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Evidence-Based Suicide Prevention Screening in Schools

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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.,

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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 —**A**cknowledge (the signs of suicide), **C**are (about the suicidal person and offer help), and finally **T**ell (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 asses 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(urposelessnes), 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.

PRACTICE AND RESEARCH CONCERNS

Although it cannot be disputed that suicidal behavior must be addressed in schools, there are some concerns over the use of screening methods to identify adolescents at risk of suicide. Two concerns are the lack of funding and willingness among staff to implement these risk assessment programs. Studies have shown that school counselors and teachers who are already overwhelmed with the demands put on them during the school day find it very difficult to find the time or resources to provide suicide screening and assessment (Mazza, 1997; Metha et al., 1998; Shaffer et al., 1988). School staff tend to counterargue that a more efficient use of time and resources would be to specifically target at-risk youths rather than conduct a schoolwide screening or prevention curriculum. The concern over workload strains is legitimate. Although the School Social Work Association of America (2001) has recommended that schools not exceed a student to social worker ratio of 800 to one, the reality is that social workers' student load is often several times that number. The high caseload burden calls into question the viability of some social workers' ability to advocate for suicide prevention screening programs or to lead such initiatives, despite their relevance to school social work practice.

Another concern is the high rate of false positives that may occur when sampling a large school population. Several studies that have evaluated the efficacy of school-based screenings found a large range in sensitivity (83 percent to 100 percent) as well as specificity (51 percent to 76 percent) (Reynolds, 1991; Shaffer & Craft, 1999; Thompson & Eggert, 1999). Although this may reduce the amount of false negatives, it does make for a higher incidence of false positives (Gould, Greenberg, Velting, & Shaffer, 2003).

Racial Considerations

One final concern that is especially relevant to the practice of social work and its focus on inclusion of diversity is that suicide screening and assessment tools may not be appropriate for use with all racial and ethnic groups (Manetta & Ormand, 2005). Many of the recognized suicide screening instruments were developed using majority white samples; therefore, caution needs to be used when interpreting the results for ethnic minority adolescents (Manetta & Ormand). The research literature is not sufficiently developed for us to summarize the ability of current suicide screening instruments to positively identify ethnic minority adolescents at risk of suicide. More important, given the dearth in research on effective interventions for ethnic minorities, we know less about what to do when an ethnic minority child or adolescent is thought to be suicidal. Future research is needed to guide our understanding of the suicide warning signs for ethnic minority adolescents and the effective referral services and treatments for this population.

Practice Considerations

Despite the deficiencies mentioned earlier, several important practice implications can be discerned from the existing literature. For instance, suicide prevention screening should be considered as a two-tier system (Rudd et al., 2006), and this framework should be considered when developing empirically based suicide screening (warning signs) programs and tools (Table 1). The first tier directs an individual to call emergency services or seek immediate help in response to overt threats, preparatory acts, and expressed thought about dying. The second tier suggests that individuals should seek help, without specifying immediate assistance, when someone exhibits a range of suicide warning signs. However, the adoption of the two-tier framework requires a clinical paradigm shift—namely, conceptualizing the clinical goal of suicide screening programs as an effort to assess suicide risk in an immediate, acute, and chronic fashion (Rudd et al.). This paradigm shift will

ensure that screening programs provide information that has implications for social workers' day-to-day clinical decision making with suicidal clients.

Developing an effective suicide screening program requires several key decisions (Table 2). An important case in point is the decision regarding which population of teenagers to screen because it has major implications for the potential efficacy of the initiative. Given that the risk of suicide varies by gender, race, and socioeconomic status (Centers for Disease Control and Prevention, 1998) and these issues might affect the psychometric validity of existing screening instruments, it is important to select a population for which there is a high probability that someone screening positive is a true positive. Given scarce school-based resources and the stigma associated with suicidality, it is essential that social workers consider these issues when planning a screening program. In addition, before adapting a screening program, social workers and other mental health professionals must examine the prevalence of suicidal behavior in their school's population (Peña & Caine, 2006). It makes no sense to expend resources if planners do not have a sense that suicidal behavior is prevalent in their school or among youths in the larger community.

Several other key decisions and actions must be taken, including conducting cost–benefit analysis to assess staff availability, training requirements, and willingness; establishing monitoring to ensure existing systems are not overwhelmed; developing clear informational materials to aid in securing active written parental consent before screening; and, most important, ensuring that referral resources are available. Screening should not be done if the appropriate follow-up care is not available and clear protocols related to crisis planning and ongoing contact with community providers, mobile crisis teams, and clinical referral networks are not in place (Peña & Caine, 2006). Finally, several legal and ethical considerations must be addressed while developing a screening program. Decisions must be made as to who are mandated reporters, who can see the files of students who screen positive, and what will be the criteria for notifying parents and guardians. In regard to parent notification, obtaining active, written parental consent for screening is essential and must be addressed. The thoughtful consideration of these issues increases the potential for a suicide screening program to actually benefit those being screened and for the program to be affordable and sustainable (Peña & Caine).

