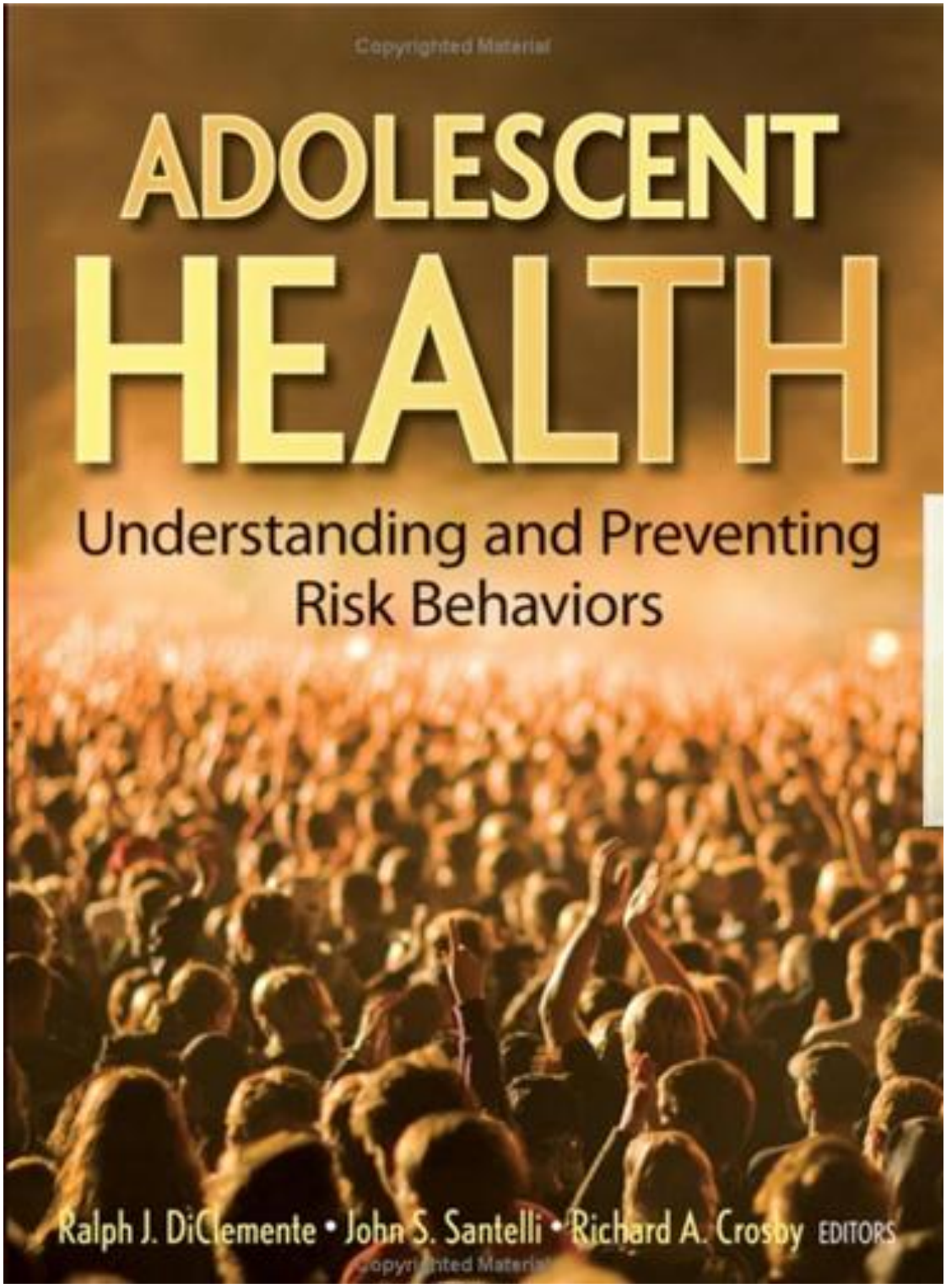
# ADOLESCENT HEALTH

## Understanding and Preventing Risk Behaviors



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RJD

To Sahara Rae—the brightest light in my universe, the axis on which my world revolves, and the center of my heart—with all my love. To my lovely, talented, and supportive wife—a partner in so many ways. To my wonderful family for being understanding and accepting.

JSS

To Jennifer, Isaac, and Jacob, who make life worthwhile, who keep me honest, and who tolerate my solitary scholarly propensities.

