Suicide and Suicidal Behaviors in Children and Adolescents

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Introduction

Suicide and suicidal behavior have been described for nearly all of recorded history (Rosen, 1971). Historically, societal and professional perspectives on suicide have gone through continual periods of acceptance, rejection, ambivalence, and philosophical debate -for millennia. Even today, the view of suicide as a pathological behavior or mental health problem to be prevented has been questioned by some (e.g., Szasz, 1986). The existential debate as to the legitimacy or normality of suicide is enervated when we consider suicidal behavior in children and adolescents.

Children and adolescents differ significantly from adults in their ability to cope with stressors and engage in problem-solving, in their perception and perspective of the future, and in their knowledge and understanding that undesirable events or situations can and often do change. These and other characteristics, such as potential deficiencies in self-regulation, contribute to a vulnerability in young people that is uncommon in mature adults. We also find many vulnerable youngsters who are exposed to situations and forces at home and elsewhere that they perceive as uncontrollable. Because of a limited repertoire of adaptive and coping skills, stresses and risk factors for suicidal behavior may be exacerbated in young people by their belief that they have little agency for control or ability to change undesirable environments and forces. We also find mental health problems such as depression among youngsters at risk for suicidal behaviors. However, our research shows that a significant number of young people who demonstrate suicidal behaviors do not manifest concomitant clinical levels of depressive symptomatology (Reynolds & Mazza, 1990).

In recent years, the news media have focused attention on suicidal behaviors among

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children and adolescents. This focus has increased public awareness of this problem, although public understanding still remains low, and anecdotal reports suggest that many myths and misconceptions regarding suicide continue to persevere. However, there has been a tremendous increase in the research on these problem areas in the past decade. This rapid accumulation of knowledge has occurred across many domains of study, including psychological, psychiatric, medical, and educational.

As this chapter illustrates, suicidal behavior in children and adolescents is one of the most significant mental health problems among the youth of today. Official statistics on the epidemiology of suicide indicate that the base rate for completed suicide is relatively low in comparison to formal diagnosed psychiatric disorders, such as major depression. However, research on the spectrum of suicidal behaviors, which includes suicide attempts and suicidal ideation, suggests that suicidal behaviors as a class of psychopathology are a prevalent problem among adolescents and to a somewhat lesser extent in children. In addition to the issues and warnings raised by mental health professionals, concern about adolescent suicide has also been shown by members of the United States Congress. Recently, United States Representative Gary L. Ackerman (1993), citing a Gallup Organization survey of adolescent suicidal behavior, reported that 60% of teens surveyed personally knew another teen who had attempted suicide.

The recognition of suicidal behavior as a growing and prevalent problem among children and adolescents is not new; nor are the concerns that many professionals in school and clinical settings are not providing adequate attention to this problem. Nearly 20 years ago, Toolan (1975) noted that suicidal behaviors were increasing among children and adolescents. Providing observations on a sample of approximately 900 admissions in 1966 to the child and adolescent units of Bellevue Hospital in New York City, Toolan found that 102 youngsters, including 18 children between the ages of 5 and 12 years, were seen for suicide attempts and threats. Toolan’s description of youngsters and his general suggestions for treatment (Toolan, 1975) are similar to those found in contemporary reports. Thus, although our literature base on suicidal behavior in youngsters has increased exponentially over the past 20 years, our knowledge base specific to some salient issues such as treatment has shown small gains.

Suicidal Behavior as a Distinct Form of Psychopathology

For many years, suicidal behavior has been considered a symptom component of several psychiatric disorders, such as major depression and borderline personality disorders (American Psychiatric Association, 1980, 1987, 1994). However, suicidal behavior does occur in the absence of formal psychiatric disorders (e.g., Brent, Perper, Moritz, Baughner, & Allman, 1993). In some cases, this circumstance may obviate the provision of services or lessen the clinical significance of suicidal behaviors as a form of pathology. Irrespective of other psychopathology, however, suicidal behavior represents a significant target for intervention (Reynolds, 1988).

The need to formalize as a diagnostic category suicidal behavior or suicidality—defined to include suicidal ideation and behaviors that are deliberately self-injurious—has been presented by R. A. King, Pfeffer, Gammon, and Cohen (1992). R. A. King et al. (1992) called for the inclusion of suicidality as a diagnostic category in the then-upcoming DSM-IV, noting the inadequacies of DSM-III-R in its consideration of suicidal behavior. R. A. King et al. (1992) proposed a category of suicidal disorder of childhood and adolescence that included two subtypes, suicidal ideation and suicidal behavior, with the latter specific to suicide attempts and serious self-injurious behavior. Relatedly, Kahan and Pattison (1984) proposed the consideration of the “Deliberate Self-Harm Syndrome” (DSH) as a variant of nonlethal suicidal behavior that typically emerges during late adolescence. These authors also suggested the consideration of DSH as an Axis I disorder in DSM-IV.
The 1991 DSM-IV Options Book (American Psychiatric Association, 1991), which was an initial draft of proposed DSM-IV categories, included the suggested problem of suicide attempts, noting the particular relevance for adolescents who do not meet criteria for other disorders. In addition, a new option of "With Suicidal Behavior" was suggested as a subtype of Adjustment Disorder if criteria for other subtypes of Adjustment Disorder (e.g., With Depressed Mood, With Disturbance of Conduct) were not met. However, neither of these options/recommendations was included in DSM-IV (American Psychiatric Association, 1994).

With the emergence of systematic studies of suicidal behaviors in children and adolescents, and the growing awareness that such behaviors may occur without the presence of formal mental disorders, there is a need to recognize suicidal behavior in youngsters (as well as adults) as a distinct form of psychopathology with diverse presenting characteristics and biopsychosocial etiologies, if not within the context of a formal diagnostic system, then by professional acceptance of suicidal behaviors as a significant psychological disturbance irrespective of the existence of clinical or personality disorder.

The Problem of Suicidal Behavior among Children and Adolescents

It cannot be overstated that suicidal behavior is a serious and often overlooked problem among children and adolescents. Suicidal behavior has been reported as one of the most frequent psychiatric emergencies among children and adolescents (Robinson, 1986), with suicidal behaviors as one of the strongest predictors of psychiatric hospital admissions among adolescents (Hillard, Slomowitz, & Deddens, 1988). Recent surveys and government statistics suggest that suicide is the second leading cause of death among adolescents 15-19 years of age [National Institute of Mental Health (NIMH), 1992]. Although suicide is less prevalent among young children, children as young as preschool age do make suicide attempts and exhibit suicide-like behaviors (Pfeffer & Trad, 1988; Rosenthal & Rosenthal, 1984; Rosenthal, Rosenthal, Doherty, & Santora, 1986; Trad, 1990). Statistics suggest that there are over 2000 suicides by 15- to 19-year-olds each year in the United States. Most professionals view the number of suicides reported as an underestimate of the number of youngsters who purposefully take their own lives each year. As we shall show, it may be estimated that there are over 1 million additional youths who attempt suicide each year but survive. It may be inferred by rates of hospitalization that many of these attempts are of limited lethality, and many others may be considered gestures rather than true attempts. However, a significant number of youngsters who attempt suicide injure themselves physically or mentally.

Research also indicates that most parents are unaware of their youngsters' suicidal behaviors (Joffe, Offord, & Boyle, 1988; Rey & Bird, 1991; Walker, Moreau, & Weissman, 1990; Velez & Cohen, 1988; Zimmerman & Asnis, 1991a,b), and data suggest that most adolescent suicide attempts do not tell others prior to their attempt. In a sample of 59 adolescents with a history of suicide attempts whose parents sought psychiatric help for their youngsters, Zimmerman and Asnis (1991b) found that 61% of parents were unaware of their youngsters' suicide attempt. Similar findings were reported in a study of suicidal children and adolescents conducted by Kashani, Goddard, and Reid (1989), who found that 86% of parents were not aware of their youngsters' suicidal behavior. Velez and Cohen (1988), in a large community sample study of mothers' and children's reports of suicidal behavior, found little concordance between child reports of suicide attempts and suicidal ideation and mothers' reports. For instance, Velez and Cohen found a correlation of \( r = 0.16 \) between mother and child report of suicidal ideation, with youngsters reporting greater ideation than mothers. Of the 25 children and adolescents who reported having made one or more suicide attempts, only 2 mothers indicated an awareness of these attempts.
Nosology of Suicidal Behavior in Youngsters

It is important for the study and understanding of suicidal behavior in youngsters to explicate the variety and nature of clinical phenomena associated with this domain of behavioral pathology. There have been numerous perspectives taken to delineate types of suicidal behavior as well as types of suicide completion (e.g., Pokorny, 1974; Zilboorg, 1936; Zubin, 1974). Presented here is a severity perspective that delineates degrees of suicidal behavior and cognitions within a hierarchical framework. This model is viewed as providing a basis for distinguishing forms of suicidal behavior for purposes of clinical work as well as research. All too often, we create very simple constructs such as “thoughts of suicide,” “suicide attempt,” and so forth without considering the potentially complex and diverse nature of each domain of suicidal behaviors/cognitions. In order to gain a better understanding of how to prevent suicide, we must first recognize and understand the variety and complex nature of suicidal behavior, especially as it relates to children and adolescents.

The terminology specific to the description of suicidal behavior has varied over time, but in general three broad categories have been delineated: suicidal ideation, suicide attempts, and suicide completion. In addition, suicidal gestures or threats may also be considered as aspects of suicidal behavior. Other descriptions such as parasuicide have been used in the literature, with slight differences in definition of suicidal behavior. For this chapter, the former nomenclature will be used. This classification is consistent with that of the Center of Studies of Suicide Prevention and the National Institute of Mental Health (Ellis, 1988).

Operationally, the categories of suicide and suicidal behavior are defined as follows: Suicide is an act of intentional self-injury that was fatal to the individual. A suicide attempt represents a broad domain of self-injurious behavior that involved some degree of intentionality. A number of authors prefer to use the term “parasuicide” to describe suicide attempts and other forms of intentional self-injury; although this term is often used without implying motivation or severity of outcome (Fremouw, de Perczel, & Ellis, 1990; Kreitman, 1977; Linehan, 1981; Linehan & Nielsen, 1981; Shneidman, 1985). Although we agree that the term parasuicide is a preferred descriptor, we will use the more common term “suicide attempt” in this chapter. Moreover, as we will note, there are significant problems in the application and utility of the term suicide attempt to define a broad class of suicidal behaviors. “Suicidal ideation” as defined by Reynolds (1988, p. 4) “is the domain of thought and ideas about death, suicide, and serious self-injurious behavior, including thoughts related to the planning, conduct, and outcome of suicidal behavior.” Thus, suicidal behavior is broadly described in this chapter to include the domains of suicide, suicide attempts, overt and covert threats or gestures, and suicidal ideation.

Suicide Completion

Suicide completion is only one behavior among many along the suicidal-behavior continuum. Ladame and Jeanneret (1982) describe suicide as only the tip of the iceberg of suicidal behaviors. The research and information gathered on adolescent suicide have been obtained by two primary methods. One common method of evaluation is by psychological autopsy, in which information is gathered from the family, relatives, and peers of the deceased (Phillips, 1989; Runeson, 1989; Shapiro, Carrigan, Whittinghill, & Derrick, 1985). Psychological autopsies attempt to reconstruct, understand, and determine what was happening in the victim’s life preceding the suicide. Premorbid status, and in particular psychiatric diagnoses, made using psychological autopsy procedures have been viewed as reasonably valid (e.g., Brent et al., 1993d). In addition to relatively in-depth psychological autopsies, a second method has been to review the medical charts and
Methods of Suicide Completion. The methods used for suicide completion by adolescents are quite diverse, with research suggesting that methods vary by country. This outcome is reasonable, as there are differences in the availability of means, such as firearms, between countries. In the United States, firearms are the most popular method for males and females (Jobes, 1992; Rosenberg, Smith, Davidson, & Conn, 1987). In contrast, the most widely used methods in England are suffocation, strangulation, and hanging (Hawton, 1986). In the United States, suicide by firearms in adolescents increased by 45% from the 1950s to the 1970s, while the rate for most other methods stayed fairly constant (Boyd, 1983). Hoberman and Garfinkel (1988a) found differences in methods used between males and females and between younger and older youngsters. Males and older adolescents were more likely to use firearms as a method for suicide, while females were more likely to use ingestion or carbon monoxide poisoning. Children and younger adolescents were most likely to commit suicide by hanging.

Psychopathology. Much of our knowledge base specific to the premorbid psychological status of adolescent suicide completers has been obtained through the use of psychological autopsies (e.g., Runeson, 1989; Shafi et al., 1985; Shafi, Steltz-Lemarsky, Derrick, Beckner, & Whittinghill, 1988). On the basis of psychological autopsies, DSM-III clinical disorders found among adolescent suicide completers included mood disorders, conduct disorder, and substance abuse (Runeson, 1989; Shafi et al., 1985, 1988). In the Shafi et al. (1988) study, 95% of the suicide completers met the criteria for one or more DSM-III Axis I clinical disorders. DSM-III personality disorders such as borderline, antisocial, and avoidant were also found in 29% of the suicide completers (Shafi et al., 1988). Psychopathology and suicidal behavior will be described in more detail later in this chapter.

Individual Differences in Mortality. Among adolescents as well as adults, more males than females complete suicide (Carlson & Cantwell, 1982; Eisenberg, 1984; Ladame & Jeanneret, 1982; Weissman, 1974). It has been suggested that males are more likely to die from their suicide attempts than females because males use more violent means (Eisenberg, 1984; Hawton, 1986; Jacobson, 1965; Weissman, 1974). Eisenberg (1984) reported that an increase in late adolescent and young adult mortality (ages 15-24) was strongly correlated with the increase of suicides by violent means. Most countries reported males outnumbering females in their respective suicide completion rates (e.g., Kosky, 1987). In the 60 suicide cases investigated by Shafi (1989), males committed suicide 5:1 over females. However, in Asian countries, the ratio of males to females is nearly equal, 1:1 (Eisenberg, 1984).

The literature on suicide for children and adolescents has shown consistent racial differences in suicide completers. Caucasian adolescents commit suicide 2:1 over non-Caucasian (Shaffer & Fisher, 1981). Native American adolescents are considered the highest at-risk group for suicide, yet studies involving this population are few (Hawton, 1986; Reynolds & Mazza, 1992a). According to the National Center for Health Statistics, Native American adolescents who live on reservations commit suicide 5 times more often than Caucasian adolescents (Hawton, 1986).

