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School-Based Suicide Prevention Programs: Are They Effective?

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Abstract: The efficacy of adolescent suicide prevention programs in school settings has recently been criticized, especially for students who are at-risk for suicidal behavior. The theoretical orientation, targeted populations, goals, and methods for examining efficacy of school-based programs are reviewed. Results showed that most programs are of short duration, follow a stress-related model, and fail to assess actual suicidal behaviors. The methodology for measuring efficacy for most programs also was flawed, using acquisition, knowledge, or attitude changes as a measure of effectiveness, rather than a reduction in suicidal behavior. Thus, the effectiveness of these school-based prevention programs in reducing actual adolescent suicidal behavior is seriously questioned. The mixed results reported in this review and their implications for school psychologists, mental health professionals, and students are discussed. Suggestions and recommendations are made for current practice and future research.

The problem of adolescent suicide and suicidal behavior continues to be a major concern for both school personnel, including school psychologists, faculty, and administrators, and parents. Suicide is a leading cause of death in adolescents aged 15-19 years (National Institute of Mental Health, 1992). Unfortunately, this problem is not limited to high school adolescents; in fact, there has been a dramatic increase in the suicide rate of younger students aged 10-14 years. According to the Center of Disease Control (CDC, 1995), from 1980 to 1992 the suicide completion rate for students 10 to 14 years old increased 120% compared to 28% for adolescents 15 to 19 years old. Examining the behavior of suicide itself does not reflect the severity of the problem because suicide is only one behavior and the rarest among a continuum of suicidal behaviors that include suicide attempts, suicidal intent, and suicidal ideation (Ladame & Jeanneret, 1982; Reynolds, 1988). The magnitude of this problem becomes apparent when the statistics of these other suicidal behaviors are examined. For example, approximately 7 to 8% of high school students attempt suicide each year (CDC, 1991; Dubow, Kausch, Blum, Reed, & Bush, 1989; Garrison, McKeown, Valois, & Vincent, 1993), and approximately 10 to 13% of junior and senior high school adolescents at any given time have moderate to severe levels of suicidal thoughts (Garrison, Addy, Jackson, McKeown, & Waller, 1991; Reynolds, 1988; Smith & Crawford, 1986).

Background Information on Suicidal Adolescents

Although it is beyond the focus and scope of this article to discuss in detail characteristics of adolescent suicidal behavior, some general knowledge of suicidal adolescents may be useful for school psychologists working with at-risk youth. The following is an extremely brief overview of the descriptive characteristics, risk factors, and myths of suicidal adolescents of which school psychologists should be aware (for more detailed information, see Berman & Jobes, 1991; Brent, 1995; Reynold & Mazza, 1994).

Descriptive Characteristics. Research examining suicidal behavior in adolescents has shown gender differences between adolescents who attempt suicide versus those who complete suicide (CDC, 1992; Eisenberg, 1984; Garfinkel, Froese, & Hood, 1982). Female adolescents attempt

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suicide approximately three times more often than males (Eisenberg, 1984; Garfinkel et al., 1982); however, males commit suicide about five times more frequently than females (Berman & Jobes, 1991; Shafii, Steltz-Lenarsky, Derrick, Beckner, & Whittinghill, 1988). Self-inflicted gunshot wounds are the most common method of committing suicide for male and female adolescents (Berman & Jobes, 1991), while ingestion of pills is the most common method of suicide attempts chosen by adolescents (Berman & Jobes, 1991; Reynolds & Mazza, 1993).

Risk Factors. Research examining adolescent attempters and completers has identified numerous risk factors including psychopathology (Brent et al., 1993; Marttunen, Aro, Henriksson, & Lonnqvist, 1991; Shafii et al., 1988), previous attempt history (Lewinsohn, Rohde, & Seeley, 1993; Shafii, Carrigan, Whittinghill, & Derrick, 1985), hopelessness (Cole, 1989; Mazza & Reynolds, 1997), negative personal history (Lewinsohn et al., 1993), and access to and availability of guns (Boyd, 1983; Brent et al., 1988). For adolescents, the presence of mental illness coexisting with suicidal behavior is quite prevalent (Brent et al., 1988; Brent et al., 1993; Shafii et al., 1988). Shafii and colleagues (1988) reported, based on psychological autopsies they conducted, that 95% of the adolescents who had committed suicide qualified for at least one mental disorder. Similar high rates of psychopathology, such as depression and conduct disorder, were reported by Brent et al. (1988) in suicide completers and attempters. For more details regarding risk factors for suicidal adolescents, see Brent et al. (1993) and Brent (1995).

