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Chapter 15

THE SPECTRUM OF SUICIDAL BEHAVIOR

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Suicides among youth are a continuing tragedy. Between 1956 and 1996, the suicide rate in the United States increased from 0.4 to 1.6 for the 10- to 14-year age group, and from 2.3 to 9.7 for the 15- to 19-year age group (McIntosh, 2000). According to a National Vital Statistics Report (Centers for Disease Control [CDC], 2000), suicide is the third leading cause of death for these age groups, accounting for 13.4% of all deaths. Furthermore, severe suicidal ideation and suicide attempts among youth are associated with substantial psychopathology and adaptive impairment (Fergusson & Lynskey, 1995; Lewinsohn, Rohde, & Seeley, 1995; Reinherz et al., 1995), extreme distress for suicidal youth and their families, and innumerable psychiatric hospitalizations.

This chapter begins with a review of recent findings on the prevalence of suicidal thoughts and behaviors among youth. Research pertinent to the continuum of youth suicidality is then presented, with an emphasis on the links among suicidal thought, attempts, and completed suicide. This information is followed by a review of known risk factors, including a discussion of the psychiatric disorders that increase risk for suicidal behaviors. Our knowledge of these risk factors has increased rapidly during the past 20 years. Findings from epidemiologic and clinic-based studies have converged to form a consensus of primary risk factors. Finally, the latter part of the chapter outlines treatment interventions that may be effective in reducing suicidal ideation and, perhaps, suicide attempts among youth.

DEFINITION OF SUICIDAL BEHAVIOR

For the purposes of this discussion, *suicidal behavior* refers to the full spectrum of suicidality, which includes the traditional categories of suicidal ideation, suicide attempts, and completed suicide. *Suicidal ideation* represents thoughts or wishes to be dead or to kill oneself. *Suicide attempts* are self-injurious behaviors with some degree of suicidal intent. *Completed suicides* are self-inflicted and intended deaths. These three categories have often been conceptualized (e.g., Brent et al., 1988; King, 1997; Lewinsohn, Rohde, & Seeley, 1996) as distinct yet overlapping aspects of the spectrum of suicidal behavior.

It should be noted that there is much variability within each component of this spectrum. For example, suicidal ideation may range from the adolescent thinking that other individuals (such as friends or family members) would be better off if he or she were dead, to thinking through and planning a specific suicide attempt method. Similarly, a suicide attempt may range from an attempt of relatively low medical lethality and ambivalent or impulsive intent to one of much greater lethality in which the adolescent carefully develops and carries out a suicidal plan.

PREVALENCE OF SUICIDAL BEHAVIORS

Suicidal Ideation

It is not uncommon for adolescents to think about suicide. For example, the 1999 Youth Risk Behavior Surveillance (YRBS; Kann et al., 2000) found that, in the previous year, 19.3% of high school students nationwide had seriously considered attempting suicide, and 14.5% had made a specific plan to attempt suicide. In an epidemiologic longitudinal study of high school students (Oregon Adolescent Depression Project [OADP]), Lewinsohn et al. (1996) found that 12.9% of youths had considered hurting or killing themselves at some point in their lives, and 8.3% had made a suicide plan.

Prevalence rates indicate that adolescent females are 1.5 to 2 times more likely to report suicidal ideation than are adolescent males (King, 1997). For example, according to the 1999 YRBS (Kann et al., 2000), 24.9% of female students versus 13.7% of male students had seriously considered suicide, and 18.3% of females versus 10.9% of males had made a plan. Lewinsohn et al. (1996) found that 23.7% of OADP females and 14.8% of OADP males reported lifetime experiences of suicidal ideation.

Recent data suggest that rates of suicidal ideation in adolescence may peak at about the age of 16 years. Among OADP adolescents (Lewinsohn et al., 1996), lifetime suicidal ideation rates increased through the age of 16 (age 14 = 14.6%; 15 = 16.8%; 16 = 22.5%), then stabilized (17 = 20.1%; 18 = 21.0%). The 1999 YRBS data (Kann et al., 2000) showed a similar pattern as suicidal thoughts tended to peak in 10th grade. Twenty-two percent of 10th graders had seriously considered suicide in the previous 12 months (9th grade = 18.1%; 11th = 18.3%; 12th = 18.4%) and 17.7% had made suicide plans (9th = 14.6%; 11th = 13.6%; 12th = 11.4%).

As alluded to, the notion of suicidal ideation comprises suicidal thoughts that vary in their level of specificity and severity of intent. Within some studies (e.g., Andrews & Lewinsohn, 1992; Kienhorst, DeWilde, Van den Bout, Diekstra, & Wolters, 1990), researchers have captured this variability by operationalizing and measuring different aspects of suicidal ideation. Findings suggest that suicidal thoughts fall on a single continuum, with increasing levels of severity. For example, in the OADP (Andrews & Lewinsohn, 1992), the lifetime prevalence of each type of suicidal thought declined as the severity of intent of each thought increased: 16.3% of adolescents reported thoughts of death, 13.3% wished they were dead, 12.9% thought about killing themselves, and 8.3% made a plan.