CONCLUSION

The high incidence of youth self-directed violence in the United States represents widespread and devastating outcomes that often have severe interpersonal and economic consequences. Suicide screening has shown to be a promising tool for identifying youths at risk of self-directed violence. However, efforts to advance suicide screening are limited by a dearth of research on suicide warning signs, development of assessment instruments, and well-designed studies on the efficacy of screening as a method of suicide prevention, particularly for ethnic minority populations. The extant literature is consistent in noting that when care is provided for children with moderate to severe mental health problems it often comes from school-based or other settings with no connection to the mental health sector (Canino et al., 2002). Thus, schools remain an effective setting for suicide prevention. School-based suicide screening programs offer promise and can be used most effectively when considered in combination with effective referral resources (Peña & Caine, 2006). Social workers, if given the appropriate training, time, and financial resources, could be instrumental in the implementation of screening and preventive education programs. Future research is needed to discern social workers' ability to develop effective screening programs and to address teenagers' experiences of service barriers and what happens after they are referred for services.

REFERENCES

Aseltine RH. An evaluation of a school based prevention program. Adolescent and Family Health 2003;3(2):81–88.

Aseltine RH, DeMartino R. An outcome evaluation of the SOS suicide prevention program. American Journal of Public Health 2004;94:446–451. [PubMed: 14998812]

Busch KA, Fawcett J, Jacobs DG. Clinical correlates of inpatient suicide. Journal of Clinical Psychiatry 2003;64:14–19. [PubMed: 12590618]

Canino G, Shrout PE, Alegria M, Rubio-Stipec M, Chavez LM, Ribera JC, Bravo M, Bauermeister JJ, Fabregas LM, Horwitz S, Martinez-Taboas A. Methodological challenges in assessing children's mental health services utilization. Mental Health Services Research 2002;4:97–107. [PubMed: 12090311]

Capuzzi D. Legal and ethical challenges in counseling suicidal students. Professional School Counseling 2000;6(1):36–45.

Centers for Disease Control and Prevention. Suicide among African-American youths–United States, 1980–1995. Morbidity and Mortality Weekly Report 1998;47:193–196. [PubMed: 9531022]

Children's Mental Health Screening and Prevention Act, H.R. 3063, 108th Cong. 2003.

Chiles JA, Strosahl K, Cowden L, Graham R. The 24 hours before hospitalization: Factors related to suicide attempting. Suicide and Life- Threatening Behavior 1986;16:335–342. [PubMed: 3764997]

Eaton DK, Kann L, Kinchen S, Ross J, Hawkins J, Harris WA, Lowry R, McManus T, Chyen D, Shanklin S, Lim C, Grunbaum JA, Wechsler H. Youth Risk Behaviors Surveillance–United States 2005. Morbidity and Mortality Weekly Report 2006;55:1–33. [PubMed: 16410759]

Eckert TL, Miller DN, Riley-Tillman TC, DuPaul GJ. Adolescent suicide prevention: Gender differences in students' perceptions of the acceptability and intrusiveness of school-based screening programs. Journal of School Psychology 2006;44:271–285.

Garland A, Zigler E. Adolescent suicide prevention: Current research and social policy implications. American Psychologist 1993;48:169–182. [PubMed: 8442571]

Goldsmith, SK.; Pellmar, TC.; Kleinman, AM.; Bunney, WE. Reducing suicide: A national imperative. Washington, DC: National Academies Press; 2002.

Goldston, DB. Assessment of suicidal behaviors and risk among children and adolescents (Tech. rep. submitted to National Institute of Mental Health [NIMH], Contract No. 263-MD-909995). Bethesda, MD: NIMH; 2000.

Gould MS, Greenberg T, Velting DM, Shaffer D. Youth suicide risk and preventive interventions: A review of the past 10 years. Journal of the American Academy of Child & Adolescent Psychiatry 2003;42:386–405. [PubMed: 12649626]

Gould MS, Marrocco FA, Kleinman M, Thomas JG, Mostkoff K, Cote J, Davies M. Evaluating iatrogenic risk of youth suicide screening programs: A randomized controlled trial. JAMA 2005;293:1635–1643. [PubMed: 15811983]

Gutierrez PM, Watkins R, Collura D. Suicide risk screening in an urban high school. Suicide and Life-Threatening Behavior 2004;34:421–428. [PubMed: 15585463]

Halfors D, Brodish PH, Khatapoush S, Sanchez V, Cho H, Steckler A. Feasibility of screening adolescents for suicide risk in "Real World" high school settings. American Journal of Public Health 2006;96:282–287. [PubMed: 16380568]

Hinawi SS. A model screening program for youth. Behavioral Health Management 2005;25(6):38–44.