RAC

To my family and my colleagues—all of whom make life exciting, rewarding, and bring simple pleasures to life as a scholar.

CHAPTER

13

# PREVENTION OF SUICIDAL BEHAVIOR DURING ADOLESCENCE

**ANTHONY SPIRITO, QUETZALCOATL HERNANDEZ-CERVANTES**

## LEARNING OBJECTIVES

After studying this chapter, you will be able to

- Classify attempted and completed suicide by gender and race.
- Catalog possible risk and protective factors for suicide during adolescence.
- Recognize programmatic strengths and shortcomings in school-based suicide awareness and education programs.

Rates of attempted and completed suicide rise precipitously during adolescence (Kessler, Borges, & Walters, 1999). In 2005, approximately 16.9 percent of adolescents in the United States seriously considered attempting suicide, 13 percent developed a suicide plan, 8.4 percent attempted suicide, and 2.3 percent attempted suicide in a manner requiring emergency medical treatment (Centers for Disease Control and Prevention [CDC], 2006). These rates translate into approximately two million attempts per year, of which about 700,000 receive emergency medical treatment (Shaffer & Pfeffer, 2001), resulting in considerable economic burden.

Although there are important differences between those adolescents who attempt and those who complete suicide, a previous suicide attempt is one of the best predictive risk factors for eventual completed suicide by an adolescent. Thus, it is clear that preventing the onset of suicidal behavior, the focus of this chapter, is an important facet of addressing the public health problem of youth suicide.

## EPIDEMIOLOGY

In this section we discuss rates of attempted and completed suicide in youth. The primary focus is on rates in the United States. Gender and race differences are also reviewed.

### *Completed Suicide*

Suicide completion is the third leading cause of death for children, adolescents, and young adults (10 to 24 years old) in the United States (CDC, 2007). After puberty, rates of suicide increase with age, until they stabilize in young adulthood. Among the 15 through 24 age group, data collected between 1950 and 2004 indicated a peak in death rates for suicide in 1990 (13.2 per 100,000), decreasing in 2000 (10.2) and not varying significantly afterwards—9.7 in 2003 and 10.3 in 2004 (U.S. Department of Health & Human Services [U.S. DHHS], 2006). The increase in the rate of suicide from the 1970s through the late 1990s has been attributed to rising rates of depression, an increase in substance abuse, and the increased availability of firearms among adolescents (Commission on Adolescent Suicide Prevention, 2005). Indeed, data from the Centers for Disease Control and Prevention (2004) indicate that death by firearms (49 percent) is the leading cause of death for persons between 10 and 19 years of age, followed by suffocation (mostly hanging; 38 percent) and then poisoning (7 percent).

It is unclear why the decrease in suicide rates occurred in the 1990s. Olfson, Marcus, Weissman, and Jensen (2002) note there was a more than threefold increase in antidepressant use by adolescents between 1987 and 1996, which might account for the decrease in suicide. In addition, suicide awareness programs, discussed later in this chapter, were introduced into high schools during the mid-1980s.

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Quetzalcoatl Hernandez-Cervantes cowrote this chapter during a postdoctoral summer internship supported by grant UNAM Macroproyecto MP6-11, with supplemental support from the Center for Alcohol and Addiction Studies at Brown University.

Differences by gender in completed suicide in 15- through 29-year-olds are pronounced: 16.8 per 100,000 for males and 3.6 for females in 2004 (U.S. DHHS, 2006). Death rates for suicide among females peaked in 1980 (4.3) and in 1994 for males (23.0). However, in males the trend increased steadily from 1950 (6.5) to its peak in 1994 and began decreasing thereafter to 17.1 per 100,000 in 2004. For females, the trend in suicide rates is much more stable: 2.6 per 100,000 in 1950, and 3.6 in 2004.

Why is this gender difference so pronounced? One possibility is that completed suicide is associated with not just depression but conduct difficulties or aggressive behavior and substance abuse during adolescence, both of which are more common in males than in females. Also, males are much more likely to choose firearms as a suicide method than females. The increase in young male suicide rates in the 1980s and 1990s has also raised interest in whether suicidal behavior is related to masculinity, not only in the United States but in many other countries as well (Hunt, Sweeting, Keoghan, & Platt, 2006).

