



Published in final edited form as:

*Child Sch.* 2007 October 1; 29(4): 219–227.

## Evidence-Based Suicide Prevention Screening in Schools

**Sean Joe, PhD, LMSW [assistant professor] and Heather Bryant, MSW [research lab manager]**

School of Social Work, University of Michigan.

### Abstract

Screening for suicidality, as called for by the President's New Freedom Commission on Mental Health, is a major public health concern. As a place where adolescents spend a considerable amount of their waking hours, school is an important venue for screening adolescents for suicidal behaviors and providing preventive education and risk management. Social workers, as the largest occupational group of mental health professionals in the United States, have a significant role to play in the national strategy to prevent youth suicide, especially at the school level. This article reviews the literature on suicide prevention screening, warning signs, and risk factors to gain a better understanding of evidence-based screening strategies and discuss the implications for school social workers, counselors, and psychologists. It focuses on the identification of research-based information and explication of potential means for guiding preventive screening and clinical practice with suicidal adolescents.

### Keywords

adolescents; assessment instruments; clinical knowledge; schools; suicide screening

Screening for suicidality, as called for by the President's New Freedom Commission on Mental Health (2003) and the Children's Mental Health Screening and Prevention Act (2003), is a major public health concern. Suicide and suicidal behavior are an increasing problem for adolescents in the United States (Goldsmith, Pellmar, Kleinman, & Bunney, 2002). The Centers for Disease Control and Prevention have reported that since the 1950s, the rate of suicide in children and adolescents has increased by more than 300 percent (Scherff, Eckert, & Miller, 2005). According to recent data from the Youth Risk Behavior Surveillance, in 2005, 16.9 percent of U.S. high school students had seriously considered attempting suicide, and approximately 8.4 percent had attempted suicide at least once in the preceding 12 months (Eaton et al., 2006). Given these alarming statistics, it is imperative to provide suicide prevention education and screening for school-age children and youths. Another rationale for screening is that research has suggested that adolescents will honestly state whether they are suicidal when asked (Miller & DuPaul, 1996). Social workers and other mental health professionals, particularly those in school settings, need to get involved in screening to help reduce suicide and nonfatal suicidal behavior among adolescents (Peebles-Wilkins, 2006).

In recent years, the largest increase in the professional mental health workforce has been among social workers. From 1992 to 1998, there was a 309 percent increase in the number of social workers serving mental health institutions, in contrast to a 119 percent increase among psychiatrists and a 204 percent increase among psychologists (Manderscheid et al.,

2004). As the largest occupational group of mental health professionals in the United States (Manderscheid et al.), social workers have a significant role to play in the national strategy to prevent youth suicide, especially at the school level. The June 2006 special issue of *School Social Work Journal* celebrated 100 years of social work in the schools. Given the importance of social workers in today's schools, a review of the literature yielded very few articles specific to school social workers and their role in suicide screening, risk assessment, or prevention.

## IATROGENIC RISK

Despite research indicating that screening programs are an effective approach to identifying students who may be at risk of suicide (Shaffer & Craft, 1999) and have some support among administrators and teachers, many schools fail to use them because of concerns regarding their use, the most common of which has focused on whether screening adolescents and providing education on the topic of suicidal behaviors actually increases suicidal thoughts and behavior in teenagers. For this reason, some schools do not allow for suicide-specific questions in the Centers for Disease Control and Prevention's Youth Risk Behavior Surveillance (Goldsmith et al., 2002). However well intended parents' and school administrators' concerns over iatrogenic risks related to suicide screening may be, current research suggests that it is unfounded. In fact, the growing body of research on suicide warnings signs suggests that exposure to suicide-related content does not encourage individuals to consider attempting suicide.