Suicide Attempts

Although suicide attempts among youth occur less often than the experience of suicidal ideation, they are not infrequent. In fact, the rates of nonlethal attempts among adolescents are striking. General population studies have consistently shown that the percentage of adolescents reporting suicide attempts varies between 7% and 16% (King, 1997). Findings from the OADP (Andrews & Lewinsohn, 1992; Lewinsohn et al., 1996) indicated that 7.1% of individuals (females = 10.9%; males = 3.8%) reported having made one or more suicide attempts at some point in their lives. The 1999 YRBS (Kann et al., 2000) revealed that 8.3% of high school students nationwide (females = 10.9%; males = 5.7%) had made one or more attempts during the past year. Adcock, Nagy, and Simpson (1991) examined suicide attempt rates in 8th- and 10th-grade students in Alabama (N = 3,803) and found that 16% (females = 19%; males = 12%) reported at least one lifetime incident of attempted suicide.

As the preceding statistics suggest, similar to the gender difference for suicidal ideation, researchers have consistently found that a greater percentage of adolescent females report having attempted suicide. Moreover, also similar to the findings for suicidal ideation, some researchers have found that age is linked to prevalence rates. For example, according to the 1999 YRBS data (Kann et al., 2000), 10.6% of 10th graders reported at least one suicide attempt during the previous year. In contrast, 6.1% of 11th graders and 5.6% of 12th graders reported having made an attempt during the previous year. Utilizing a longitudinal design, Kovacs, Goldston, and Gatsonis (1993) examined ongoing rates of suicide attempts among outpatient adolescents with depressive disorders. They found that ages 13 to 15 years were peak periods for suicide attempts. At age 12, 3% of the adolescents made an attempt during the previous year; at age 13, 12% attempted suicide; at 14, 13% attempted suicide; and at 15, 11% made an attempt. Suicide attempt rates declined in later adolescence: 9% at 16; 6% at 17; and 2% at 18. According to Kovacs et al. (1993), younger adolescents may have a limited ability to regulate or tolerate intense negative affect or emotional distress. As they mature, they may develop better tolerance for dysphoric mood states and diverse coping resources and may therefore be less likely to resort to attempted suicide when they are despondent.

Any discussion of suicide attempts among adolescents would be incomplete without mention of the varying levels of lethality and intent involved in these attempts. Although the rates of suicide attempts among adolescents are relatively high, most attempts are low in medical lethality (i.e., the likelihood that the behavior will result in death). OADP findings (Lewinsohn et al., 1996) indicated that the most common suicide attempt methods for females were ingestion (55% of attempts) and cutting (31%). Males more often used methods of higher lethality. In addition to ingestion (20%) and cutting (25%), their methods included gun use (15%), hanging (11%), and other methods (22%), such as acts of injecting air into the veins or running into traffic. Other researchers have also documented that adolescent males use more lethal means when attempting suicide. For example, in a study of 3,437 adolescent students (469 of whom attempted suicide), Reynolds and Mazza (1994) found that female attempters were more likely to ingest pills (45.2% vs. 22.5%) and cut their wrists (30.4% vs. 18.6%) than were male attempters. In contrast, males were more likely to report the use of guns (12.4% vs. 0.4%), hanging or drowning (7.8% vs. 3.3%), and stabbing (7.0% vs. 6.6%).

Medical lethality can also be inferred through findings that detail the percentage of adolescents who receive medical attention following their suicide attempts. The 1999 YRBS data (Kann et al., 2000) revealed that, of those students who had attempted suicide during the previous 12 months, 31.3% had made an attempt that required medical attention. In corroboration of the preceding findings on suicide methods, the YRBS findings support the notion that suicide attempts by male adolescents are of higher lethality: 36.8% of male attempters required medical attention, compared to 28.4% percent of female attempters.

Suicidal intent can be defined as the extent to which an individual wishes to die. Findings from several clinical and community-based studies have indicated that suicidal intent and medical lethality are highly associated. For example, Robbins and Alessi (1985) found a high correlation (r = .90) between the seriousness of intent and the lethality of adolescent inpatients' most recent suicidal behavior. Andrews and Lewinsohn (1992) found a high positive correlation (r = .67) between intent and lethality among the OADP students. Despite the documented association between intent and lethality, it would be a mistake to assume that the medical lethality of a suicide attempt by an adolescent automatically matches the adolescent's intent to die. An adolescent may choose a method such as acetaminophen ingestion without having much knowledge about its actual toxicity. Because of the possible discrepancy between level of intent and lethality, it is extremely important to assess suicidal intent *and* medical lethality when determining the severity of the attempt.

Completed Suicides

According to National Center for Health Statistics data for 1998 (CDC, 2000), the suicide rate for individuals age 15 to 24 years in the United States is 11.1 per 100,000 individuals. There is a gender difference in completed suicides, although it is the reverse of what is seen with ideation and attempts (Figure 15.1). For female youth, the rate is 3.3. For males, it is 18.5. In contrast to the diminishing rate of nonlethal attempts that occurs during late adolescence and early adulthood, the rate for completed suicides increases with adulthood. The rate for children age 5 to 14 is 0.8. This is much lower than the rate of 11.1 found for individuals age 15 to 24, which is lower than the rate of 14.6 found for adults age 25 to 44.

As already noted, adolescent males more often use lethal methods when attempting suicide. This has commonly been used to explain the gender difference in adolescent suicide rates. Firearms are the most common method of suicide completion among adolescents (McIntosh, 2000). In the year 1996, firearms were used by 66.4% of male suicide victims and by 48.3% of female victims (age 15 to 19). After firearms, the most common methods for adolescent males were hanging (including instances of strangulation and suffocation, 22.7%), gas poisoning (3.4%), and poisoning that involved solid or liquid substances (2.3%). Methods of suicides for female victims included hanging (29.3%), solid or liquid poisoning (12.1%), jumping from heights (3.1%), and gas poisoning (2.5%).