Rates of death by suicide are highest among Native American males 15 through 24 years old, with a rate of 30.7 per 100,000 in 2004, followed by white (not Hispanic or Latino) males, with a rate of 19.0, and Hispanic or Latino males at 12.8 per 100,000 (U.S. DHHS, 2006). The lowest death rates for suicide in the same age group are found among African American females (2.2), followed by Hispanic or Latino females (2.5), and Asian or Pacific Islander females (2.8). The low rates among African Americans have been attributed to a greater emphasis on religion in African American families. However, the difference in rates of completed suicide between African Americans and whites has decreased over the past few decades.

### *Attempted Suicide*

Rates of attempted suicide rise precipitously during adolescence. Data from the 2005 Youth Risk Behavior Surveillance System (YRBSS) of over 13,000 adolescents indicated that within a twelve-month period, 21.8 percent of females grades nine through twelve and 12 percent of males grades nine through twelve reported suicidal ideation (CDC, 2006). The highest percentages were found among Hispanic or Latino females (24.2 percent), compared to white males, at 12.4 percent. Among females, 10.8 percent reported attempted suicide, with Hispanic or Latino females reporting the highest rate (14.9 percent). Among males, only 6 percent reported attempted suicide, with Hispanic or Latino males having the highest percentage (7.8 percent). This latter trend is also found in students with a suicide attempt requiring medical attention: 2.9 percent were females (with Hispanics or Latinos exhibiting the highest percentage—3.7 percent), and 1.8 percent were males (Hispanics or Latinos with the highest percentage—2.8 percent). Hispanic adolescents consistently report higher rates of suicide attempts than other groups. Data trends from the national YRBSS indicate that seriously considered suicide attempts decreased from 1991 (29 percent) to 2003 (16.9 percent). For attempted

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suicide, the rates rose slightly from 1991 (7.3 percent) to 2005 (8.4 percent) (U.S. DHHS, 2006). Medically serious suicide attempts also increased slightly, from 1.7 percent in 1991 to 2.3 percent in 2005.

Why are there such high rates of attempted suicide in Hispanic and Latino families? Disparities between adolescent and parent acculturation, socioeconomic disadvantage, traditional gender-role socialization, and intergenerational conflict create conditions that are believed to lead to adolescent suicidal behavior in Hispanic families (Zayas, Kaplan, Turner, Romano, Gonzalez-Ramos, 2000). Traditionally structured Hispanic families often have restrictive, authoritarian parenting styles, which may affect the development of adolescent females moving toward autonomy, even when the father is absent (Zayas et al., 2000). In addition, the support from extended family members traditionally used to help parents manage these issues is often limited due to immigration. Cuellar and Curry (2007) also note that there is a high occurrence of substance abuse, delinquency, and suicide attempts among a subgroup of adolescent Hispanic females, which may also be related to the high rates of suicidal behavior in this group.

Duarté-Véléz and Bernal (2007) note that in order to identify elements for prevention and treatment of suicidal behavior in Latino youth, studies of specific Latino subgroups should be conducted, such as Latinos from Mexico (64 percent of the Hispanic population in the United States), Puerto Rico (10 percent), the Dominican Republic (3 percent), and Central and South America (3 percent). For example, Fortuna, Perez, Canino, Sribney, and Alegria (2007) examined lifetime suicide attempts in several Latino subgroups in the United States, including Mexicans, Puerto Ricans, Cubans, and others. Although they did not find any differences in rates by these subgroups, they did find that most of the attempts occurred below the age of eighteen years and that one of the associated risk factors was acculturation, even among those without psychiatric morbidity.

Native Americans report the highest rates of attempted suicide during adolescence. The National American Indian Adolescent Health Survey (Borowsky, Resnick, Ireland, & Bloom, 1999) sampled more than 11,000 Native American students in schools on reservations in eight Indian Health Service areas. The overall rate of lifetime suicide attempts was 16.8 percent, and the rate for girls was 21.8 percent. However, the rates also varied considerably across tribes.

Regarding the high rate of suicidal behaviors among American Indian and Alaska Native (AI/AN) communities, Alcántara and Gone (2007) comment that factors such as native identity, social support networks, attitudes toward education, cultural continuity, spirituality, and socioeconomic level affect the suicide epidemiological profile of AI/AN communities. In their review, Alcántara and Gone underscore the protective role of spirituality, positive attitudes towards education, and the presence of cultural continuity, as these were found to be strongly associated with reduced and in some cases nonexistent rates of suicide in certain AI/AN communities.

