

CHAPTER 15

School-Based Prevention and Intervention for Depression and Suicidal Behavior

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INTRODUCTION

Prior to the 1970s, depression among children and adolescents received relatively little empirical or theoretical attention. Indeed, some researchers maintained that depression did not exist in youth and that the criteria listed in the *Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association, 1952)* needed to be modified for use with children and adolescents (Glaser, 1967; Toolan, 1962). Beginning in the 1970s, a number of researchers began to focus on mood disorders in children and adolescents, concluding that depressive disorders clearly occur during this developmental period, are clinically debilitating, and are associated with numerous negative sequelae, including future psychopathology (e.g., Albert & Beck, 1975; Carlson & Cantwell, 1979; Cytryn & McKnew, 1972; Kashani, & Simonds, 1979; Kovacs, Feinberg, Crouse-Novak, Paulauskas, & Finkelstein, 1984; Orvaschel, Walsh-Allis, & Ye, 1988; Rutter, 1986). As a result of these early investigations, epidemiologic and intervention research on depression within school-age youth has increased dramatically over the past two decades.

Depression is now considered to be one of the most prevalent mental disorders among adolescents, with approximately 20% experiencing an episode of depression during the teenage years (Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993; Newman et al., 1996). During the past century, successive birth cohorts appear to have experienced increasingly higher lifetime prevalence rates of depression (Kessler et al., 2003; Lewinsohn, Rohde, Seeley, & Fischer, 1993). Epidemiologic data on the lifetime

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prevalence of depression have indicated a 10-fold increase in the risk in youth over the past century, suggesting that U.S. schools are in an epidemic of depression (Klerman & Weissman, 1989; Seligman, 2000). Adolescent depression predicts future suicide attempts, substance abuse, antisocial behavior, academic problems, interpersonal problems, and unemployment (Gotlib, Lewinsohn, & Seeley, 1998; Lewinsohn, Rohde, Klein, & Seeley, 1999; Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2003; Newman et al., 1996; Reinherz, Giaconia, Hauf, Wasserman, & Silverman, 1999). Unfortunately, most adolescents who suffer from depression do not receive treatment (Lewinsohn, Rohde, & Seeley, 1998b; Newman et al., 1996). The World Health Organization (2007) projects that depression will become the second leading contributor to the global burden of disease by 2020.

Commensurate with the increasing rates of depression has been an increase in suicide among the nation's youth. The suicide rate among youth ages 15–19 is 300% higher than in the 1960s, making it the third leading cause of death in this age group, exceeded only by unintentional injury and homicide (National Center for Injury Prevention and Control, 2002). Many more youth attempt than successfully complete suicide. For every one adolescent suicide death, approximately 32 adolescents are treated for self-inflicted injuries, and even more adolescents make a suicide attempt that does not require medical attention (Lubell & Vetter, 2006). In a recent study, 1 in 6 U.S. high school students disclosed seriously considering suicide in the past year, and 1 student in 12 reported engaging in at least one attempt (Grunbaum, 2003). Youth who attempt suicide are much more likely to make future attempts, and those who make multiple attempts have a heightened risk for committing suicide during adolescence and adulthood (Brent, Baugher, Bridge, Chen, & Chiappetta, 1999; Fombonne, Wostear, Cooper, Harrington, & Rutter, 2001; Shaffer et al., 1996).

Clearly, public health campaigns to effectively prevent and treat depression and suicidal behavior in youth are imperative in order to curtail this insidious epidemic. Given the central role of schools in providing access to mental health services for youth, school settings and staff are essential for mounting large-scale depression and suicide prevention campaigns (Burns et al., 1995). Indeed, there has been a recent call for school psychologists to be catalysts in this regard (Herman, Merrell, Reinke, & Tucker, 2004; Reinke, Herman, & Tucker, 2006).

The purpose of this chapter is to review the current state of the field with respect to implications for school-based intervention efforts for depression and suicidal behavior. In doing so, we describe (a) the public health system's prevention paradigm and alignment with the three-tier intervention model, (b) the scope and nature of the problem of adolescent depression and suicidal behavior, (c) assessment and screening instruments and procedures, and (d) evidence-based universal and targeted prevention approaches and tertiary-level interventions. As it is beyond the scope of this chapter to conduct an exhaustive review of the available intervention programs, we draw upon examples from the research literature to illustrate these various approaches. We conclude by identifying important directions for future school-based intervention research and practice.

PUBLIC HEALTH PREVENTION MODEL

The three-tier intervention model presented in chapter 1 is based on the original public health classification system developed by the Commission on Chronic Illness (1957). The three levels of the model correspond to the three types of prevention: primary, secondary, and tertiary. In 1994, the Institute of Medicine (IOM) proposed an alternative mental health spectrum for psychiatric disorders that ranges from prevention to treatment to maintenance (Mrazek & Haggerty, 1994). In the IOM paradigm, the term *prevention* is reserved for interventions that occur before the initial onset of the mental disorder. Following Gordon's (1983, 1987) classification system for biological disease prevention, the IOM paradigm includes three levels of preventive interventions: *universal*, *selective*, and *indicated*. Universal prevention programs are administered to the entire population regardless of risk status. Selective preventive interventions target subgroups of the population whose risk for developing a disorder is significantly elevated on the basis of known risk factors for the disorder. Indicated prevention programs target individuals who have prodromal or subthreshold symptoms of the disorder but are below the clinical criteria for a diagnosis. Thus, selective and indicated prevention programs can be considered targeted prevention approaches. For the purposes of this review, we align the IOM prevention paradigm with the three-tier model as follows: universal interventions are included in the first tier, targeted interventions (i.e., selective and indicated) are included in the second tier, and treatment interventions are included in the third tier.

The IOM paradigm also proposes the following five stages of preventive intervention research: (a) identify the problem or disorder and review information to determine its extent, (b) determine the risk and protective factors that may be amenable to intervention, (c) conduct pilot studies and efficacy trials aimed at reducing the risk factors and promoting the protective factors, (d) conduct effectiveness trials of the intervention in real-world conditions, and (e) implement the preventive intervention in large-scale community campaigns. As described subsequently in this chapter, considerable progress has been made in the first three stages with respect to extant research on depression and suicide prevention. However, much still remains to be accomplished in the latter two stages in order to reduce the incidence of depression and suicidal behavior.

SCOPE OF THE PROBLEM

During the past 30 years, extensive research has been conducted with respect to the epidemiology and etiology of adolescent depression and suicidal behaviors. The following sections provide a brief review of this research.

