14 to 17. Results indicated that among adolescents with a mental disorder but no mental health support at 14 years, the odds of having clinical depression by age 17 were more than 7 times greater when compared to adolescents who had been similarly depressed at baseline but who did access mental health services (Neufeld et al., 2017). Moreover, contact with mental health services was so effective that after 3 years, depressive symptomatology among those with disorders was similar to those of unaffected individuals (Neufeld et al., 2017).

■ *GUIDELINES FOR TREATMENT OF PEOPLE AT RISK OF SUICIDE*

The Joint Commission issued a Sentinel Alert on detecting and treating suicidality in all settings in February 2016 (The Joint Commission, 2016). The guidelines are:

1. **Review each patient's personal and family medical history for suicide risk factors.** While it is imperative to thoroughly assess for risk factors including access to lethal means, history of suicidality, recent discharge from psychiatric care, etc., the Sentinel Alert notes that there is no typical suicide victim, that most individuals with one or more risk factors do not attempt to take their own lives, while others without apparent risk factors sometimes do.

2. **Screen all patients for suicide ideation, using a brief, standardized, evidence-based screening tool.** The Sentinel Alert notes that those who expressed thoughts of death or self-harm on screening questionnaires are 10 times more likely

to attempt suicide than those who do not report suicidal thoughts (The Joint Commission, 2016).

3. **Review screening questionnaires before the patient leaves the appointment or is discharged.** The Sentinel alert recommends instruments such as the Suicide Prevention Resource Center's *Decision Support Tool & The Columbia-Suicide Severity Rating Scale* for more in depth screening and assessment of patients determined to be at risk for suicide. Furthermore, when the clinician believes the patient may be a danger to self or others, HIPAA permits contacting family or friends to obtain corroborating information even without the patient's permission, when indicated. The quality of the patient's relationship with family and friends, and whether contacting them would be beneficial instead of potentially counter-therapeutic, should also be considered.

4. **Take the following actions, using assessment results to inform the level of safety measures needed.** (4a) Keep patients in acute suicidal crisis in a safe health care environment under one-to- one observation. (4b) For patients at lower risk of suicide, make personal and direct referrals and linkages to outpatient behavioral health and other providers for follow-up care within one week of initial assessment, rather than leaving it up to the patient to make the appointment. (4c) Give every patient and his or her family members the number to the National Suicide Prevention Lifeline. (4d) For every patient, conduct safety planning by collaboratively identifying possible coping strategies with the patient and by providing resources for reducing risks. (4e) For every patient, restrict access to lethal means.

5. **Establish a collaborative, ongoing, and systematic assessment and treatment process with the patient involving the patient's other providers, family and friends as appropriate.**

The Sentinel Alert emphasizes the dynamic and changing nature of suicide risk over time, requiring both personal care as well as short-term and long-term safety plans.

6. **To improve outcomes for at-risk patients, develop treatment and discharge plans that directly target suicidality.** The Sentinel Alert notes that while hospitalization may be necessary for a patient's immediate safety, it does not address the ongoing near-term and longer-term suicide risk. The Sentinel Alert calls for evidence-based clinical approaches that reduce suicidal thoughts, including Cognitive therapy for Suicide Prevention (CBT-SP), Collaborative Assessment and Management of Suicide (CAMS), and Dialectical Behavior Therapy (DBT).

7. **Educate all staff in patient care settings about how to identify and respond to patients with suicide ideation.** The Sentinel Alert notes that education is necessary to ensure that staff respond sensitively to those with suicidal thoughts and should also include training on environmental risk factors, finding help in emergencies, & policies for screening, assessment, referral, treatment, safety and support of patients at risk for suicide.

8. **Document decisions regarding the care and referral of patients with suicide risk**. The Sentinel Alert provides a documentation checklist and recommends generous documentation as the chart becomes the primary method of communication among providers (The Joint Commission, 2016).