Gould and colleagues (2005) conducted a randomized controlled trial of a suicide screening program with classes from six high schools to determine whether adolescents' being asked about such behaviors may trigger suicide ideation and behavior. The study, which targeted 13- to 19-year-olds attending schools in New York State, consisted of providing an experimental group with a screening survey containing questions relating to suicidal behavior and ideation and administering the control group a screening with no questions related to suicidality. Both groups received the same second survey, which included questions on suicidal behavior and ideation. Gould and colleagues found that the experimental group reported rates of suicidal ideation between the first and second survey administration that were not significantly higher.

## SUICIDE SCREENING AND RISK MANAGEMENT IN SCHOOLS

As the place where adolescents spend the majority of their waking hours outside of home, school is an important venue for screening adolescents for suicidal behaviors and providing preventive education and risk management services. Indeed, it has been shown that school-based programming is the most common approach when it comes to addressing youth suicide (Kalafat & Elias, 1995). Legislation, including the Public Health Service Act of 1990 and the Youth Suicide Prevention Act of 1987, has led to an increase in suicide prevention programs in schools (Metha, Weber, & Webb, 1998). Many states now require schools to provide suicide prevention, management, and postvention guidelines as a part of their tragedy-response plans (Capuzzi, 2002).

Suicide prevention and education in schools is typically broken down into three categories: (1) curriculum programs, (2) in-service training for teachers and staff, and (3) schoolwide suicide screening (Eckert, Miller, Riley-Tillman, & DuPaul, 2006). Curriculum programming for students has been the most extensively studied of the three programs. More than one researcher has noted that suicidal behavior is generally not effectively reduced or prevented by curriculum programs (Garland & Zigler, 1993; Miller & DuPaul, 1996; Shaffer, Garland, Gould, Fisher, & Trautman, 1988). The goal of in-service training for teachers and other school staff is to help them identify students at risk of suicide and

provide them with the knowledge of what action to take once these students have been identified (King & Smith, 2000). There is very little research on the efficacy or acceptability of in-service training. Schoolwide screening involves class- or schoolwide self-report screening to identify potentially suicidal adolescents. Those who score in the high-risk range are then interviewed individually to get a more accurate risk assessment. Suicide screening has been advocated for by many researchers who believe it could potentially be more efficient and effective than curriculum programs or in-service training (Eckert et al.).

Research to date has found that “few standardized indicated suicide prevention programs exist that have been tested in randomized prevention trials targeting high school students” (Thompson, Eggert, Randell, & Pike, 2001, p. 743). Aseltine and DeMartino (2004) noted that many preventive suicide screening programs have not been scientifically evaluated and those that have yielded mixed results. A recent comprehensive review of the literature on suicide screening as an approach to adolescent suicide prevention (Peña & Caine, 2006), funded by the National Institute of Mental Health (NIMH), reviewed 17 articles, 10 of which were related to the evaluation or implementation of suicide screening programs for youths (Aseltine, 2003; Aseltine & DeMartino; Gould et al., 2005; Gutierrez, Watkins, & Collura, 2004; Halfors et al., 2006; Miller, Eckert, DuPaul, & White, 1999; Rotheram-Borus & Bradley, 1991; Shaffer, Wilcox, & Lucas, 1996). This review also revealed that the primary goal of many screening programs is often not to have a direct impact on suicidal behavior but rather to increase help-seeking behavior. In fact, Peña and Caine found that only two programs reported an actual reduction in suicide attempts (Aseltine & DeMartino; Rotheram-Borus & Bradley). For instance, in a no-control group study Rotheram-Borus and Bradley found a decrease in suicide attempts in runaway youths being served by four community agencies after implementation of a screening program.