One strategy for reducing the number of adolescent suicides in the United States may be to restrict the access of adolescents to firearms. In a case-control study, Brent et al. (1988) compared the characteristics of adolescent suicide victims to those of suicidal psychiatric inpatients and found that availability of firearms in the home was one

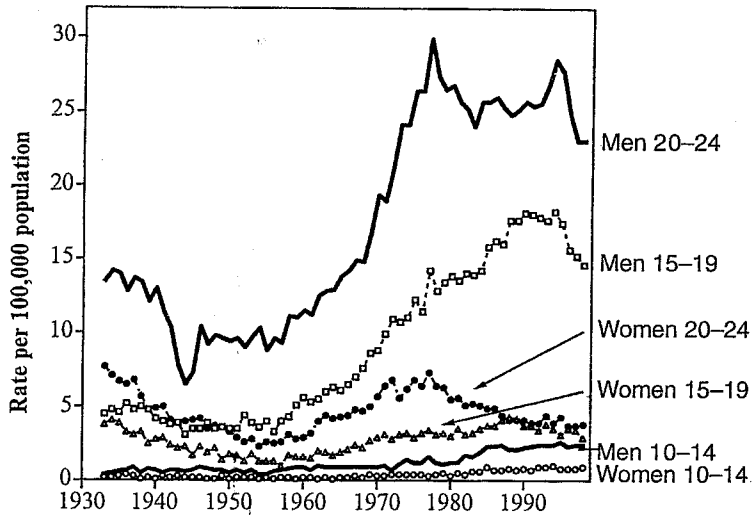

Figure 15.1 The Spectrum of Suicidal Behavior
Source: Data from the National Center for Health Statistics for 1998 (CDC, 2000).

differentiating factor. Firearms had been present in the homes of 74.1% of the suicide victims, compared to 33.9% of the homes of psychiatric inpatients. More recent studies have also found an association between completed suicide and the availability of firearms (Brent, Kolko, et al., 1993; Kellermann et al., 1992).

CONTINUUM OF SUICIDAL BEHAVIOR

Findings from a number of studies (e.g., Andrews & Lewinsohn, 1992; Brent et al., 1988; Kienhorst et al., 1990) suggest that suicidal ideation, suicide attempts, and completed suicides fall on a continuum of severity. These components of the spectrum of suicidality are each somewhat distinct, yet clearly overlapping. Among adolescents who think about suicide, a certain percentage will make a suicide attempt. And among those adolescents who make attempts, a smaller number will complete suicides. Information concerning this continuum derives from studies that have explored the relationship between the intensity of suicidal ideation and suicide attempts, as well as from retrospective and prospective studies that document continuity between history of attempts and completed suicides.

Kienhorst et al. (1990) explored numerous psychosocial predictors of suicidality in a sample of 9,393 students (age 14 to 20) from the Netherlands. They found that the best predictor of suicide attempts was frequent thoughts of suicide. According to the OADP findings (Andrews & Lewinsohn, 1992; Lewinsohn et al., 1996), 87.8% of females and 87.1% of males who attempted suicide at some point in their lives also

reported suicidal ideation. Of the nonattempters, 1.7% of females and 0.6% of males reported suicidal ideation. The OADP findings further indicated that the level of severity of suicidal ideation increased the likelihood for suicide attempts. Specifically, 16.7% of adolescents who reported high baseline ideation attempted suicide over the course of the next year. This contrasts to suicide attempt rates of 6.7% for adolescents with moderate baseline ideation, 2.8% for mild levels of baseline ideation, and 0.3% for those with no baseline ideation.

Brent et al. (1988) found that adolescent suicide completers were similar to suicidal psychiatric inpatients over a broad range of domains, including their history of suicide attempts and most psychiatric disorders. They stated that this overlap suggests a continuum between suicidal attempts and completed suicide. Forty-four percent of suicide completers had made previous suicide attempts. Marttunen, Aro, and Lonnqvist (1992), in a retrospective psychological autopsy study of 53 suicides (age 13 to 19) in Finland, found that 34% of suicide completers had a history of suicide attempts.

Several longitudinal studies (e.g., Kotila, 1992; Motto, 1984; Otto, 1972) have tracked the outcome of adolescent patients who had been hospitalized for suicide attempts. In an early study in Sweden, Otto (1972) followed 321 male youth over the course of 10 to 15 years and found that 11.3% committed suicide. Kotila (1992), in a shorter time frame of 5 years, tracked the welfare of 120 male adolescents and 302 females adolescents, age 15 to 19. Within 5 years, 1.2% of females died from suicide and 8.7% of males died from suicide or possible suicide (e.g., drowning). Thirty-nine percent of these deaths occurred within 6 months after hospitalization. Although a history of suicide attempt is a predictor of a future suicide attempt and completed suicide in males and females, it is clearly a stronger predictor among males.