Suicide Notes. The notion that most suicidal adolescents leave a suicide note before their suicide attempt has been dispelled as a myth. Of the 505 children and adolescents seen in the hospital, only 5.3% of the attempts were accompanied by a suicide note (Garfinkel et al., 1982). Similar results regarding suicide notes were found among
adolescent attempters in the general population (Reynolds & Mazza, 1993c). On the basis of clinical interviews with adolescents who had attempted suicide, only 9% left a suicide note. Suicide notes are sometimes left and can provide substantial information, but they are not as common as once thought (Leenaars, 1992).

**Suicide Attempts**

Suicide attempts among young people represent serious pathological behavior. Crumley (1982) suggests that suicide attempts by adolescents be considered a primary symptom of a serious psychiatric disorder. The consequences of an attempt can be devastating, both mentally and physically. Before we describe data on the epidemiology and characteristics of suicide attempts, it is important to consider the utility of this term and the domain of behavior it represents. The term suicide attempt encompasses such a vast array of behaviors, actions, intentions, and outcomes as to make it minimally useful in research or clinical applications for describing a class of suicidal behavior. The wide range of behaviors included in this domain is a distinct problem in the interpretation of research and in making comparisons between groups of attempters, nonattempters, and other suicidal behaviors.

Suicide attempts often have debilitating lifetime outcomes. Although data suggest that the majority of suicide attempts by young people are of limited lethality (Reynolds & Mazza, 1993a), not all adolescents who attempt suicide go back to school the next day or the next week. Some youngsters end up disfigured, scarred, or paralyzed for the rest of their lives, as was the outcome for a 16-year-old girl who attempted suicide by shooting herself in the head with a handgun. Some suicide attempts result in broken bones, such as for a 9-year-old girl who attempted suicide by running in front of a car, or a 13-year-old boy who jumped from the second story window of his home. Suicide attempts are thus quite serious and need to be viewed as indicative of severe psychological disturbance. In many cases, there is only a fine line between suicide and parasuicide, determined by the minutes saved by paramedics in the rush to the hospital or the motorist who swerves to avoid the child who purposefully runs into the street.

Because of the extreme variability in actual behaviors that constitute what is generically referred to as a suicide attempt, research that examines differences between youngsters who have made a suicide attempt and those without such a history is limited in generalizability. The basic problem, as will be elucidated in greater detail at the end of this chapter, is that the attempt group includes youngsters who have made serious and potentially life-threatening or fatal attempts, such as gunshot wounds to the head, as well as youngsters who have made attempts that are very mild or of limited lethality potential, such as taking 5 or 6 acetaminophen tablets. Grouping these youngsters together as "suicide attempters" suggests a homogeneous group that has little empirical or rational support.

Gender differences among rates of suicide attempts in the United States and most other countries show that females make more attempts than males (Diekstra, 1993; Jobes, 1992). Eisenberg (1984) reviewed epidemiological studies and estimated that among adolescent attempters, the female/male ratio is approximately 3:1. Garfinkel et al. (1982) also found a female/male attempt ratio of 3:1. In their school-based study of 469 adolescents who indicated a history of suicide attempts, Reynolds and Mazza (1992a) found a female/male ratio of 2:1 for attempters. A similar ratio was reported by Swedo (1989) in a study of 80 adolescent suicide attempters who were hospitalized for their attempts. The increased lethality of adolescent attempts is suggested in the Swedo study, as she found that significantly more males (46% vs. 19%) than females required extended inpatient therapy. Most of the research cited above has been conducted with adolescents, although some studies such as that by Swedo (1989) also included older children (i.e., ages 10 and
older). Garfinkel et al. (1982) found that the ratio of males to females was approximately equal for children under the age of 13.5 years who attempted suicide.

Suicide attempts are also a primary marker for continued suicidal behavior and, in some cases, future completion. Dijkstra (1993), in a review of trends in suicidal behavior in Europe and North America, notes that suicide attempts may be “the most important precursor of suicide.” In a study conducted in Finland, Kotila (1992) reported that of 362 adolescent suicide attempters who were seen in a hospital emergency ward and followed up after an average of 5 years, 8.7% of males and 1.2% of females completed suicide or died violent deaths (e.g., drowning). The overall proportion of 3.6% was 20 times higher than the average mortality for suicide and violent deaths in this age group in Finland during the period of the study. Approximately 75% of the suicides occurred within 1 year of being seen in the hospital setting.

In young people, the methods used for suicide or suicide attempts are diverse and vary for male and female adolescents. Data on methods of attempts also vary by country, in part as a function of different cultures and laws, the latter of primary importance to the availability of firearms. Much of the literature reported from hospital and clinical settings indicates that overdose (drugs and alcohol) accounts for 70–90% of the suicide attempts made by adolescents (Barter, Swaback, & Todd, 1968; Crumley, 1979; Garfinkel et al., 1982; Litt, Cuskey, & Rudd, 1983; Pieffer, Newcorn, Kaplan, Mizruchi, & Plutchik, 1988; Robbins & Alessi, 1985; Spirito et al., 1992; Spirito, Stark, Fristad, Hart, & Owens-Stively, 1987; Weissman, 1974). Females, who make significantly more suicide attempts than males, frequently use drugs as a means of attempting suicide. Litt et al. (1983), who studied 27 adolescent attempters, 21 of whom were females, found that 78% of the attempts were by drug overdose. A study conducted by Spirito et al. (1987) examining 71 adolescent suicide attempters, 55 of whom were female, found that 82% of the attempts were by drug overdose. Males, on the other hand, use more violent methods to attempt suicide, such as jumping, hanging, and guns (Eisenberg, 1984; Hawton, 1986; Mehr, Zeltzer, & Robinson, 1981).

Table 1 shows the suicide-attempt methods of 469 adolescents who reported one or more attempts from a study of over 3400 school-based adolescents conducted by Reynolds and Mazza (1993a), who found that females used pills and cutting the wrist to a greater extent than did males, with males more frequently attempting suicide by means of hanging and guns. Overall, there was a significant difference in the methods used in suicide attempts between males and females, $\chi^2 (5) = 63.58, p < 0.0001$. A history of multiple attempts was more prevalent among females (35%) than males (22%) in the sample of attempters, $\chi^2 (1) = 7.52, p < 0.01$. It is of interest that the difference between males and

<table>
<thead>
<tr>
<th>Suicide method</th>
<th>Male (%)</th>
<th>Female (%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pills</td>
<td>22.5</td>
<td>45.1</td>
<td>37.7</td>
</tr>
<tr>
<td>Cut wrist</td>
<td>18.6</td>
<td>30.4</td>
<td>26.6</td>
</tr>
<tr>
<td>Stab self</td>
<td>7.0</td>
<td>6.6</td>
<td>6.9</td>
</tr>
<tr>
<td>Gun</td>
<td>12.4</td>
<td>.4</td>
<td>4.2</td>
</tr>
<tr>
<td>Hang/drown</td>
<td>7.8</td>
<td>3.3</td>
<td>4.7</td>
</tr>
<tr>
<td>Other</td>
<td>31.8</td>
<td>14.3</td>
<td>19.8</td>
</tr>
</tbody>
</table>

*Adapted from Reynolds and Mazza (1993a).
*Total sample includes a small proportion of subjects who did not report sex.
females in their reported rate of hospitalization for their attempts was not significant [males = 20.4%, females = 21.4%, \( \chi^2 (1) = 0.05, p = ns \)].

Garfinkel et al. (1982) examined the methods of suicide attempts among 505 children and adolescents who appeared in a hospital emergency room in Ontario. Information was obtained by reviewing the medical charts of these youngsters. They found that children under the age of 13.5 years were significantly more likely to attempt suicide by hanging than older adolescents, \( \chi^2 (4) = 45.16, p < 0.01 \). Garfinkel et al. (1982) also found that most children and adolescents used methods of low lethality and high likelihood of being rescued from their suicide attempts. Their results suggest that child and adolescent attempts may be ambivalent in their attempt to take their own lives. From the medical charts, 78% of the suicide attempts were of low lethality, 21% were of moderate lethality, and only 1% were of high lethality (Garfinkel et al., 1982). More than half (51%) of the attempts were judged as having a high likelihood of being rescued and only 3.4% were judged as low. Garfinkel et al. (1982) used the Risk–Rescue Rating Scale (Weisman & Worden, 1972) to assess lethality and the likelihood of being rescued. Attempts of low lethality and high likelihood of being rescued are more associated with communicating despair and reaching out for help, according to Weisman and Worden (1972). However, questions as to the reliability of using the Risk–Rescue Rating Scale with adolescents have been raised by Spirito, Brown, Overholser, Fritz, and Bond (1991). Smith and Crawford (1986) suggest that the low-lethality attempts by adolescents may be more of a means for communicating the chaos in their lives than a wish to die.

Many adolescents who attempt suicide are ambivalent about their intent to die, and unfortunately for some the attempt is fatal because they underestimated the lethality of the means employed (Eisenberg, 1984). The use of medical lethality as a measurement of suicidal risk, however, needs to be viewed with caution. Rotheram (1987) suggests that medical lethality is unrelated to the intention and desire of the individual to die. She states that it is the perception of the individual that is important. For example, an individual who takes 6 diet pills may have the same desire and intention to die as someone who ingests 50 aspirin (Rotheram, 1987). Relating lethality of means to intention is a tenuous undertaking. A study by Myers, Otto, Harris, Diaco, and Moreno (1992) suggests that at least in the case of acetaminophen overdose, adolescents have limited knowledge of drug toxicity.

Robbins and Alessi (1985) conducted a study that examined the communication aspects of adolescents who attempted suicide. Their study examined 64 adolescent attempters, ages 13–18, consecutively hospitalized in the adolescent psychiatric ward at the University of Michigan Hospital. Robbins and Alessi (1985) focused on two communication aspects: whether adolescents who make nonlethal attempts go on to make more dangerous attempts and whether adolescent statements about their seriousness of intent to die are accurate indicators of the lethality of their actual attempts.

Subjects were evaluated by two child psychiatrists in a structured interview that followed the Schedule for Affective Disorders and Schizophrenia (SADS) (Endicott & Spitzer, 1978). The results showed that 33 of the 64 patients had made at least one prior suicide attempt and 15 had made two or more attempts. Of the 64 patients, 6 (9.3%) had made a suicide attempt that was rated as medically dangerous, according to the SADS. Medically dangerous is defined on the SADS as "medical lethality of 4 (brief unconsciousness) to 6 (respiratory arrest)." The results showed that more females (22 of 37) (59%) than males (11 of 27) (41%) made multiple attempts. However, more males (N = 4) (36%) than females (N = 2) (9%) made medically dangerous attempts. All the adolescents who had made medically dangerous attempts had previously made nonlethal attempts. Robbins and Alessi (1985) concluded that those who make nonlethal attempts may be at higher risk for making more lethal and medically dangerous attempts than those who have not made a previous suicide attempt.

The results of the Robbins and Alessi (1985) study found that adolescent statements
regarding their suicidal intent were highly correlated with their suicidal behaviors, \( r = 0.67 \). The correlation between the statement of intent and medical lethality was also high, \( r = 0.87 \). A similar correlation was reported between statement of intent and the number of suicide gestures, \( r = 0.71 \). Robbins and Alessi (1985) concluded that adolescents report their suicidal feelings honestly and reliably when being interviewed by someone with whom they have established rapport.

Smith and Crawford (1986) investigated the number of adolescents who received medical attention after their suicide attempt. They found that only 12% of the suicide attempters received medical attention following their attempt. Similar results were reported by Reynolds and Mazza (1992a), who examined a national sample of 3437 adolescents. They found that approximately 20% of adolescent attempters received hospital attention following their attempt. These findings also underscore the danger in generalizing the results of studies conducted in clinical settings to the general adolescent population. These results also indicate that using the medical contact process to estimate the suicide rate for adolescents is not accurate, missing approximately 80–90% of those adolescents who make suicide attempts (Reynolds & Mazza, 1992a; Smith & Crawford, 1986).

**Suicidal Ideation**

Suicidal ideation is an important aspect of suicidal behavior that is of great relevance for the identification of children and adolescents. Although non-self-injurious, suicidal ideation represents a common denominator of suicide-risk behavior and has the potential for being the earliest warning of a youngster at risk for more overt suicidal behaviors. Suicidal ideation may be viewed as a primary marker for more serious suicidal behavior (Bonner & Rich, 1987; Linehan, 1981) and a basic component in the classification of suicidal behaviors (Pfeffer, 1986; Pokorny, 1974; Zubin, 1974). Research on suicidal behavior in young people suggests that suicide attempts are in many cases preceded by thoughts and cognitions (ideation) of killing oneself (Andrews & Lewinsohn, 1992; Brent, 1989; Garrison, 1989; C. A. King, Raskin, Gdowski, Bukus, & Opipari, 1990; Pfeffer, Zuckerman, Plutchik, & Mizruchi, 1984; Rotheram-Borus & Trautman, 1988; Stiffman, 1989). Suicidal ideation encompasses a range of thoughts, from general cognitions about death and wishes about not being alive to more serious and specific thoughts about killing oneself, including the how, when, and where (Reynolds, 1988). Research involving suicidal behavior has shown that suicidal ideation is often a precursor to more serious suicidal behavior (Shafi et al., 1985, 1988). Thus, suicidal ideation may be viewed as the initial stage of suicidal behavior (Brent, 1989; Ellis, 1988; Ladame & Jeanneret, 1982; Pfeffer et al., 1984; Reynolds, 1988; Rudd, 1989; Shafi et al., 1985; Smith & Crawford, 1986).

The utility of suicidal ideation for the identification of suicidal youth will be described later in this chapter. It is important to note that suicidal ideation as a component of suicidal behavior needs to be viewed as a multifaceted construct and as much more than a simple question as to whether or not a youngster has thought about killing himself or herself. Research on suicidal ideation or group assignment predicated on one or two questions regarding having thoughts of suicide lacks sufficient specificity for defining this domain of suicidality and obscures the relative importance of suicidal ideation as a component of suicide risk in youth.