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Epidemiology

Depression

According to the *DSM-IV* classification system for mental disorders, depressive disorders include major depressive disorder (MDD) and dysthymia (American Psychiatric Association, 1994). MDD among children and adolescents has the same set of symptoms and criteria for diagnosis as with adults. To meet criteria for MDD, an individual must have experienced five or more symptoms during the same 2-week period. At least one of the symptoms must be either a depressed mood (or irritable mood for children and adolescents) or loss of interest or pleasure. The other symptoms include changes in weight or failure to make necessary weight gains during childhood, sleep problems, psychomotor agitation or retardation, fatigue or loss of energy, feelings of worthlessness or excessive guilt, difficulty concentrating or indecisiveness, and repeated suicidal ideation or plans for suicide, as well as attempts. The essential feature of dysthymia in children and adolescents is a chronically depressed mood that occurs for most of the day, for more days than not, and for at least 1 year (2 years for adults). In addition, two or more of the following six symptoms must be present to meet criteria for dysthymia: poor appetite or overeating, insomnia or hypersomnia, low energy or fatigue, low self-esteem, poor concentration or difficulty making decisions, and feelings of hopelessness.

The basic epidemiologic parameters include *point prevalence* (percentage of the sample who are in an episode of disorder at the time of the assessment), *lifetime prevalence* (percentage who have experienced an episode during their lifetime), and *incidence* (percentage who are not depressed at the beginning of an observation period but who develop an episode during a specified period of time). Incidence rates are customarily divided into *first incidence* (percentage that develop an episode for the first time during the observation interval) and *recurrence* (percentage of individuals with a previous episode that develop another episode during the interval). From a public health perspective, the total incidence rate (percentage of first incident and recurrent cases combined) is important for planning the delivery of mental health services because it indicates how many individuals in the population will become depressed during a certain time period.

Data from the Oregon Adolescent Depression Project (OADP) provide estimates for the prevalence and incidence of depression and suicidal behavior during childhood and adolescence (Lewinsohn, Hops, et al., 1993). OADP participants were randomly selected in three cohorts from nine senior high schools representative of urban and rural districts in western Oregon. A total of 1,709 adolescents completed the initial assessment (T1), which included a diagnostic interview and questionnaire assessment. Approximately 1 year later (T2), 1,507 (88%) of the participants completed a second diagnostic interview and questionnaire assessment. Average age of the OADP sample at T1 was 16.6 years ($SD = 1.2$, range = 14–18). Slightly over half of the participants (53%) were female; 91% were White; 12% had repeated a grade in school; 53% were living with both biological parents at the time of the T1 interview, and an additional

18% were living with a biological parent and stepparent. Most participants resided in households in which one or both parents worked as a minor professional or professional (for more detail, see Lewinsohn, Hops, et al., 1993).

Prevalence and incidence rates of MDD and dysthymia based on the OADP are presented in Table 1. As can be seen, depression is quite common during adolescence. The lifetime prevalence rate of MDD for participants at T1 was especially high (19%). Conversely, the lifetime prevalence of dysthymia was only 3% during adolescence. The 1-year first incidence rate for MDD was 7% for girls and 4% for boys; the rate of MDD recurrence for the T1–T2 interval of 1 year was 21% for girls and 9% for boys.

OADP prevalence rates for adolescent MDD are comparable to the rates that have been reported for adults in more recent studies, such as the National Comorbidity Survey Replication (Kessler et al., 2003). Our tentative conclusion is that the prevalence of depression in older adolescents is at adult levels. Previous research reporting much lower rates of depression in younger children suggests a substantial increase in the prevalence of depression from childhood to adolescence (e.g., Costello et al., 1996; Fleming, Offord, & Boyle, 1989). Although the OADP rates of depression onset in childhood are low, the annual incidence rate increases from 1–2% at age 13 to 3–7% at age 15 (see Figure 1).

Gender differences in the rate of depression among adults have consistently reported a ratio of 2:1 (Nolen-Hoeksema, 2002). Conversely, most studies of preadolescent children (i.e., 12 years of age or younger) find no gender difference in rates of depression, or find a slight elevation in boys compared with girls (e.g., Brooks-Gunn & Petersen, 1991; Garrison, Schluchter, Schoenbach, & Kaplan, 1989; Nolen-Hoeksema, Girgus, & Seligman, 1991; Petersen, Sarigiani, & Kennedy, 1991; Rutter, 1986). A significant gender difference was found in the OADP, with females being twice as likely as males to be depressed. Comparing the OADP results with other

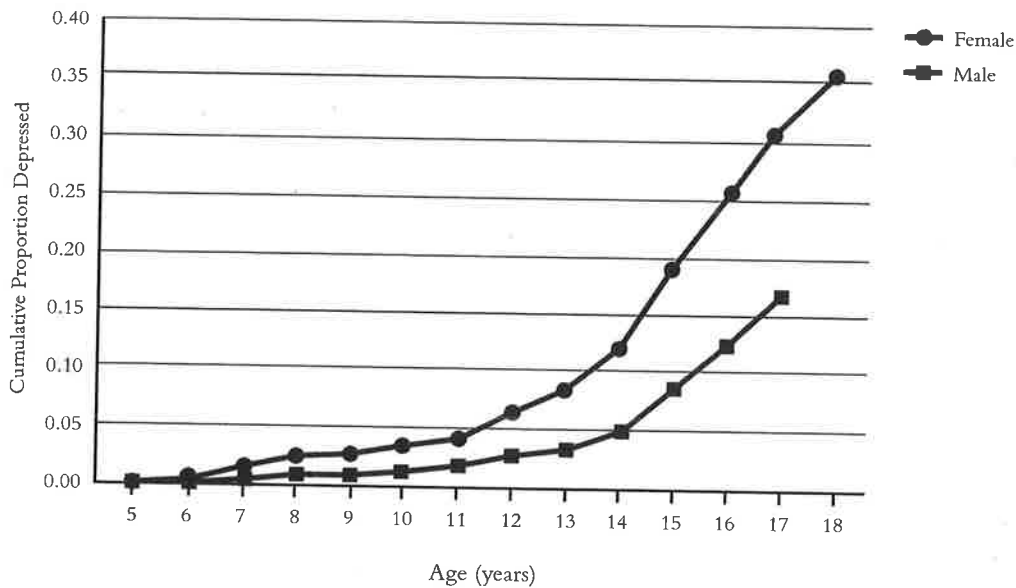
Table 1. Prevalence and Incidence of Major Depressive Disorder (MDD) and Dysthymia (percentage of sample)

	Total Sample		Female Sample		Male Sample	
	MDD	Dysthymia	MDD	Dysthymia	MDD	Dysthymia
Point Prevalence						
T1	2.9	0.5	3.4	0.6	2.0	0.5
T2	3.1	0.1	3.6	0.3	2.6	0.0
Lifetime Prevalence						
T1	18.5	3.2	24.8	4.0	11.6	2.3
T2	24.0	3.0	31.6	4.1	15.2	1.7
1-Year Incidence						
Total incidence	7.8	0.1	10.4	0.1	4.8	0.0
First incidence	5.7	0.1	7.1	0.1	4.4	0.0
Recurrence	17.9	0.0	21.1	0.0	9.1	0.0

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Figure 1. Cumulative proportion experiencing onset of major depressive disorder, as a function of age and gender.