RISK FACTORS

Study Methodologies

Researchers have used various study methodologies to form an integrated understanding of risk factors for suicidal behavior. Knowledge about risk factors for completed suicide derive primarily from national mortality statistics, psychological autopsy studies, and longitudinal studies of suicidal individuals. In the United States, data concerning deaths by suicide are compiled by the National Center for Health Statistics (NCHS) within the Centers for Disease Control (CDC). This information is primarily demographic. Individual states submit data from death certificates that have been completed by coroners and medical examiners. Complementing this information are data from population-based psychological autopsy studies, which involve a detailed examination of consecutive deaths by suicide within a defined geographic area. The psychological autopsy study methodology is considered to be a powerful tool for identifying risk factors for completed suicide (Moscicki, 1999). It involves obtaining retrospective information from people who knew the deceased and from medical, school, and other records. Information typically gathered include the victim's state of health, history of treatment, level of functioning, psychosocial symptoms, and environmental circumstances in the victim's life preceding the suicide. In contrast to

these two population-based methodologies, clinic- and hospital-based studies generally sample individuals who have expressed significant suicidal ideation or engaged in suicidal behaviors. Researchers may examine predictors of future suicidal behaviors in the context of a longitudinal design.

Information concerning risk factors for suicidal ideation and suicide attempts has been obtained from large-scale community-based studies as well as from clinic- and hospital-based studies. Prospective studies have been used to track the developmental course of psychopathology in adolescents from general community samples (e.g., Lewinsohn, Rohde, & Seeley, 1994) and to study the outcome of hospitalized adolescent suicide attempters (e.g., Brent, Kolko, et al., 1993; Goldston et al., 1999; King et al., 1995; King, Hovey, Brand, Wilson, & Ghaziuddin, 1997). Numerous descriptive and correlational studies have also enriched our understanding of the factors associated with suicidal ideation and suicide attempts among youth.

Psychopathology

Shneidman (e.g., 1993, 1996) has written in detail about precipitants of suicide. He believes that most suicides are associated with "psychache," which he defines as intolerable psychological pain. Suicidal behavior usually occurs when an individual has surpassed her or his threshold for psychological pain. In that sense, as Shneidman would argue, each suicidal act is an intensely personal act. Research has, however, substantiated the existence of commonalities or common pathways involving psychopathology or psychiatric disorders that are predictive of suicide risk (King, 1998). These include depression, alcohol and substance abuse, and a pattern of conduct disorder or aggressive and impulsive behavior. Although not discussed here, several other forms of psychopathology (e.g., anxiety disorders and schizophrenia) have also been associated with suicidal behavior in youth.

Depression

Rates of depression rise sharply during adolescence (e.g., Petersen et al., 1993), and studies of depressive disorders across the lifespan indicate that the risk of developing a depressive disorder is particularly high among older adolescents (Burke, Burke, Rae, & Reiger, 1991). Point prevalence and lifetime prevalence rates of major depressive disorder (MDD) among adolescents are approximately 2% to 4% (e.g., Garrison et al., 1997) and 20% (Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993), respectively. A disorder of substantial public health significance, MDD in adolescents is associated with a wide range of psychiatric comorbidity (e.g., Kovacs, 1996), substantial psychosocial impairment (e.g., Puig-Antich et al., 1993), and increased risk of suicide (Marttunen, Aro, Henriksson, & Lonnqvist, 1991; Rao, Weissman, Martin, & Hammond, 1993; Shaffer, Garland, Gould, Fisher, & Trautman, 1988).

Suicidal behaviors are common and often unrelenting among adolescents with depression. Lewinsohn et al. (1996) found that 41% of OADP students with MDD had considered suicide, compared to 6.5% of adolescents without MDD. In a prospective study of childhood-onset depression, Kovacs et al. (1993) identified a four- to fivefold increase in suicidal ideation and behavior among youth with MDD or dysthymic disorder, compared to youth with other psychiatric disorders. By late adolescence, 85% of those with depression had experienced significant suicidal ideation and 32% had attempted suicide. During a 6-month follow-up of adolescent inpatients, Brent, Perper, et al. (1993) found that 100% of adolescents who attempted suicide reported major depressive disorder, compared to 59% of adolescents who did not attempt suicide. Finally, in the nationwide retrospective study in Finland (Marttunen et al., 1991), half of the male suicide fatalities and two-thirds of the females suffered from a depressive disorder. As noted by Lewinsohn et al. (1996), community-based studies indicate that the strongest predictors of future suicide attempts are a past suicide attempt and a current episode of major depression.

Alcohol and Substance Abuse and Dependence

Alcohol abuse and dependence appear to be primary risk factors for adolescent suicidal behavior. They have been associated with suicidal behavior in numerous studies of adolescent suicide risk (e.g., Andrews & Lewinsohn, 1992; Kienhorst et al., 1990; King, Hill, Naylor, Evans, & Shain, 1993; Pfeffer, Newcorn, Kaplan, Mizruchi, & Plutchik, 1988). Pfeffer et al. (1988) analyzed the hospital charts of 200 consecutively admitted adolescent psychiatric inpatients and found significant positive associations among alcohol abuse, MDD, and the severity of recent suicidal behavior. During the baseline period of the OADP (Andrews & Lewinsohn, 1992), adolescents with alcohol abuse or dependence were nearly 7 times more likely to have attempted suicide than were adolescents without alcohol abuse or dependence. Moreover, compared to adolescents without alcohol abuse or dependence, those with alcohol abuse or dependence were 22 times more likely to attempt suicide during the first year of the study. In Kotila's (1992) 5-year follow-up of hospitalized adolescent suicide attempters in Finland, alcohol abuse was a significant predictor of eventual completed suicide.