The National Action Alliance for Suicide Prevention has also offered best practice guidelines for the treatment of those at risk for suicidal behavior (Covington, Hogan, Abreu, Berman, & Breux, 2011). Where the above-mentioned Joint Commission Sentinel Alert guidelines are weighted toward best practices following discharge from healthcare

organizations, the following National Action Alliance guidelines are more general.

National Action Alliance for Suicide Prevention best practices (Covington et al., 2011):

1. Persons at risk for suicidal behavior should always be treated in the least restrictive setting.

2. Suicidal persons must have immediate access to care. Sixty-six percent of those who take their own lives were not receiving treatment at the time of death. Moreover, many people seek treatment only when they are in a crisis (Covington et al., 2011).

3. Suicidality must be addressed directly. It is too often assumed that the suicidality is a symptom of the underlying condition and treatment efforts are directed mostly toward alleviation of the underlying condition. Treatment must directly address the suicidality in addition to any underlying condition.

4. Suicidal patients should have a safety plan which is created collaboratively between caregiver and patient.

5. For hospitalized patients, the first follow up appointment post discharge must occur within 24-72 hours after discharge.

6. There is only limited evidence to support the efficacy of hospitalization as a treatment for suicidality without follow up care with evidence-based treatments.

7. There is only limited evidence to support the efficacy of pharmacotherapy as a treatment for suicidality without additional evidence based treatments.

8. Evidence based treatments such as CBT-SP, DBT, and CAMS are highly recommended.

9. It is important to recognize the need of frequently isolated suicidal persons for connectedness. After a suicidal person reaches out to a crisis hotline, caring contacts such as caring letters or caring follow-up calls are strongly recommended. Gould has reported that 90% of callers to a suicide crisis hotline found that follow-up telephone calls after contacting the hotline helped in keeping them safe, and 54% reported that the calls helped significantly with keeping them from killing themselves (Covington et al., 2011).

10. Trusting therapeutic alliances are fundamental to reducing suicide risk and promoting recovery and wellness. Such alliances are most productive when the care is collaborative, where the client is actively engaged in making choices that will keep him/her safe, and when the clinician feels confident that he/she has the training and skills to manage the suicide risk and support their client's safety (Covington et al., 2011).

■ EVIDENCE-BASED TREATMENTS OF SUICIDALITY

Treatment for suicidal patients has typically focused on the underlying mental health disorder in the hope that this will by itself reduce suicidal thoughts and feelings. The evidence now suggests that treatment should also directly target and treat suicidal thoughts and behaviors, using evidence-based interventions. Controlled trials show that cognitive behavior therapy for suicide prevention, dialectical behavior therapy, and collaborative assessment and management of suicidality are more effective than usual care (that is, traditional therapies that seek to treat mental disorders but do not focus explicitly on reducing suicidality) in reducing suicidal thoughts and behaviors (Hogan & Grumet, 2016).

COGNITIVE BEHAVIOR THERAPY FOR SUICIDE PREVENTION (CBT-SP).

Between 1999 and 2002, 120 suicide attempters at the Hospital of the University of Pennsylvania, Philadelphia were recruited for a study on the effectiveness of Cognitive therapy for suicide prevention and followed for 18 months (Brown et al., 2005). Study participants were randomly assigned to usual care (treatment from clinicians in the community), or to the CBT-SP condition. The CBT-SP condition comprised 10 outpatient cognitive therapy sessions in addition to their usual care treatment via clinicians in the community. CBT-SP identifies proximal thoughts, images, and core beliefs activated prior to suicide attempts, addresses them with cognitive and behavioral strategies, and provides adaptive ways of coping with stressors. In addition, specific vulnerability factors such as hopelessness, poor problem solving, impaired impulse control, treatment non-compliance, and social isolation are addressed (Brown et al., 2005). Participants in the CBT-SP condition were 50% less likely to reattempt suicide than usual care, had a significantly lower reattempt rate, and reported significantly lower

levels of hopelessness and depression then the usual care group. The authors concluded that CBT-SP was effective at preventing suicide attempts throughout the 18 months since discharge (Brown et al., 2005).