Suicidal ideation may be defined as thoughts and cognitions about taking one's life as well as thoughts specific to the act of suicide. Reynolds (1988) has operationalized suicidal ideation as a specific construct, delineated as a quasi-hierarchical continuum. In this continuum, suicidal ideation is characterized as ranging from low-severity general thoughts about death (morbid ideation) to general wishes that one were never born or specific wishes that one were dead to much more serious ideation about specific means of
committing suicide. Included within the domain of suicidal ideation are also thoughts about suicide and the response of others and about the impact on others.

An examination of the research suggests that suicidal ideation has not, until recently, been well defined or measured as a psychological construct. Suicidal ideation, as a domain of suicidal behavior, has been studied in children and adolescents, although, as will be noted later in this chapter, there is a great deal of variability in the measurement and conceptualization of suicidal ideation in young people. However, most research suggests that suicidal ideation is a critical aspect of suicidal behavior. Pfeffer (1986), describing the results of a study of suicidal behavior in children, noted that inpatient children with suicidal ideas were considered at risk for serious suicidal behaviors. Kosky, Silburn, and Zubrick (1986), in a sample of 628 depressed children seen in a psychiatric facility, reported that 13% indicated significant suicidal ideation, and over one third of these children had made a prior suicide attempt. Kosky et al. (1986) also noted a rapid increase in suicidal ideation after age 12, with females showing greater suicidal ideation than males.

In research using the method of "psychological autopsies" to evaluate the premorbid status of adolescents who had committed suicide, Shafi et al. (1985) found that suicidal ideation was a precursor to most adolescent suicides. They stated (p. 1064): "We believe that the suicidal ideation of yesterday is highly likely to become the suicide threat or attempt of today or the completed suicide of tomorrow." In this manner, suicidal ideation is highlighted as an important characteristic of suicidality in at-risk groups of youngsters.

Studies have also noted levels of suicidal ideation that may be considered "clinically relevant" in other populations of children and adolescents. In a study of 101 randomly selected preadolescent children from a public school setting, Pfeffer et al. (1984) found that 11.9% of the subjects demonstrated suicidal behaviors, with suicidal ideation present in 8.9% of the total sample. Pfeffer (1985) later suggested that this figure is probably an underestimate because a number of ideating children may have been reluctant to discuss these thoughts. Reynolds (1988, 1992a), using the Suicidal Ideation Questionnaire (Reynolds, 1987), reported finding clinically significant level of suicidal ideation in 9–12% of school-based adolescents with sample sizes ranging from 890 to 2139 adolescents ages 13–19. Similar results were found by Wright (1985) in a study of 207 high school seniors, 10.6% of whom indicated having suicidal thoughts. In a study of 4657 adolescents that included 101 youngsters with a history of suicide attempts, Kienhorst, De Wilde, Van den Bout, Diekstra, and Wolters (1990) examined a range of psychosocial and demographic variables and found that suicidal ideation was the most powerful predictor of a suicide attempt in this group of youngsters. Andrews and Lewinsohn (1992) found a very strong relationship between suicidal ideation and suicide attempts in a large sample of school-based adolescents, with approximately 87% of suicide attempters reporting suicidal ideation compared to approximately 1% of youngsters who had not attempted suicide. Andrews and Lewinsohn (1992) also found suicidal ideation to be a significant predictor of subsequent suicide attempts.

Epidemiology of Suicidal Behavior

The examination of the epidemiology of suicidal behavior is important for understanding the extensive and pervasive nature of suicidality among children and adolescents. To a large extent, much of the literature on the epidemiology of suicide among youngsters is specific to adolescents. As we noted, suicidal behavior has been described in young children, but there are few epidemiological studies of suicidal behavior in children. The latter circumstance may be a function of its lower incidence, as well as a natural disinclination for school personnel to permit researchers to evaluate suicidal behavior in school-based samples of children.
In our description of the epidemiology of suicidal behavior, a distinction must also be made regarding the time frame of the behavior. Suicide-completion data by their nature represent an incidence rate and are thus presented as new cases in a 12-month (typically calendar-year) period or as an average per year across a period of several years. Suicide attempts may be studied from an incidence perspective (an attempt in the 12 months preceding the data collection) or as a prevalence rate. The latter examines the extent to which a youngster has ever made a suicide attempt and is thus a lifetime occurrence. Prevalence of suicide-attempt data also depends on the respondent's age, given that older youngsters have greater potential for ever engaging in suicidal behavior, as well as potential age-cohort effects. Suicidal ideation has been reported in a number of ways from current ideation to ideation in the past week to ideation over the past 12 months to lifetime occurrence.

**Suicide Completion**

Attention to suicide has increased in the United States as well as in other countries over the past decade. Most countries, including the United States and Canada, have reported marked increases in the number of adolescents and young adults committing suicide (Berman, 1986; Brent, 1989; Dyck, Newman, & Thompson, 1988; Goldney & Katsikitis, 1983; Hawton, 1986; Lester, 1991; Shaffer & Fisher, 1981). Shafi et al. (1985) cited an increase of more than 80% in children (ages 10–14) and more than 100% in adolescents (ages 15–19) who committed suicide from 1976 to 1980. There are obvious questions as to the reliability of official statistics for mortality due to suicide in children and adolescents (Hoerner & Garfinkel, 1988a; Jobes, Berman, & Josselson, 1987). D. Miller (1981) suggests that there may be as many as 5 suicides for every 1 that is officially reported.

Suicide rates among children and adolescents tend to show a linear increase by age (McIntosh, 1992). Reported rates of suicide are often differentiated by age groups, e.g., 15–19 years, or 15–24 years, and so forth. These groupings often cloud our understanding of suicide-completion rates for developmental groups. For instance, McIntosh (1992) notes that the grouping of 15- to 19-year-olds masks relatively lower rates found in 13- and 14-year-olds and may therefore overestimate suicide completion during adolescence.

Reviews of the epidemiology of suicide among youth are quite widespread (e.g., Berman, 1986; Blumenthal, 1990a; Garrison, 1992; Holinger, 1989; Rosenberg, Smith, Davidson, & Conn, 1987; Shaffer, 1988), and the reader is referred to these and other studies for more in-depth examination of individual differences in the epidemiology of suicide in children and adolescents. A rough approximation is that the incidence of suicide in 15- to 19-year-olds is 11/100,000 (1989 United States data reported by the NIMH (1992)). Significantly lower rates of suicide completion are found for younger adolescents and children, with highest rates during adolescence found among males, and in particular white males (Holinger, 1989). In 1989, over 2000 adolescents 15–19 years of age committed suicide, with a 4:1 male/female ratio of completers (NIMH, 1992).

**Suicide Attempts**

The rate of suicide attempts in children and adolescents varies as a function of study and sample characteristics, as well as the time frame. The latter is important in distinguishing between incidence and prevalence data. Incidence data typically report on the occurrence of a suicide attempt within the past year, and prevalence is the occurrence of a suicide attempt in the past. In this respect, prevalence is similar to evaluation of lifetime occurrence of suicide attempts. We will discuss some of the methodological issues related to potential difficulties in interpretation of research on suicide attempts in young people.
later in the chapter. However, it is important to note that estimates of prevalence and incidence are most useful for understanding suicide attempts in children and adolescents from the general population. This group also includes a great many youngsters who may demonstrate psychopathology but not be seen by a mental health professional or in a treatment setting. Thus, the general population is not synonymous with youngsters free from psychopathology. Similarly, individual differences (e.g., gender, race, age) for which differences in suicidal behavior have been found will affect base rates to the extent that samples vary on these variables.

Incidence of Suicide Attempts. It was previously thought that the incidence of suicide attempts in adolescents was approximately 1/1000 (Seiden, 1969). Most epidemiological reports of suicide and suicidal behaviors among adolescents indicate that these behaviors have increased dramatically in the past 25 years. The problem of suicidality among young people may be even greater, given recent research that suggests that the actual number of adolescents from the general population who attempt suicide each year is many times more than previously thought. The studies described below are based on samples of adolescents from school-based settings and as such do not include adolescents in inpatient, correctional, or other mental health settings. Thus, if we anticipate that the many youngsters who are out of school because they have run away from home or been incarcerated for delinquent acts or are in mental health settings have a higher rate of suicidal behavior (e.g., Reynolds & Mazza, 1993b; Rotheram-Borus, 1993), the findings below are underestimates of the true proportion of adolescents who attempt suicide each year. Even as an underestimate, however, these data suggest that the number of youngsters who make a suicide attempt may be considered to be of epidemic proportion.

An incidence study of suicidal behavior in a sample of 1364 adolescents from grades 7–12 in a semirural community was reported by Dubow, Kausch, Blum, Reed, and Bush (1989), who found that 7% of their sample reported having made a suicide attempt in the past year. In a noteworthy study of 3764 adolescents from grades 9–12 in South Carolina, Garrison, McKeown, Valois, and Vincent (1993) found that 7.5% of their sample reported having made a suicide attempt in the past year. Garrison et al. (1993) reported that approximately 21% of the suicide attempters (1.6% of the total sample) reported needing medical treatment for their attempt. In a community-based study in Ontario, Canada, Joffe et al. (1988) reported 6-month incidence data on suicide attempts among a sample of 1256 children ages 12–16 years. They found that among 12- to 13-year-olds, 3.8% of females and 3.5% of males reported suicide attempts, and among 14- to 16-year-olds, 7.1% of females and 2.4% of males reported a suicide attempt in the previous 6 months.

Felits, Chenier, and Barnes (1992) surveyed 3064 adolescents from North Carolina in grades 9–12 for substance use and suicidal behavior. They found that approximately 25% of youngsters in their sample reported serious suicidal ideation during the past 12 months, and that 14.4% of the total sample had made a specific suicide-attempt plan during this time period. The authors reported that 4.5% of their sample indicated a suicide attempt in the past year. They found that 2.1% of the total sample were treated by a doctor or nurse for injuries due to their suicide attempt, suggesting that nearly half the adolescents who made an attempt in the past year required some level of medical intervention for their injuries.

In what is likely one of the most robust samples of school-based youngsters, the Centers for Disease Control (CDC, 1991) reported on the Youth Risk Behavior Survey data on adolescent suicidal behavior. The CDC report notes that among a sample of 11,631 students from all 50 states, 8.3% indicated having made a suicide attempt in the past year, including 10.3% of females and 6.2% of males. The CDC found that 2.1% of all adolescents were seen in medical settings for their suicide attempt.

Results of the CDC (1990), Dubow et al. (1989), and Garrison et al. (1993) studies are
remarkably similar and suggest relatively robust statistics on the percentage of youngsters who attempt suicide each year. The base rate of 7–8% is high for a serious behavior such as suicide attempts and suggests that rather than 1/1000, as many as 1 of every 13 adolescents make a suicide attempt each year. It is also important to note that most of the studies cited above report that approximately 2% of all adolescents made an attempt of severity sufficient to require medical attention.

**Prevalence of Adolescent Suicide Attempts.** The prevalence of suicide attempts refers to the proportion of persons who have made one or more suicide attempts during their life. By this measure, we might expect to find a higher proportion of youngsters who have made an attempt among older adolescents, given that they have had a longer time to have engaged in suicidal behavior. However, this expectation may be mediated by cohort trends for the expression of suicidal behavior in younger adolescents. Likewise, findings based on school samples of older youngsters are biased by substantial high school dropout rates and the location of some adolescents in mental health and other placements who are not sampled. Our discussion here focuses on suicide attempts among adolescents from the general population, although there are studies that have reported on suicide attempts among psychiatric inpatient, outpatient, and other mental health or specialized treatment settings (e.g., Borst & Noam, 1989; Pfeffer et al. 1988).

Several studies of adolescents have been reported that relied on relatively modest-size samples from a single school or location. J. M. H. Friedman, Asnis, Boeck, and DiFiore (1987) reported on a sample of 380 adolescents from an academically select high school in New York, finding that 8.7% had a history of one or more suicide attempts. Smith and Crawford (1986) conducted a study assessing suicidal ideation in high school students, 237 from a public high school and 76 females from a private high school. They reported that 8.4% indicated that they had made at least one suicide attempt. In discussing their results and those of other investigators, Smith and Crawford (1986) suggested that there are over 1.5 million American youngsters between the ages of 15 and 19 who have attempted suicide at least once.

In a survey of 635 adolescents in Rhode Island, Riggs and Cheng (1988) found that 11.8% reported a history of a suicide attempt. This sample was ethnically diverse, with whites making up a minority (14.9%) of the sample. Although proportions were not reported, the authors indicated that significantly more females than males indicated a past suicide attempt. Kandel, Ravels, and Davies (1991), with a sample of 597 9th and 11th grade youngsters, reported that 12% of females and 6% of males indicated a history of a suicide attempt.

In a sample of 1048 9th grade students who responded to the item “Have you ever tried to kill yourself?” Shafter et al. (1990) found that 97 (9.26%) responded “Yes.” These youngsters were participants in a study examining effects of a suicide prevention program using a pretest–posttest design. As a function of this design, the authors were able to reassess youngsters' reports of previous suicide attempts. Shafter et al. (1990) found that 34 youngsters who initially reported an attempt said “No” to the attempt question at the retesting and 41 youngsters who reported “No” at time one said “Yes” to an attempt history at time two. The authors suggest several reasons for this discrepancy, although the absolute rate of suicide attempts at each assessment was similar (e.g., 9% and 10%, respectively).

An investigation of adolescent health behavior conducted by Adcock, Nagy, and Simpson (1991) surveyed 3803 8th and 10th grade students in Alabama. The sample was 62% white, 35% African-American, and 3% of other ethnic origin. It was found that approximately 16% of the sample reported a past suicide attempt. By gender, 19% of female and 12% of male adolescents reported having made a suicide attempt. Windle, Miller-Tutzauer, and Domenico (1992) reported on data on suicidal behavior gathered from the 1987 National Adolescent Student Health Survey of over 11,000 early (8th grade)
and midadolescents (10th grade) from a representative sample of 224 schools, along with data on alcohol use. Windle et al. (1992) found that 13.3% of white, 12.7% of African-American, and 16.8% of Hispanic youngsters indicated that they had made a suicide attempt.