Walls, Chapple, and Johnson (2007) found that stressors like coercive parenting, caretaker rejection, negative school attitudes and perceived discrimination (surprisingly,

mostly from teachers) were related to suicidality among American Indian adolescents from the Midwest and Canada. Walls et al. also found that depressive symptoms and anger mediated the effects of several key predictors of suicidality in American Indian adolescents. Olson and Wahab (2006) note that most risk factors for Native American adolescents are the same as those for other adolescent populations in North America.

The reliability and accuracy of prevalence estimations for adolescent suicide attempts are problematic. It is known that statistics on completed suicide are generally considered to be underestimates of the true incidence, principally because of failure to report and misclassification of unintentional injuries that might be suicides (such as single-car crashes). Similarly, data on nonfatal suicide attempts are typically collected by self-report and thus are subject to definitional vagaries and the adolescent's interpretation of his or her behavior as suicidal or not. Nonetheless, Evans, Hawton, Rodham, and Deeks (2005) reviewed the prevalence of suicidal phenomena in adolescents based on 128 studies from 1963 to 2000. They found that the mean proportion of suicide attempters was 9.7 percent and ideators 29.9 percent. Though the prevalence of suicidal phenomena varies depending on terminology and methodology used, Evans et al. did not find any statistically significant differences attributable to either terminology or methodology in the studies they reviewed, although a higher proportion of suicidal phenomena was reported in studies using anonymous questionnaires versus studies using nonanonymous measures. Thus, the consistency of the findings can lead to some confidence in the general accuracy of these rates.

In summary, completed suicide occurs at a very high rate in adolescents, and the rate increased substantially in the 1980s and 1990s in white males. Native American adolescent males have especially high rates of completed suicide. Attempted suicide is much more common in females than males, with Hispanic females and Native American females from certain tribes demonstrating the highest rates of suicide attempts.

## PREVENTION

In the last decade, the field of suicide prevention has benefited from the establishment of the *Evidence-Based Practices Project* (EBPP; Rodgers, Sudak, Silverman, & Litts, 2007). The EBPP is a coalition of the Suicide Prevention Resource Center and the American Foundation for Suicide Prevention, funded by the Substance Abuse and Mental Health Services Administration. The EBPP reviewed suicide prevention programs and created an online registry (www.sprc.org) of evidence-based suicide prevention programs (Rodgers et al., 2007).

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The EBPP followed a five-step process to classify programs. The first three steps included a literature review to identify programs, a screening process to eliminate programs that did not meet minimal methodological standards, and ratings by at least three expert reviewers of the twenty-four identified programs. Experts used a 1-to-5 scale to rate each program on ten items: theory, fidelity, design, attrition,

psychometrics, analysis, threats to validity, safety, integrity, and utility. Programs were classified under "effective" if their ratings on the integrity and utility scores averaged 3.5 or greater, "promising" if the average scores were between 3.0 and 3.5, or "insufficient current support" if either average score fell below 3.0 (Rodgers et al., 2007). Based on this rating scheme, four programs were classified as effective and eight as promising. Two of the four effective programs and six of the eight promising programs targeted adolescents and are discussed below.

Another major effort to review the efficacy of suicide prevention occurred in August 2004, when experts from fifteen countries met in Salzburg, Austria, for a five-day workshop. They reviewed major databases for relevant articles published from 1966 to June 2005 (Mann et al., 2005). This group developed the following classification scheme: awareness and education, screening, means restriction, and media. We follow this same scheme in this chapter. Under each category, as appropriate, we review studies rated as promising or effective by the EBPP, as well as studies cited in the literature, including many noted by the Salzburg project.

### *Suicide Awareness and Education Programs*

Mann et al. (2005) noted that suicide awareness and education are conducted primarily by primary care physicians and by gatekeepers. The gatekeepers for adolescents are based primarily in school settings.

