Teen Suicide Prevention: reviewing the literature

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"On my honor as a student, I have neither given nor received inappropriate aid on this assignment"

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Youth Suicide is a serious public health concern. According to the Center for Disease Control and Prevention, suicide is the third leading cause of death for children between the ages of 10 and 24. In an effort to address this serious health concern, society must work to address two important questions; what can and should be done to help prevent young individuals from developing such intense feelings of isolation and hopelessness and how can society better identify adolescents who are at risk?

When a teen takes his or her own life it can impact his or her family, school, and to the community. Suffering the loss of a loved one is difficult; however, losing a loved one to suicide can often leads the survivors with severe emotional distress (Bolton et al, 2013). Suicide is usually preventable and our obligation as a society is to assess, evaluate and change factors that are responsible for suicide. The focus of this paper will be on the factors and prevention strategies related to teen suicide. Suicide is ultimately a combination of multiple compounding factors. Influences on many different levels including individual, community, and national factors influence the suicide rate (Mann et al, 2005). In order to effectively reduce suicides and suicide attempts society will have to begin to address issues on every level.

Health Problem

Approximately 4,600 children will die from suicide each year and statistics show that the number is increasing. In 2004, the suicide rate among 10 to 24 year olds was 7.32 per 100,000. Around the same time period lawmakers and health professionals decided to include an initiative to decrease the suicide rate for adolescents in the health promotion, Healthy People 2010. Unfortunately the United States was not able to achieve their goal of reducing the number of suicides among young people and instead the rate of suicide has continued to increase. In the

Healthy People 2020 initiative there is yet another objective related to mental health that intends to decrease the overall rate of suicide, as well as an objective to reduce the number of suicide attempts by adolescents. The specific goal as stated in Healthy People 2020 is to decrease the rate of suicide from the baseline of 11.3 per 100,000 to 10.2 per 100,000 by 2020. Unfortunately, since 2007 when the results for this goal were first tracked, the suicide rate among young people has increased. For example, the suicide rate in 2010 it was 12.1 per 100,000.

Reducing suicide attempts by adolescents was another goal established by Healthy People 2020. The objective of the initiative was to decrease adolescence suicide attempts from the baseline of 1.9 attempts per 100,000 to 1.7 attempts per 100,000 by 2020. To date there has been a steady increase from the baseline of 1.9 attempts per 100,000 established in 2009. The most recent data pertaining to this issue states that in 2011 the rate was 2.4 attempts per 100,000 (Healthy People 2020, 2013). In 2011 there were approximately 25 million adolescent children in the United States (Forum on Child and Family Statistics, 2012). Given these statistics, approximately 250,000 adolescents will attempt suicide in 2012.

Epidemiology

Since 1960 the rate of suicide for children living in the United States between the ages of 15 and 19 years old has doubled, and the suicide rate for children between 10 to 14 years old has tripled. Between the 1990 and 2000, the overall suicide rates decreased while the youth suicide rate continued to increase. Then, between 2003 and 2004, the rate of suicide among the youth population increased significantly. After 2004, suicides rates in adolescents and young children decline briefly until 2009 when they began increasing again.

Although the increase in youth suicide is not completely understood, increased substance use, changes in the family structure, and increased access to firearms is believed to have contributed to the rise is the rate of suicide (Cash & Bridge, 2009; Cutler, 2001). Almost 50% of the fatal suicide attempts are due to the use of firearms and another 40% percent are due to asphyxiation (Center for Disease Control and Prevention (CDC), 2013, Shain, 2007). The increase in the rate of youth suicide is also casually attributed to the decrease use and treatment of adolescent depression due to the decreased use of SSRI's (Cash & Bridge, 2009; Cutler, 2001; Shain, 2007;Waldvogal et al., 2008). Other factors associated with this increase are increased access to social media, and increases in suicides in young troops (Cash & Bridge, 2009).