Myths. There are several myths surrounding adolescent suicidal behavior that need to be dispelled (Reynolds, 1988). The first and foremost is that talking about suicide will promote suicidal behavior; research has shown that this is not the case and that actually talking about suicide and suicidal behavior provides adolescents with an avenue to talk about their feelings (Reynolds, 1988; Reynolds & Mazza, 1994; Shafii et al., 1985). A second myth is that adolescents who attempt suicide act impulsively and do not have any prior suicidal thoughts (Reynolds, 1988). Research by Shafii et al. (1985) and Brent et al. (1993) showed that adolescents who completed suicide frequently had engaged in previous suicidal behavior. A third myth is that parents are often aware of their child's suicidal behavior. Kashani, Goddard, and Reid (1989) showed that 86% of parents were unaware of their child's suicidal tendencies.

In response to the problem and increased rate of adolescent suicide and suicidal behavior, there has been a dramatic increase in the number of suicide prevention programs implemented in the schools within the past 15 years (Garland, Shaffer, & Whittle, 1989). However, the effectiveness of these programs, especially for those who pose the greatest risk for future suicidal behavior, has come under strong criticism (Garland et al., 1989; Shaffer, Garland, Gould, Fisher, & Trautman, 1988). This article examines the empirical literature on suicide prevention programs and presents some critical issues that need to be addressed before implementing suicide prevention programs in the schools. Based on the review of current research and literature on this topic, suggestions for determining the effectiveness of future programs will be made.

School-Based Suicide Prevention Programs

As the problem of adolescent suicide and suicidal behavior gained attention in the 1980s, there was a significant increase in the number of suicide prevention programs being implemented in the schools. Garland et al. (1989) reported that the number of schools using these programs doubled from 789 to 1,709 between 1984 to 1986. They also reported that more than two-thirds of the programs were of short duration, 2 hours or less (Garland et al., 1989). Given the lethal nature of the problem and the dramatic increase in the use of suicide prevention programs, the goals, theoretical orientation, and overall structure, including methods for examining efficacy of these programs, deserve further investigation. Table 1 provides a summary of the research studies that have been conducted to

Table 1
A Summary of the Efficacy Studies for Suicide Prevention Programs in the Schools

Authors	Participants	Theoretical Orientation	Targeted Students	Length of Program	Measurement of Effectiveness	Measurement of Suicidal Behavior	Identified At-Risk Youth for Suicide	Comments
Ross, 1980	teachers & school personnel	unknown	universal	unknown	increased calls for referrals and back-up support	none	no	Two brochures were developed, one for school personnel and one for students.
Ashworth, Spirito, Colella, & Benedict-Drew, 1986	9th graders from 8 high schools—4 experimental & 4 controls	stress	universal	6 sessions	pre-post, students' attitudes, knowledge, & hopelessness	none[1]	no	Significant gains were reported in knowledge, increased helping behaviors, and decreased levels of hopelessness.
Nelson, 1987	8 high schools	unknown	universal	4 hours	pre-post students' knowledge & attitudes	none	no	School staff and parents were provided with suicide awareness seminars.
Spirito, Overholser, Ashworth, Morgan, & Benedict-Drew, 1988	5 high schools, 3 experimental & 2 controls	stress	universal	6 weeks	pre-post, students' knowledge, attitudes, & hopelessness	none[1]	no	Changes in attitude were more a function of the combined pretest and curriculum, rather than the curriculum itself. No negative effects of the curriculum resulted on the assessment measures. Females appear to benefit more from the curriculum than males, but baseline differences were not controlled.