DIALECTICAL BEHAVIOR THERAPY (DBT)

Investigators recruited 101 female patients at a university outpatient clinic or community practice who met criteria for borderline personality disorder as well as both current and past suicidal behavior (Linehan et al., 2006). Participants were randomly assigned to either one year of DBT or one year of community treatment by experts (CTBE). Follow up assessments were conducted every 4 months for 2 years.

Subjects receiving DBT were half as likely to make a suicide attempt, required less hospitalization for suicide ideation, and had lower medical risk across all suicide attempts and self-injurious acts combined (Linehan et al., 2006). Subjects receiving DBT were less likely to drop out of treatment and had fewer psychiatric hospitalizations and psychiatric emergency department visits. The authors concluded that DBT is effective at reducing suicide attempts (Linehan et al., 2006).

COLLABORATIVE ASSESSMENT & MANAGEMENT OF SUICIDALITY (CAMS)

The Collaborative Assessment and Management of Suicidality (CAMS) is an intervention that modifies how clinicians engage, assess, and treat suicidality.. CAMS creates the opportunity for a suicidal patient to identify the "drivers" or causes that lead to suicidal ideation. Collaborative assessment and management of suicidality is an intensive psychological treatment that is suicide-specific, helping patients develop other means of coping and problem solving to replace or eliminate thoughts of suicide as a solution. One of the core values of this treatment is that most suicidal patients can be treated effectively in outpatient settings (Hogan & Grumet, 2016).

Thirty-two patients who had attempted suicide or who had been assessed as at imminent risk were recruited for a study of the efficacy of CAMS at the Harborview Medical Center in Seattle. The goal of the study was to investigate whether CAMS is an improvement over standard outpatient crisis intervention (Comtois et al., 2011). Patients were randomly assigned to CAMS care versus Enhanced Care as Usual (E-CAU) in an outpatient crisis intervention setting attached to a safety net hospital. In the E-CAU condition, patients received an intake with a psychiatrist or psychiatric nurse practitioner followed by 1-11 crisis intervention sessions with a case manager, until the crisis was resolved. Patients in the CAMS condition received a minimum of 4 CAMS sessions and treatment was discontinued once the suicidality was resolved. Follow up assessments were conducted regularly for 12 months (Comtois et al., 2011). Results showed that CAMS participants had improved more than E-CAU at the 12-month assessment on suicidal ideation, mental health symptoms, and hope. CAMS participants also evidenced continuing improvement to near zero where E-CAU participants appeared to lose ground back into the clinical range (Comtois et al., 2011). Of note is the authors assessment that the CAMS patients took to the overt CAMS focus of reducing suicidal thoughts and behavior as a way of coping with emotional pain, and replacing it with adaptive coping skills (Comtois et al., 2011).

CARING CONTACTS

As many as 70% of patients discharged from the hospital never attend their first therapy appointment (Hogan & Grumet, 2016; Luxton, June, & Comtois, 2013). First tried four decades ago, studies show that simple, and brief but caring contacts with patients discharged from the hospital can have an ongoing immunizing effect preventing deaths by suicide. Hypothesizing that a sense of connectedness would have a protective effect particularly among patients who refused any further treatment following hospital

discharge, Motto contacted 3005 patients recently discharged from hospitalization for suicidality and depression (Motto & Bostrom, 2001). Of the original sample of 3005 patients, a total of 843 patients who refused ongoing treatment in 9 San Francisco hospitals between 1969 and 1974 were randomly divided into two groups. One group received at least 4 caring letters annually for 5 years while the other group received no further contact. Patients in the contact group had lower rates of death by suicide in all five years of the study (Motto & Bostrom, 2001). The protective effect was most pronounced in the first two years where 16 patients in the no contact group were lost to suicide compared to only 7 in the contact group. Moto & Bostrom (2001) concluded that a systematic program of contact (caring letters) with persons at risk for suicide but who refuse to remain in the healthcare system, exerts a significant preventive influence (Motto & Bostrom, 2001).