In a study of suicidal behavior in a sample of 5437 adolescents drawn from 11 junior and senior high schools in 8 states across the United States, Reynolds and Mazza (1992a) examined the prevalence and characteristics of adolescent suicide attempts. Participants were in grades 7–12, with a mean age of 15.46 years and an approximately equal number of males (50.2%) and females (49.8%). Racially, the sample was heterogeneous, with a significant proportion (28.6%) of minority group participants. Our findings indicate a high prevalence of suicide attempts reported by this sample of adolescents. There were 469 (13.65%) adolescents who reported one or more suicide attempts. Significantly more females (17.9%) than males (9.5%), \( \chi^2(1) = 51.30, p < 0.0001 \), indicated a history of one or more suicide attempts. The highest rate of suicide history was found among Native American adolescents (25.5%), and the lowest was among African-American youngsters (10.6%). Suicide attempts were also reported by a large proportion (16.3%) of Hispanic youngsters.

Approximately two thirds of these youngsters who had made an attempt indicated that their attempt had been made within the past year. Of the adolescents who indicated a history of a suicide attempt, 20.9% reported that they were hospitalized for their attempt. The difference in the proportions of males and females hospitalized for their attempt was not significant. Nearly 30% of youngsters reported more than one attempt, with the difference between males and females in the mean number of attempts reported being nonsignificant.

Our investigation found that nearly 1 of 7 adolescents in a large, ethnically stratified sample reported having attempted suicide. These data are very similar to those found by Windle et al. (1992) in their examination of the National Adolescent Student Health Survey. We (Reynolds & Mazza, 1992a) also asked youngsters how long it had been since their last attempt. Although it is difficult to extrapolate from these data, a rough approximation based on the number of youngsters who made an attempt in the past 12 months suggests an incidence rate of approximately 8% that is consistent with other incidence studies (e.g., CDC, 1991; Garrison et al., 1993). We found that approximately 1 in 5 adolescents who reported a suicide attempt were hospitalized for their attempt, a proportion higher than that found by other investigators (e.g., Smith & Crawford, 1986), but consistent with findings of Garrison et al. (1993).

**Suicidal Ideation**

A number of studies have examined suicidal ideation in children. As noted earlier, Pfeffer et al. (1984) found suicidal ideas in 8.9% of a sample of 101 schoolchildren between the ages of 6 and 12 years who were interviewed. They also found that suicide threats were reported in 2% of their sample. Sack, Beiser, Phillips, and Baker-Brown (1993), in a study of 907 Native American and non-Native American children, ages 7–10 years, found relatively high rates of suicidal ideation (response of "A lot of the time" to the question "Have you thought of killing yourself"), particularly among children with depressive symptoms (13.4%), conduct problems (12.1%), and comorbid conduct and depression (15.9%). Among nondepressed, non-conduct-problem children, the rate was 4.7%.

In a survey of adolescent behavior and problems conducted by the Dane County, Wisconsin, Youth Commission in 1990 (Blindell, 1991), a stratified sample of 2215 adolescents from grades 7–12 completed a questionnaire regarding suicidal behavior and other health and mental health concerns. To the item specific to considering suicide, 22% of females and 11% of males indicated that doing so was a moderate concern, and
8% of females and 5% of males reported it to be a serious problem. Joffe et al. (1988), in their study of 1256 youngsters, reported that among 12- to 13-year-olds, 7.5% of females and 6.7% of males reported suicidal ideation in the previous 6 months, with suicidal ideation reported by 14.5% of the females and 3.3% of the males aged 14–16 years.

In a study examining suicidal ideation in 1542 younger adolescents of ages 12–14 years, Garrison, Jackson, Addy, McKeown, and Waller (1991b) found that approximately 21% of the sample reported mild suicidal ideation during the previous week, while 10% demonstrated moderate to severe levels of suicidal ideation. Females manifested higher levels of suicidal ideation than did males. In a subsample of youngsters who were interviewed with a diagnostic interview along with their parents, Garrison et al. (1991b) found that most suicidal behaviors (ideation and attempts) reported by the adolescents were not reported by their parents. In a 3-year longitudinal study of suicidal ideation in 1073 adolescents, Garrison, Addy, Jackson, McKeown, & Waller (1991a) found that approximately 8–10% of their sample manifested moderate to high levels of suicidal ideation each year, although there were few adolescents who maintained high levels across the 3 years of the study. In their study of 3764 high school students surveyed as to their suicidal behavior over the past 12 months, Garrison et al. (1993) found that 11% of youngsters reported having serious suicidal thoughts, with 6.4% having made a specific suicide plan.

As noted, Reynolds (1988) reported significant levels of suicidal ideation over the past month as measured by the Suicidal Ideation Questionnaire (SIQ) in 10% of a sample of 890 adolescents in grades 10–12, with 12% of females and 8% of males reporting significant levels of suicidal ideation. Using the SIQ—Junior High Version (SIQ-JR) with a sample of 1280 adolescents in grades 7–9, Reynolds (1988) reported significant levels of suicidal ideation in 11% of the total sample, with clinical levels found in 9% of male and 13% of female adolescents. Lamb and Pusker (1991), using the SIQ with a school-based sample of 69 adolescents, found that 16% demonstrated clinical levels of suicidal ideation. Kandel et al. (1991), with a sample of 597 9th and 11th grade youngsters, reported that over the previous few weeks, 22% of females and 11% of males reported thinking of ways to kill themselves and that 32% of females and 16% of males reported suicidal thoughts.

In the previously mentioned survey conducted by the CDC (1991) with a sample of 11,631 adolescents in grades 9–12 drawn from all 50 states, 27.3% of all students reported having thought seriously about attempting suicide in the past 12 months. In this study, 16.3% of school-based youngsters indicated that they had made specific suicide plans during the preceding 12 months. Females reported higher rates of suicidal ideation (33.9%) and plans (20.2%) than did males (20.5% and 12.3%, respectively).

The aforementioned studies specific to suicidal ideation vary in the time frame as well as the procedures used to operationalize and assess suicidal ideation. A reasonable estimate is that suicidal ideation is manifested by approximately 10–15% of children and adolescents at any one time. As with other suicidal behaviors, such as attempts, significantly more adolescent females manifest suicidal ideation than do adolescent males. In children and younger adolescents, gender difference in suicidal ideation is typically not evident. Data on suicidal ideation experienced over a 1-year period suggest that serious suicidal ideation is experienced by a significant proportion of the general adolescent population.

Evaluation of Suicidal Behavior in Young People

The identification of youngsters who are at high risk for suicidal behaviors is a major step in the intervention in and prevention of these behaviors. Identification of high-risk youngsters has been seen as a significant procedure for effective intervention (e.g., Eddy, Wolpert, & Rosenberg, 1987). Due to parents' general lack of awareness of youngsters' suicidal behavior (e.g., Joffe et al., 1988; Zimmerman & Asnis, 1991b), the most suitable
method for the evaluation of suicidal behavior in adolescents is by questioning the youngster directly. It has been our clinical experience in conducting hundreds of interviews with children and adolescents that youngsters are reliable reporters of their suicidal behaviors and that in many instances suicidal behaviors are not reported to parents or peers. This experience is consistent with the finding reported by Robbins and Alessi (1985).

It has been the perspective of the first author that a proactive procedure for the identification and clinical evaluation of suicidality in young persons be conducted by direct evaluation: by either self-report, clinical interview, or a combination of these approaches (Reynolds, 1988, 1991d). With younger children, parent interviews are an important part of the evaluation procedure, although in one-on-one interviews with children, we do find youngsters reporting suicide attempts that their parents thought were accidents. It should be recognized that there have been few measures developed specifically to evaluate suicidal behavior in young people that have been sufficiently tested to ascertain their psychometric quality—in particular their reliability and validity. For the most part, those measures that are available target adolescents, with few measures available for the systematic evaluation of suicidality in children.

**Overt Signs of Suicidal Behavior in Youngsters**

There are a number of observable behaviors that may occur and should alert one to the possibility that an adolescent is at risk for suicide. These behaviors include having frequent accidents, engaging in dangerous or risky behavior, talking about death or morbid themes, and such actions as giving away meaningful possessions. It is important to be vigilant for these indicators and treat them as signs of suicide potential. It is equally important to know that not all suicidal youngsters will provide such signs and symptoms of their intent, nor are all youngsters who demonstrate the behaviors listed above suicidal. Thus, it should be realized that the occurrence of these behaviors in a child or adolescent does not necessarily lead to or indicate that the youngster is at risk for suicidal behaviors. However, the behaviors noted should not be ignored.

The identification of suicidal behavior in adolescents and young adults is a difficult task. There is an obvious hesitation by some adolescents to inform others that they are thinking of taking their own life or that they are preoccupied with thoughts of death. The potential for ridicule from peers and parents often precludes the acceptability of telling others of suicidal ideation or intent. Although some adolescents will voluntarily inform professionals or parents of their problems, and some will confide in peers who may let others know, those who will do so appear to be at best a small proportion of the large number of distressed youngsters who are in need of assistance. Furthermore, it is sometimes difficult to perceive the behavior at the time of their occurrence as indicative of suicidality. Much of what we know regarding overt indicators or precursors of suicidal behavior is based on hindsight or retrospective recollection of events, behaviors, or changes in behaviors that at the time appeared relatively benign or within a normal range of functioning. It is often only after an attempt or completion that the previous behaviors take on significant meaning.

**Direct Assessment of Suicidal Behaviors in Young People**

After more than a decade of research on suicidal behavior involving well over 15,000 children and adolescents, the first author has noted that youngsters generally do not refer themselves for psychological help. Many of the youngsters identified through school-based screening procedures (e.g., Reynolds, 1986a, 1991d) as depressed or manifesting serious levels of suicidal ideation have indicated that they had not communicated their distress to a
professional, parents, or even friends or peers. In some cases, adolescents who on being questioned have endorsed serious suicidal thoughts have also indicated that they had no intention of telling anyone. As an example of this attitude, Fig. 1 presents the responses of a 13-year-old boy on the SIQ:JR (Reynolds, 1987). This assessment was part of an annual school-based screening using the two-stage model described below. What is of interest here is the significant and frequent specific thoughts of suicide. Less frequent was mild ideation such as wishes he were dead or had never been born. Also significant is the response to item 9 on the SIQ:JR, in which the younger, although actively thinking of killing himself, indicated that he had no thoughts of telling others he planned to kill himself. What we have inferred from this and other similar cases is that unless we ask youngsters directly, it is extremely difficult to know the extent of their suicidality.

From our work with depressed and suicidal youngsters, it is evident these are real and significant mental health problems that are demonstrated by many youngsters in school, as well as in clinical settings. This being so, there is a great need for reliable and valid assessment measures for suicidal behavior in young people. We have come to the general conclusion that the most effective method for identification of suicidal children and adolescents is by direct questioning, rather than relying on self- or peer referral or observations of others. For the most part, the latter procedures, while they may identify a small proportion of suicidal youngsters, will result in a large number of false-negatives. Given the decision-making utilities related to the identification of suicidal adolescents, to err in the direction of false-negatives, that is, to perceive a youngster as not at risk when the youth is suicidal, is highly undesirable as an outcome. Likewise, when we use psychological measures for the evaluation and identification of suicidal behavior in youngsters, we should have some information and understanding as to the anticipated proportion of false-positives and false-negatives that may occur in using a particular measure or cutoff score.

<table>
<thead>
<tr>
<th>This thought was in my mind</th>
<th>Almost every day</th>
<th>Couple times a week</th>
<th>About once a month</th>
<th>I had this thought in the past month</th>
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<tbody>
<tr>
<td>1. I thought it would be better if I was not alive</td>
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<td>2. I thought about killing myself</td>
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<td>3. I thought about how I would kill myself</td>
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<td>4. I thought about when I would kill myself</td>
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<td>5. I thought about people dying</td>
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<td>6. I thought about death</td>
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<td>7. I thought about what to write in a suicide note</td>
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<td>8. I thought about writing a will</td>
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<td>9. I thought about telling people I plan to kill myself</td>
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<td>10. I thought about how people would feel if I killed myself</td>
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<td>11. I wished I were dead</td>
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<td>12. I thought that killing myself would solve my problems</td>
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<td>13. I thought that others would be happier if I was dead</td>
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<td>14. I wished that I had never been born</td>
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<td>15. I thought that no one cared if I lived or died</td>
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Figure 1. Responses to the SIQ:JR by a 13-year-old boy. Adapted and reproduced by special permission of the publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, FL 33549, from the Suicidal Ideation Questionnaire by William M. Reynolds, Ph.D. Copyright 1987 by Psychological Assessment Resources, Inc. Further reproduction is prohibited without permission from PAR, Inc.
Without such information, we have minimal evidence to support the use of a particular measure for the identification of at-risk children and adolescents.

Over the past decade, a number of measures have been developed that evaluate aspects of suicidal behavior in young people. These measures include paper-and-pencil self-report instruments and semistructured clinical interviews. Presented below are descriptions of a number of measures of suicidal behavior, the majority of which have been developed for use with adolescents.

**Suicidal Ideation Questionnaire.** Toward the goal of identification of suicidal youth, Reynolds (1987, 1988, 1989, 1991a) has developed the SIQ, a self-report measure of suicidal ideation in youngsters ages 13–19 years. A 25-item version of the SIQ, the Adult SIQ (Reynolds, 1991b), was developed for use with adults and has demonstrated high reliability with samples of college students, community adults, and psychiatric outpatients (Reynolds, 1991c; Reynolds, Kobak, & Greist, 1992, 1994) as well as sensitivity to pharmacotherapy in adult outpatients with major depressive disorder (Reynolds, Kobak, Greist, Jefferson, & Tollett, 1993).

The SIQ was developed as a measure of adolescents' current level of suicidal ideation and is based on a model of suicidal ideation delineated by Reynolds (1988). The SIQ does not provide a probability estimate of risk for completed suicide or suicide attempt. According to the author, variability in individual characteristics such as personality, mental health status, self-regulation, motivation, psychosocial stressors, and family and social support structure does not support the assignment of a numerical probability for suicide. The SIQ does provide a measure of the seriousness of suicidal thoughts in adolescents.