Kalafat J, Elias MJ. Suicide prevention in an educational context: Broad and narrow foci. Suicide and Life-Threatening Behavior 1995;25:123–133. [PubMed: 7631366]

Kaplan, A. Assessing the effectiveness of the Columbia University TeenScreen Program; Poster presented at the 52nd annual meeting of American Academy of Child and Adolescent Psychiatry; Toronto. 2005 Oct.

King K, Smith J. Project SOAR: A training program to increase school counselors' knowledge and confidence regarding suicide prevention and intervention. Journal of School Health 2000;70:402–407. [PubMed: 11195950]

Manderscheid, RW.; Atay, JE.; Male, A.; Blacklow, B.; Forest, C.; Ingram, L.; Maedke, J.; Sussman, J.; Ndikumwami, A. Highlights of organized mental health services in 2000 and major national

and state trends. In: Manderscheid, RW.; Henderson, MJ., editors. Mental health, United States, 2002 (DHHS Pub. No. SMA04-3938, pp. 243–279). Rockville, MD: U.S. Department of Health and Human Services, Center for Mental Health Services, Substance Abuse and Mental Health Services Administration; 2004.

Manetta AA, Ormand T. A comparative analysis of substances used by suicidal and non-suicidal high school students. School Social Work Journal 2005;29(2):83–97.

Mazza JJ. School-based suicide prevention programs: Are they effective? School Psychology Review 1997;26(3):382–396.

Metha A, Weber B, Webb LD. Youth suicide prevention: A survey and analysis of policies and efforts in the fifty states. Suicide and Life-Threatening Behavior 1998;28:150–164. [PubMed: 9674075]

Miller DN, DuPaul GJ. School-based prevention of adolescent suicide: Issues, obstacles and recommendations for practice. Journal of Emotional and Behavioral Disorders 1996;4(4):221–230.

Miller DN, Eckert TL, DuPaul GJ, White GP. Adolescent suicide prevention: Acceptability of school-based programs among secondary school principals. Suicide and Life-Threatening Behavior 1999;29:72–85. [PubMed: 10322622]

Peebles-Wilkins W. Evidence-based suicide prevention [Editorial]. Children & Schools 2006;28:195–196.

Peña JB, Caine ED. Screening as an approach for adolescent suicide prevention. Suicide and Life-Threatening Behavior 2006;36:614–637. [PubMed: 17250467]

President's New Freedom Commission on Mental Health. Achieving the promise: Transforming mental health care in America (Pub. No. SMA 03-3832). Rockville, MD: Author; [Retrieved November 20, 2006]. from http://www.mentalhealthcommission.gov/reports/reports.htm

Reynolds W. A school-based procedure for the identification of adolescents at risk for suicidal behaviors. Family and Community Health 1991;14(3):64–75.

Rotheram-Borus MJ, Bradley J. Triage model for suicidal runaways. American Journal of Orthopsychiatry 1991;61:122–127. [PubMed: 2006668]

Rudd MD. Warning signs for suicide. Suicide and Life-Threatening Behavior 2003;33:99–100. [PubMed: 12710545]

Rudd MD, Berman AL, Joiner TE, Nock MK, Silverman MM, Mandrusiak M, Van Orden K, Witte T. Warning signs for suicide: Theory, research, and clinical applications. Suicide and Life-Threatening Behavior 2006;36:255–262. [PubMed: 16805653]

Scherff AR, Eckert TL, Miller DN. Youth suicide prevention: A survey of public school superintendents' acceptability of school-based programs. Suicide and Life-Threatening Behavior 2005;35:154–169. [PubMed: 15843333]

School Social Work Association of America. School social worker staffing needs. 2001 [Retrieved October 26, 2006]. from http://www.sswaa.org/members/resolutions/staffing.html

Shaffer D, Craft L. Methods of adolescent suicide prevention. Journal of Clinical Psychiatry 1999;60:70–74. [PubMed: 10073391]

Shaffer D, Garland A, Gould M, Fisher P, Trautman P. Preventing teenage suicide: A critical review. Journal of the American Academy of Child & Adolescent Psychiatry 1988;27:675–687. [PubMed: 3058676]

Shaffer D, Scott M, Wilcox H, Maslow C, Hicks R, Lucas CP, Garfinkel R, Greenwald S. The Columbia Suicide Screen: Validity and reliability of a screen for youth suicide and depression. Journal of the American Academy of Child & Adolescent Psychiatry 2004;43:71–79. [PubMed: 14691362]

Shaffer, D.; Wilcox, H.; Lucas, CP. The development of a screening instrument for teens at risk for suicide; Poster presented at the meeting of the Academy of Child and Adolescent Psychiatry; New York. 1996.