Note. From "Major Depressive Disorder in Older Adolescents: Prevalence, Risk Factors, and Clinical Implications," by P. M. Lewinsohn, P. Rohde, and J. R. Seeley, 1998, *Clinical Psychology Review*, 18(7), pp. 765-794. Reprinted with permission.

studies (Nolen-Hoeksema & Girgus, 1994; Petersen et al., 1991) suggests that the gender difference in MDD rates probably emerges in the relatively small window between the ages of 11 and 14, as depicted in Figure 1.

Suicidal Behavior

Although the prevalence rate of suicide in adolescents has increased over 300% since the 1960s, the overall base rate for completed suicide in 2002 was 7.4 per 100,000 for youth age 15-19 (Commission on Adolescent Suicide Prevention, 2005); suicide before the age of 12 is very rare. Because the rate of suicide completion is so low, epidemiologic research has focused more broadly on suicidal behavior such as suicide attempts and ideation. According to the 2003 Youth Risk Behavior Survey data (Grunbaum et al., 2003), 9% (male = 5%, female = 12%) of U.S. high school students surveyed made one or more attempts during the previous 1-year period. With respect to suicide ideation, 17% (male = 12%, female = 22%) of students reported that they had seriously considered attempting suicide in the past year. The onset-age curves for suicide attempts based on the OADP data are presented in Figure 2. As can be seen, the onset-age curves for suicide attempts are similar to those for MDD presented in Figure 1, in which the incidence rate dramatically increases at about the age of 12.

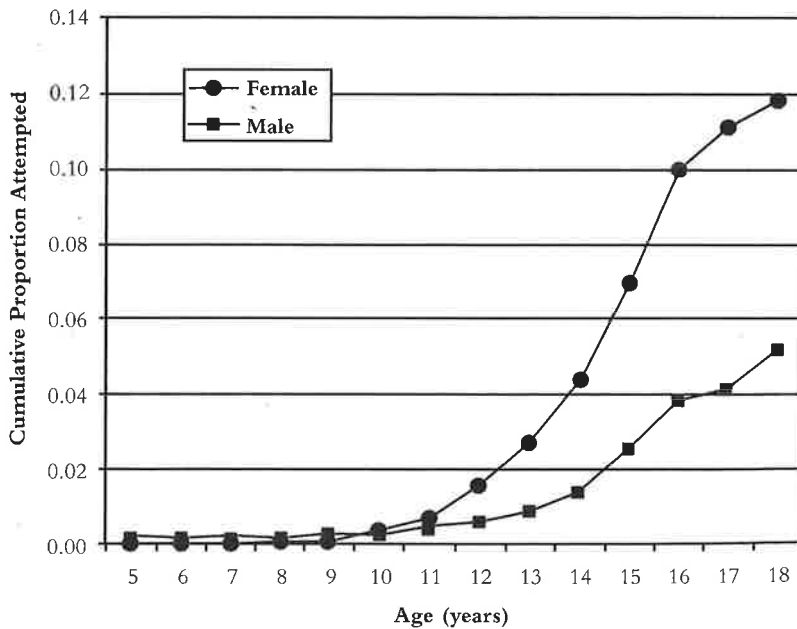
Etiology: Risk and Protective Factors

Depression

Lewinsohn and Essau (2002) provide a review of the epidemiologic evidence that has identified the psychosocial risk and protective factors for adolescent depression. These factors include both individual (person-related) and environmental risks. Individual factors include female gender, pubertal timing, elevated depressive symptomatology, depressotypic cognitive style, poor physical health, poor academic functioning, poor coping skills, low self-esteem, low self-rated social competence, excessive emotional reliance on others, externalizing behavior problems, internalizing behavior problems, and a previous history of psychopathology. Contextual factors include family conflict, marital discord, low level of family support, parental history of depression, social adversity, low peer support, major life events, and daily hassles. Although some of these risk and protective factors are not directly modifiable (e.g., female gender, family history of depression, social adversity), interventions for depression have been developed to ameliorate individual risk factors (e.g., depressotypic cognitions) and build or enhance protective factors (e.g., coping skills, increasing pleasant activities, problem-solving skills).

Garber (2006) advocates that, in addition to the identification of risk factors, it is important to examine the risk mechanisms that may illuminate the intervening paths that link risk factors to depression onset. A particularly significant lacuna in the literature is the absence of research regarding how risk and protective factors work

Figure 2. Cumulative proportion experiencing first suicide attempt as a function of age and gender.



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interactively to increase the risk for depression. Two psychosocial mechanistic models that have received considerable research attention include the cognitive vulnerability model (Abramson, Metalsky, & Alloy, 1989; Beck, 1967) and the stress-buffering model (Brown & Harris, 1978; Cohen & Wills, 1985). The cognitive vulnerability model posits that negative cognitions represent a diathesis that, in combination with stressful events, leads to negative thoughts, which in turn increase the risk for depression. Regarding a protective mechanism, the stress-buffering model proposes that social support or coping skills mitigate the relation between stressful life events and the onset of depression. Such risk mechanisms have been the target of preventive interventions described later in this chapter.

Suicidal Behavior

Although research studies have revealed some common factors, there are no simple answers as to the cause of youth suicide. Expert consensus is that an individual's biological characteristics interact with environmental forces to influence the development of suicidal behavior (Evans, Hawton, & Rodham, 2004). Individual characteristics such as substance abuse (Shaffer et al., 1996), poor interpersonal problem solving (Rotheram-Borus, 1990), and aggressive-impulsive tendencies (Sourander, Helstelä, Haavisto, & Bergroth, 2001) are related to suicidal behavior, as is academic failure (Lubell & Vetter, 2006). The period preceding the suicide is often marked by stressful events, such as the loss of a loved one (Cole & Siegel, 2003) or physical abuse (Johnson et al., 2002). Over 90% of youth who commit suicide experience at least one major psychiatric disorder (Gould, Greenberg, Velting, & Shaffer, 2003). Of these disorders, depression is by far the most common (American Association of Suicidology, 2007). Furthermore, comorbidity between depression and conduct disorder or substance abuse has been linked to a twofold increase in the risk for suicidal behavior compared with non-comorbid depression (Lewinsohn, Rohde, & Seeley, 1995; Seeley, 2002). Contextual risk factors include firearm availability (Shah, Hoffman, Wake, & Marine, 2000), suicide contagion (Gould, 2001), and poor family environment (Wagner, Silverman, & Martin, 2003). On the other hand, student connectedness with school was the primary protective factor identified by the National Longitudinal Study of Adolescent Health (Resnick et al., 1997).