There are two forms of the SIQ. The SIQ consists of 30 items and is designed for senior high school students; the SIQ-JR includes 15 items and is designed for junior high school students, but may also be used with older adolescents (e.g., C.A. King et al., 1990). On both versions, the youngster rates each item on a 7-point scale that assesses the frequency with which the cognition occurred over the past month. Included in the response format is a category indicating that the thought/cognition has never occurred, as well as a response option that indicates that the thought had previously occurred, although not in the past month. Items are scored from 0 to 6, such that a high score is indicative of numerous suicidal cognitions occurring with significant regularity over the past month. The SIQ-JR is illustrated in Fig. 1. Cutoff scores on the SIQ and SIQ-JR have been developed to define levels of suicidal ideation considered to be clinically relevant and to indicate the need for further evaluation.

The internal consistency reliabilities using the Cronbach (1951) coefficient alpha \( (\alpha) \) of the SIQ and SIQ-JR reported by Reynolds (1988) for various samples and by age and sex were uniformly high and ranged from 0.93 to 0.94, with a total sample reliability coefficient of 0.94 on the SIQ-JR and a total sample reliability coefficient of 0.97 for the SIQ. The test–retest reliability of the SIQ was examined in a large sample of 801 youngsters who were retested on the SIQ approximately 4 weeks after the initial assessment. On the initial assessment, a mean of 17.76 (SD = 20.76) was obtained; 4 weeks later, a mean SIQ score of 17.49 was found (SD = 23.82), with a test–retest reliability coefficient of 0.72. This value is moderately high and consistent with the state–construct nature of suicidal ideation. There was a nonsignificant difference between mean scores between the two testings \((t = 0.45, p = ns)\), suggesting relative stability of raw scores.

The validity of the SIQ has been demonstrated by correlations with measures of related constructs. Correlational studies with measures of depression, hopelessness, anxiety, self-esteem, history of suicide, and other related variable have been reported in detail by Reynolds (1988, 1989, 1992a). Reynolds (1990) reported a correlation of 0.68 \((p < 0.001)\) between the SIQ-JR and the Suicidal Behavior Interview (SBI) (Reynolds, in press b) and a correlation of 0.63 \((p < 0.001)\) between the SIQ and the SBI. Using the SBI as
criterion measure for differentiating youngsters at risk for suicidal behaviors, Reynolds (1991d) reported significant differences in SIQ scores between at-risk \( M = 77.22 \) and non-at-risk \( M = 55.17 \) adolescents. The clinical efficacy of SIQ and SIQ-JR cutoff scores has been described by Reynolds (1991d, 1992a) using the SBI as criterion measure.

A number of investigators have used the SIQ with clinical samples. Ritter (1990), with a sample of 28 adolescent suicide attempters evaluated with the SIQ within 24 hours of their attempt, reported a mean score of 108.6, with a range of 52–152, all scores well above the clinical cutoff of 41. Spirito et al. (1987) found a significant difference in SIQ scores between adolescent suicide attempters who were characterized as having a past history of acute (SIQ mean = 109.1) as compared to chronic (SIQ mean = 53.5) psychiatric problems. In a sample of adolescent female suicide attempters and a demographically matched sample of nonattempters, C. A. King et al. (1990) found significant differences in SIQ-JR scores between attempters \( M = 57.8 \) and nonattempters \( M = 17.0 \). C. A. King, Hill, Naylor, Evans, and Shain (1993) found a significant relationship between the SIQ-JR and family dysfunction \( r = 0.54, p < 0.001 \), depression \( r = 0.55, p < 0.001 \), and lifetime severity of suicidal behavior \( r = 0.55, p < 0.001 \) in a sample of 54 adolescent inpatient females. In a sample of adolescents hospitalized for a suicide attempt \( N = 27 \) or whose hospitalization included suicidal ideation \( N = 51 \) and a nonsuicidal control group \( N = 38 \), Shaunesey, Cohen, Plummer, and Berman (1993) found significantly higher SIQ scores for suicide attempters \( M = 85.70 \) and suicidal ideators \( M = 73.86 \) than nonsuicidal controls \( M = 26.55 \), \( F = 15.19, p < 0.01 \).

The SIQ is useful both in the initial evaluation of adolescents who are potentially at risk for suicide and self-destructive behaviors and in the evaluation of youngsters who have made suicide attempts. In the latter application, the SIQ can serve as a measure for the follow-up evaluation of adolescents at continued risk. In schools and clinical settings, the SIQ provides an efficient and economical method of screening for suicidal thoughts and intent in adolescents. The SIQ may also be used for the evaluation of large-scale intervention and prevention programs, particularly those implemented in school settings. Schools that recognize mental health problems among adolescents and engage in preventative and intervention programs for suicide or other mental health problems can use the SIQ as a measure for program efficacy.

Life Orientation Inventory. The Life Orientation Inventory (LOI) (Kowalschuk & King, 1988) is a paper-and-pencil measure of suicidal orientation, or the resolution that people have once they encompass the belief of suicide as a personal option or choice. The LOI consists of six subscales that vary in length from 16 to 24 items. These scales include: Self-Esteem Vulnerability, Overinvestment (a supplementary scale most applicable to persons who have experienced loss), Overdetermined Misery, Affective Domination, Alienation, and Suicide Tenability. The total LOI consists of 113 items. There is also a 30-item screener, although only 4 items on this scale deal specifically with suicide. The LOI item-response format is a 4-point scale from "I Am Sure I Disagree" to "I Am Sure I Agree." The LOI protocol form uses different titles for the subscales, such as "Love, Work, and What is Important to Me" for the Overinvestment subscale and "Reasons for Living or Dying" for the Suicide Tenability subscale. The authors of the LOI suggest that the scale requires 30–60 minutes to complete. Because of the linguistic complexity of some of the items, we suggest that most adolescents will require 45–60 minutes.

The LOI was developed with adolescents and adults, and the authors suggest that a 6th grade reading level is required to respond to the scale. Norms (T-scores and percentiles) are provided for youngsters 18 years and younger and for adults. There were 907 youngsters in the adolescent norms, which is a reasonably large sample. Unfortunately, there was a preponderance of Native American youngsters (approximately 16%) in the standardization sample (compared to approximately 1% in the general population). Given
the relatively high rate of suicidal behavior among Native American adolescents (Berlin, 1987; Gartrell, Jarvis, & Derksen, 1993; Grossman, Milligan, & Deyo, 1991; Reynolds & Mazza, 1993a), this disproportionate representation may attenuate the utility and meaningfulness of the norms, as the norms are presented for the total sample and are not differentiated by gender or ethnic background. The authors do not discuss the potential bias in norms as a function of the relative unrepresentativeness of the sample.

The reliability of the subscales is variable, with internal consistency reliability ranging from 0.53 to 0.82 for youngsters 13–16 years and from 0.51 to 0.84 for ages 17–19 years. Test-retest reliability was not reported for adolescents, although a sample of college students were tested twice, with subscale test-retest coefficients ranging from 0.62 to 0.83. Validity data are sparse for adolescents. These data consist of correlations between the LOI subscales and two hopelessness measures for two groups of 40 youngsters who are not adequately described. Only significant correlations are reported, and they are adjusted for restriction of range. Overall, the LOI is an interesting measure, although at this time there is insufficient data to support its clinical use. Further reliability, validity, and normative data need to be established with the general adolescent population.

**Reasons for Living Inventory.** The Reasons for Living Inventory (RFL) was developed for adults by Linehan, Goodstein, Nielsen, and Chiles (1983) as a self-report measure of persons' beliefs related to reasons for not committing suicide. The RFL consists of 48 items that provide scores on 6 factors: Survival and Coping Beliefs, Responsibility to Family, Child-Related Concerns, Fear of Suicide, Fear of Social Disapproval, and Moral Objections. Although the RFL has been used in several research studies with adolescents (e.g., Cole, 1989a; Fremouw, Callahan, & Kashdan, 1993), data suggest that additional research is needed with youngsters. In a study reported by Fremouw et al. (1993), the RFL did not differentiate between suicidal and nonsuicidal hospitalized adolescents, although a significant difference was found between suicidal inpatients and normal controls. Cole (1989a) found mixed results in groups of normal and delinquent adolescents, reporting some evidence of discrimination between groups of adolescents based on suicidal status, but relatively low correlations with related measured.

**Adolescent Psychopathology Scale: Suicide Scale.** The Adolescent Psychopathology Scale (APS) (Reynolds, in press a) is a multidimensional self-report measure of psychopathology in adolescents. The APS consists of 20 scales that evaluate DSM-IV Axis I domains, 5 personality disorder scales, and 11 content scales (e.g., self-concept, alienation, disorientation). The Suicide Scale of the APS is one of the content scales and consists of 8 items that reflect aspects of suicidal behaviors, e.g., suicidal ideation, attempts, intent. Norms for the APS are provided for a national sample of over 1800 adolescents, with data also presented for a clinical sample of 506 youngsters drawn from 21 states. Reynolds (in press a) reports an internal consistency reliability of 0.88 for the standardization sample of school-based adolescents and 0.92 for a clinical sample drawn from mental health settings. As a component of a broad-based measure of adolescent psychopathology, the Suicide Scale of the APS allows for the examination of suicidality in conjunction with psychopathology and other problems in adolescents.

**Suicidal Behaviors Interview.** The SBI (Reynolds, 1990, in press b) is a semistructured clinical interview developed for the clinical evaluation of suicidal behavior in adolescents. There are 20 questions on the SBI, 18 of which are scored on either a 0–2 or a 0–4 point scale. Two questions specific to attempted suicide are not scored—i.e., length of time the youngster thought about the attempt before acting and what precipitated the attempt—but are included in the interview to gain further clinical insight into components of a youngster's suicidal behavior.
The SBI consists of two parts, the first of which includes four sets of questions that have been shown to be related to suicidal behaviors in adolescents and important aspects to examine in the evaluation of suicidal youngsters (Brent et al., 1988; Garfinkel & Golombek, 1983; Hawton, 1986; Reynolds, 1988). These questions evaluate generalized levels of psychological distress (including anxiety, depression, and hopelessness), the severity of daily hassles, general level of social support from family, friends, school, work, and other factors (reverse scored), and evaluation of recent major negative life events. Each set of questions is scored using a global rating (0–4), with a high score indicative of severe problems in each domain.

The second section consists of questions specific to suicidal behavior and related risk factors. Questions in this section follow the hierarchy of suicidal cognitions and behaviors described by Reynolds (1988). Thus, the first items in this section focus on mild suicidal ideation, followed by items dealing with specific thoughts of how, when, and where the youngster has contemplated suicide. Overt suicide-related behaviors, such as writing a will, leaving a suicide note, and giving away possessions, are then evaluated, followed by questions about prior suicide attempt(s). The latter focus on these specifics: length of time since the most recent attempt, the youngster’s perception at the time that the attempt would be successful, and information about the method used and circumstances of the attempt (i.e., location of significant others who might intervene or probability of rescue).

Items are scored by the interviewer, with higher scores indicative of greater severity of suicidal behavior. Each item has descriptors associated with specific points on the rating scale. Descriptors vary across items and are specific to the suicidal behavior delineated by the item. For instance, item 6, which deals with general thoughts of killing oneself, is scored on the basis of frequency from absent (0) or infrequently (1) to most of the time (4). Item 7, which is specific to thoughts of how the youngster might kill himself or herself, is scored on the basis of how well formulated the plan is, with possible scores ranging from absent (0) or vague plan (1) to detailed plan (4). As a semistructured clinical interview, SBI items are presented and scored in a reasonably objective format, with operational anchors associated with score points on each item.

In the original development study (Reynolds, 1990), the reliability of the SBI was examined from the perspective of internal consistency reliability and interrater reliability. The sample consisted of 352 subjects, ages 12–19 years. Racially, one third of the sample were nonwhite. Subjects were individually interviewed by one of seven trained interviewers using the SBI. For a subsample of 36 youngsters, a second interviewer was present and independently scored the SBI to establish interrater reliability. The coefficient alpha reliability ($r_a$) was 0.92 for the 18-item (scored portion) SBI. Internal consistency reliability coefficients were somewhat higher for females ($r_a = 0.93$) as compared to males ($r_a = 0.89$). For a group of 62 youngsters who reported a history of one or more suicide attempts, a coefficient alpha reliability of 0.88 was found. Interrater reliability coefficients were high, with a zero-order correlation of 0.97 and an intraclass correlation coefficient ($r_{icc}$) of 0.99 between the sets of interviewers. This high reliability between raters is consistent with that achieved during the training.

A factor analysis of SBI items produced three factors that the author delineated as specific to: (1) covert and overt suicidal behaviors, (2) psychological distress and stress, and (3) history of suicide attempt. Scores on these subscales were moderately related to each other and demonstrated moderate to high reliability ($r_a = 0.83–0.90$). Further evidence of validity was presented in the form of correlations between the SBI total scale and subscales and the SIQ, Reynolds Adolescent Depression Scale (RADS) (Reynolds, 1986b), and history of previous suicide attempt. Moderate to high correlations were reported between the SBI and related measures. A series of multiple regression analyses with the SBI as dependent variable and related measures, age, and sex as independent
variables produced a multiple correlation of 0.82 for the junior high school subjects and 0.79 for the senior high school subjects.

Reynolds and Mazza (1993c) examined the reliability of the SBI, using a different sample of 486 adolescents ($M_{age} = 14.57$ years) including 191 males and 295 females from grades 7–12 in three schools. Adolescents were interviewed with the SBI as part of a two-stage school-based procedure for the identification of suicidal youngsters. This procedure is described in more detail below. Interviewers were eight graduate students who received extensive training on the administration and scoring of the SBI by the author. For a subsample of 47 adolescents, a second interviewer was present and scored the SBI as it was administered to establish interrater reliability. The reliability of the SBI was examined from the perspective of internal consistency reliability using the coefficient alpha of Cronbach (1951) and interrater reliability. The coefficient alpha was 0.90 for the total 18-item interview. The interrater reliability was high, with a zero-order correlation of 0.95. In addition, a dependent sample t-test between SBI scores for the pairs of raters was nonsignificant ($t = 0.52, p = ns$). The mean difference between raters was less than 1 point. These results support the high internal consistency and interrater reliability of the SBI with adolescents. Given the seriousness of the behavior assessed, high reliability is a prerequisite for a measure of suicidal behavior.