Improving physician recognition of depression and suicide risk is deemed a valuable preventive approach, because many adult suicide victims have contact with their physician in the months prior to their death. Although adolescents' relationships with their doctors are different from those of adults, two studies have examined the effectiveness of primary care physicians in adolescent suicide prevention. Pfaff, Acres, and McKelvey (2001) trained primary care doctors in Australia to recognize and respond to suicidality in their adolescent and young adult patients. Although there was greatly increased identification of suicidal patients, there was no change in physician management or treatment of these individuals. Asarnow et al. (2005) conducted a study in which primary care physicians screened adolescents for depression and then referred them to either standard care or a quality improvement intervention. The latter condition consisted of case managers who supported primary care clinicians in managing the depressed adolescent, cognitive-behavioral therapy provided by the case managers, and education to the physician regarding depression treatment (both psychological and pharmacological). Although not statistically significant, at six-month follow-up suicide attempts dropped from 14.2 percent to 6.4 percent in the quality improvement group, compared to a change from 11.6 percent to 9.5 percent in the usual care group.

The primary venue in which suicide awareness and education programs reach adolescents is schools. The rationale behind school-based programs is that a large proportion of high school students is exposed to peers with suicidal feelings and that adolescents are more likely to tell peers than adults if they have suicidal thoughts. Most programs are designed to increase awareness of suicide warning signs, dispel myths, promote case finding, provide information about availability of mental health resources,

provide ways to cope with depression and suicidal feelings, and encourage students to seek help. Kalafat (2003) noted that after an initial surge of interest in school-based suicide prevention programs in schools in the 1980s, interest waned in the mid to late 1990s. However, the Surgeon General's Call to Action to Prevent Suicide (U.S. Public Health Services, 1999) brought renewed interest. Indeed, Objective 4.2 of the National Strategy to Prevent Suicide calls for an increase in the number of evidence-based suicide prevention programs in schools.

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Two major review articles have examined studies in suicide awareness and education programs in the schools: one reviewing studies from 1980 through 1995 (Ploeg et al., 1996) and the other reviewing studies from 1990 through 2002 (Guo & Harstall, 2002). The Ploeg et al. (1996) review concluded that overall knowledge improves with suicide awareness programs, but that attitudes and help seeking are both positively and negatively affected by these programs. Some studies have found that suicide awareness and education programs can have negative effects on boys (Shaffer, Garland, Vieland, Underwood, & Busner, 1991) and a negative effect on adolescents with a history of suicidal behavior (Shaffer, Vieland, Garland, Rojas, Underwood, & Busner, 1990). Guo and Harstall (2002) concluded that these programs improve knowledge and attitudes of participants, but they did not find an effect on suicidal behavior.

The EBPP found two universal suicide awareness and education programs to be promising: the Lifelines program—and its updated version, Lifelines ASAP, which combines material from the Adolescent Suicide Awareness Program (ASAP; Ryerson, 1990)—and the Signs of Suicide (SOS) program (Aseltine & DeMartino, 2004). The latter will be discussed here, as it contains a unique combination of awareness and screening.

SOS is a suicide awareness and education curriculum with a screening program for depression and other risk factors. The educational component of this program teaches adolescents that suicide is directly related to a psychiatric disorder, typically depression, unlike many of the original suicide awareness programs in which suicidal behavior was often described as a reaction to stress. SOS teaches adolescents that mental illness is treatable and that they should respond to a suicidal peer using the ACT technique: acknowledge the signs of suicide, respond with care, and tell a responsible adult. A video dramatization is shown about the signs of suicidality and depression, as well as correct and incorrect ways to respond to a suicidal peer. The screening portion of the SOS program entails completing a seven-item measure of depressed mood. If adolescents meet the clinical cutoff score on this measure, the Columbia Depression Scale, an interpretation sheet attached to the screen encourages them to seek help immediately.

Aseltine and DeMartino (2004) present data from five high schools in Connecticut and Georgia, with over one thousand subjects each in the SOS and control groups. At three-month follow-up, there was a significant improvement in knowledge as well as adaptive attitudes toward depression and suicide. Most important, SOS was the first program to demonstrate a statistically significant reduction in suicide attempts at three

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months: 3.6 percent in SOS versus 5.4 percent in the control group. The authors noted that a longer-term follow-up is necessary to determine whether this reduction in suicidal behavior persists.