Between 2002 and 2004, in a World Health Organization sponsored study on preventing post-discharge suicide, participating hospitals in Campinas, Brazil; Chennai, India; Colombo, Sri Lanka; Karaj, Iran; and Yungcheng, China, applied the same protocol and recruited 1867 suicide attempters (Fleischmann et al., 2008). Participants were randomly assigned to a treatment as usual (TAU) group or a Brief Intervention and Contact (BIC) group, and followed for 18 months. The TAU modality operated according to the norms prevailing in each hospital's emergency department, which typically included necessary medical intervention but did not include psychiatric assessment or referral. The BIC condition included a one hour psychoeducational session explaining suicidal behavior as a sign of psychological or social distress, risk and protective factors, adaptive alternatives to suicidal behaviors, and referral options. The BIC condition also included 9 follow up contacts spaced at 1, 2, 4, 7, and 11 weeks after discharge, and then 4, 6, 12, and 18 months after discharge (Fleischmann et al., 2008).

Participants in the treatment as usual (TAU) group were 11 times more likely to have died by suicide as compared to participants in the BIC group: at the 18 month follow up only 0.2 percent (2 patients out of 872 in the BIC group) of patients in the BIC group were lost to suicide compared to 2.2 percent (18 patients out of 827) in the TAU group. The authors attributed the protective effect of the BIC group to the sense of connectedness and support the suicide attempters gained from the follow-up contacts, and concluded that a brief information session combined with systematic long-term contacts is effective at preventing suicides following discharge (Fleischmann et al., 2008). The caring contacts approach has also been endorsed as promising by the Joint Commission Sentinel Alert (The Joint Commission, 2016).

SUICIDE HOTLINES & EFFICACY OF FOLLOW-UP CALLS

Suicide prevention hotlines play a critical role in providing supportive intervention to people in crisis. With the majority of suicidal people receiving either no treatment or inadequate treatment, with 70% of those just discharged from hospitalization following a suicidal crisis either not attending their first follow up appointment and/or dropping out of treatment after only 4 or fewer sessions, and with increasing evidence that many suicide attempts are extremely impulsive and occur within mere minutes after the first suicidal thought, suicide hotlines are a critical bulwark saving countless lives.

Established in 2005, the National Suicide Prevention Lifeline is a network of over 160 local crisis centers. Lifeline had responded to 3 million calls by 2011 and now answers over a million calls per year. By providing well trained counselors, hotline staff stay on the phone providing critical hope and emotional support to suicidal callers emotionally lost in an impulsive sense that taking their lives is the only way out. Hotlines additionally reduce emotional distress and suicidal ideation among callers, and provide

linkage with referrals to community resources.

The accumulating evidence for the preventative efficacy of post-crisis follow-up contacts on subsequent suicidality has led to the inclusion of follow up contacts among the evidence-based best practices recommended by the National Action Alliance for Suicide Prevention (Covington et al., 2011; Gould, M. S., Lake, A. M., Galfalvy, H., Kleinman, M., Munfakh, J. L., Wright, J. and McKeon, R. 2017). Callers to Lifeline experience a reduction in hopelessness as well as suicidal intent even during the course of a single hotline call. However, almost half of suicidal callers experience subsequent suicidality in the ensuing weeks after their initial hotline call (Gould, M. S., Kalafat, J., HarrisMunfakh, J. L. and Kleinman, M. 2007) Moreover, fewer than a quarter of suicidal callers go on and connect in the ensuing weeks with the mental health care agency to which they are referred (Gould et al., 2007). Consequently, caring follow-up calls provide critical and life-saving continuity of care to suicidal callers who continue to negotiate their emotional turmoil and suicidality alone and without professional support. Illustratively, in a study of 550 callers who received caring follow-up contacts at 6 different crisis centers, 79.6% reported that the follow-up calls stopped them from killing themselves, and 90.6% reported that the follow-up calls kept them safe. Callers getting more follow-up calls as well as a greater duration of calls (in minutes & days) perceived the intervention as more helpful (Gould, 2017; National Suicide Prevention Lifeline, 2014).