While children under 14 years of age experience suicidal ideations, the rate at which they have a fatal suicide attempt is lower than in adolescents between the ages of 15 and 24. According to statistics the most vulnerable age to attempt suicide is 15 years of age (Cutler, 2001). This may be due to increased access to lethal weapons, higher incidence of mental illness development, and/or increasing proficiency with the planning and execution of the suicide attempt. Males complete suicide at a higher rate than females; however, females have higher rates of suicide attempts, specifically, females attempt suicide at two to three times that rate of males (Cash & Bridge, 2009; Waldvogel et al., 2008). One of the reasons males have a higher rate of suicide is that they are six times more likely to use lethal means, such as firearms and asphyxiation, than females (Cash & Bridge, 2009; Cutler, 2001,).

Another interesting fact is that White individuals living in the United States have a higher rate of suicide than Non-Whites individuals. From 2005 to 2009, white males had suicide rates of 11 per 100,000 and white females were 3 per 100,000 (CDC, 2013; Mackin et al., 2012). Although the suicide rate among African Americans is less than White Americans, the suicide

rate among African Americans has been increasing proportionately. The Hispanic population in the United States has an even higher proportion of suicide attempts than the overall population; however, there is not an increase in the percentage of fatal suicide attempts in the Hispanic population. This may be due to difficulty in acculturation (Cash & Bridge, 2009). American Indians and Alaska Natives ages 10-24 are at greater risk for suicide than the general adolescent population, it is estimated that the risk for AI/AN was as high as 10 per 100,000 for females and 31 per 100,000 for males (CDC, 2013; Mackin et al., 2012).

Risk Factors

Suicide and suicide attempts are not extremely well understood. A toxic combination of individual, social, and societal factors converging together to negatively influence and impact an adolescent's emotional well-being are believed to increase the risk for suicide. Individuals may feel hopeless about there future because of factors present in the external environment as well as factors present in their interpersonal life. Research has shown external factors such as social relationships with parents, teachers, and members the community can impact an adolescent's decision about suicide (Cash & Bridge, 2009, Shain, 2007). Societal factors such as the stigmatization of mental health, the deterioration of the nuclear family, an increase and sensationalism of lethal weapons and community factors such as the amount of violence, employment and health care access also affect the risk of suicide (Cash & Bridge, 2009; Waldvogel et al., 2008).

The presence of a mental health condition has been shown to be present in up to 90% of suicide and up to 80% of these cases were untreated or undertreated at the time of the suicide (Mann et al., 2005; Shain, 2007; Waldvogel et al., 2008). The most common mental health conditions present in youth suicide attempts were mood disorders, anxiety disorders, personality

disorders and substance abuse disorders (Cash & Bridges, 2009;Waldvogel et al., 2008). Depression is by far the most significant mood disorder associated with suicidal ideation and attempts (Cash & Bridges, 2009; Dodig-Ćurković et al., 2010). In 2007 eight percent of adolescents fit the criteria of Major Depressive disorder. Specifically, more than two million children between ages 12 and 17 experienced a depressed mood for a period of two weeks or longer while also experiencing behavior changes such as changes in eating habits, sleeping habits, concentration and/or self worth (Substance Abuse and Mental Health Service Administration (SAMHSA), 2012; DSM-IV-TR, 2000).

One study found that males under the age of 24 were at greater risk for fatal or severe nonfatal suicide attempts when they had a comorbid mood and conduct disorder (Cash & Bridges, 2009). Other studies show that suicidal ideation in adolescents increases the risk for psychiatric problems in adulthood. This information further supports the fact that there are long-term positive effects for effectively treating adolescent mental health conditions. Therefore, the thought is that by decreasing the suicidal ideations in adolescents with proper and effective treatment, a health care provider may be able to positively impact or change the life course of an individual.

Substance use disorder dramatically increases suicidal ideations and attempts, especially when combined with other mental health conditions. Substance abuse and alcohol use have been associated with nearly half of the adolescent suicides, mostly among males (Waldvogel et al., 2008). Alcohol abuse with comorbid major depression represents a high-risk profile for suicidal behavior, repeated attempts and completed suicide (Dodig-Ćurković et al., 2010).