ASSESSMENT AND SCREENING

Semistructured diagnostic interviews are considered to be the gold standard for assessing mental disorders. However, because diagnostic interviews can be resource intensive (e.g., requires training and administration time), self-report questionnaires are often used to identify at-risk youth. Although self-report questionnaires require fewer resources to administer compared with diagnostic interviews, they are typically more limited with respect to classification accuracy (e.g., higher false-positive rates). Given such a trade-off between convenience and accuracy, multistage screening strategies

have been developed in which self-report questionnaires are administered in the first screening stage, followed by diagnostic interviews among those who screen positive.

Diagnostic Interviews

Standardized and comprehensive interviews for children and adolescents include the Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS; Orvaschel, Puig-Antich, Chambers, Tabrizi, & Johnson, 1982); the Diagnostic Interview Schedule for Children (DISC; Costello, Edelbrock, & Costello, 1985); the Diagnostic Interview for Children and Adolescents (DICA; Herjanic & Reich, 1982); and the Child and Adolescent Psychiatric Assessment (CAPA; Angold et al., 1995). A review of these interviews is provided by Essau, Hakim-Larson, Crocker, and Petermann (1999). We encourage a comprehensive assessment of all *DSM-IV* criteria for major depression and dysthymia as a way of gauging the presence of depressive disorders and suicidal ideation. In addition, given the frequent occurrence of comorbid psychopathology in depressed adolescents, we strongly advise the use of semistructured interviews to consistently and systematically assess a broad range of mental disorders, including alcohol or drug abuse and dependence, posttraumatic stress disorder and other anxiety disorders, conduct and oppositional defiant disorders, and attention deficit hyperactivity disorder (ADHD).

Self-Report Depression Questionnaires

In addition to semistructured interviews, several questionnaires are available to assess for the presence of depressive symptoms. These instruments focus on current depressive symptomatology and may be particularly valuable for tracking change over time. In addition to monitoring change, self-report questionnaires are useful for both screening and therapeutic purposes, as they identify specific problem areas that need attention. Screening for depression is especially important because adolescents may not readily volunteer that they are severely depressed or suicidal, although they do appear willing to admit these difficulties if asked directly (Reynolds, 1986).

For adolescents, we recommend the Center for Epidemiologic Studies–Depression Scale (CES-D; Radloff, 1977), which is in the public domain, and the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The original BDI was revised to correspond to *DSM-IV* symptom criteria (BDI-II; Beck, Steer, & Brown, 1996) and is appropriate for adolescents aged 13 years or older. Although the CES-D and BDI were developed for use with adults, they are easy to administer and have been shown to be reliable and valid screeners for depression in adolescent samples (Roberts, Lewinsohn, & Seeley, 1991). Other youth self-report measures that are commonly used include the Reynolds Adolescent Depression Scale (RADs; Reynolds, 1987a); the Children's Depression Inventory (CDI; Kovacs, 1985); and the Mood and Feelings Questionnaire (MFQ; Angold et al., 1987). Detailed descriptions and

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summaries of the psychometric properties of these instruments have been presented by Reynolds (1994) and Essau et al. (1999).

Multistage Identification

Depression screening tests are usually employed as the first stage of a multistage process in which those who score above a specified cutoff are identified as putative cases (Reynolds, 1991). Universal screening can serve as an efficient and effective first step in large settings, such as schools. The identified youth may be given another screening at a later date using a serial screening strategy. In the final stage, a semistructured diagnostic interview such as the K-SADS is administered, from which a definitive diagnosis is established. The screening is a fast, economical, accurate, and valid way of identifying as many cases in the population as possible, without diagnostically interviewing everyone. Large-scale screening procedures that have been developed for adults, such as the National Depression Screening Day, should be expanded to include school-age children, beginning with youth about age 11, as indicated by Figures 1 and 2.

Assessment of Suicidal Behavior

The rates of suicide-related behaviors among adolescents underscore the need for proactive methods of identifying at-risk youth before they escalate to more self-destructive behavior. Even if the youth does not ultimately engage in suicidal behavior, it is important to identify a youth experiencing distress that results in suicidal ideation, and to refer him or her to mental health services. All screening measures to date produce false positives, but the cost of this error is minimal compared with the cost of false negatives. It is better to raise a concern than to miss an at-risk youth. When programs provide a systematic and sensitive follow-up to the screening, distressed youth can get the help and follow-up care they need. This care will generally need to be initiated by the school, although back-up support from mental health providers with more experience in dealing with suicidal adolescents may be available.

We strongly recommend that the assessment of current and past suicidal behavior (ideation and attempts) be a routine component of assessment procedures with distressed adolescents. Several psychometrically sound suicide behavior assessment instruments have been developed and evaluated. The National Institute of Mental Health commissioned a review of the suicide assessment measures for adolescents (Goldston, 2000, 2003). Recommended self-report measures of suicidal ideation include the Columbia Suicide Screen (Shaffer et al., 2004), the Suicidal Ideation Questionnaire (Reynolds, 1987b), which has two forms specifically developed for adolescents (Grades 7–9 and 10–12), and the Beck Scale for Suicide Ideation (Beck & Steer, 1991).

One of the most widely used high school suicide screening programs is the Columbia TeenScreen Program (Shaffer et al., 2004). Using a multistage strategy, students complete the brief Columbia Suicide Screen self-report questionnaire in the first stage. Those who screen positive are administered a diagnostic interview (i.e., the DISC) during the second stage to assess a comprehensive range of psychiatric symptoms and disorders. During the third stage, youth who have been identified as meeting *DSM-IV* criteria for a psychiatric disorder are evaluated by a mental health clinician, who determines whether the student needs to be referred for further evaluation or tertiary-level treatment. Evaluation of the Columbia TeenScreen Program indicates that most of the students who have been identified as high risk for suicide were not previously recognized as such, and very few had received prior treatment.

Stigmatization

Stigmatization of students is a key issue for school-based mental health screening and assessment. Stigmatization occurs when students are pejoratively categorized in a way that sets them apart from their peers as socially unacceptable (Penn et al., 2005). In a review of the literature, Wahl (2002) concluded that negative attitudes toward persons with mental illness are evident as early as the third grade. Furthermore, a 2002 survey of adolescents ages 14–22 found that peers with major depression were perceived as more likely to be violent and as less likely to do well in school than those without major depression (Penn et al.).

Stigmatization has been found to be associated with reduced self-esteem (Link, Struening, Neese-Todd, Asmussen, & Phelan, 2001), increased symptoms and stress (Markowitz, 1998), and reduced help-seeking on the part of adolescents (Penn et al., 2005). One of the most effective means to reduce stigma is to educate staff and professionals who work with adolescents (Penn et al.). In addition, adolescents who are informed about mental illness, both in terms of facts and myths, are less likely to stigmatize others and more likely to seek help and adhere to treatment (Penn et al.). Thus, it is recommended that schools provide both school staff and students with education about destigmatizing mental illness using universal prevention programs prior to implementing screening programs.