POSTVENTION

According to the Higher Education Mental Health Alliance (HEMHA, 2014) postvention efforts entail pre-determined strategies to sensitively and effectively deal with deaths on campus after they occur. Effective postvention is also thought to contribute to prevention by minimizing the risk of copycat behaviors. Postvention planning incorporates

implementation of clinical services, communication strategies, and holding of on campus memorial services which are designed to assist the campus in returning to normal functioning. In its excellent postvention guide entitled *Postvention: A Guide for Response to Suicide on College Campus* HEMHA lists the following goals (HEMHA, 2014):

> *help those impacted by suicide deal with the current trauma and grief and reduce the intensity of an individual's or group's emotional, mental, physical and behavioral reactions to a crisis*

> *stabilize the campus community, restore some semblance of order and routine, and help the community return to their pre-crisis level of functioning*

> *prevent (or at least limit the risk of) further suicides and imitative suicidal behavior through contagion, as other students in the community who are struggling with psychological pain may be influenced to act in a similar way. After hearing about a suicide death, those who are already at risk for suicide may develop a greater sense that suicide is a viable option*

> *help students, faculty and staff solve problems as this may help to enhance independent functioning*

> *facilitate understanding and help the campus community:*

- process what has happened
- encourage the expression of difficult emotions
- help individuals understand the impact of the event
- avoid institutionalizing grief (i.e., when the memory of a campus suicide becomes ingrained in the institution to the point that it becomes difficult to remember the community as safe or without grief)
- allow for learning from current postvention efforts to improve future prevention, postvention and response efforts

A campus postvention planning committee should be established recognizing that effective postvention requires an interdisciplinary approach relying on key stakeholders from across the campus. Postvention coordinators should be appointed who then lead campus efforts in providing sensitive and effective pre-determined strategies during times of on campus deaths by suicide (HEMHA, 2014).

SAFETY PLANNING GUIDE

The Suicide Prevention Resource Center recommends this tool for anyone going through a suicidal crisis. Patients at high risk for suicidality work together with their clinician to create a safety plan. The safety plan is a brief, prioritized list of coping strategies patients can use before or during a suicidal crisis. Implementing the safety plan is a six-step process including warning signs, internal coping strategies, social contacts who can distract from the crisis, family members or friends who may offer help, agencies or professionals to turn to, and making the environment safe. The safety planning guide is available at SPRC.org (SPRC, 2009).

USEFUL RESOURCES

An extensive list of resources is available at ZeroSuicide.SPRC.org

SUMMARY

Historically, clinicians would treat the underlying condition but not address suicidality directly. Best practice guidelines today call for suicidal thoughts and behavior to be addressed directly by evidence-based approaches in addition to treating the underlying disorder. Suicidal persons are often lacking in social skills and struggle with loneliness. Social isolation places people at higher risk for suicidality and leaves them without helpful friends and family during a crisis. Connectedness is increasingly understood to be a critical component of effective care for those with suicidality.