Findings from retrospective studies also suggest that alcohol abuse and dependence are significant risk factors for suicide. For example, in an early matched control study, Garfinkel, Froese, and Hood (1982) reviewed the hospital records of 505 adolescent suicide attempters and found that substance abuse was a significant factor in differentiating attempters from matched controls. Hoberman and Garfinkel (1988) reviewed the medical examiner records of 229 adolescent suicide victims and found that 28% had detectable blood alcohol levels following death, and nearly half had abused alcohol at the time of their death. Finally, Marttunen et al.'s (1991) study found evidence of alcohol abuse or dependence for 23% of the male suicide victims and 44% of the female victims. In 51% of the suicides, the adolescent had drunk alcohol in the time period immediately preceding the suicide. Marttunen et al. (1991) conjectured that, given the retrospective nature of their findings, their estimates and those from similar studies might actually underestimate the prevalence of alcohol use among adolescent suicide victims.

The studies indicate that a significant proportion of adolescent suicides occur among individuals with histories of alcohol problems. Alcohol abuse increases impulsive behavior, impaired judgment, and mood changes, thus increasing the likelihood of a suicide attempt. Moreover, alcohol that is consumed preceding the suicide act may add to the risk of a medically serious attempt (Robbins & Alessi, 1985). Not surpris-

ingly, comorbid depression and alcohol abuse appears to enhance the risk for suicidal behavior (Kovacs et al., 1993; Shafii, Steltz-Lenarsky, Derrick, Beckner, & Whittinghill, 1988). For example, Shafii et al.'s (1988) retrospective study of adolescent suicides (age 11 to 19) found that 76% of victims suffered from major depression or dysthymia, 62% experienced alcohol or substance abuse, and 38% (vs. 5% of matched controls) had comorbid depression and alcohol or substance abuse.

Antisocial Behavior, Aggression, and Impulsivity

In their prospective study of OADP adolescents, Lewinsohn et al. (1996) reported that the baseline presence of disruptive behavior disorder was a significant predictor of future suicide attempts, but only when it was comorbid with major depression. Similarly, Kovacs et al. (1993) found that conduct disorder behavior increased the likelihood for suicide attempts when linked with depression. They found that 57.5% of suicide attempts made during follow-up occurred during episodes of major depression or dysthymia, 16.1% occurred during episodes of depression that were comorbid with conduct or substance use disorder, and only 8% were made during episodes of conduct or substance use disorder without depressive features. Pfeffer et al. (1988), in their evaluation of the hospital charts of adolescent psychiatric inpatients, found that aggressive behavior was linked to suicidal behavior. Finally, in regard to psychological autopsy studies, Marttunen et al. (1992) reported that 43.4% of adolescents who had killed themselves had displayed antisocial behavior during the last year of their lives; and Shafii, Carrigan, Whittinghill, and Derrick (1985) reported that 70% of adolescent suicide victims in the Louisville area had a history of antisocial behavior.

Studies such as those previously mentioned (see also Brent et al., 1988; Rich, Young, & Fowler, 1986) suggest that patterns of impulsivity, aggression, and violent behavior are connected to suicidal behavior in adolescents. Moreover, these personality features—which are characteristic of conduct disorder and adult antisocial personality disorder—further increase the risk for suicidal behavior when they are comorbid with depression and substance abuse. As noted by King (1997), because these aggressive, antisocial patterns of behavior tend to emerge relatively early in life and are associated with a variety of negative outcomes, they have important predictive validity and represent an important developmental pathway in our understanding of depression comorbidity and suicidal behavior.

Summary

Significant psychopathology and continued, severe psychosocial impairment seem to be the rule, rather than the exception, for suicidal adolescents. In fact, authors such as Marttunen et al. (1991, 1992) have argued that suicide among adolescents is most often the endpoint of a long course of severe pathology and distress.

Family and Interpersonal Stress

A growing number of empirical studies (e.g., Brent et al., 1994; Lewinsohn et al., 1996; Marttunen, Aro, & Lonnqvist, 1993; Pfeffer et al., 1988; Shaffer et al., 1996) indicate

that family and interpersonal difficulties are associated with suicidal behavior. In a psychological autopsy study of completed suicides, Shaffer et al. (1988) documented a strong relationship between suicide and instances of being rejected, ridiculed, or teased by others. Moreover, among OADP youth, Lewinsohn et al. (1996) found that low social self-competence, along with low social support from friends, significantly predicted future suicide attempts.

In a nationwide retrospective study of adolescent suicides in Finland, Marttunen et al. (1993) conducted a more thorough examination of interpersonal precipitants. They examined the incidence of precipitant stressors that occurred during the last month of the victims' lives. Interpersonal conflicts and separation were the most common precipitants. Eleven percent of victims experienced conflict with parents, 21% with a girlfriend or boyfriend, and 9% with someone other than a parent, girlfriend, or boyfriend. Fifteen percent underwent separation from a girlfriend or boyfriend, 6% from parents, and 6% from someone else. Twenty-six percent endured interpersonal problems other than separation and conflict. Forty-eight percent of the interpersonal stressors occurred during the last 24 hours of the adolescents' lives; 76% took place during the last week.