(Table continues)

Table 1, continued

Authors	Participants	Theoretical Orientation	Targeted Students	Length of Program	Measurement of Effectiveness	Measurement of Suicidal Behavior	Identified At-Risk Youth for Suicide	Comments
Overholser, Hemstreet, Spirito, & Vyse, 1989	9th graders from 3 high schools	stress	universal	5 sessions	pre-post, students' knowledge, attitudes, & hopelessness	none[1]	no	Gender differences were examined. Females showed reduced levels of hopelessness, less reliance on maladaptive coping strategies, and better evaluative attitude. Males showed a slight increase in hopelessness and an increase in maladaptive strategies and negative evaluative attitudes.
Shaffer, Vieland, Garland, Rojas, Underwood, & Busher, 1990	7 high schools, 4 experimental & 3 controls	2 programs: (a) mental illness; (b) mental illness	universal	(a) 3 hours (b) 1.5 hrs.	pre-post, students' attitudes, suicide attempt status, reaction to programs.	yes, suicide attempts	yes	Attempters were compared to nonattempters. Attempters' reactions to the program were more negative than those of nonattempters. Program exposure did not influence attempters' deviant attitudes. Attempters were less likely to recommend that programs be presented to others. None of the attempters rated the program as upsetting, but were more likely to know someone who was upset by the program than nonattempters.

(Table continues)

Table 1, continued

Authors	Participants	Theoretical Orientation	Targeted Students	Length of Program	Measurement of Effectiveness	Measurement of Suicidal Behavior	Identified At-Risk Youth for Suicide	Comments
Shaffer, Garland, Vieland, Underwood, & Busner, 1991	11 high schools: 6 experimental & 5 controls	3 programs: (a) mental illness (b) stress (c) stress	universal	(a) 4 hours (b) 3 hours (c) 1.5 hrs.	pre-post, students' knowledge, attitudes, program acceptability, and resources available	yes suicidal preoccupations	yes	Gender and ethnicity differences were examined. Most students found the programs interesting, with females and minorities rating the programs more positively. A high proportion of students on the pretest had subscribed to program goals. The programs were likely to reinforce that suicide is related to stress. A small but significant number of students who had been exposed to the program changed their opinions from suicide never being a solution to it could be. Programs increased students' knowledge about where to get help. A small number of students reported that being exposed to the program made their problems worse.

(Table continues)

Table 1, continued

Authors	Participants	Theoretical Orientation	Targeted Students	Length of Program	Measurement of Effectiveness	Measurement of Suicidal Behavior	Identified At-Risk Youth for Suicide	Comments
Ciffone, 1993	10th graders from 3 high schools	mental illness	universal	1 session	pre-post students' attitudes	none	no	During the pretest, a majority of adolescents do *not* hold a sensible or accurate view of suicide, would *not* seek help for themselves, and would *not* encourage a friend to see a mental health professional. Program did not change the attitude of 55% of the students who viewed suicide as a possible solution.
Orbach & Bar-Joseph, 1993	11th graders from 6 high schools	stress	universal	7 sessions	pre-post, students' suicide potential, hopelessness, & coping skills	yes suicide prevention	no	Suicide potential scores were reduced for those students in the program. Results were mixed regarding hopelessness. Program was effective in reducing suicide potential with conduct disorder students, but they stated that the program was too exposing.

(Table continues)

Table 1, continued

Authors	Participants	Theoretical Orientation	Targeted Students	Length of Program	Measurement of Effectiveness	Measurement of Suicidal Behavior	Identified At-Risk Youth for Suicide	Comments
Kalafat & Elias, 1994	10th graders from 2 high schools	stress	universal	3 sessions	pre-post, students' attitudes and knowledge	none[1]	no	Pretest effect regarding knowledge gains were not significant. Students who received the curriculum still less likely to tell a friend to call a mental health center. 4% believed the classes would make it harder to deal with a friend's problem. Most students hold a sensible view regarding suicide and these views were unaffected by the curriculum.
Eggert, Thompson, Herting, & Nicholas, 1995	9–12th graders from 5 high schools	mental illness & stress	selected those at-risk for school failure	5 and 10 months	pre-post and follow-up, suicidal behavior, stress, hopelessless, depression, anger, social support, personal control, & self-esteem	yes past attempts current ideation	yes	Suicidal behaviors, stress, anger, hopelessness and depression were significantly reduced for the assessment only, 5-month, and 10-month groups compared to baseline. Self-esteem and social support increased for all 3 groups. The assessment-only group was as effective as the 5-and 10-month curriculum program except for personal control. Results were similar for the 5-month and 10-month programs.