One reason universal suicide awareness and education programs may not be as successful as hoped is that they do not target students at greatest risk for suicide. Selective prevention focuses on groups with known risk factors for suicidal behavior. The EBPP found two suicide awareness and education programs with high-risk youth to be promising and one to be effective. One promising program, Zuni Life Skills Development (LaFromboise & Howard-Pitney, 1995), targets Native American youth who are at high risk for suicide. LifeSkills Training is designed to teach the social competence needed to enhance social and emotional development as well as academic success. The units in the curriculum cover building self-esteem, identifying emotions and stress, increasing communication and problem-solving skills, recognizing and eliminating negative thinking, and setting goals. There is also suicide-specific training. The curriculum was developed so that it would be culturally acceptable to Zuni values and beliefs and was taught by teachers to students. In a randomized controlled trial, adolescents receiving the Zuni LifeSkills curriculum ($N = 69$) reported lower levels of hopelessness and better problem-solving and suicide intervention skills (as assessed by observer report) than the control group ($N = 59$).

The second program categorized by the EBPP as promising was Reconnecting Youth (Eggert, Thompson, Herting, & Nicholas, 1995). The one selective prevention program labeled as effective by the EBPP was Counselors-CARE/Coping and Support Training (Thompson, Eggert, Randell, & Pike, 2001). These two programs were tested by the same research group. Reconnecting Youth is a suicide prevention program for high school students identified as at risk for school dropout. Peers, school staff, and parents were used to deliver four different components of the intervention: school bonding activities, parent involvement, crisis response planning, and a class offered daily for one semester (eighty classes of fifty minutes each). A primary goal of Reconnecting Youth was to enhance feelings of personal control and self-esteem, using skills training to improve decision making, social support from teachers and peers, anger management, and communication. The Eggert et al. (1995) study compared students who screened positive for suicide risk behaviors and who took part in the intervention for one semester ($N = 36$), two semesters ($N = 35$), or who received a comprehensive assessment only ($N = 35$). All three groups demonstrated a reduction in suicidality, depression, hopelessness, and anger at the end of the school year. Only the two intervention groups demonstrated an improvement in level of personal control at follow-up.

The developers followed up their Reconnecting Youth program with a briefer version targeted at potential school dropouts who screened positive on a suicide risk measure. Participants were randomized to one of three conditions. Counselors-CARE (C-CARE) consisted of a two-hour assessment interview followed by a two-hour individual motivational counseling session and social connections intervention designed

to link each youth with a school-based case manager, a favorite teacher, or both, as well as a parent. The second condition, Coping and Support Training (CAST) consisted of C-CARE plus a twelve-session coping skills and small-group support program targeting mood management, school performance, and drug use. The third condition was the school's standard of care for at-risk students—a brief assessment, referral to a school counselor, and notification of parents. At nine-month follow-up, both C-CARE and CAST members demonstrated significant improvement in suicidal ideation, depression, and hopelessness compared to the standard care group. CAST was more successful in enhancing personal control and problem solving than the other two conditions.

There are several shortcomings to school-based prevention programs. First, even if a program is effective, confidentiality concerns may limit the number of students who seek help from teachers and other school personnel. Another possible limitation of suicide prevention programs is their specificity. Prevention programs that focus on general mental health skills such as problem-solving, crisis management, mood management, and social skills may be more beneficial to students than programs focusing simply on suicide. Similarly, Kalafat (2003) noted that programs promoting protective factors such as contact with caring adults and a sense of connection with school, family, and community may be preferable to suicide-specific awareness programs. However, these programs are relatively uncommon.

The literature to date has not typically addressed other relevant markers of prevention program effectiveness, such as level of implementation difficulty, cost-effectiveness, and potential for dissemination (Burns & Patton, 2000). One limitation in implementation is lack of fidelity when programs are transported to the community. Kalafat and Ryerson (1999) recommend taking several steps to improve implementation fidelity, including discussing the particulars of the program with key stakeholders in order to address resistance and barriers. In addition, providing additional one-time training has been found to improve helper competency for as long as six months (Chagnon, Houle, Marcoux, & Renaud, 2007). One key to sustainability of these programs is supportive administrators and teachers. Kalafat and Ryerson (1999) noted that identifying core elements that must be retained and others that can be modified or eliminated assists sustainability, but may also impede effectiveness.

### *Screening*

*Screening* is a method to identify high-risk individuals, rather than populations, who would benefit from further assessment and then possibly referral for treatment. Screening can directly assess suicidality or can address underlying risk conditions, such as depression, associated with suicidal behavior. For adolescents, screening occurs primarily in schools. The most well-researched screening program is the Columbia Teen Screen (McGuire & Flynn, 2003).