Brent et al. (1988) assessed the frequency of precipitants that took place during the 6 weeks before the suicidal episodes of adolescent suicide attempters and suicide victims. Very high rates of overall interpersonal conflict were found for both the suicidal inpatients (SI; 87.5%) and victims of completed suicide (CS; 70.4%). Interpersonal conflicts were highest with parents (SI 69.6%; CS 22.2%), peers (SI 43%; CS 11.1%), and girlfriend or boyfriend (SI 35.7%; CS 25.9%). High frequencies were also found in both groups for overall interpersonal loss (SI 44.6%; CS 18.5%) and losses tied to peers (SI 8.9%; CS 11.1%) and girlfriend or boyfriend (SI 12.5%; CS 3.7%). Pfeffer et al. (1988) found that loss of boyfriend, recent change in school, and parental discord were associated with suicidal behavior among female adolescent psychiatric inpatients. According to Pfeffer et al., each of these variables can be conceptualized as an expression of loss of social attachments.

As reviewed by Wagner (1997), several familial stressors have been linked to suicide attempts and completions. Previous research suggests that a history of physical or sexual abuse, the loss of or separation from family members, and poor communication and problem solving within the family are risk factors for suicide attempts. Furthermore, research suggests that a history of physical or emotional abuse or neglect, the loss of or separation from family members, poor communication and problem solving within the family, and psychopathology in the family—namely depression, alcohol or substance abuse, and history of suicide attempts of immediate family members—may be risk factors for completed suicide. Individual studies may help in bringing these generalizations to light.

King, Segal, Naylor, and Evans (1993) identified family characteristics connected to suicidal behavior in depressed adolescents by comparing groups of depressed suicidal inpatients, depressed nonsuicidal inpatients, and normal comparison adolescents. They discovered that suicidal adolescents more often had fathers who reported significant depressive symptoms, and that the suicidal adolescents appeared to have more distant relationships with their fathers. Brent et al. (1994) used a retrospective case-control study to identify familial risk factors for completed suicide. They found that,

in contrast to the community controls, suicide victims were less likely to have lived in a two-parent home; were exposed more often to parent–child discord, physical abuse, and residential instability; and more often lived in families with a history of depression and substance abuse.

Suicide Risk Among Gay, Lesbian, and Bisexual Youth

A recent body of literature (e.g., Faulkner & Cranston, 1998; Fergusson, Horwood, & Beautrais, 1999; Garofalo, Wolf, Wissow, Woods, & Goodman, 1999; Remafedi, French, Story, Resnick, & Blum, 1998) has established that gay, lesbian, and bisexual (GLB) adolescents are at substantial risk for suicidal behavior. General population surveys found (Garofalo, Wolf, Kessel, Palfrey, & DuRant, 1998; Remafedi et al., 1998), for example, that 42% of GLB youth experienced suicidal ideation during the past year, and 28% of GLB youth made at least one suicide attempt during the year.

GLB youth face some of the same risk factors for suicide attempts that affect heterosexual youth, although factors such as comorbid depression, substance abuse, and conduct disorder have been found to be amplified in GLB youth (Fergusson et al., 1999). However, there are some risk factors that appear to be particular to GLB youth. For example, stigmatization and discrimination against GLB individuals are still commonplace in society. The negative, hostile attitudes from society are especially heightened because discrimination and intolerance are openly supported by many societal institutions such as churches, schools, and youth programs who may not accept or support GLB adolescents (McDaniel, Purcell, & D'Agelli, 2001; McFarland, 1998). Living in a homophobic environment may lead GLB youth to internalize negative self-images of shame and self-hatred that are based on societal myths and stereotypes of homosexuality (McDaniel et al., 2001; McFarland, 1998).

GLB adolescents may be caught in a double-bind situation. GLB youth who disclose their sexuality suffer increased levels of social isolation, rejection, frequent harassment, and violence from both peers and family members (Bagley & Tremblay, 2000; Faulkner & Cranston, 1998; Garofalo et al., 1999; McDaniel et al., 2001; McFarland, 1998). However, GLB youth who have not disclosed their sexuality may experience intense anxiety from the fear of being persecuted if their sexuality were brought into the open.

Developmentally, GLB youth may not experience intimate relationships until a later age than other adolescents. They may thus be relatively less skilled in maintaining intimate relations, and they may perceive the breaking up of relationships as confirming negative self-evaluations (McFarland, 1998). GLB youth are more likely than heterosexual youth to be pressured to leave home and live self-sufficiently (McFarland, 1998). This may be developmentally premature. Some GLB youth who leave home may not be prepared to live independently.

Finally, issues surrounding HIV and AIDS are possible linkages to suicide risk (McDaniel et al., 2001; McFarland, 1998). For individuals who are just becoming aware of their sexual orientation, intense anxiety may be experienced over the possibility of contracting HIV and AIDS. Such anxiety may lead to other psychiatric symptoms and, for some, to an increased risk for suicide. Second, individuals who have contracted HIV or AIDS may engage in self-destructive actions that include suicidal behavior.

Theoretical Considerations

Because, on quick perusal, the literature on youth suicide risk may appear to consist of static categories of predictors, it is worth noting that theoretical attempts have been made to understand relationships among these risk factors and their influences on suicidal behavior (e.g., Linehan, 1993). King (1997) argues that because adolescence is characterized by certain developmental tasks, role requirements, and social contexts, models are needed that specifically address risk for suicidal behavior *during* adolescence. She notes that it is possible to move beyond a catalogue of risk factors by conceptualizing youth suicidal behavior and associated pathologies (e.g., increased prevalence levels of depression and alcohol abuse) as conditions that unfold over time within a context of multiple developmental changes. Transactional models of development (e.g., Sameroff & Chandler, 1975) provide these types of conceptualizations. A transactional model is a useful tool in our efforts to understand and prevent adolescent suicidal behavior because of its emphasis on the continuous interplay among risk variables (and thus an ability to detail specific windows of preventive opportunity) for specific profiles of at risk youth.