Suicidal Behavior History Form. The Suicidal Behavior History Form (SBHF) (Reynolds & Mazza, 1992c) is a form guide for the evaluation of a youngster's past history of suicidal behavior, in particular suicide attempt(s). The SBHF is a four-page form and a detailed Clinicians Guide that describes the administration, interpretation, and rationale for the SBHF. Page 1 of the SBHF provides for the documentation of client information, including psychosocial risk factors, health considerations, family factors, major life events, drug and alcohol use, current and past mental health diagnoses, current prescription medications, social supports, previous hospitalization, significant others/contact persons, interviewer information, and circumstances of the interview. Pages 2–4 of the SBHF focus on questions specific to recent and past suicide attempts, with questions including method, place, and circumstances of attempt, planning of attempt, intention to complete suicide, availability of rescue, reasons for attempt, outcome immediately following attempt, communication with others, specifics of suicide note, writing of a will, giving away possessions, medical and psychiatric attention for attempt, current status, availability of guns, pills, family history of suicidal behavior, and other questions including current level of suicidal intent.

Although not a formal assessment measure, the SBHF allows for the systematic evaluation of past and present suicidal behavior in adolescents and adults. In this manner, the SBHF provides the clinician with a formal documented history of an individual's suicidal behavior and allows for the integration of this information along with test data, clinical observations, and other information for the evaluation of suicide risk and the development of an intervention program or plan. The SBHF may also be used in conjunction with formal measures of suicidal behavior for providing documentation of evaluation of suicidality, an important consideration when working with suicidal individuals (Berman, 1990; Jobes & Berman, 1993).

Summary

The measures described above represent a majority of measures developed for use with youngsters and, with the exception of the SBHF, have demonstrated psychometric characteristics that allow for their evaluation for research and clinical applications. Space limitations preclude a comprehensive review of all measures of suicidality used in research with young people. For example, our review did not include the Pfeffer (1985) Spectrum
of Suicidal Behaviors (SBS) scale, a 5-point scale that classifies behavior as (1) nonsuicidal, (2) suicidal ideation, (3) suicidal threats, (4) mild suicide attempt, or (5) serious suicide attempt. The SBS has been used in numerous studies of child and adolescent suicide as a descriptive measure for categorizing groups as to levels of suicidality. A number of other measures, some of which were developed for adults, have also been used with children or adolescents. Rich, Kirkpatrick Smith, Bonner, and Jans (1992) used an adapted version of the Scale for Suicidal Ideation (SSI) (Beck, Kovacs, & Weissman, 1979) with a sample of high school students, although these authors did not report on the psychometric characteristics of the SSI with high school students. Brent et al. (1993d) used the Beck Suicide Intent Scale (BSIS) (Beck, Schuyler, & Herman, 1974), a 16-item clinical interview with an inpatient sample of adolescents, and while reliability estimates were ascertained for other interview and self-report measures in their study, no psychometric data were reported for the BSIS. In addition, the Suicide Probability Scale (Cull & Gill, 1982) was not reviewed, and although Cull and Gill included a limited number of adolescents in their normative sample, research (Tatman, Greene, & Karr, 1993) has raised questions as to the utility of this measure with adolescents.

We also did not review measures such as the Death Suicide Interview used in research by Carlson, Asarnow, and Orbach (1987), for which no psychometric information was reported. Orbach, Feshbach, Carlson, Blaugman, and Gross (1983) reported on the Suicidal Tendencies Test, designed to measure four attitudes toward death and suicide (attraction to life, repulsion by life, attraction to death, and repulsion by death) using fairy tales that require resolution to a story. Orbach et al. (1983) found low test–retest reliability coefficient for scores on this interview measure with a sample of suicidal and nonsuicidal children. A self-report form, the Multi-Attitude Suicide Tendency Scale (Orbach et al., 1991), was developed for use with adolescents and shows moderate levels of reliability and validity. Rudd (1989, 1990) reported on the 10-item Suicidal Ideation Scale which he developed for use with college students, including older adolescents. Rudd (1989) reports adequate internal consistency reliability (α = 0.86) and correlations with related constructs as validity evidence. Using a structured diagnostic interview, Velez and Cohen (1988) constructed a 6-item measure of suicidal ideation and reported an internal consistency reliability coefficient of 0.73 for this scale, minimally adequate for use in research.

Identifying Youngsters at Risk for Suicidal Behaviors: A Two-Stage School-Based Screening Procedure

We have noted that schools represent one of the few settings that allow for the potential identification of the significant numbers of youngsters who demonstrate or are potentially at risk for suicidal behaviors. For the most part, schools have not engaged in proactive approaches for the identification of suicidal youth. Although schools are beginning to recognize this need, most schools are ill-equipped or relatively unsophisticated in procedures and methods for identifying affected youngsters. On the basis of over a decade of research and applications, the first author has developed and tested procedures for the school-based identification of youngsters who demonstrate significant suicidal ideation and who report an intent or propensity for self-injurious behavior.

School-based screening for at-risk youngsters is a cost-effective means of identifying and directing intervention services to high-risk youngsters. As Shaffer, Garland, Gould, Fisher, and Trautman (1988) point out, even with a high rate of success, school-based prevention programs that utilize educational approaches would prevent fewer than 1% of adolescent suicides. They note that a better strategy is to provide services to those youngsters who are at greatest risk. It is our conclusion that by identifying these youngsters via school-based screening procedures, we are best able to target those
youngsters who might be in greatest need of intervention, as well as tailor interventions to
individual needs. Shaffer et al. (1988) and Garfinkel (1988) view procedures that assist in
the early identification of suicidal youth as preventative approaches to youth suicide.

The identification of adolescents' severity of suicidal ideation serves as a viable
proactive approach for the identification of youths at risk for suicide. Although it is not
suggested that all adolescents who manifest suicidal ideation will attempt suicide, suicidal
ideation appears to be a precursor for the vast majority who do attempt suicide and many
who commit suicide (e.g., Shafi et al., 1988). Andrews and Lewinsohn (1992), in a
longitudinal study of school-based adolescents, found that suicidal ideation was a signif-
icant predictor of future suicide attempts, even when controlling for previous suicide
attempts. In addition, suicidal ideation represents a domain of maladaptive cognitions that
are worthy of treatment consideration.

The procedure described below may be viewed as a multiple-gate or multiple-stage
screening procedure. Multiple-stage screening methods have been proposed and found
useful for the identification of mental health problems in children and adolescents in
school settings (Reynolds, 1986a). School-based screening procedures are a viable strategy
for the identification of youngsters who are thinking about suicide and other self-
destructive behaviors. For professionals in school settings, the importance of screening for
suicidal behaviors can be readily appreciated if one considers the thousands of adolescents
who kill themselves each year and the estimated 1–2 million youngsters who make suicide
attempts. As noted, studies suggest that approximately 9–12% of adolescents endorse
significant levels of suicidal thoughts, making the identification of youngsters who are
actively thinking about suicide an important quest.

A major problem in the identification of suicidal adolescents is the lack of self-referral
by suicidal youngsters. Many youngsters do not communicate suicidal thoughts to others,
which makes the identification of suicidal adolescents by peers, teachers, or others a
difficult undertaking. Reliance on teachers for the identification of suicidal youngsters is a
misguided expectation, given that high school teachers have limited contact with 100–200
students per day. It is unrealistic to expect the average teacher, even with training, to have
complete insight into the problems of students. Likewise, the psychoeducational ap-
proaches that suggest that teachers and other professionals be vigilant for signs of depression are based in part on the false assumptions that professionals are reliable in their
identification of depressed youngsters and that suicidal youngsters are also depressed. In a
study of over 1400 adolescents who were screened with the SIQ and RADS, 530 of whom
were interviewed with the SBI, Reynolds and Mazza (1990) found 39 youngsters who were
at risk for suicidal behaviors. Of these, 13 (33%) did not evidence a clinical level of
depressive symptomatology on the RADS. The authors also found a higher rate of past
history of attempts among the suicidal nondepressed adolescents (92.3%) compared to
the suicidal depressed youngsters (76.9%). On the basis of clinical interviews with a
sample of 2787 adolescents seen in community mental and health care clinics, Stiffman,
Earls, Robins, and Jung (1988) found that only 18% of 677 youngsters who reported
suicidal ideation and suicidal behavior met criteria for major depression. Thus, depression,
although a related clinical problem, is not always found in suicidal adolescents.

The screening procedure delineated below uses a two-stage assessment approach for
the identification of youngsters who may be characterized as demonstrating clinically
significant levels of suicidal thoughts. This procedure includes the group administration of
the SIQ within classrooms as the initial screen. Following collection and scoring of the SIQ,
those youngsters who score at or above the cutoff score are interviewed by a trained
professional for more specific suicidal behaviors. In our research and clinical practice, we
have used the SBI as the clinical interview for youngsters identified in the initial stage of the
screening. Detailed descriptions and efficacy of the screening procedure described below
can be found in Reynolds (1991a,d).
Stage 1

The first stage is the group screening of a school or of specific grade levels in a school with the SIQ or similar measure. In practice, this screening has been accomplished by teachers, who, after receiving a brief in-service training session, administer the SIQ to students in their classrooms. This assessment, including administration, directions, and distribution of the SIQ, can be conducted in less than 20 minutes. We have found it best to administer the screening at the same time for all students, preferably in the morning (second or third period). Once teachers have administered the SIQ, the questionnaires are collected and scored (a same-day mail-in scoring service is available for the SIQ).

At this first screening stage, we have typically found between 9% and 12% of youngsters to score at or above the cutoff score on the SIQ. The basic strategy is to identify students who report significant levels of suicidal thoughts at the initial screening. These youngsters are then evaluated by qualified school professionals with a semistructured clinical interview or other similar measures to determine specific suicide risk and decide on intervention/referral procedures. The sensitivity of the initial-stage selection procedure is a function of the cutoff score used to identify youngsters who demonstrate significant suicidal ideation. By selecting a somewhat more conservative (lower) cutoff score on the SIQ and SIQ-JR, Reynolds (1991a) reported a 100% sensitivity for the identification of youngsters who were considered to be at-risk for more severe suicidal behaviors on the basis of clinical interviews using the SBI.

Stage 2

The second stage of the screening process involves a comprehensive interview with those youngsters who report significant suicidal thoughts on the initial assessment measure. In our experience, this interview can be conducted by school psychologists, counselors, and other health professionals who are knowledgeable about psychological disorders in adolescents and have had training on the interview procedures. This interview should include a detailed assessment of suicidal behaviors, evaluate the possibility of diagnosable disorders (e.g., depression), and establish a plan for follow-up and, if necessary, protection of the adolescent against self-destructive behaviors.

In our research with this identification procedure, we have used the SBI as the primary assessment measure for Stage 2, along with the SBIF for obtaining greater detailed information from youngsters who have reported a history of one or more suicide attempts. As noted above, youngsters identified as demonstrating a clinical level of suicidal ideation at the initial screening are then interviewed. We have found it useful to begin interviews with those youngsters who score highest on the SIQ or SIQ-JR as soon as possible after the screening. In some cases in which the school has observed very high scores on the SIQ after the screening, youngsters were seen that day; and in some cases referred for services.

Summary

The procedures outlined here for the identification of youngsters thinking about suicide are effective in targeting students who are actively thinking of suicide and in need of intervention. This procedure results in the identification of numerous school-based adolescents who are seriously thinking of killing themselves. The school-based screening for suicidal behavior also fits into multicomponent intervention programs, such as those suggested by Blumenthal and Kupfer (1988) and Garfinkel (1989). It should also be noted that there is a need for formal evaluation of suicidality in youngsters seen in mental health and other treatment facilities. Pfeffer (1981a) notes the importance for all children seen for a psychiatric evaluation to also be assessed for signs of suicidality.
Suicidal Behavior and Psychopathology in Adolescents

Studies investigating suicidal behavior and psychopathology in adolescents have been for the most part conducted in hospital and clinical settings (e.g., Asarnow & Guthrie, 1989; Brent, 1987; Brent et al., 1993a,b; Christoffel, Marcus, Sagerman, & Bennett, 1988; R. C. Friedman et al., 1984b; Garfinkel et al., 1982; Pfeffer et al., 1986; Robbins & Alessi, 1985; Rotheram-Borus & Trautman, 1988). Most of these studies have examined the relationship of formal psychiatric disorders (DSM-III/DSM-III-R Axis I and Axis II disorders) and suicidal behavior in children and adolescents. Research investigating formal DSM-III Axis I clinical disorders in suicidal children and adolescents has found psychiatric disorders of depression, substance abuse, schizophrenia, eating disorders, and conduct disorder in completers and attempters (Apter, Bleich, Plutchik, Mendelsohn, & Tyano, 1988; Brent, 1987; R. C. Friedman et al., 1984b; Kosky, Silburn, & Zubrick, 1990; Kovacs & Puig-Antich, 1989; Pfeffer et al., 1988, Schreiber & Johnson, 1986; Shafi et al., 1985, 1988; Weiner & Pfeffer, 1986).

The most common DSM-III/DSM-III-R clinical disorder diagnosis reported among suicidal children and adolescents is depression (Brent et al., 1988, 1993a,b; R. C. Friedman et al., 1984b; Kosky et al., 1990; Lewinsohn, Rohde, & Seeley, 1993; Myers, Burke, & McCauley, 1985; Pfeffer et al., 1988; Robbins & Alessi, 1985). Brent et al. (1993a) found an affective disorder in 86.5% of a sample of 37 inpatient adolescent suicide attempters. In a study conducted by Shafi et al. (1988) examining the diagnoses of 21 adolescent suicide completers via psychological autopsies, depression was diagnosed in 76% (16) of the suicide completers as either a primary or a secondary psychiatric disorder. Similar results were reported in a study conducted by Robbins and Alessi (1985), who studied 64 adolescent attempters hospitalized in a psychiatric unit and found that 76.6% (49) were diagnosed with depression. In a study of 231 children and adolescents of ages 6–18 years, Brent et al. (1986) found a high rate of dysthymic disorder (DSM-III criteria) among youngsters who had made one or more suicide attempts. Depression has also been noted in very young children who attempt suicide. Rosenthal and Rosenthal (1984), using modified Weinberg criteria, found that 56% of 16 preschool children who made one or more suicide attempts were depressed.