Prior suicide attempts or history of a family member committing suicide is a good predictor of future suicide attempts as well. A previous suicide attempt in males increased the

risk for a subsequent suicide attempt by 30 fold, whereas it only increased the risk for females by 3 fold (Waldvogel et al., 2008). As previously stated, there is strong evidence to suggest that having a family member experience a fatal suicide attempt increases the risk for suicidal behavior (Wagner, 1997). Genetic factors may influence this behavior and several studies have shown strong and consistent evidence that suicidal behavior may be up to 45% inheritable and that there is a 5 fold greater risk for suicide completion in individuals with a relative who has committed suicide (Dodig-Ćurković et al., 2010;Waldvogel et al., 2008). Other theories suggest that successful suicide attempts model negative coping strategies to family members. Additionally individuals who have a family history of suicide may have gained knowledge regarding the completion rate of different methods and behaviors (Dodig-Ćurković et al., 2010)

Several studies showed that individuals who experience suicidal ideations, non-fatal and fatal suicide attempts perceived parental relationships as strained (Dodig-Ćurković et al., 2010; Waldvogel et al., 2008). Children that experienced suicide attempts were more likely to be dissatisfied with the amount of attention they received from their parents (Dodig-Ćurković et al., 2010; Wagner, 1997). One study suggests that a child who experienced a less satisfying relationship with his or her parents, especially poor communication with his or her father, was at an increased risk for suicide completion (Wagner, 1997). Other studies suggest that there is a correlation between single parent homes and an increased risk of suicide; however, this association is thought to be due to the parental relationship and not directly from the single parent environment. That is, studies have shown that suicidal behavior is more prevalent in children of divorced parents when compared to children of single parents (Cutler, 2001). On the other hand secure attachment and parental support are generally associated with lower symptoms

of depression, anxiety, and substance abuse (Dodig-Ćurković et al., 2010; Waldvogel et al., 2008).

Exposure to physical or sexual abuse has also been associated with an increased risk of developing depression, anxiety disorder, personality disorder, and substance abuse and has been found to be a factor in as many as 33% to 50% of suicide attempts (Cash & Bridges, 2009; Dodig-Ćurković et al., 2010; Waldvogel et al., 2008). When compared to the general population, individuals who have suffered from abuse within the past 12 months had higher rates of suicide attempts than those who had not suffered from abuse. This increased risk could reflect an increase in feeling isolated and lack of the problem solving skills needed for that situation (Waldvogel et al., 2008). Although childhood abuse is a risk factor, it is important to note that not all adolescents that endure abuse experience suicidal ideations. This may be related to the severity and type of abuse that occurred as well, therefore, assessing the individual's feelings concerning the abuse is equally important if not a more important predictor of suicide than the occurrence of abuse itself (Dodig-Ćurković et al., 2010).

Stressful life events can be difficult for anyone to handle and when they are added to other risk factors, the stressor may be the event that results in a suicide attempt. Studies have found that the loss of a parent or loved one is a significant risk factor for suicide (Waldvogel et al., 2008). Young individuals that are able to successfully problem solve stressful situations have a lower incidence of suicidal behaviors compared to those who lack problem solving skills. Another significant factor that has a correlation with an increased risk of suicide is being economically disadvantaged. Adolescents that experienced poverty were 2.4 times more likely to engage in suicidal behaviors compared to non-impoverished peers (Waldvogel et al., 2008). However, the suicide rate has remained relatively stable in inner cities whereas the increase has

overwhelmingly taking place in suburban areas (Cutler, 2001). Difficulties in school can also increase adolescents' risk for suicidal behavior and one study showed that dropouts were 37 times more likely to attempt suicide than controls. Students who are neither in school nor working have also been shown to be at a substantial risk for completing suicide (Waldvogel et al., 2008). Adolescents who are gay, lesbian, and bisexual have 8 times the risk for suicidal ideation and attempts then heterosexual peers (Cash & Bridges, 2009; Shain, 2007;Waldvogel et al., 2008). The impact of media coverage of suicides has an effect on adolescents as well and in areas where multiple suicides have taken place, studies have shown that the amount of time that the media spent covering the initial suicide impacted the others. The contagion effect is mainly seen in the adolescent and young adult population (Gould et al., 2003)