A caring treatment alliance as well as caring follow up contacts is an important preventive factor. Most people at risk for suicidality do not receive professional care, and the majority of Americans who are receiving treatment do not receive minimally adequate care. When adequate care is available, treatment is effective at reducing rates of death by suicide. Research indicates that while there is a dearth of research on pharmacological interventions specifically targeting suicidal thoughts and behavior, preliminary evidence for ketamine and buprenorphine is promising. The weeks following hospitalization for suicidality are a particularly high risk time for deaths by suicide. Careful adherence to best practice guidelines easily available from organizations such as the National Action Alliance for Suicide Prevention will ensure effective treatment as well as thorough and careful transition planning, safety planning, and follow up care, and minimize deaths by suicide. ■

Numerous studies document means restriction as a powerful method of suicide prevention. The overwhelming majority of people who attempt suicide survive for decades following an attempt not leading to death. Attempters prevented from their chosen means of suicide, do not simply substitute an alternate method of suicide, but overwhelmingly survive and endure.

Means restriction is critically important because the suicidal process is so frequently both ambivalent and impulsive. Elapsed time from first suicidal thought to the attempt is often ten minutes or less. Since interventions such as identification, assessment and treatment are too late to help in this short suicide hot period, means restriction is critical.

The Evidence

CARBON MONOXIDE POISONING

Suicide by gas oven was the most popular method of suicide in England of the 1950s. Starting at that time, England switched from highly toxic coal gas with a carbon monoxide content of twelve percent to the far less toxic natural gas. Removal of the far more lethal coal gas resulted in thousands of lives saved (Hawton, Keith, 2007). The overall rate of suicide in the population fell substantially (down by one third) indicating the power of means restriction as well as providing powerful support to the idea that most people surviving a non-lethal attempt do not simply substitute another more lethal method (Daigle, 2005).

AGRICULTURAL PESTICIDES

Death by highly toxic agricultural pesticides is the most common form of suicide in Asia, resulting in an estimated 300,000 suicides each year (David Gunnell & Eddleston, 2003). (Gunnel, 2003). Agricultural pesticides vary significantly in their toxicity from a case fatality rate over 60% for paraquat to 8% for chlorpyrifos (D. Gunnell et al., 2007). In Sri Lanka, where ingestion of toxic pesticides is common, suicide rates increased 8-fold to a rate of 47 per 100,000 between 1950 to 1995, but then halved from 1995 to 2005 as pesticide toxicity was reduced. In 1995, Sri Lanka banned all WHO class 1 ("extremely or highly toxic") pesticides, resulting in nearly 20,000 fewer suicides from pesticides in the ensuing ten years as compared to the previous ten years (D. Gunnell et al., 2007). The overall rate of suicide also

fell drastically indicating that removal of popular methods of suicide does not result in equivalent increases in rates of suicide via alternate means.

PHARMACEUTICALS

Paracetamol is a popular over the counter analgesic in the UK which is often lethal in overdose. It's easy over the counter availability has resulted in many suicide deaths. Legislation was introduced in 1998 limiting access to paracetamol by lowering packet sizes and making it harder for the public to accumulate a sufficiently lethal dose. Following the legislation, rates of paracetamol related suicide declined, and little evidence of displacement to other analgesics was observed. Hawton (2004) estimated that 200 lives were saved in the 3 years following the legislation (Hawton et al., 2004). Similarly, controls on the sale of sedatives in Australia resulted in reduced rates of sedative –related suicides, with no evidence of displacement to other means (Oliver, 1972). In Japan, Yamasawa et al. (1980) concluded that restricting availability of certain drugs to prescription-only resulted in reductions in the suicide rate related to those particular drugs, with no evidence of displacement to other means (Yamasawa, Nishimukai, Ohbora, & Inoue, 1980).

FIREARMS

Miller & Hemenway (2008) note that more than one third of US households contain a firearm. Furthermore, suicide attempts using guns are particularly lethal (Miller & Hemenway, 2008). In a study investigating the impact of firearm availability on suicide method-choice among 47 adolescent suicides in Western Pennsylvania, 85% of attempters used guns when they were available in the home vs. only 8% who used guns when firearms were not available in the home (Brent et al., 1991). Carrington & Moyer (1994) investigated the impact of legislative Bill C-51 restricting firearms possession in Canada since 1978. The authors found a correlation between

gun control and reduced suicide rates with no evidence of displacement to other means (Carrington & Moyer, 1994).