[1]Measured exposure to peer suicidal behavior.

examine the efficacy of suicide prevention programs in the schools and will be used as a guideline for discussing issues and concerns regarding prevention programs. Several studies that examined the efficacy of programs implemented after a suicide completion (Hazell, 1991; Hazell & Lewin, 1993) or those targeted at nonschool-based populations (Rotheram-Borus & Bradley, 1991) were not included because their primary goals and methodology were different, even though they may be effective in preventing further suicidal behavior. Furthermore, studies that were not self-identified as prevention programs also were not included, even though they may share similar underlying goals in preventing suicidal behavior (Reynolds, 1991).

Goals of School-Based Suicide Prevention Programs

One of the central components of suicide prevention programs is the goals. In their review of more than 100 programs, Garland et al. (1989) found that most programs focused on a similar set of broadly defined goals that included (a) heightening the awareness of adolescent suicidal behavior, (b) assisting with at-risk case identification, and (c) providing students and staff with information about mental health resources and how to access them. A small set of programs also had as a priority a fourth goal—improving students' coping strategies (Shaffer et al., 1988).

Although the set of broadly defined goals of these programs are stated as preventative, this is somewhat misleading, because these programs offer secondary and tertiary prevention rather than primary prevention (Silverman & Felner, 1995a, 1995b). Further examination of the goals and the purpose behind them show that, with the exception of coping strategies, they are in the areas of suicidal behavior education and early identification, which are not synonymous with primary prevention. The first goal is to increase the sensitivity and knowledge base about adolescent suicidal behavior, providing information about the risk factors, recognizing clues and dispelling myths; however, the underlying purpose of this is actually the second goal: assisting with the recognition and identification of peers who may be at-risk for suicide. Research has shown that adolescents who are at-risk for suicidal behavior confide in their peers before talking to adults (Ross, 1980, 1985; Spirito, Overholser, Ashworth, Morgan, & Benedict-Drew, 1988). The third goal is an intervention strategy; the person is already at-risk, therefore, what resources are available and how does one access them? The fourth goal actually focuses on trying to help adolescents choose effective coping strategies when problems do occur, with the intention of eliminating suicide as a possible coping strategy. However, combining this goal with the others does not constitute an "immunization" against self-destructive behaviors, as has been previously stated (Orbach & Bar-Joseph, 1993). With the primary focus of these programs really being on education and identification, a more accurate and appropriate classification of these programs would be suicidal behavior educational and early identification programs, rather than suicide prevention programs.

Correctly identifying the primary underlying goals of these programs raises an additional issue that deserves mentioning. There have been early identification programs or procedures, although not labeled as prevention programs, which achieve the same goals, such as the two-stage screening model proposed by Reynolds (1986, 1988). These types of programs have been shown to be effective in identifying at-risk youth for suicidal behavior (Reynolds, 1991) and have been recommended by others who have conducted efficacy studies of suicide prevention programs (Shaffer, Garland, Vieland, Underwood, & Busner, 1991; Shaffer et al., 1990). Failure to use such programs will be discussed later in this article (see the section entitled *Measurement and Evaluation of Suicidal Behavior Programs*).

Theoretical Orientation of Suicide Prevention Programs

The theoretical orientation of most suicide prevention programs may be one of the contributing factors to the negative effects that have been reported. In their review of

115 suicide prevention programs, Garland et al. (1989) reported that 96% of the programs subscribed to a "stress model" theoretical orientation. The stress model orientation also was central in 7 of the 11 efficacy studies reviewed in Table 1. This type of theoretical orientation represents suicide as a response to a significant or extreme amount of stress, ignoring the substantial amount of research that has shown that adolescent suicide and suicidal behavior is strongly associated with mental illness or psychopathology (Brent et al., 1986; Brent et al., 1993; Lewinsohn et al., 1993; Shafii et al., 1985; Shafii et al., 1988). The stress model orientation also has been criticized strongly because it "normalizes" suicide and suicidal behavior, suggesting that given enough stress, everyone may be vulnerable to suicide (Ciffone, 1993; Hoberman & Garfinkel, 1988; Shaffer et al., 1988). Furthermore, portraying suicide as an outcome of stress may actually increase the likelihood of suicidal behavior because suicide may be viewed as a viable alternative under stressful conditions (Shaffer et al., 1988).

In a review by Garland et al. (1989), several program directors avoided using a mental illness model because they feared that linking suicidal behavior to psychopathology would discourage students from disclosing their own or a peer's true suicidal intent. However, Shaffer et al. (1988) took the opposite position. They argued that emphasizing the relationship between mental illness and suicide may make suicide or suicidal behavior a less appealing method for coping with problems thereby prompting individuals to seek professional services. In addition, Garland et al. (1989) suggested that using a medical model of mental illness and linking it to suicide may be more acceptable to the public than characterizing suicide in terms of behaviors caused by stress.