Prevention Strategy- Healthcare Provider Education

Beginning in 2001 there was a great deal of discussion concerning the increased risk of suicide in adolescents when treated with Selective Serotonin Reuptake Inhibitor (SSRI) for depression. Subsequently, the Food and Drug Administration (FDA) required a black box warning on all SSRI's cautioning the risk of suicide among adolescents. From 2003 to 2004 there was an 18.2% increase in youth suicides and in the second half of 2004 there was a significant decrease in antidepressant use (Shain, 2007). The increase in deaths following the black box warning label on SSRI's in 2004 highlights the importance of having enhanced training programs for clinicians in recognizing and treating mental health issues in children (Cash & Bridges, 2009; Cutler, 2001;Waldvogal et al., 2008).

Due to the shortage of mental health care providers, many primary care physicians are treating mental illness in the primary care arena. Therefore, ongoing education and training is extremely important for these providers because many of them did not receive extensive training

in mental health treatment during their medical training. The recognition and treatment of depression by a primary care provider has been identified as a key concept in suicide prevention (Leitner et al., 2008; Mann et al., 2005, Shain, 2007). Appropriate identification and treatment has been found to significantly reduce suicidal behaviors in adolescents (Isaac et al., 2009; Mann et al, 2005). Appropriate management of an adolescent with depression includes close monitoring, initiation of SSRI and a referral for counseling (NIHCM, 2010).

Health care providers have the opportunity to intervene and improve patient depression and suicidal behavior through regular screening, treatment and appropriate referrals to mental health care providers (Nutting et al., 2005). Unfortunately mental health conditions often go undiagnosed and untreated in adolescences, even with the wide availability of screening tools available to primary care providers. I believe that it is necessary for to require and/or encourage health care providers to participate in enhanced suicide awareness, treatment and prevention training.

Health Belief Model

Universal screening in Primary Care settings can effectively reduce adolescent morbidity and mortality (Fallucco et al., 2010; Wintersteen, 2010; Horowitz et al., 2009). Unfortunately, studies show that 40% of practitioners do not provide care according to the most recent published guidelines (Grol & Wensing, 2004). In a review of 76 studies on practice behaviors, barriers to implementing practice guidelines included lack of awareness, lack of familiarity, lack of agreement, lack of self efficacy, lack of outcome expectancy, inertia of previous practice and external barriers (Cabana et al., 1999). An effective model that can be used to change primary care clinician's behaviors and increase the number of depression and mental health screenings in adolescents is the Health Belief Model (HBM). The HBM asserts that many factors, including

perceived susceptibility, preserved severity, perceived benefit, perceived barriers, cues to action and self-efficacy, are all involved in an individual's motivation to change behavior. (Edberg, 2007). In order for the HBM model to be effective in helping a clinician seek additional education or implement adolescent screening and treatment guidelines, the clinician must first be evaluated so as to identify the factors that may be preventing the clinician from doing so.

Research suggests that Primary Care Physicians see over 70% of the adolescent population; however, adolescents are not typically screened for depression during these visits (Fallucco et al, 2012). As primary care providers are playing an increasingly important role in treating children for mental health issues, it is important that they continue to educate themselves about mental health issues and better implement mental health screenings. By providing information to clinicians that highlights the number of children that are at risk for mental health conditions and the impact that they, as health care providers, could have on these mental health conditions, the clinician's perceived susceptibility, perceived severity and perceived benefit would be addressed and he or she would be motivated to implement better mental health screenings.

According to the HBM theory, an individual must believe that he or she is susceptible to a particular health outcome prior to believing the he or she needs to take action. Perceived susceptibility refers to the idea or degree to which a person feels that he or she is susceptible (Edberg, 2007). Perceived severity simply refers to the how severe the individual perceives the health outcome to be (Edberg, 2007). Likewise, the perceived benefit refers to the positive outcome that occurs if and when the client decides to implement a preventative action (Edberg, 2007). In the case referenced in the previous paragraph, it is vital to address perceived susceptibility, perceived severity and perceived benefit. The goal is to target the clinician's

behavior; however, it is not the clinician that is susceptible to the mental health condition or suicide, it is his or her patient that is susceptible. Therefore perceived susceptibility, perceived severity and perceived benefit must be addressed vis à vis the clinician's patients.