UNIVERSAL APPROACHES TO DEPRESSION AND SUICIDE PREVENTION

Research on universal interventions for the prevention of depression and suicidal behavior in adolescence has burgeoned in the past three decades. As summarized in the following sections, the universal approaches have typically focused on preventing depression or suicidal behavior rather than taking a more integrated approach for these highly related problems. However, recent efforts that focus on improving environmental contexts such as school climate provide a foundation for a more

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integrated approach toward the prevention of depression and suicidal behavior as discussed below.

Preventing Depression

Over the past 20 years, several efficacy and effectiveness trials have been conducted to evaluate school-based universal interventions for preventing youth depression. Because the intervention formats typically include large-group presentations or classroom curriculum modifications, one of the strengths of the universal prevention approach is that it minimizes stigmatization associated with mental health treatment (Spence, Sheffield, & Donovan, 2003). Most universal programs are manualized and include a variety of instructional methods (e.g., didactic sessions; cartoons; individual, small-group, and whole-class interactive exercises and activities; homework and skill practice; mood monitoring and diary keeping). Universal prevention approaches for adolescents typically employ principles based on cognitive-behavioral therapy, interpersonal therapy, problem-solving skills training, and social skills training. (For cognitive-behavioral therapy, see Clarke, Hawkins, Murphy, & Sheeber, 1993; Hains & Ellman, 1994; Merry, McDowell, Wild, Bir, & Cunliffe, 2004; Lowry-Webster, Barrett, & Dadds, 2001; Pössel, Horn, Groen, & Hautzinger, 2004; Sheffield et al., 2006; Shochet et al., 2001; Spence et al., 2003. For interpersonal therapy, see Merry et al., 2004; Shochet et al., 2001. For problem-solving skills training, see Hains & Ellmann, 1994; Sheffield et al., 2006; Spence et al., 2003. For social skills training, see Pattison & Lynd-Stevenson, 2001; Pössel et al., 2004.)

Although several efficacy trials of universal prevention programs have found significant reductions in depressive symptoms from baseline to postintervention, most have not found effects that persisted into long-term follow-up. In addition to efficacy research, several effectiveness trials have evaluated universal prevention programs for adolescents that were delivered by endogenous providers (e.g., school teachers) rather than research staff, which is a key feature of effectiveness research (e.g., Clarke et al., 1993; Lowry-Webster et al., 2001; Roberts, Kane, Thomson, Bishop, & Hart, 2003; Sheffield et al., 2006; Spence et al., 2003, 2005). One rigorous trial found that an eight-session universal cognitive-behavioral depression prevention program, delivered by school teachers, produced significantly greater reductions in depressive symptoms from baseline to postintervention relative to assessment-only controls. However, these effects were no longer significant at 1-year or 4-year follow-up (Spence et al., 2003, 2005). Most universal prevention effectiveness trials have not produced significant effects from baseline to postintervention, and none have been shown to decrease the incidence of future depressive episodes.

Given the limited available evidence for the efficacy and effectiveness of universal interventions described above, depression prevention experts have recently called into question whether widespread dissemination of universal school-based interventions can be justified at this juncture (Spence & Shortt, 2007). This limited evidence may be due, in part, to the weak methodological rigor that has been employed in most evaluations

conducted to date. Spence and Shortt further conclude that current, brief interventions may not provide enough dosage to produce lasting effects. In addition, they propose that universal interventions need to move beyond an exclusive focus on the individual-related factors and include broader ecological approaches that emphasize the family and school contexts. To this end, *beyondblue*, an Australian depression prevention initiative, is currently evaluating the impact of an extensive universal school-based preventive intervention that combines (a) a 3-year psychosocial skills curriculum, (b) a school-wide approach to building a supportive school climate, and (c) effective links to appropriate services for youth experiencing emotional difficulties (Spence et al., 2005).

Preventing Suicidal Behavior

Schools can play a key role in preventing youth suicide and in identifying youth who need referral to mental health services (Potter & Stone, 2003). School education codes include the mandate not only to educate but also to protect students (Lazear, Roggenbaum, & Blase, 2003). In the United States, high schools are mandated to provide suicide prevention education. This education is mandated because experts agree that schools have a powerful influence on youth well-being. Many adolescents' lives revolve around the school setting (Gould et al., 2003); their social development is more influenced by school-related factors than factors from almost any other setting (Kalafat & Elias, 1995).

Schools can involve staff in suicide prevention in a variety of ways, including developing district-wide school policies concerning student suicide (King, 2001), creating linkages between schools and community mental health resources (Poland, 1995), and involving school staff in gatekeeper training programs. Gatekeeper programs train adults who interact with or observe students on a daily basis to recognize youth who may be at risk for suicide and to respond appropriately (Lazear et al, 2003; Cole & Siegel, 2003). Gatekeeper training is the most widely used youth suicide prevention method in high schools (Kalafat, 2003).

Since 1980, a multitude of school-based gatekeeper programs have been initiated (Kalafat & Elias, 1995). The four most common training programs for staff gatekeepers include Suicide Options, Awareness and Relief (SOAR); the Applied Suicide Intervention Skills Training (ASIST); Question, Persuade, Refer (QPR); and SAFE:TEEN. SOAR consists of an 8-hour training course for school counselors. Although no randomized controlled trials have been published to date for this program, evaluations of pre-post results show that immediately after training, counselor knowledge and sense of comfort with intervening increased. However, the results were most prominent with newly trained members, suggesting a need for ongoing training (King & Smith, 2000). ASIST is a 2-day workshop for adults working with youth that focuses on increasing awareness and understanding of suicide and developing readiness to prevent adolescent suicidal behavior. Pre-post evaluations of participants suggest increased knowledge and willingness to intervene, but data have not yet been reported to support the long-term effectiveness of the program (Commission on Adolescent

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Suicide Prevention, 2005). QPR Gatekeeper Training for Suicide Prevention includes a CD-ROM program that covers key topics of suicide prevention. A recent randomized controlled trial of a high school adaptation of QPR showed that training increased self-reported knowledge, gatekeeper self-efficacy, and services accessed by students (Wyman et al., 2008). SAFE:TEEN is a comprehensive gatekeeper approach that includes staff, parents, and peers, with a 2-day staff training component. Evaluations of SAFE:TEEN show increased knowledge and willingness to intervene, and a county-wide follow-up demonstrated reduced county suicide rates over a 5-year period after implementation (Kalafat & Ryerson, 1999).