The Columbia Teen Screen program consists of multiple stages to identify adolescents at risk for suicide. In the first stage, consent from parents for screening is obtained. In the second stage, the eleven-item Columbia Suicide Screen is administered. This

measure assesses symptoms of depression, substance abuse, suicidal ideation, and past suicide attempts. The screen items are embedded within thirty-two general health questions and four items on relationships and family concerns. Administration time is approximately ten minutes. The performance of the teen screen was examined in 1,729 high school students in the New York area. The sensitivity of the screen was 0.75, while specificity was 0.83 (Shaffer et al., 2004). The relatively low specificity indicates the need for a second-stage evaluation to reduce false positives.

Adolescents who screen positive on the Teen Screen are then administered a voice-activated, computerized psychiatric diagnostic interview, the Voice Diagnostic Interview Schedule for Children (Voice-DISC). In the fourth stage, a clinician conducts a brief clinical evaluation based on the diagnostic report provided by the Voice-DISC. If no significant psychiatric difficulty is noted in the interview or the adolescent is already receiving treatment, no further action is required. If the interview reveals significant psychiatric disturbance, the clinician or a case manager contacts the adolescent's parents and a referral is arranged.

McGuire and Flynn (2003) discussed several models of screening being used across the country to implement the Teen Screen program. In one model, a master's-level mental health clinician is hired to work full-time in the school to manage all the steps of the program, from screening to referral. In a second model, a part-time bachelor's-level clinician completes the first stage of the screen and then refers positive screens to the school guidance counselor for further evaluation and referral. In a third model, screening is considered part of the school guidance counselor's responsibilities. In this model, the guidance department conducts all stages of the program. In a variant of this third model, a school-based health center takes the place of the guidance department in implementing the program. In a fourth model, outside personnel are hired to come into a school for a brief period of time to conduct the screen, Voice-DISC, clinical evaluations, and referrals.

There are several limitations to screening model programs like the Columbia Teen Screen. First, there may be resistance to implementation of such programs by school staff. Eckert, Miller, DuPaul, and Riley-Tillman (2003) conducted a survey that exemplifies the need to obtain buy-in from key personnel responsible for implementation of a screening program. The responses of 211 school psychologists to a survey about suicide prevention programs indicated that in-service training and curriculum-based programs were significantly more acceptable than a schoolwide screening program.

One reason for resistance to screening is the fear that asking about suicidality will trigger increased incidences of suicidal ideation and behavior. However, one study found that this was not the case. Gould et al. (2005) conducted a study of students who took part in a two-day screening. Students were randomly assigned to a baseline screen with and without suicide-related questions. Two days after the initial screening, students who had been exposed to questions about suicide were slightly more likely to report suicidal ideation (4.7 percent) than those who were unexposed (3.9 percent).

Resistance can also be related to greater workloads, uneasiness in managing suicidal adolescents, and lack of referral resources. The lack of availability of treatment

services for adolescents who screen positive in many communities is particularly problematic. When services are available, adolescents and their families often have difficulty accepting the fact that they need further evaluation and treatment. There are at least two other potential limitations. First, there can be considerable costs involved in the program, and they vary by the model chosen for implementation. Second, there is some concern that screening may not adequately identify minority adolescents at risk of suicide. Kataoka, Stein, Lieberman, and Wong (2003) reviewed the results of a gatekeeper model adolescent suicide prevention program that has been in place in the Los Angeles school system since 1986 and found that Latino students were being underidentified relative to their percentage of the school population.

### *Means Restriction*

A number of approaches have been used to prevent access to lethal means as a suicide reduction strategy. As discussed previously, firearms are the most common method of suicide among adolescents. This is true for males and females, younger and older adolescents, and for all races. Primary prevention of suicide involves reducing access to the means. Brent, Perper, Moritz, Baugher, and Allman (1993) examined the characteristics of suicide in adolescents with no apparent psychopathology and found that the presence of a loaded gun in their homes distinguished these suicides from the comparison groups. They concluded that for suicides in which impulsivity is a major determinant, preventing access to methods might be the most beneficial prevention strategy.

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Beautrais, Fergusson, and Horwood (2006) compared suicide data for eight years before and ten years after restrictive firearms legislation was introduced in New Zealand. The rate of suicide in youth (fifteen to twenty-four years old) was reduced by 66 percent after legislation was introduced. Brent and Bridge (2003) conclude that restrictive gun regulations contribute to a reduction in youth suicide rates. However, method substitution—leading to an increase in another suicide method such as hanging—has been found in some studies.