## SCREENING PROGRAMS

The Signs of Suicide (SOS) is a prevention program that incorporates both a curriculum to increase suicide awareness and a brief screening for depression and other suicidal risk factors (Aseltine & DeMartino, 2004). It is the first screening intervention to be evaluated using a randomized control design. In this program, students are educated on the signs of depression and suicide in others, as well as in themselves. Students are then taught to ACT—Acknowledge (the signs of suicide), Care (about the suicidal person and offer help), and finally Tell (a responsible adult). The screening portion of the program includes completion of the Columbia Depression Scale, which is scored by the students. By scoring the screening instrument themselves, students are able to assess any suicidal thoughts they may be experiencing, which may encourage them to seek help (Aseltine & DeMartino). The suicide awareness curriculum serves to reduce suicidality by promoting increased awareness of depressive symptoms and by encouraging adaptive attitudes toward suicidal behaviors and depression. In a randomized control study of five schools, Aseltine and DeMartino found that students who were in the SOS treatment group reported significantly fewer suicide attempts three months after the program than those attending regular health or social studies. Participation in SOS also produced a modest effect (slightly more than one-third of a standard deviation) in increased knowledge and more adaptive attitudes toward depression and suicide. However, changes in help-seeking behaviors as a result of the SOS program were not statistically significant. Although decreased levels of suicide ideation were found in the treatment group, they were also not statistically significant (Aseltine & DeMartino).

Suicide screening to prevent suicide is often described as a tool, a program, or both. For example, the Columbia TeenScreen (Shaffer et al., 1996), an instrument that has been empirically validated and widely used, is evaluated on the basis of its ability to identify students at risk of suicide. The TeenScreen program is currently conducted at more than 450

sites across the nation and has been identified by President Bush's New Freedom Commission on Mental Health as a model for early suicide prevention intervention (Hinawi, 2005). In the first stage of the program, students complete the Columbia TeenScreen screening instrument. Those who are identified as being at elevated risk are further assessed via computer through the use of the Diagnostic Interview Schedule for Children. In the final stage, a clinician interviews the identified at-risk students (Shaffer & Craft, 1999). The Columbia TeenScreen has been proven to be effective in identifying adolescents at risk of suicide. Shaffer and colleagues (2004), in their research conducted with ninth- to 12th-grade students from New York metropolitan area high schools, found that 100 percent of adolescents who met study criteria for suicide risk (defined as endorsement of suicide ideation or a prior attempt and a diagnosis of major depression, dysthymia, or substance abuse) were identified by TeenScreen's screening instrument. Kaplan (2005) observed that compared with an in-school mental health program, 15 times more adolescents in TeenScreen were identified as needing mental health services.

Psychometrically validated screening instruments are essential to any screening program. To effectively identify suicidal youths, a screening instrument should be assessed in relation to its sensitivity (ability to correctly identify those who are suicidal), specificity (ability to correctly identify those who are not suicidal), positive predictive value (proportion of those who screen positive who are true positives), and the negative predictive value (the probability that a person who screens negative is correctly identified as not at risk of suicide) (Peña & Caine, 2006). Given that the efficacy of any suicide screening program depends on the assessment tools, we review the most common suicide screening instruments.

## SCREENING INSTRUMENTS

Peña and Caine's (2006) comprehensive NIMH review of suicide screening programs found seven psychometrically validated and fairly brief screening instruments that assess suicide ideation and attempts: the Columbia Suicide Screen (CSS), Risk of Suicide Questionnaire (RSQ), Suicidal Ideation Questionnaire (SIQ), Suicidal Ideation Questionnaire JR (SIQ-JR), the Diagnostic Predictive Scales (DPS), Suicide Risk Screen (SRS), and the Suicide Probability Scale (SPS). These seven screening instruments have generally good psychometrics, and their performance on the performance parameters would suggest implementation challenges. In high school settings, the CSS, SIQ, and SIQ-JR tend to have a positive predictive value ranging from 0.16 to 0.33, thus they will yield a large number of false positives. The RSQ, DPS, and other instruments typically used in the clinical treatment setting tend to have higher positive predictive value (0.53 to 0.55) and might best be recommended for use in school-based screening programs. The sensitivity scores of the seven instruments ranged from 1.00 to 0.48, which means that up to 52 percent of youths in need are screened negative by these instruments (Peña & Caine). In sum, the two most commonly used instruments are the SRS (Thompson & Eggert, 1999) and SIQ (Gutierrez et al., 2004).