Targeted Population of Suicide Prevention Programs

A second reason that some suicide prevention programs have shown limited effectiveness may be because they used a universal strategy, targeting all students rather than those most at-risk for suicide (Garland et al., 1989). A universal strategy is directed to all students regardless of their previous behavior or current risk status. Of the studies listed in Table 1, 10 of the 11 used a universal strategy.

The utility of an universal strategy for a low base-rate problem such as suicide has been criticized (Garland et al., 1989; Shaffer et al., 1988). Garland and colleagues (1989) stated that targeting all students for suicide prevention is actually a low-risk strategy given the small portion of adolescents who commit suicide. Using statistics obtained from the U. S. Bureau of Census (1988), Garland and associates noted that of the 172,000 students who participated in suicide prevention programs in the 1986-1987 school year, less than 1% of the adolescents 15 to 19 years old who committed suicide (based on National Center for Health Statistics 1985 data cited by Garland et al., 1989) would have been exposed to these programs. Although this statistic does not negate the fact that saving one life is worthwhile, the same effort and monies that were used for the universal programs may have been better spent on programs for adolescents who had already been identified as at-risk for suicidal behavior. For example, a screening procedure completed by all students to identify those who are at-risk or who have engaged in previous suicidal behavior (Reynolds, 1988, 1991) would represent a high-risk strategy and may be more efficient and cost-effective.

One additional point needs to be discussed regarding preventative programs for suicidal behavior targeted at all students. Research has shown that adolescents who commit suicide or engage in suicidal behavior frequently suffer from psychopathology, such as depression or conduct disorder (Brent et al., 1988; Brent et al., 1993; Marttunen et al., 1991; Shafii et al., 1988), and that they are the least likely to attend preventative educational programs (Berman, 1990). Therefore, specifically targeting at-risk students for these programs is necessary to ensure that resources and intervention services are provided for those students who need them the most.

Measurement and Evaluation of Suicidal Prevention Programs

A third concern about many suicide prevention programs is methodological; they do not employ measures to assess actual suicidal behaviors in evaluating their effectiveness. Even though suicide is a low base-rate event, other suicidal behaviors such as attempts and ideation occur with greater frequency in school-based adolescents (CDC, 1991; Garrison et al., 1993; Reynolds, 1988; Reynolds & Mazza, 1994; Smith & Crawford, 1986). Therefore, suicidal behaviors could be used as dependent measures in program evaluation studies (Potter, Powell, & Kachur, 1995; Rotheram-Borus & Bradley, 1991). It is perplexing that many researchers in the field of suicidology advocate for screening measures that directly assess suicidal behavior (Berman & Jobes, 1991; Eggert, Thompson, Randell, & McCauley, 1995; Garrison, 1989; Garrison et al., 1993; Poland, 1989; Reynolds & Mazza, 1994; Smith & Crawford, 1986), yet these measures are seldom employed in suicide prevention programs. Furthermore, it is difficult to understand why most programs that are designed for suicide prevention/intervention do not assess suicidal behavior or measure the reduction of suicidal behavior in an effort to demonstrate program effectiveness.

In addition to measuring suicidal behaviors as a means of efficacy, prevention programs should include a long-term follow-up component (Spirito et al., 1988). Although short-term efficacy is expected in programs (Ashworth, Spirito, Colella, & Benedict-Drew, 1986), suicidal ideation, suicide attempts, or both may reoccur in at-risk students. A long-term follow-up component would evaluate whether students implement curriculum-learned strategies or access resources that were highlighted in the program (Spirito et al., 1988). Long-term follow-up evaluations would determine if the effects of a program have a lasting impact on the adolescents who completed it.

The limited efficacy of suicide prevention programs also is a measurement issue that needs to be addressed. The research and literature examining the effectiveness of these programs to reduce suicidal behavior, especially in the at-risk population, appears to be minimal (Garland et al., 1989; Shaffer et al., 1988; Shaffer et al., 1991; Shaffer et al., 1990). In fact, several studies showed that prevention programs had the opposite effect. That is, adolescents who were at the greatest risk for future suicidal behavior showed increased levels of hopelessness, more maladaptive coping strategies, and less evaluative skills after the prevention programs were implemented (Overholser, Hemstreet, Spirito, & Vyse, 1989; Shaffer et al., 1991; Shaffer et al., 1990).