In his review of the literature on means restriction, Hawton (2007) concluded that an "impulsive response to an acute personal crisis and availability of a firearm in the household were key features leading to suicidal acts by shooting" (Hawton, Keith, 2007).

Miller & Hemenway (2008) note that guns account for 53% of all suicide deaths in the United States. Having a gun at home increases the risk of suicide from two-fold to ten-fold depending on the age of the sample population and on the way in which the gun is stored (Miller & Hemenway, 2008). And the higher risk associated with homes with guns extends not only to the gun owner, but also to the gun owner's spouse and children. Adolescent suicide is four times as likely in homes where firearms are loaded and unlocked as compared to homes where they are locked and unloaded (Miller & Hemenway, 2008).

JUMPING

After the installation of wire barriers on the Clifton suspension bridge in Bristol, England, in December 1988, jumping deaths from the bridge halved from 41 to 20 in the five year period after construction of the barriers compared to the previous five years (Bennewith, Nowers, & Gunnell, 2007). In addition, overall rates of suicide in the area did not increase, indicating that those prevented from jumping off the Clifton suspension bridge did not substitute other methods of suicide.

When the anti-suicide barriers at an Australian central city bridge were removed in 1996, suicides at the bridge rose 5-fold from 3 in the four years prior to removal of the barriers to 15 in the four years following (A. L. Beautrais, 2001). Installation of a safety net at a popular jumping site in Berne, Switzerland reduced suicides at the site to zero with no concomitant increase in suicides from jumping at alternate high places in Berne (Reisch & Michel, 2005).

Numerous bridge studies from multiple locations worldwide document the efficacy of means restriction as a critical suicide prevention tool (A. Beautrais, 2007; Cantor & Hill, 1990).

In her review of suicide by jumping, Beautrais (2007) concluded that installing barriers at popular jumping sites such as bridges reduces suicides at these locations. Beautrais (2007) cautioned however that suicide by jumping from high-rise buildings is more common than jumping from bridges, and notes a dearth of research regarding suicides by jumping from buildings (A. Beautrais, 2007).

■ *THE SUICIDAL PROCESS*

During a suicidal crisis, the period of real risk is frequently very brief and self-limiting, and as the acute phase of the crisis passes, so does the urge to attempt suicide (Miller & Hemenway, 2008). Limiting access to means in those precious minutes of real risk is critical to preventing suicides. In an Austrian study of 82 patients hospitalized following an attempt, 48% reported ten minutes or less elapsed time between the first thought of suicide and the attempt (Deisenhammer et al., 2009). Other studies have found similarly brief and impulsive elapsed times (less then 60 minutes) for approximately half of attempters (Pearson, Phillips, He, & Ji, 2002; Williams,JMG & Pollock, LR, 2000). (Williams and Pollock, 2000; Pearson et al, 2002).

Acute interpersonal crisis is frequently cited as the immediate trigger preceding suicide attempts in the ensuing minutes. In a study of 33 survivors of self-inflicted gunshot wounds, interpersonal conflict with a partner or family member was the most common reason given (de Moore, Plew, Bray, & Snars, 1994). Impulsive suicide attempts in moments of crisis is often cited (D. Gunnell et al., 2007; Hawton, Keith, 2007; Miller & Hemenway, 2008).

Deisenhammer and colleagues (2009) found that attempters who were less impulsive and reported longer elapsed times between the first thought of suicide and the attempt also scored higher on measures of suicidal intent (Deisenhammer et al., 2009). It is possible that those attempters acting less out of the momentary frustration of a brief crisis and more out of a durable commitment to ending their lives, form the small minority cohort who subsequently go on to lethal suicide attempts.. Thus, it appears that for young people, for whom suicide attempts are most often impulsive, means restriction represents a particularly potent suicide prevention intervention.