It would be optimal if *all* secondary school staff working with students had access to tools that support the long-term maintenance of their knowledge and skills in youth suicide prevention. Kalafat & Elias (1995) argue that such an approach is particularly appropriate in targeting a student's sense of social alienation, withdrawal, and weak social supports, all serious risk factors. Surrounding a student with caring individuals not only reduces an adolescent's sense of isolation, it also increases the number of people who can be alert for signs of distress.

Connecting With At-Risk Youth

It can be difficult for school staff to cultivate and maintain positive relationships with youth who exhibit behavioral patterns of withdrawal and irritability commonly associated with depression. Research has shown that school personnel tend to either avoid students with depressive characteristics (Morris, 1980) or engage in conflicted interactions with them (Martin, 1989). School personnel have preconceived notions about the qualities of a model student. Students are viewed as more teachable when they show high attentional focus and adaptability, amiability, and low reactivity. Adolescents with symptoms of depression tend to appear on the "less teachable" end of the continuum: distractible, inflexible, withdrawn, and reactive, thus eliciting more aversive reactions from school staff (Pullis, 1985). When teachers think students are capable of, but not practicing, self-control, they are more likely to respond with increased punitive and coercive strategies. Students, in turn, may come to avoid achievement situations and disengage further from classroom activities (Rothbart & Jones, 1998). Such a pattern is undoubtedly detrimental to student academic and psychosocial outcomes.

Though much attention has been given to equipping staff to effectively handle externalizing student behavior such as arguing and fighting, training in addressing internalizing behaviors is seriously lacking. Increasing staff understanding of issues related to depression and other unique developmental challenges faced by adolescents can be extremely helpful in shifting the focus in school personnel from negative attributions of purposeful misbehavior to active problem solving, which can lead to reduced conflict. When adolescents feel accepted and respected as individuals, the focus can move from one of accusation to one of support (Rothbart & Jones, 1998).

The importance of staff accessibility and support cannot be overstated. Quality relationships with other adults can buffer the impact of risk factors on outcomes for vulnerable adolescents. Adult accessibility, including empathy, warmth, and respect toward adolescents, is one of the most significant factors in preventing adolescent suicide (Toumbourou & Gregg, 2002). In schools where students feel connected (e.g., feel staff are responsive, feel they are a contributing part of their school), rates of suicidal ideation and emotional distress are lower (King, 2001). Youth who have positive relationships with school personnel have a reduced risk of suicide attempts and completions, and better mental health outcomes (Lubell & Vetter, 2006).

Having an accessible staff not only reduces the risk of adolescent suicide, it also increases the likelihood that signs of risk are detected as early as possible. Only a very small percentage of youth suffering from mental illness are identified in school settings (Horwitz, Leaf, Leventhal, Forsyth, & Speechley, 1992; Levitt, Saka, Romanelli, & Hoagwood, 2007). To be better equipped to recognize youth at risk for suicide, staff need training in how to be approachable and build positive relationships with youth. Training for staff must address the importance of behaving in a respectful, caring, and nurturing way with adolescents, and in being attentive to their needs. Adolescent youth are much more likely to approach an adult with whom they have a relationship (Kalafat & Elias, 1995), and it is within the context of a relationship that adults can recognize warning signs in youth, and get them the help they need. Supportive teacher behaviors and skills can be taught as part of a school-wide effort to foster a positive school climate. School climate has a direct effect on the health, safety, performance, and feelings of connectedness that staff and students have for schooling.

Using Universal Evidence-Based Programs to Create a Positive School Climate

Evidence is accumulating that indicates which aspects of the school environment can create or aggravate risk factors for adolescent internalizing disorders, such as depression and suicidal behavior, and which of these factors could be modified to reduce risk (Reinke & Herman, 2002). One element of effective prevention programs is to include protective elements to counter the development of risk (UCLA School Mental Health Project, 2003; White & Jodoin, 1998). Programs targeting a more supportive, interdependent school climate, where help-seeking is viewed as normative, serve a protective role in suicide prevention (Hazell & King, 1996).

As described in previous chapters, schools are increasingly implementing multilevel school-wide initiatives to improve school climate such as those based on school-wide positive behavior supports (SWPBS; Sugai, Horner, & Gresham, 2002). SWPBS prescribes proactive strategies for defining, teaching, and supporting appropriate student behaviors. At the universal level of intervention, SWPBS includes a system of training marked by consistent rules and consequences, encouragement, and clear expectations across all school settings. The expected outcome of SWPBS training is to

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create the type of nurturing environment that is critical to fostering adolescents' healthy social and emotional development. Extensive research supports the success of SWPBS systems in reducing discipline problems and promoting positive school climate with existing school resources (Sugai et al., 2002; Taylor-Greene et al., 1997; Todd, Horner, Sugai, & Sprague, 1999). SWPBS interventions have effectively decreased the number of office referrals due to problem behavior, improved academic and social climates of the school, and created a more positive learning environment for both students and teachers (Metzler, Biglan, Rusby, & Sprague, 2001; Sprague et al., 2001).

Although SWPBS is intended to influence a wide range of student behavior, studies of its implementation have typically focused on outcomes related to student externalizing behavior (Herman et al., 2004; Lane, Wehby, Robertson, & Rogers, 2007). An improved school climate would also likely promote protective factors and reduce risk factors for depression and suicidal behavior (Herman et al.). For example, staff training in creating a warm and nurturing environment, by engaging in simple behaviors such as making eye contact and referring to the student by name, can increase students' feelings of connectedness to the school. Given what we know about positive school climate and reduced risk for adolescent suicide, it is likely that youth vulnerable to developing depression or suicidal behavior would benefit from the SWPBS approach. Indeed, Lane et al. (2007) recently found that students with internalizing behavior problems were the most responsive to SWPBS compared with youth having externalizing and comorbid problem behaviors.

TARGETED YOUTH PREVENTION PROGRAMS

Similar to the research on universal prevention described above, targeted interventions to date have been developed and evaluated in separate research silos of depression or suicidal behavior prevention. The following sections provide a brief review of the efficacy and effectiveness research on targeted prevention efforts.