The evaluation of efficacy for these programs is complicated by the different types of measures that are used across programs as well as the structure of the programs. Given that one of the central goals of the programs reviewed by Garland et al. (1989) was to provide information about adolescent suicide (i.e., warning signs, myths), a popular approach to evaluating a program's effectiveness has been to measure students' knowledge gains after the program curriculum (Ashworth et al., 1986; Nelson, 1987; Overholser et al., 1989; Spirito et al., 1988).

In general, studies evaluating program effectiveness used a pretest-posttest design and showed significant improvement in students' knowledge after completing the program (Ashworth et al., 1986; Kalafat & Elias, 1994; Overholser et al., 1989; Spirito et al., 1988). However, in one study (Spirito et al., 1988), knowledge gains were attributed to taking a pretest as well as the curriculum itself. They reported that students who completed a suicidal knowledge test prior to the curriculum were sensitized to the issues surrounding suicidal behavior and were more likely to benefit from the program. Similarly, in the study by Eggert, Thompson, Herting, and Nicholas (1995), significant reductions in suicidal ideation, hopelessness, and depression were reported for the assessment only group as well as for the prevention program "personal growth classes." In the study by Kalafat and Elias (1994), even though a majority (64%) of the students stated that the curriculum made it easier to "deal with friends' problems," there was a small percentage (4%) of students who stated the opposite and there was an equal percentage of students who

stated that they knew someone who was either "helped a lot" or "upset a lot" by the curriculum classes.

The efficacy studies using pretest-posttest designs also have shown some negative effects of the prevention curriculum (Overholser et al., 1989; Shaffer et al., 1991; Shaffer et al., 1990). In the Overholser et al. (1989) study, males and females were examined separately. Although the results showed that the curriculum had positive effects for females in reducing levels of hopelessness, evaluative and experiential attitudes, and reliance on maladaptive strategies, the opposite was true for males. Similarly, Shaffer et al. (1991) reported a small but significant number of students who had stated on the pretest that suicide was never an option, then changed their opinion on the posttest, stating that suicide was a possible option. These negative effects have serious ramifications for using suicide prevention programs in the schools that cannot be overlooked, especially for male adolescents who are three times more likely to commit suicide than female adolescents (National Institute of Mental Health, 1992).

In conjunction with knowledge gains, change in attitude also has been a common method in assessing program effectiveness (Battaglia, Coverdale, & Bushong, 1990; Ciffone, 1993; Kalafat & Elias, 1994; Nelson, 1987; Overholser et al., 1989; Shaffer et al., 1988; Spirito et al., 1988). Although most of the research was consistent in reporting that those students who attended suicide prevention programs showed increased knowledge of and favorable attitudes toward seeking help compared to those who did not attend, there is no empirical evidence that shows that increased knowledge or change in attitudes translates to a reduction of suicidal behavior (Berman & Jobes, 1995; Ciffone, 1993). Ciffone (1993) concluded that school-based suicide prevention programs that use an educational format are limited, because changes in knowledge or attitudes are not necessarily linked to changes in behavior. Furthermore, in the studies that were reviewed in Table 1, several researchers reported that the curriculum had little or no effect in changing the attitudes of some students, especially those who viewed suicide as a possible solution (Ciffone, 1993; Overholser et al., 1989; Spirito et al., 1988). In fact, Overholser et al. (1989) reported that males showed a slight increase in maladaptive coping strategies and in negative evaluative attitudes after completing the curriculum, the opposite of the desired direction. Thus, the relationship of knowledge gains and attitude changes affecting suicidal behavior remains unsubstantiated (Ciffone, 1993; Overholser et al., 1989; Shaffer et al., 1988; Shaffer et al., 1991; Spirito et al., 1988).