Depressive disorders are also frequent in adolescent suicide attempters found in school-based samples. Andrews and Lewinsohn (1992), in an epidemiological study of 1710 older adolescents, found that approximately 80% of 121 youngsters who had attempted suicide prior to the evaluation also met criteria for a depressive disorder during this time period. Alcohol and drug abuse were also relatively common diagnoses in this group of attempters. In a community study of suicidal behavior in a sample of children and adolescents from 752 families, Velez and Cohen (1988) found major depressive disorder (MDD) present in 19% of suicide attempters compared to 11% of nonattempters and a past episode of MDD in 35% of attempters compared to 4.5% of nonattempters.

Substance abuse is also a common DSM-III Axis I diagnosis among completers and attempters (Brent et al., 1986, 1988, 1993a; Kotila & Lonnqvist, 1988; Levy & Deykin, 1989; Lewinsohn et al., 1993; Pfeffer et al., 1988; Robbins & Alessi, 1985; Schreiber & Johnson, 1986; Schuckit & Schuckit, 1989; Shafi et al., 1988). In the Shafi et al. (1988) study, substance abuse was a primary or secondary diagnosis in 62% of the adolescent suicide completers. Kandel et al. (1991) found drug use highly related to suicide attempts in adolescents, particularly females. In a study of 424 older adolescents, Levy and Deykin (1989) found substance-abuse disorder as a risk factor for suicide attempts and ideation, with somewhat greater effects found for males. In older adolescents, there also appears to be an increased frequency of comorbidity of substance abuse and depressive disorders (Carlson, Rich, Grayson, & Fowler, 1991) and substance-abuse and borderline personality disorder (Runeson & Beskow, 1991) among suicide completers.
Although formal psychiatric diagnoses were not reported by Kotila and Lonqvist (1988), who described the characteristics of 422 adolescent suicide attempters, they did find that 53% of males and 40% of females had consumed alcohol when making their suicide attempt. Kotila and Lonqvist (1988) also found that males (15%) were significantly more likely to report that their attempt was influenced by alcohol than females (5%), $\chi^2 = 17.5, p < 0.001$. Berman and Schwartz (1990) reported on suicidal behavior among adolescent drug users seen in four outpatient drug treatment facilities. Of 298 drug users surveyed, 29.9% reported a history of one or more suicide attempts. Although substance abuse is relatively prevalent among youngsters who attempt suicide, the rate is not necessarily higher than rates found in nonattempter psychiatric samples.

Research investigating formal clinical disorders has found that the diagnosis of conduct disorder is not uncommon among male and female adolescent suicide attempters (Schreiber & Johnson, 1985; Taylor & Stanfeld, 1984). Taylor and Stanfeld (1984) reported that in a sample of 50 youngsters ranging in age from 8 to 17 years who attempted suicide by poison, approximately 20% had a diagnosis of conduct disorder. However, a similar rate was found in a matched sample of nonsuicidal psychiatric controls. In a report by Borst and Noam (1989), the diagnosis of conduct disorders was also found to be the most frequent diagnosis (44.5%) in a sample of 36 suicide attempters (both children and adolescents) who were inpatients in a psychiatric hospital. It should also be noted that a similar rate of conduct disorders (51%) was found among nonsuicidal youngsters in the hospital sample.

There have been few research studies examining adjustment disorder among adolescents in relation to suicidal behavior (e.g., C. A. King et al., 1990; Pfeffer et al., 1988). In the Pfeffer et al. (1988) study, adjustment disorder was diagnosed in 7.4% ($N = 6$) of males and 9.2% ($N = 11$) of females. The results of the Pfeffer et al. (1988) study must be interpreted cautiously because adolescents could receive multiple diagnoses. C. A. King et al. (1990) compared 19 female adolescent attempters to 21 “normal” adolescent females. Adjustment disorder was measured by the Personality Inventory for Children (Lachar, 1982). The results of this study showed that female attempters had significantly higher adjustment disorder scores than “normal” adolescents. Reynolds and Mazza (1992b), in their school-based study of 378 suicide attempters and 2419 nonattempters, also found significantly higher scores on the APS Adjustment disorder scale ($F = 382.02, p < 0.0001$) in adolescents who had a history of attempted suicide than in those without a suicide-attempt history. The results of these studies suggest the need to examine adjustment disorder in relation to suicidal behavior in adolescents. These results are also limited by the use of severity measures, rather than formal diagnosis, by C. A. King et al. (1990) and Reynolds and Mazza (1992b).

Another clinical disorder that needs to be further examined in relation to suicidal behavior is schizophrenia. The research on schizophrenia in relation to suicidal adolescents has been minimal. In the Pfeffer et al. (1988) study, schizophrenia was diagnosed significantly more often in males, 22.2% (18), than in females, 6.7% (8), ($\chi^2 = 8.8, p < 0.003$). It appears from this study that schizophrenia may be more related to suicidal behavior in adolescents than has been thought in the past, especially for males.

Personality disorders have also been found to be prevalent in youngsters who demonstrate suicidal behaviors. Brent et al. (1993a), in a study of 37 inpatient adolescent suicide attempters, found that 81% manifested a DSM-III-R personality disorder or trait as assessed by the Structured Clinical Interview for the DSM-III-R for personality disorders (Spitzer, Williams, Gibbon, & First, 1989).

**Coexisting Clinical and Personality Disorders**

Studies examining formal DSM-III or DSM-III-R clinical and personality disorders in suicide completers and suicide attempters have begun to focus on coexisting disorders.
Shafi et al. (1988) found that 81% of completers fulfilled the DSM-III criteria for more than one mental disorder at the time of their death. Similar results were reported in the R. C. Friedman et al. (1984b) study; 60% of attempters with an Axis I disorder also met the criteria for a formal Axis II personality disorder. Results from other studies suggest that adolescents with concurrent coexisting mental disorders, DSM Axis I or Axis II or both, are more at risk for suicidal behavior than those with only one mental disorder (Alessi, McManus, & Brickman, 1984; Brent, Kalko, Allan, & Brown, 1990; Clarkin, Friedman, Hurt, Corn, & Aronoff, 1984; R. C. Friedman et al., 1982; R. C. Friedman, Aronoff, Clarkin, Corn, & Hurt, 1983; Shafi et al., 1988).

Research findings suggest that a coexisting personality disorder with certain Axis I clinical disorders may increase the risk of suicidal behavior in adolescents (Alessi et al., 1984; R. C. Friedman et al., 1983; Fyer, Frances, & Sullivan, 1988). The combination of "comorbidity" of antisocial personality and depressive symptoms has been found to be particularly lethal in adolescents and young adults (Blumenthal & Kupfer, 1986, 1988). Fyer et al. (1988) examined 180 patients who were diagnosed with borderline personality disorder. Among the 180 patients, Fyer et al. (1988) reported that those with coexisting borderline and an affective disorder engaged in more suicidal behavior than those with only a borderline personality disorder.

Reynolds and Mazza (1992d) examined clinical levels of comorbidity in 306 school-based adolescents who had a history of one or more suicide attempts using six scales on the APS: depression, adjustment disorder, conduct disorder, substance abuse, borderline personality disorder, and anger. They reported that 13.4% of the attempters had two or more APS scale T-scores at or above 70 (Reynolds & Mazza, 1992b). The two scales showing the highest proportions above a T-score of 70 were borderline personality disorder and depression, 20.4% and 18.3%, respectively. Because of the reliance on the APS, a severity measure, rather than formal diagnoses, caution must be taken in interpreting this study.

The investigation of specific combinations of disorders or patterns of comorbidity and suicidal behavior has received little attention in clinical studies (Blumenthal & Kupfer, 1986, 1988). Research needs to be conducted that examines patterns of comorbidity that occur most frequently in completers, attempters, and school-based populations.

**Relationship with Depression**

Of special note is the relationship between depression and suicidal behavior. Depression is diagnostically and phenomenologically linked to suicide and suicidal behavior (Reynolds, 1992b, 1994). Of persons who commit suicide, approximately half have a diagnosis of depression (Goodwin & Runck, 1992). Depression in children and adolescents is a serious clinical problem involving cognitive (disturbances in thinking), affective, motivational, somatic (physical complaints), and vegetative symptoms (eating and sleeping problems), as well as the emotional symptom of sadness. Myers et al. (1991) suggest that suicidal youngsters with major depression may constitute a distinct group of youngsters with depressive disorders. In the past 15 years, a great deal has been learned regarding depression in children and adolescents. Most of this research is descriptive, focusing on correlates of depression in youngsters. There has also been significant research on the psychobiology of childhood depression, with researchers examining biological and neuroendocrine correlates as well as genetic factors [Emslie, Weinberg, Kennard, and Kowatch (Chapter 8); Puig-Antich, 1987]. Biological markers have also been examined for suicidal behavior (Cohen, Winchel, & Stanley, 1988; Ryan et al., 1988; van Praag, 1982, 1986). In addition, advances in the development of methodologies for the identification and assessment of depression [Hodges (Chapter 10); Reynolds (Chapter 11)], as well as research on treatment strategies for the amelioration of depressive symptomatology in youngsters...
Stark, Rouse, and Kurowski (Chapter 14); Lewinsohn, Clarke, and Rohde (Chapter 15), have greatly enhanced our understanding of and ability to deal with this disorder.

Youngsters with depressive disorders (e.g., major depression, dysthymia) appear to be at greater risk for suicidal behavior than those with other psychiatric disorders. Kovacs, Goldston, and Gatsonis (1993), in a longitudinal study of suicidal behavior in children with depressive disorders and other psychiatric disorders, found a significantly greater proportion of youngsters with depression who attempted suicide compared to nondepressed psychiatric controls. The highest rate of attempts found at follow-up (late teens) was 37% for youngsters with major depression as their study index diagnosis. In a longitudinal study, Rao, Weisssman, Martin, and Hammond (1993) found 7 suicides among a subsample of 159 individuals who as children or adolescents had an initial diagnosis of major depression. On the basis of psychological autopsies, 5 of these 7 cases had a diagnosis of major depression at the time of their suicide.

The relationship between suicidal behavior and depression is by no means clear. Sample characteristics, as well as aspects of suicidality, appear related to depression. In a study of adolescent suicide attempters hospitalized in a pediatric unit and differentiated as impulsive or nonimpulsive on the basis of their premeditation, Brown, Overholser, Spirito, and Fritz (1991) found nonimpulsive suicide attempters to be significantly more depressed than impulsive suicide attempters. Nonimpulsive attempters also demonstrated a high level of suicidal ideation on the SIQ (M = 75.6) that approached statistical significance (p < 0.06) compared to SIQ scores of the impulsive suicide attempters (M = 53.3).

**Personality and Psychosocial Characteristics and Suicidal Behavior**

There are some limitations to the heavy reliance on the use of formal DSM-III (American Psychiatric Association, 1980) or DSM-III-R (American Psychiatric Association, 1987) diagnoses in the study of suicidal behavior in children and adolescents. Although formal diagnoses are useful for description and in making group comparisons, such as completers vs. attempters, they also produce a rigid structure for labeling individuals. The diagnosis itself may overshadow specific symptom(s) or trait(s) that are precipitating or play a more causal role in the suicidal behavior. Goldsmith, Fryer, and Frances (1990) suggest that personality traits such as impulsivity may be better predictors of suicidal behaviors than are personality disorders. Several studies have focused on specific symptoms or traits within clinical and personality disorders that may be related to adolescent suicidal behavior (e.g., Blumenthal & Kupfer, 1988; Brent & Kolko, 1990). For example, personality characteristics of impulsivity and aggression have been found to be important potential precursors of adolescent suicidal behavior (Cairns, Peterson, & Necker, 1988; Cantor, 1976; GisPERT, Wheeler, Marsh, & Davis, 1985; Patsios, Clum, & Luscomb, 1979; Pfeffer et al., 1988) and to be related to neurobiological correlates of suicide (Goodwin & Brown, 1989; Plutchik & van Pragg, 1989). Impulsivity and aggression, as personality characteristics, have been reported more frequently in hospitalized female attempters than in female psychiatric controls and male attempters (Cantor, 1976; Gispert et al., 1985). Kashden, Fremouw, Callahan, and Franzen (1993) found that adolescent suicidal inpatients demonstrated greater impulsivity than nonsuicidal inpatients or a high school control group. Pfeffer et al. (1988) found that aggressive behavior was a significant predictor for suicidal risk in females, but not for males. The importance of anger, aggression, and hopelessness as characteristics for understanding suicidal behavior is not new (e.g., Shaw & Schelkun, 1965) and has also been raised in the psychodynamic literature (e.g., Hendin, 1991).

A number of psychosocial characteristics have been studied in various samples of children and adolescents. Foremost among these variables have been hopelessness and
depression along with environmental variables of social support and major and minor negative events, the latter often conceptualized as chronic strains or hassles. These studies have been conducted with clinical and nonclinical samples of children and adolescents (e.g., Asarnow & Guthrie, 1989; Asarnow, Carlson, & Guthrie, 1987; Cole, 1989b; Kazdin, French, Unis, Esveldt-Dawson, & Sherick, 1983; Mazza & Reynolds, 1991, 1993; Reynolds, 1988; Reynolds & Waltz, 1986; Rich et al., 1992) and constitute an extensive literature base. In general, depression and hopelessness have shown strong relationships to suicidal behavior, the latter typically operationalized as suicide attempts or suicidal ideation or both. However, many studies have found gender differences in the relationship of psychosocial variables to suicidal behavior, particularly in adolescents (e.g., Cole, 1989b; Mazza & Reynolds, 1991).

Family Dysfunction and Abuse

Family problems or difficult child–parent relationships or both are frequent issues among suicidal children and adolescents (Asarnow et al., 1987; Brent et al., 1993; Carlson, 1983; Hawton, 1987; Kerfoot, 1987; Orbach, 1988; Pfeffer, 1981b, 1986, 1989a; Sabbath, 1969; Schrut & Michels, 1969; Taylor & Sainsfield, 1984). In a study of adolescent suicidal inpatients, nonsuicidal inpatients, and a normal adolescent control group, C. A. King, Segal, Naylor, and Evans (1993) found that fathers of suicidal adolescents reported greater depression and family problems than fathers of the other two groups. Suicidal inpatients reported greater problems with fathers in a number of relationship domains. Adolescents’ relationship with their mothers was not significantly different between groups. C. A. King et al. (1993) suggest the need to engage parents, and in particular fathers, in treatment.