The findings discussed above suggest that the dissemination of information to parents about the risk of keeping firearms in the home would be useful. Kruesi, Grossman, Pennington, Woodward, Duda, and Hirsch (1999) provided a three-step intervention called *means restriction* to the parents of adolescents who were seen at an emergency room and who were at risk for suicide. The intervention involved informing parents that their child was at increased risk for suicide, explaining to parents that limiting access to lethal means could reduce risk, and educating parents on ways to limit access to lethal means. At two- to three-month follow-up, the parents in the experimental group were more likely to have taken steps to limit access to lethal means. Five out of eight households that had firearms took actions to limit access to firearms after the program, compared to 0.7 in the control group.

### *Media*

The media can be used in a proactive way to inform people about suicide and to provide education regarding the importance of early detection of risk factors. Suicide prevention programs for the general public typically address depression and the subsequent risk for suicide. Such educational programs may also help decrease the stigma about suicidality, emotional problems, and the use of mental health services. Mann et al. (2005) concluded that these public education programs have modest effects at best on attitudes.

The media can also exacerbate suicide risk by glamorizing suicide. Stack (2005) noted that nonfictional stories about a suicide are more likely than fictional stories to result in imitative suicide. Stack reviewed fifty-five studies and concluded that nonfictional stories about celebrities were 5.27 times more likely to result in imitative suicide, stories on female suicide were 4.89 times more likely to report a copycat effort, and stories reported on television rather than in newspapers were 79 percent less likely to find a copycat effect.

Gould, Jamieson, and Romer (2003) reviewed the literature specifically on adolescents and concluded the evidence is stronger for imitative effects from the news media than from fictional stories. Nonetheless, a few studies have found increased rates of suicide and suicide attempts following television shows about suicide. Gould et al. (2003) concluded that journalists need to be educated about ways to report on suicide to minimize imitation and encourage help seeking. Media guidelines have been prepared by the Centers for Disease Control and Prevention (O'Carroll & Potter, 1994). The CDC's suggestions include limiting the description of the suicide method, limiting the amount of media coverage, providing the telephone numbers of crisis centers or mental health agencies as a public service, and establishing a specific mental health liaison with the media.

## SUMMARY

Adolescent suicide as a preventable public health problem is a significant concern, because suicidal behaviors have increased steadily over the last few decades among people aged fifteen to twenty-four, especially males. Social disorganization, developmental-task challenges, migration and mobility, acculturation, family and personal disorganization, diminished moral values, increases in the rate of substance use, access to firearms, and the influence of the media, including exposure to images of violence, have been hypothesized to account for these recent trends in the increase in attempted and completed suicide by adolescents. Prevention of suicidal behavior in the general population of adolescents focuses on general suicide awareness and education, as well as fostering protective factors. These general prevention programs have demonstrated only modest success in changing attitudes toward suicide, with little effect on actual suicidal behavior.

Prevention programs that either screen to identify high-risk individuals or select high-risk groups as the initial focus of a program appear to be more effective in reducing suicidal behavior than awareness and education programs. Thus, universal prevention programs that identify high-risk groups may be the most effective suicide prevention method for

adolescents at this time. The cost-effectiveness of screening the general population to identify individuals still needs to be determined and compared to identification of high-risk populations a priori (Mann et al., 2005). Nonetheless, there is sufficient research available now that prevention programs with some evidence can be chosen for implementation. Moderators of effectiveness (such as racial differences) will be important to examine in future research, as well as the best means by which to enhance the protective factors that keep adolescents with high-risk profiles from progressing to suicidal behavior.

## KEY TERMS

Evidence-Based Practices Project (EBPP)
Means restriction
Screening

## DISCUSSION QUESTIONS

1. What are the benefits and drawbacks of the screening method for identifying high-risk individuals? Do you feel that screening is objective?
2. Discuss possible primary and secondary prevention strategies for suicide among adolescents.
3. Do the media glamorize or sensationalize suicide? How could changes in policy affect the portrayal of suicide within the media?
4. Are there significant differences between adolescents who attempt suicide and those who complete suicide? As an emerging health professional, what do you believe is the best way to prevent the onset of suicidal behavior, thus reducing the rates of completed suicide?

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