Targeted Depression Prevention

Several efficacy trials have evaluated selective and indicated depression prevention programs that are targeted to at-risk adolescents (e.g., Clarke et al., 1995; Jaycox, Reivich, Gillham, & Seligman, 1994; Peden, Rayens, Hall, & Beebe, 2001; Seligman, Schulman, DeRubeis, & Hollon, 1999). Previous studies have targeted youth with various risk factors, including poverty (Cardemil, Reivich, & Seligman, 2002), recent death of a parent (Sandler et al., 1992), recent parental divorce (Wolchik et al., 2002), parental depression (Beardslee et al., 1997), female gender (Quayle, Dzurawiec, Roberts, Kane, & Ebsworthy, 2001), negative cognition style (Seligman et al., 1999), and family conflict (Jaycox et al.). Several indicated depression prevention trials have targeted adolescents with elevated depressive symptoms but below threshold for a clinical diagnosis (e.g., Clarke et al., 1995, 2001; Stice, Burton, Bearman, & Rohde,

2006; Stice, Rohde, Seeley, & Gau, 2008). Research findings to date indicate that such secondary prevention efforts have been more successful than the universal depression programs. Indeed, a recent meta-analysis of 30 depression prevention trials found the postintervention effect size was .30 for selective interventions, .23 for indicated interventions, and .12 for universal interventions (Horowitz & Garber, 2006). At follow-up, the mean effect sizes were .34, .31, and .02, for selective, indicated, and universal interventions, respectively. Whereas the utility of disseminating current universal interventions for preventing depression has been recently questioned, as described in the earlier section on preventing depression (e.g., Spence & Shortt, 2007), the evidence for the efficacy of targeted interventions is more compelling. Two exemplars for targeted depression programs are described next.

Clarke et al. (1995) conducted a randomized controlled trial to examine whether a school-based program using group cognitive therapy for preventing depression would significantly reduce the incidence of unipolar affective disorders in youth at risk for future depression. Ninth-grade adolescents in three high schools were identified as potentially at risk for depression through school-wide administration of the CES-D scale, followed by a structured diagnostic interview (the K-SADS) for the adolescents with elevated depressive symptoms. The adolescents identified as not currently depressed but with elevated CES-D scores were invited to participate in the prevention study; 150 accepted and were randomly assigned to either (a) a 15-session, after-school, cognitive-behavioral preventive intervention ($n = 76$); or (b) a "usual care" control condition ($n = 74$). The intervention, titled the Adolescent Coping with Stress Class (Clarke & Lewinsohn, 1995), consisted of fifteen 45-minute sessions in which participants are taught cognitive-behavioral therapy (CBT) techniques to identify and challenge negative or irrational thoughts that may contribute to the development of future affective disorder. Survival analysis results indicated significantly fewer of the at-risk youth in the intervention group developed either MDD or dysthymia during the 12-month follow-up period compared with the control group (14% vs. 26%, respectively).

The Penn Optimism Program (Gillham & Reivich, 1999; Gillham, Reivich, Jaycox, & Seligman, 1995; Jaycox et al., 1994) is another targeted depression prevention program that has been extensively evaluated. This prevention program contains two major components: a cognitive component and a social problem-solving component. The cognitive component was based on the cognitive vulnerability model of depression (Beck, 1967, 1976; Ellis, 1962; Seligman, 1991), including negative self-evaluation, dysfunctional attitudes, and low expectations for self-performance. The intervention was delivered to small groups of 10- to 13-year-old youth during twelve 1½-hour weekly sessions. Students were taught to identify negative beliefs, evaluate these beliefs, and generate more realistic alternatives. The social-problem-solving component focused on conduct and interpersonal problems that are often associated with depression in youth. Students were taught to think about their goals before acting, generate possible solutions for problems, and make decisions by weighing the pros and cons of each option. Students were also taught techniques for coping with parental conflict as well as behavioral techniques to enhance assertiveness, negotiation, and relaxation. Screening criteria

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included both selective and indicated approaches by identifying at-risk youth based on either self-reported parental conflict or self-reported elevated depressive symptoms. Compared with a matched comparison group, program participants reported significantly fewer depressive symptoms immediately following the program and at 6-month and 2-year follow-ups. Moreover, teachers also reported better classroom behavior in intervention participants compared with control participants.

Although several effectiveness trials have been conducted for universal preventive interventions for depression, as described earlier, we could locate only one targeted depression prevention effectiveness trial where endogenous providers delivered the intervention. Using an adaptation of the Penn Optimism Program for mainland Chinese youth, Yu and Seligman (2002) found that a 10-session teacher-delivered CBT program for students with elevated depressive symptoms or family conflict produced greater reductions in depressive symptoms than assessment-only controls, from baseline to postintervention, baseline to 3-month follow-up, and baseline to 6-month follow-up. Given the mounting evidence for the efficacy of school-based targeted depression prevention programs, more effectiveness research is clearly warranted.

Targeted Suicide Prevention

Few school-based targeted suicide prevention programs have been developed and rigorously evaluated to date. The most comprehensive targeted school-based interventions have been developed and evaluated by Eggert, Thompson, and their colleagues (Eggert, Karovsky, & Pike, 1999; Eggert, Thompson, Herting, & Nicholas, 1994, 1995; Thompson, Eggert, & Herting, 2000; Thompson, Eggert, Randell, & Pike, 2001). The interventions are targeted to youth who are deemed to be at risk of dropping out of high school. Based on both selective and indicated approaches, a multiple gating procedure is used to first identify students who are at risk of dropping out based on school attendance and academic performance data as well as on referrals from teachers, counselors, or other gatekeepers. The second gate includes an assessment of suicide risk; youth identified as not at risk for suicide are screened out. The interventions are aimed at reducing suicidal behavior by improving the students' personal resources that enhance self-esteem and sense of control, decision making, and social support resources.

Eggert, Thompson, and colleagues evaluated three preventive interventions, including a small-group intervention titled Personal Growth Class (PGC; Eggert et al., 1994, 1995; Thompson et al., 2000), a brief individually delivered intervention called Counselors Care (C-CARE), and the Coping and Support Training (CAST) program, which combines the PGC and C-CARE intervention approaches (Thompson et al., 2001). PGC is a semester-long class that includes life skills training using strategies of group process; peer and teacher support; goal setting; and weekly monitoring of mood management, substance use, and school performance. C-CARE is a standardized individual intervention approach delivered by trained research staff consisting of (a) a 2-hour computer-assisted suicide assessment; (b) a brief motivational counseling session

to enhance empathy and reinforce positive coping skills and help-seeking behaviors, and increase access to services; and (c) a social network connections component to link youth with a school-based case manager or a favorite teacher, and to contact the youth's parent or guardian to enhance immediate support and communication. CAST is a small-group intervention delivered in twelve 1-hour sessions over 6 weeks, targeting mood management, improved school performance, and reduced substance use. Each session includes helping students apply newly acquired skills and gain support from family and other trusted adults.

In a randomized efficacy trial with 100 at-risk students, compared with an assessment-only control group, PGC participants reported significant improvement in self-perceived ability to manage problem circumstances. A subsequent large, three-group randomized control trial compared CAST, C-CARE, and usual care conditions with 460 high school students. Compared with usual care, CAST and C-CARE showed significant reductions in positive attitudes toward suicide, suicidal ideation, depression, and hopelessness. CAST was found to be the most effective approach toward enhancing and sustaining personal control and problem-solving coping skills. Given these promising findings, further development and evaluation of school-based targeted approaches to suicide prevention are warranted.