TREATMENT OF SUICIDAL YOUTH

The American Academy of Child and Adolescent Psychiatry (AACAP, 2001) recently published practice parameters for the assessment and treatment of children and adolescents with suicidal behavior. These parameters provide detailed suggestions for clinicians on the assessment, crisis management, and treatment of suicidal youth. They are complemented by other recent efforts to provide clinicians with practical guidelines (e.g., Brent, 1997; Rudd, Joiner, Jobes, & King, 1999). Although empirically based knowledge concerning the effective treatment of suicidal behavior is limited, these sets of recommendations integrate empirical knowledge with clinically derived expertise. As Rudd et al. (1999) state in their guidelines for outpatient treatment, this is consistent with the goal of integrating science and practice, while acknowledging the current empirical limitations in our understanding of effective interventions. The following discussion emphasizes studies that are part of a developing empirical foundation for the effective treatment of suicidal individuals.

Efficacy of Treatment Strategies for Suicidal Youth

The effort to prevent suicide attempts and completed suicide in youth is challenged by the near-complete absence of empirically validated, effective treatments for suicidal behavior in youth (King & Knox, 2000). The meager state of our knowledge has been highlighted in several recent reviews, including practitioner guidelines for the aftercare of suicidal adolescents (Brent, 1997), randomized clinical trials of interventions designed to reduce suicidal behavior (Linehan, 1997), and guidelines for the outpatient treatment of suicidality (Rudd et al., 1999). The current scientific basis provides only tentative answers to some of the most fundamental questions concerning interventions, their effectiveness, and their potential associated harm.

No randomized controlled study targeting suicidality in youth has clearly demonstrated efficacy in terms of reduced adolescent suicide attempts, and few controlled studies have demonstrated reductions in suicidal ideation (Rudd et al., 1999). In addition, to the authors' knowledge, no controlled study specifically targeting suicidal behavior in preadolescents has ever been conducted.

Rudd et al. (1996) evaluated the efficacy of a brief cognitive-behavioral outpatient treatment intervention and demonstrated reductions (over the course of 1 to 12 months) in suicidal ideation among older adolescents and young adults. Their cognitive-behavioral intervention incorporated a strong emphasis on problem solving, which is consistent with other interventions demonstrating reductions in suicidal ideation, depression, and hopelessness (as reviewed in Rudd et al., 1999).

In a randomized trial of youth (age 16 and younger) who had deliberately poisoned themselves, Harrington et al. (1998) examined the outcome differences (at 2 and 6 months) between "routine care" and a home-based family intervention. The family intervention consisted of an assessment session and four home visits by social workers who conducted sessions on family problem solving. No significant group differences were found in suicidal ideation, hopelessness, or adolescent perceptions of family functioning. Harrington et al. found, however, that the family intervention was associated with a reduction in suicidal ideation among youth without major depression. In addition, parents in the intervention group were more satisfied with treatment than were parents in the routine-care group.

Cotgrove, Zirinsky, Balck, and Weston (1995) randomized hospitalized adolescent suicide attempters to either a treatment group ($n = 58$) that received "standard care," or an experimental group ($n = 47$) that received a token that allowed for immediate rehospitalization—without question—if the adolescent felt suicidal and felt the need to be hospitalized. Of the adolescents in the token group, 11% used their tokens and 6% attempted suicide during the next year. In contrast, 12% of adolescents in the control group attempted suicide. Although the group differences were not statistically significant, a 1-year reduction in suicide attempts was evident for adolescents who received tokens, even among those who chose not to use them. Even though the findings from this study are limited, this approach appears promising.

Other treatment studies targeting suicidal adults include a study of young adult females with borderline personality disorder. Linehan, Armstrong, Suarez, Allmon, and Heard (1991) compared a cognitive-behavioral treatment (i.e., dialectical behavior therapy [DBT]) intervention with "treatment as usual" (treatment of choice in the community) and found that—at 4-month intervals during the course of treatment—those females who received the cognitive-behavioral treatment had fewer suicide attempts, attempts of less lethality, and better treatment adherence. At 1-year follow-up (Linehan, 1993), the DBT group reported fewer suicidal attempts, less anger, and better social adjustment for the 6-month period directly following treatment, and better social adjustment and fewer psychiatric inpatient days for the following year. In a randomized controlled study of an outreach intervention program for adult suicide attempters evaluated in an emergency room, Welu (1977) found a significant reduction (at 1-month and 4-month follow-up) in suicide reattempts and alcohol use among individuals assigned to the outreach program, compared to individuals who were assigned to normal treatment. Outreach efforts consisted of home visits and telephone contacts.

Treatments targeting the family unit are often considered to be a key component of interventions with youth with depression and suicidal behavior because of the connections between suicidal behavior and family conflict, parent–adolescent communication problems, parental psychopathology, and family history of suicidal behavior (Keitner et al., 1987; King, Segal, et al., 1993; Shafii et al., 1985; Wagner, 1997). In a clinical trial comparing three psychosocial treatments for adolescent depression, Brent et al. (1998) found that the efficacy of cognitive behavioral treatment for these adolescents "plummeted" in the presence of self-reported maternal depression, suggesting the need to assess and treat maternal psychopathology. A family therapy program called Successful Negotiation/Acting Positively (SNAP; Rotheram-Borus, Piacentini, Miller, Graae, & Castro-Blanco, 1994) was developed to target family functioning in families of youth suicide attempters. The program's primary goal is to increase positive family communication skills and improve the family's ability to use effective problem-solving strategies during conflict. This is a promising approach that suggests the possibility of positively impacting treatment adherence among female adolescent suicide attempters presenting to an emergency room (Rotheram-Borus et al., 1999).