Another aspect of behavioral change within the HBM is perceived barriers. Perceived barriers are what an individual believes are the causes or reasons preventing them from adapting a different behavior (Edberg, 2007). With regard to implementing guidelines, such as those related to mental health assessments, perceived barriers have included lack of awareness, lack of familiarity, time limitations, reimbursement issues, lack of self-efficacy, and inertia of previous practice (Cabana et al., 1999; Grol & Wensing, 2004). All of these barriers can be overcome with the dissemination of information, education and practice (Cabana et al., 1999). The Institute of Medicine (IOM), the United States Preventive Services Task Force (USPSTF), the American Academy of Pediatrics (AAP) and the American Academy for Child and Adolescent Psychiatry (AACAP) all recommend adolescent screenings for depression and other mental health conditions by primary care providers (AACAP, 1997; NIHCM, 2010; Fallucco et al., 2012). Per the HBM theory, by providing education based on information from credible sources, such as those previously mentioned, and having regular discussions with clinicians regarding the guidelines, the clinician would no longer have a lack of awareness and/or lack of familiarity about the guidelines.

Using depression-screening tools during a visit requires approximately 5 minutes of time and is often well received by the patient (NIHCM, 2010). Scales that are recommended for primary care use include the Patient Health Questionnaire for Adolescents (PHQ-A) and the Beck Depression Inventory- Primary Care Version (BDI-PC). The Guidelines for Adolescent Depression in Primary Care (GLAD-PC) provides the clinician with a stepwise process for

depression management of adolescents in the primary care setting. This particular tool kit is available at no cost to the provider on the Internet. The toolkit is designed to be a user-friendly guide for the clinicians and assists them with overcoming barriers to implementing depression screenings and treatment into practice. Recommendations, Flowcharts, Behavior rating scales, DSM Guidelines, Treatment protocols, medication regimens, monitoring schedules, referral information, patient information and billing information are also discussed in the GLAD-PC toolkit. In this authors opinion it is an invaluable resource for all clinician's offices.

In the context of the HBM, self-efficacy is defined as an individual's belief that he or she has the ability to take action. Studies have shown that Primary Care Providers providers that are exposed to additional training in adolescent depression and suicide assessment skills screen adolescents more frequently and feel more confident and knowledgeable about assessment and prevention than Primary Care Providers that were not exposed to additional training, and that the improvements were sustained over time (Fallucco, 2012; Winersteen, 2010;). With so many children and adolescents experiencing mental health conditions, coupled with a shortage of mental health providers to care for them, primary care providers are having an increased exposure to mental health conditions. Participating in educational activities that enhance the provider's ability to screen, treat and manage mental health conditions can increase their belief that they have the ability to take action.

The final component of the HBM is a cue to action, which is an external even that motivates an individual to act. What will it take for a provider to implement these changes into practice? This author hopes that the cue to action will be as simple as a well-designed presentation, or an article about implementing mental health screenings into the clinician's

practice. Changing practice is difficult but if one person makes a change, he or she can be a model for others to change.

Conclusion

To summarize suicide in individuals younger than 24 is increasing. This is a significant public health problem that has been acknowledged by the Department of Health and Human Services as an issue that needs to be addressed. Healthy People 2010 and 2020 have included goals for decreasing the rate of suicides and the rate of suicide attempts. Males have fewer but more fatal suicide attempts than females. Firearms and asphyxiation are the means used for almost 90% of all fatal suicides. Many factors are associated with an increased risk for suicide including mental health issues, family history of suicide, family dysfunction, history of abuse, socioeconomic status, educational performance, sexual orientation and the contagion effect. Strategies for decreasing the suicide rate include interventions at the National, State and Individual level. One intervention, particular germane to health care providers, is increasing the providers' education regarding mental health screenings, mental health treatment and the management of mental health conditions in practice. The health belief model is an acceptable model to encourage clinicians that is important and necessary to adapt these behaviors into practice.

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