The results cited regarding the limited efficacy of these suicide prevention programs, in conjunction with several studies reporting negative effects for some at-risk students, have serious implications for the implementation of such programs in the schools. The problem is further exacerbated by some state laws that require that suicide prevention programs be implemented in the schools without sufficient efficacy data. There are six states that currently have laws that require that some type of suicide prevention program be implemented in the schools (i.e., California, Connecticut, Florida, Maryland, Rhode Island, and Wisconsin), with Hawaii, Oregon, and Texas submitting similar legislation in their states (Garland & Zigler, 1993; Metha, Weber, Chen, & Dode, 1993). The effort of these states should be applauded; however, requiring the implementation of suicide prevention programs that have not been shown to be effective and that may actually have negative consequences in certain at-risk populations is problematic. Similarly, Potter et al. (1995) stated that suicide prevention and intervention program development needs to be based on scientific research while upholding ethical standards of causing no harm.

Where Do We Go From Here?

Researchers, youth prevention committees, state legislators, school board committees, and school psychologists and administrators have all recognized that suicide and suicidal behavior is a serious problem for our youth. Community-wide and state-wide efforts continue to be necessary to reduce and eliminate a multifaceted complex prob-

lem like youth suicide and suicidal behavior. Clarification of the targeted populations and goals of suicide prevention programs may assist in providing students with appropriate resources and services to reduce and prevent suicidal behavior. Still, we need to improve the efficacy of the effort, time and money allocated to suicide prevention programs. Current school-based curriculum programs employing low-risk strategies have shown limited efficacy, and their success in reducing actual suicidal behavior is unknown. Furthermore, several researchers have reported adverse effects in attitudes and coping strategies regarding suicide (Overholser et al., 1989; Shaffer et al., 1991; Spirito et al., 1988) in the very population they were designed to help. This suggests that the structure and underlying premise of many current school-based prevention programs needs to change. Berman and Jobes (1995) also have suggested that the development of suicide prevention programs is a process and that current and future prevention programs need to address the inadequacies of earlier programs. The following changes are, therefore, recommended for future suicide prevention programs:

1. Prevention programs should change to a mental illness model rather than a stress model to explain suicidal behavior (Ciffone, 1993; Hoberman & Garfinkel, 1988; Shaffer et al., 1988). This would include highlighting the empirical research linking psychiatric disorder (i.e., affective disorders, substance abuse, and personality disorders) to adolescents who complete or attempt suicide (Brent et al., 1986; Brent et al., 1993; Shafii et al., 1988).

2. Prevention programs should include assessment instruments that examine actual suicidal behaviors (i.e., ideation, attempts). These assessment instruments should be used at the beginning of a program to identify at-risk youth or those who have already engaged in past suicidal behaviors (Eggert, Thompson, Randell, et al., 1995; Reynolds, 1988, 1991; Reynolds & Mazza, 1994). Similarly, school psychologists need to be educated on the different types of assessment instruments available and how to evaluate the suicidal risk status of adolescents.

3. Empirical evidence needs to be gathered to show whether the programs are effective in reducing suicidal behavior (i.e., ideation, attempts) and suicide during short and long-term periods (Ashworth et al., 1986). A short-term assessment could cover several months and would reflect the immediate impact of the program. A long-term assessment should cover one to three years to allow time for students to implement procedures or strategies that were learned in the program.

4. Prevention programs should focus on targeting at-risk populations on multiple dimensions of suicidal behavior, such as suicidal ideation and attempts, rather than targeting everyone (Reynolds, 1991; Shaffer et al., 1991). This would ensure that those who are identified as at-risk are included in the prevention program.

5. Prevention programs should increase collaboration between research and community resources, especially regarding alcohol use, gun control, and treatment facilities and programs for those who are at-risk for suicidal behavior (Battaglia et al., 1990; Eggert, Thompson, Randell, et al., 1995; Garland & Zigler, 1993).

Summary and Conclusion

The problem of suicide and suicidal behavior is an unfortunate reality facing many adolescents today. Although there has been an increase in the number of schools implementing suicide prevention programs during the past decade (Garland et al., 1989) and an increased awareness of the problem, there is little evidence to support the efficacy of current suicide prevention programs. The cliche "something is better than nothing" appears to be a myth for a selected group of adolescents at-risk for suicidal behavior. Although school-based programs remain the most efficient means for reaching the greatest number of at-risk adolescents, they need to be restructured based on previous research and they need to provide empirical evidence that they reduce suicidal behavior. The problem of adolescent sui-

cide and suicidal behavior is not going to go away quickly. It is going to take a tremendous team effort by researchers, schools, communities and state resources working cooperatively to develop comprehensive and effective prevention programs to reduce suicidal behavior in our youth.

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