STUDIES OF SURVIVORS OF SERIOUS SUICIDE ATTEMPTS

Studies of survivors of the most serious suicide attempts strongly illustrate the importance of means restriction. O'Donnell, Arthur & Farmer (1994) followed 94 people who jumped in front of subway trains in London and survived. The attempters were completely convinced they would die, but survived because there is a deep well between the rails. After ten years, 9.6% of the 94 people who survived such subway jumps had gone on to end their lives, but 90.4% were still alive (O'Donnell, Arthur, & Farmer, 1994). Hawton reports on a study of 515 people prevented from jumping off the Golden Gate Bridge in San Francisco. At a median follow up period of 26 years only 4.9% of the 515 study participants had ended their lives and the overwhelming majority – some 489 out of the 515 – had not ended their lives. Reviewing the literature on means restriction, Hawton (2007) concluded that the majority of survivors of even the most serious attempts do not go on to die by suicide and furthermore do not turn to another method of suicide (Hawton, Keith, 2007).

METHOD CHOICE

Responding to a questionnaire, female college students indicated a preference for suicide methods deemed quick and painless and entailing no risk of
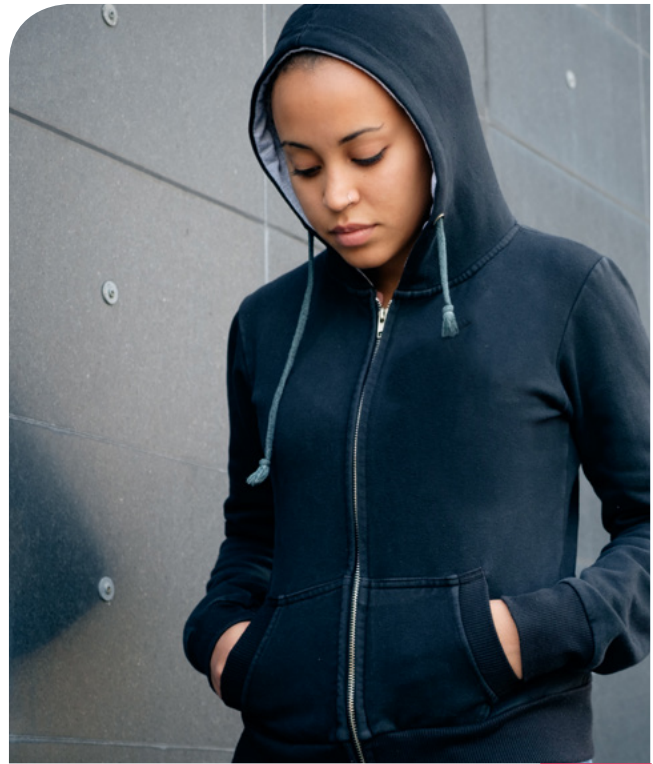
disfigurement (Lester, 1988). Since choice of method is not random, suicidal persons are less likely to migrate to an alternate method once restricted from attempting suicide in their preferred method (Daigle, 2005).

METHOD SUBSTITUTION

Although most studies convincingly show that the overwhelming majority of suicide survivors do not substitute alternate methods and indeed live and endure for decades, evidence also suggests that a small minority of attempters – perhaps those less ambivalent about dying and more thoroughly invested in ending their lives – do go on to suicide via other means.   Illustratively, when gas supply in the UK switched from highly toxic coal gas to less toxic natural gas a "small increase" in suicides by alternate methods was observed (Hawton, Keith, 2007). However, the overall rate of suicide fell by one third, saving thousands of lives.

SUMMARY

Means restriction is highly effective and life saving for the majority of people attempting to take their lives. The vast majority of survivors live and endure for decades and do not die by suicide. A relatively small minority of people prevented from ending their lives by one method — and apparently more invested in ending their lives — go on to commit suicide via other means. ■

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