Simon RI. Suicide risk assessment: Is clinical experience enough? Journal of the American Academy of Psychiatry and the Law 2006;34:276–278. [PubMed: 17032949]

Thompson EA, Eggert LL. Using the suicide risk screen to identify suicidal adolescents among potential high school dropouts. Journal of the American Academy of Child & Adolescent Psychiatry 1999;38:1506–1514. [PubMed: 10596250]

Thompson EA, Eggert LL, Randell BP, Pike KC. Evaluation of indicated suicide risk prevention approaches for potential high school dropouts. American Journal of Public Health 2001;91:742–752. [PubMed: 11344882]

Table 1

Warning signs for Suicide

Tier 1
Do you have a student at risk for suicide? Get the facts and take action
Contact the principal or designee. Call 9-1-1 or seek immediate help from the mental health provider at the school (for example, social worker, psychologist, or counselor) when you hear, say, or see any one of these behaviors:
• someone threatening to hurt or kill themselves
• someone looking for ways to kill themselves: seeking access to pills, weapons, or other means
• someone talking or writing about death, dying, or suicide
Tier 2
Seek help by contacting the mental health professionals at the school or calling 1-800-273-TALK for a referral should you witness, hear, or see anyone exhibiting any one or more of these behaviors:
• hopelessness
• rage, anger, seeking revenge
• acting reckless or engaging in risky activities, seemingly without thinking
• feeling trapped—like there's no way out
• increasing alcohol or drug use
• withdrawing from friends, family, or society
• anxiety, agitation, unable to sleep, or sleeping all the time
• dramatic changes in mood
• no reason for living; no sense of purpose in life

Source: Rudd, M. D., Berman, A. L., Joiner, T. E., Nock, M. K., Silverman, M. M., Mandrusiak, M., Van Orden, K., & Witte, T. (2006). Warning signs for suicide: Theory, research, and clinical applications. *Suicide and Life-Threatening Behavior*, *36*, p. 259. Adapted with permission from Guildford Press.

Table 2

Key Decisions to Resolve before Implementing a screening program

Decision	Task Questions Key
Population and setting	Define the population to screen and the most conducive setting in which to conduct the screening: • Does the prevalence of suicide risk factors in the community/city warrant the implementation of a screening program? • Can a screening program be integrated into existing classroom curriculum, programs, systems, and prevention efforts in the school? • Is the screening program consistent with the target student population's community or cultural values? • What are the concerns of the community or parents? How adequately can community and parental concerns be addressed? • Is the screening program consistent with the school's staff or organizational values or priorities? What are the concerns of the organizational staff and leadership? How adequately can organizational concerns be addressed?
Screening instrument	Select the screening tool: • Has the screening tool shown to be effective and valid for the student population to be screened? • What are the criteria for a screen positive, including cut-off scores and risk factors that are screened for? • What is the sensitivity, specificity, and positive predictive value of the screening tool? • Approximately how many youths will screen positive? What will be the false positives and false negatives rates in the population to be screened? Are these rates acceptable?
Staffing and referral network	Assemble a rapid response team and a broader referral network: • Does the school setting where screening is to occur have the capacity, resources, and necessary linkages to screen, assess, and refer youths? If not, can the necessary resources be put into place before screening starts? • What will be the protocols and procedures in place to screen, assess, and make referrals? • What will be the total cost of the screening program? What are the costs of the alternatives? • Approximately how many staff and of what type have to be in place to run the screening program, assess the number of positive screens anticipated, and make referrals in a timely way? • Are there enough staff for the task? Does the existing school staff have the skills and time necessary to screen, assess, and refer youths? • Is there a broad enough referral network to serve all the youths who will need services? • Are there effective treatments available for the types of conditions being screened for?
Quality assurance	Providing adequate quality assurance: • How will the screening program be monitored to ensure that protocols are followed? • Will youths get an appropriate screening and assessment? • Will youths in crisis be followed up immediately?
Legal and ethical issues	Address important ethical and legal concerns • Have most if not all of the important ethical and legal concerns been considered? • Has sufficient informed (active) consent been given to parents and youths about risks, benefits, and limits of screening? • Have representatives from community, staff, and legal council been given adequate input into how to address potential ethical and legal problems that may arise from screening?

Source: Peña, J. B., & Caine, E. D. (2006). Screening as an approach for adolescent suicide prevention. *Suicide and Life-Threatening Behaviors, 36*, p. 632. Adapted with permission from Guildford Press.