Summary

Taken together, the preceding findings from controlled studies of adolescents and adults suggest that individual cognitive-behavioral treatments that focus on problem solving and depressive cognitions may be helpful for depressed and suicidal persons (e.g., Brent et al., 1997; Linehan, 1993; Linehan et al., 1991; Rudd et al., 1996). Moreover, follow-up outreach that includes home visits or telephone contact may help reduce suicidal behavior after individual treatment. Cognitive-behavioral family therapy programs may be helpful for adolescent suicidal behaviors that appear to be linked to familial stressors and pathology.

In closing this section, it should be noted that it is essential to treat the identifiable psychopathology in adolescents who present with suicidal behaviors (Brent, 1997). As previously discussed, the large majority of these youth have severe emotional and behavioral disturbances—treatable psychiatric or mental disorders—that are risk factors for suicidal ideation, suicide attempts, and completed suicide. The reader is advised to refer to other chapters in this book concerning the effective treatment of these disorders.

GAPS IN OUR KNOWLEDGE

Although our understanding of youth suicide risk factors has grown rapidly during the last 2 decades, substantial gaps in our knowledge remain. The most visible or glaring gap concerns information about effective treatments that target suicidality in youth. As highlighted in *The Surgeon General's Call to Action to Prevent Suicide* (U.S. Public Health Service, 1999), effective suicide prevention and intervention strategies are sorely needed. Few randomized controlled intervention trials have been conducted with youth (Rudd et al., 1999), evaluated interventions have shown limited impact on suicidal ideation and behavior, and suicidal adolescents' follow-through

with treatment recommendations has generally been poor (Spirito, Boergers, & Donaldson, 2000).

Additional questions concerning risk factors for the spectrum of suicidal behaviors also remain. Further empirical studies of psychobiologic and genetic risk factors are essential, as are detailed prospective examinations of the roles of social anxiety, hopelessness, and personality traits. There has been a relative absence of research that details culturally specific factors that may contribute to adolescent suicidal behavior (Hovey & King, 1997). Difficulties encountered during the process of acculturation may be linked to suicidal behavior in different immigrant ethnic (e.g., Chinese Americans, Shiang, 2000; Mexican immigrants, Hovey, 2000) and Native American groups (Range et al., 1999). As an example, in a study of immigrant and second-generation Mexican adolescents in southern California, Hovey and King (1996) found that youth suffering from acculturative stress were more likely to experience high levels of depression and suicidal ideation. As another example, close examination of the nationwide YRBS data (Kann et al., 2000) reveals that 12.8% of Hispanic students (females 18.9%) attempted suicide during the previous 12 months, compared to 8.3% of all YRBS students. Although these findings do not address specific Latin subgroups, generational status, or levels of acculturative stress, they do expose the need for a detailed exploration of cultural factors that may contribute to elevated rates of suicidal behavior.

CONCLUSION AND FUTURE DIRECTIONS

Suicide is the third leading cause of death for adolescents in the United States. The continuum of adolescent suicidal behavior includes suicidal ideation of varying intensity and specificity, suicide attempts of varying intent and lethality, and completed suicide. According to general population surveys, approximately 7% to 20% of adolescents experience suicidal ideation on a yearly basis, and 7% to 16% make a suicide attempt at some point in their lives. Rates of suicidal ideation and suicide attempts tend to decrease by late adolescence. Although female youth report higher rates of suicidal ideation and suicide attempts, male youth show a higher rate of suicide completion. Suicide attempts by male youth more often involve lethal means.

Findings from population-based and clinical studies during the past 20 years have resulted in a consensus regarding primary risk factors for suicide attempts and completed suicide among youth. Predictors of suicide attempts include suicidal ideation, a previous suicide attempt, identifiable psychopathology, family and interpersonal difficulties, and stressors such as those that are often present in the lives of gay, lesbian, and bisexual youth. In addition to these factors, availability of firearms is a known risk factor for completed suicide.

There is a paucity of knowledge concerning evidence-based interventions or treatments that target and reduce suicidal behaviors in youth. Nevertheless, the limited data available suggest that cognitive-behavioral interventions with some type of follow-up outreach and contact may be beneficial. In addition, a family intervention and supplemental efforts to improve treatment adherence are often warranted.

The Surgeon General's Call to Action to Prevent Suicide (U.S. Public Health Service, 1999), the efforts of national organizations and advocacy groups, and recent initiatives of the National Institute of Mental Health (e.g., spearheading reviews of suicide risk assessment instruments and publishing a document addressing ethical issues in research with suicidal individuals) have combined to create a sense of urgency and commitment for research related to suicide prevention. During the past 20 years, researchers have accumulated a rich knowledge base concerning prevalence rates and primary risk factors for suicidal behaviors among youth. It is hoped that over the next 20 years, this will be supplemented by information concerning risk factors among specific racial and ethnic minority groups in addition to information about the nuances and mediators of risk among all youth. Finally, it is anticipated that by the year 2020, a chapter such as this will necessitate review of an entire body of evidence-based intervention strategies targeting the spectrum of suicidal behaviors in youth.

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