TERTIARY-LEVEL INTERVENTION AND COMMUNITY RESOURCES

With a few exceptions, tertiary-level treatment for youth who are clinically depressed or suicidal seldom occurs within the schooling context (e.g., Mufson, Dorta, Moreau, & Weissman, 2005; Stark, 1990; Stark, Hargrave, Schnoebelen, Simpson, & Molnar, 2005). Brener, Martindale, and Weist (2001) indicate that school-based mental health programs have been implemented in less than 10% of U.S. schools. However, school-based mental health programs are being increasingly adopted by school districts across the country (Adelman & Taylor, 1999). For example, there is a national movement to establish expanded school mental health (ESMH) programs that provide comprehensive mental health services, including assessment, case management, therapy, and prevention through partnerships between schools and community mental health agencies (Weist, 1997; Weist & Albus, 2004). ESMH programs have been shown to improve school climate regarding mental health and reduce student referral for special education services (Bruns, Walrath, Glass-Siegel, & Weist, 2004). By partnering with community agencies, schools can link students to evidence-based tertiary-level services such as psychotherapy and pharmacotherapy.

Psychotherapy

Available research supports the use of certain forms of psychotherapy in treatment for youth depression (Birmaher et al., 1996; Curry, 2001). CBT has been found to be superior to wait-list conditions and generally more efficacious than alternative

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treatments (Kahn, Kehle, Jenson, & Clark, 1990; Kroll, Harrington, Jayson, Fraser, & Gowers, 1996; Lerner & Clum 1990; Reynolds & Coats, 1986; Rosselló & Bernal, 1999). Brent et al. (1997) contrasted CBT, systemic behavior family therapy, and nondirective supportive therapy for adolescent depression and found that CBT resulted in higher remission rates compared with the other two treatments, although differences faded during 2-year follow-up (Birmaher et al., 2000). With respect to delivering CBT within the school setting, Stark and colleagues (Stark & Kendall, 1996; Stark et al., 2004) have developed a school-based program for preadolescent girls that can be administered individually or in small groups and includes a parent training component and a teacher consultation component; however, outcome data are not yet available. The Adolescent Coping with Depression course (Clarke, Lewinsohn, & Hops, 1990; Rohde, Lewinsohn, Clarke, Hops, & Seeley, 2005), an efficacious CBT psychoeducational program for adolescents 14 and older, also has the potential to be delivered within schools by trained staff (e.g., counselors, school psychologists, social workers, or behavior specialists). However, effectiveness research is clearly needed to evaluate whether CBT can be delivered with adequate fidelity and competence by trained staff within the school setting.

In addition to CBT, interpersonal psychotherapy for adolescents (IPT-A) has also proved to be efficacious in treating adolescent depression (Mufson et al., 1994; Mufson, Weissman, Moreau, & Garfinkel, 1999; Mufson et al., 2005). IPT-A addresses common adolescent developmental issues that are associated with depression, including separation from parents, authority and autonomy in the parent-teen relationship, development of dyadic interpersonal relationships, peer pressure, loss, and issues related to single-parent families. Mufson and colleagues (2005) recently evaluated the effectiveness of IPT-A delivered by trained staff in school-based mental health clinics in New York City. Compared with a treatment-as-usual control group, the IPT-A group showed significantly greater reductions in depressive symptomatology, faster recovery time, and improved levels of social functioning. Thus, IPT-A represents a promising treatment approach that has been effectively implemented within school-based mental health clinics.

Pharmacotherapy

Pharmacological treatment of adolescent depression remains controversial. Although earlier research found no support for tricyclics (American Academy of Child and Adolescent Psychiatry, 1998), recent findings for the selective serotonin reuptake inhibitors (SSRIs) have been more promising (e.g., Ambrosini, 2000; Emslie et al., 1997). The Treatment for Adolescents with Depression Study (TADS) recently provided strong support for fluoxetine (TADS Team, 2004). However, as with other trials, TADS found a small but significant increase in SSRI-associated suicidality, which led the Food and Drug Administration to recently issue a "black box" warning to the entire category of antidepressants. Given the safety questions regarding antidepressants for depressed adolescents, the fact that comorbid depression and substance abuse are associated with an increased suicidality, and that some degree of substance use

reduction is necessary before initiating SSRIs with depressed substance-abusing adolescents (e.g., Riggs & Davies, 2002), evaluating psychosocial treatments for adolescent depression continues to be an important priority.

CONCLUSION AND FUTURE DIRECTIONS

The overarching goal of this chapter was to review school-based approaches to the prevention and treatment of youth depression and suicidal behavior within the context of the three-tier intervention model. Although considerable progress has been made in this regard, the efforts to date have been rather fragmented and piecemeal. In order to move toward a response-to-intervention (RTI) framework, the three-tier intervention approaches studied need to be conducted in more carefully coordinated and concerted efforts. Furthermore, given the close ties between youth depression and suicidal behavior, the use of universal, targeted, and tertiary-level interventions should be integrated and complementary, rather than treating the behaviors as independent problems.

A number of future research directions have already been discussed throughout this chapter. We conclude with a few additional topics that warrant future research attention. Methods of effectively engaging and working with the parents of depressed and/or suicidal adolescents for either prevention or treatment interventions have yet to be developed. Connecting with families when interventions are provided in the school is even more challenging. However, given the generally small or nonsignificant effects for many prevention interventions, including parents has the potential to boost effectiveness.

Another important direction for future research involves the optimal timing of prevention interventions. Risk for depression and suicidal behaviors waxes and wanes among adolescents, as does the motivation to engage in and benefit from prevention programs. Information regarding the optimal methods of conducting periodic screening or "catching" adolescents when they become at risk is not currently available. Universal prevention efforts presumably are not affected by the timing of their delivery, but selective and indicated prevention interventions are strongly influenced by the timing of risk or elevated symptom status. Data on basic factors such as the duration of elevated risk or subthreshold symptom status in relation to the timing of prevention are unknown and warrant further research.

The impact of cultural, racial, and ethnic differences on engaging in and benefiting from both prevention and treatment efforts is another very understudied topic. Potential ways of tailoring programs to enhance effectiveness and the impact of client-therapist matching on race and ethnicity are additional areas for future research.

Lastly, as efficacy data continue to emerge, efforts at training school personnel in providing evidence-based approaches will be needed, along with research on promoting the widespread adoption of these programs by the schools. Schools are an ideal setting for mounting large-scale campaigns to effectively prevent and treat youth depression and suicidal behavior. The involvement of school psychologists and staff are

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essential for mounting such prevention efforts. It is our hope that by promoting protective factors and ameliorating modifiable risk factors through school-based interventions, the long-standing difficulties associated with youth depression and suicidal behavior may be averted.

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