The SRS is administered as part of a larger High School Questionnaire (Halfors et al., 2006). The SRS makes use of three empirically based criteria (suicidal behaviors, depression, and drug involvement) to define the level of suicide risk. Halfors and colleagues reported sensitivity rates for SRS ranging from 87 percent to 100 percent and a specificity range of 54 percent to 60 percent. The authors believe that the SRS's low specificity is cause for too many false positives and therefore is not practical or efficient for use in schools. The developers of the screening tool have themselves noted that there is a risk of overidentification and false positives (Thompson & Eggert, 1999). The SIQ is also used as an instrument to assess current suicidal ideation in adolescents. The 30-item version is meant for students in grades 10 to 12, whereas the SIQ-JR is a shorter, 15-item questionnaire

created for grades 7 to 9 (Gutierrez et al., 2004). Alpha coefficients for the SIQ have consistently averaged .97, with .93 for the SIQ-JR. This is by no means an exhaustive list of the suicide instruments that can be used to detect suicide risk in adolescents. Additional suicide ideation and risk measures are detailed in the NIMH-funded review *Assessment of Suicidal Behaviors and Risk among Children and Adolescents* (Goldston, 2000). However, we encourage school social workers and mental health professionals to think carefully about the limitations of many of the commonly used instruments.

## WARNING SIGNS VERSUS RISK FACTORS

Evidence-based screening programs like the SOS have been recommended to school social workers (Peebles-Wilkins, 2006) because they teach students to recognize the symptoms of depression and the relationship of these symptoms to the potential for suicide and to show concern by alerting an adult. However, given that fewer than 15 percent of depressed people attempt suicide (Goldsmith et al., 2002), a focus on a risk factor like symptoms of depression, which are not true warning signs for suicidal behavior (Simon, 2006), might not be as effective. The central goal of suicide prevention screening or education programs is to enable the public to identify teenagers most at risk of suicide, which assumes a clear ability to differentiate warning signs from risk factors for suicidal behavior and suicide. However, current research on suicide screening and education has ignored this important distinction (Rudd, 2003).

School-based suicide prevention programs have identified a range of warning signs for suicide, but there is little consistency across programs, and they often simply incorporate signs and symptoms of depression (Rudd et al., 2006). The suicide literature abounds with risk factors; however, the concept of warning signs has yet to be effectively defined and differentiated from risk factors (Rudd, 2003). In fact, few researchers have identified specific signs related to immediate risk of suicide. Warning signs are a clear set of indicators of imminent danger that will allow the public to respond appropriately as soon as the potential suicidal behavior is recognized (Rudd et al.). Earlier research has shown that the signs that commonly precede a suicide attempt include substance abuse and a communication of intent (Chiles, Strosahl, Cowden, & Graham, 1986), as well as severe anxiety or extreme agitation (Busch, Fawcett, & Jacobs, 2003; Simon, 2006). Although warning signs can also be commonly accepted risk factors with ample support in the literature, the empirical evidence gained from the literature must suggest that these risk factors hold a proximal (a few hours to days) rather than distal (a year or longer) relationship to suicidal thoughts and behaviors. This is important because mental health professionals have short time periods in which to make decisions about suicidal patients. They must determine whether a client will be safe for the next few hours or days (Rudd et al.). Therefore, research on warning signs is needed to guide the development of effective suicide prevention screening programs and assessment instruments. The American Association of Suicidology convened a work group in 2003 on this issue, has released a consensus statement on the definition of warning signs, and has identified these priorities as the appropriate goals for future research (Rudd et al.). Another beneficial outcome of the working group meetings was the development of a mnemonic device, IS PATH WARM, to help direct individuals to take action when someone manifests the following range of recognized risk factors: I(deation), S(ubstance Abuse), P(urposelessness), A(nxiety), T(rapped), H(opelessness), W(ithdrawal), A(nger), R(ecklessness), and M(ood Change). The predictive validity of this mnemonic has yet to be determined.