Family problems are prevalent among children who attempt suicide (Asarnow & Carlson, 1988; Kienhorst et al., 1987; Kosky, 1983; Orbach, Gross, & Glaubman, 1981). An impaired or dysfunctional parent–child relationship may play an important role as a precipitating factor in child and adolescent suicidal behavior. Kerfoot (1988), in a sample of 100 child and young adolescent suicide attempters, found that a serious disagreement with parents was the most frequent reason given for youngsters’ suicide attempts. Kienhorst et al. (1987) examined motives for suicide attempts in a sample of 40 children, finding family problems the most frequent reason. Similar findings were reported by Paulson, Stone, and Spostol (1978), who found that reasons for suicide attempts in young children included escape from traumatic home situation and perceived abandonment or rejection by parents. Asarnow and Carlson (1988) found that family support in comparison to depression and hopelessness was a major discriminator between child psychiatric inpatients who attempted suicide and those who had not, with suicide attempters reporting lower perceived family support. In a sample of adolescent psychiatric inpatients, C. A. King, Naylor, Evans, and Segal (1991) found moderate and significant correlations between suicidal ideation as measured by the SIS-JR and youngsters’ reports of family problems.

Suicidal behavior in children and adolescents has also been associated with parental abuse and neglect, as well as physical and sexual abuse in general (Deykin, Alpert, & McNamara, 1985; Garnefski, Diekstra, & de Heus, 1992; Green, 1978; Hibbard, Brack, Rauch, & Orr, 1988; Livingston, Lawson, & Jones, 1993; Stone, 1993). Hibbard et al. (1988) conducted a community-based study of 706 junior high school students who completed a questionnaire on physical and sexual abuse and mental health problems, 130 (18.4%) of whom indicated some form of abuse. Approximately 30% of youngsters who experienced abuse also noted a history of suicide attempts compared with 11.6% of adolescents who reported no abuse. De Wilde, Kienhorst, Diekstra, and Wolters (1992), in a community sample study of adolescents, found that adolescents who attempted suicide reported significantly more physical and sexual abuse during adolescence than nonattempters, and significantly more physical abuse during childhood. In a school-based study comparing
male and female suicide attempters with a matched sample of nonattempters, Shaunesey et al. (1993) found a higher frequency of suicide attempts among a sample of adolescent psychiatric inpatients who had been abused physically or sexually or both (N = 55) than among those with no history of abuse (N = 65). Youngsters who were hospitalized for a suicide attempt and had been abused also demonstrated significantly higher levels of suicidal ideation on the SIQ (M = 107.60) than attempters without a history of abuse (M = 58.33). Shaunesey et al. (1993) also found significant differences in SIQ scores between groups of youngsters who had experienced frequent physical abuse (M = 85.63) or infrequent physical abuse (M = 62.67) and those who had not been physically abused (M = 53.95). Garfinkel et al. (1992) found that female adolescents who had attempted suicide vs. female nonattempters reported greater physical abuse (51% vs. 24%; χ² = 26.4, p < 0.001) and sexual abuse (32% vs. 7%; χ² = 32.3, p < 0.001). Male suicide attempters reported significantly more sexual abuse than did nonattempters (χ² = 16.7, p < 0.001), but these two groups did not differ in rates of reported physical abuse. Suicide attempts and behavior have also been noted to a significant extent in physically and sexually abused youngsters seen in inpatient settings (Sansonnet-Hayden, Haley, Marriage, & Fine, 1987) and in pregnant adolescents (Bayatpour, Wells, & Holford, 1992), although abused youngsters are victimized by others as well as parents.

It is important to note the potential for suicidal behavior among parents, particularly as this may be a risk factor for suicidal behavior in some youngsters (Pfeffer, 1981a; Roy, 1989). Kerfoot (1988), in his study of deliberate self-poisoning in 100 children and young adolescents, found similar suicidal behavior in 30% of the first-degree relatives, primarily mothers, compared to 4% in a psychiatric control sample. Similar findings were reported by Myers et al. (1985), who found suicidal behaviors in 25% of families of suicidal children compared to 6% of a matched group of controls. In a descriptive study of 11 children who manifested suicidal behaviors, Orbach et al. (1981) found a suicidal parent in the majority of cases. Orbach et al. (1981) also found that all but one of the families of these children were experiencing a major family crisis. Related to suicidal behavior in parents is the significant issue of parental depression and other forms of psychopathology that may interfere with effective parenting and relate to child and adolescent psychopathology (Cicchetti, Rogosch, and Toth (Chapter 7); Downey, Feldman, Khuri, and Friedman (Chapter 22)).

Family problems and discord are significant but by no means singular in their contribution to the etiology and development of suicidal behaviors in young persons. Other externalizing as well as internalizing problems can be viewed as precursors or augmenters of suicide risk (Hoberman, 1989). Although not all suicidal youngsters have families that manifest disturbed relations or are a source of abuse or stress, parental and family dysfunction appears to be the single most prevalent problem domain among suicidal children and adolescents.

Interventions for Suicidal Behavior in Young People

Introduction

Intervention, as compared to prevention, is aimed at the active treatment of youngsters who demonstrate suicidal behaviors. It is evident that many youngsters do receive treatment for suicidal behavior, given the large number of suicide attempts that result in medical or psychiatric hospitalization. Furthermore, the number of youngsters seen in treatment settings for psychiatric disorders such as depression, borderline personality disorder, and other psychopathology includes significant numbers of youngsters who are also at-risk for suicidal behavior (Reynolds & Mazza, 1993b). Thus, it can be inferred that
there are many different treatment strategies that have been implemented with suicidal youngsters. Less evident is the efficacy of these procedures. From follow-up studies of previously hospitalized youngsters, it appears that many youngsters treated for suicidal behavior go on to complete suicide (Shaffer et al., 1988) or repeat an attempt (Spirito et al., 1992). Likewise, adolescent suicide attempters tend to be relatively noncompliant with regard to outpatient care (Spirito et al., 1992; Trautman, Stewart, & Morishima, 1993).

Our review of treatment studies includes several with adults that may prove applicable to adolescents as well as several studies that target adolescents. We also limit our discussion to psychological treatments, although pharmacological interventions with depressed suicidal youngsters are viable, particularly when presented along with psychotherapy. However, pharmacotherapy of suicidal youngsters with antidepressants needs to be a cautious undertaking, given the high level of toxicity of most tricyclic antidepressants (Kragh Sorensen, 1993) and a noted increase in antidepressant overdose as a method for suicide (Rutterstol, 1993). With reference to antidepressants, we anticipate that some of the newer selective serotonin reuptake inhibitors (SSRIs) such as fluoxetine may prove effective with suicidal youngsters, as they have shown efficacy in reducing suicidal ideation in adults (Reynolds et al., 1993). Furthermore, SSRIs have fewer side effects and are safer when taken in large doses than other antidepressant medications [Johnston & Freuhling (Chapter 17)]. It is also important to note that suicidal youngsters may demonstrate other forms of psychopathology and may benefit from other medications that are more specific to their psychiatric disorder (Pfeffer, 1984).

Most of the empirical psychological treatment literature has focused on behavioral and cognitive-behavioral interventions, with a strong emphasis on problem-solving strategies. A number of professionals have advocated the use of cognitive and problem-solving therapies for the treatment of suicidal behaviors (e.g., Brent & Kolko, 1990; Ellis, 1966; Weishaar & Beck, 1990), and research has shown deficits in these domains among suicidal youngsters (e.g., Asarnow et al., 1987; Rotheram-Borus, Trautman, Dohpkins, & Shrout, 1990; Sadowski & Kelly, 1993). Treatment-outcome research on suicidal youngsters is virtually nonexistent and is likewise sparse with adults. A review of the literature on the treatment of suicidal behavior in children and adolescents indicates a primary focus on articles that suggest treatments rather than testing the efficacy of treatments or reports of case studies or case examples. Thus, the professional is faced with accepting treatment prescriptions that have no proven efficacy. As will be noted later, the same conditions exist with regard to many school-based prevention programs.

Interventions for suicidal youngsters vary, in part, as a function of the nature of the suicidal behavior, as well as the youngster's psychological or diagnostic status. Blumenthal (1990a) delineates four components in the treatment of suicidal youths: psychological interventions; medications targeted to existing mental health problems, if necessary; use of psychiatric consultation and, if needed, hospitalization; and changes directed at the youngster's environment and social support system. Similarly, Pfeffer (1990) suggests and describes three intervention formats: a psychotherapeutic-cognitive approach, pharmacotherapy, and interventions that focus on stabilizing the environment, including major life stressors and family therapy and involvement. Pfeffer (1990) considers these interventions most useful when used together to decrease or alleviate suicidal behavior. Pfeffer (1977, 1990) also describes psychiatric hospitalization as a strategy for preventing self-harm to actively suicidal youngsters and notes the importance of involving the family in the treatment of suicidal children (Pfeffer, 1977, 1982).

Likewise, the mental state of the youngster when presenting for treatment can vary greatly. In many cases, the child or adolescent may have an acute suicidal episode or crisis in which a host of environmental, interpersonal, and internal problems and stressors combine to create a confused and intensely distressed youngster. Jobes and Berman (Jobes
& Berman, 1991; Berman & Jobes, 1991) have developed a crisis intervention model for the treatment of suicidal youngsters that appears to have a great deal of promise.

Research on the treatment of suicidal behavior presents a host of formidable difficulties if experimental designs are to be implemented. Foremost is the ethical consideration that precludes the use of most control-group designs. The utilization of wait-list or placebo conditions places suicidal subjects at potentially grave risk, given that such procedures will knowingly endanger subjects. Likewise, engaging subjects in treatment for suicidal behavior introduces the possibility that if an experimental procedure is not 100% effective, subject mortality may result. Further complications are specific to the nature of the behavior pathology, in that many suicidal individuals, because of their desire to end their life, are noncompliant or reject treatment. Characteristics of the therapist and the development of a therapeutic relationship are also important aspects for effective treatment (Bongar, Peterson, Harris, & Aissis, 1989; Pfeffer, 1984).

Because of the high comorbidity of suicidal behavior and depression, treatment for suicidal behavior may in many cases be combined with therapy for depression. In this regard, there have been a few experimental treatment studies for the amelioration of depression in children and adolescents. In a number of studies reported (e.g., Kahn, Kehle, Jenson, & Clark, 1990; Reynolds & Coans, 1986; Stark, Reynolds, & Kaslow, 1987), suicidal youngsters were either excluded or not dealt with as a specific group. Likewise, Mufson, Moreau, Weissman, and Klerman (1993), in describing the application of interpersonal psychotherapy for depressed adolescents (IPT-A), indicate that youngsters who are at risk for suicidal behaviors should not be viewed as candidates for IPT-A. Thus, although literature describing the nature and efficacy of psychological treatments for depression in youngsters has appeared, youngsters included in these therapies are typically not at imminent risk for suicidal behaviors. The utility of these therapies for suicidal youngsters remains to be determined, and it will be necessary to make extensive modification and enhancement of these procedures to include a substantial focus on dealing with suicidal behaviors and risk. Research by Rotheram-Borus et al. (1990) suggests that some adult models of depression may not be appropriate in defining targets for intervention with suicidal adolescents, although their research supports the application of cognitive-behavioral treatments for suicidal youngsters.

Suicidal behavior is often found in persons with borderline personality disorder or borderline characteristics (Cohen-Sandler, Berman, & King, 1982; Mazza & Reynolds, 1993; Reynolds & Mazza, 1992b). These findings are due in part to the inclusion of suicidal behavior as a symptom within the criteria for the diagnosis of borderline personality disorder in DSM-III-R and DSM-IV (American Psychiatric Association, 1987, 1994). Linehan (1993a, b) has developed a structured therapy that integrates cognitive and behavioral components for the treatment of borderline personality disorder along with suicidal behaviors, although these procedures have not been tested with adolescents. Known as dialectical behavior therapy (DBT), this therapy was developed and tested on adults with borderline personality disorder, most of whom also demonstrated significant suicidal behaviors. A primary target of DBT is "high-risk suicidal behaviors," "... simply because," as Linehan (1987, p. 329) succinctly notes, "psychotherapy is not effective with dead patients." The structured nature of this therapy, along with its skill-building, problem-solving, and behavior-change orientations and focus on suicidal behaviors, suggests that it has a great deal of potential for use with adolescents. The work of Linehan and colleagues (e.g., Linehan, 1993a; Linehan, Armstrong, Suarez, Alimon, & Heard, 1991; Linehan, Heard, & Armstrong, 1993) on the treatment of suicidal behaviors with DBT stands as an excellent model for modification and application with at-risk adolescents.

Although there is not an extensive research base on contemporary psychotherapies for suicidal behaviors in adults, there is some evidence to suggest that cognitive—
behavioral and behavioral therapies are effective for reducing suicidal behaviors (e.g., Salkovskis, Atta, & Storer, 1990). Clum, Paisioskas, and Luscomb (1979) note the potential utility of problem-solving treatment approaches, particularly for persons who have made multiple attempts and for whom attempts may in part be a response to interpersonal problems. Because of the relatively high numbers of multiple attempters found in samples of adolescent suicide attempters, interpersonal problem-solving approaches may be important for some youngsters, particularly if the purpose of suicidal behavior is to manipulate or effect change in the youngster's interpersonal relations.

An examination of treatment studies for suicidal behaviors suggests at least two primary groups for attention: treatment of individuals identified as suicide attempters and treatment of individuals who are identified as at imminent risk for suicide or an attempt. The latter group includes those individuals who contact significant others, professionals, crisis hot lines, or persons who are identified as at risk by school-based screening or by others, such as a therapist or other mental health professional.

A field-based intervention study of adolescents of ages 13–17 who had received services at one of two geographically separate hospitals in the Boston area and who demonstrated suicidal behaviors including suicide attempts, gestures, extreme risk-taking behaviors, and suicidal ideation was described by Deykin (1986) and Deykin, Hsieh, Joshi, and McNamara (1986). The intervention was provided to youngsters seen in one of the two hospitals, with youngsters from the second hospital acting as control subjects. The intervention consisted of a brief psychoeducational mental health awareness program along with direct contact (minimum of 4 times per year) with a community outreach worker to maintain contact between the subject and the study program. Treatments were tailored to the individual needs of each subject. Outcome variables included repeated admission to area hospitals, percentage of subjects who attended follow-up visits or clinic referrals, and subject mortality. The intervention appeared to be effective in increasing the rate of compliance with medical recommendations and keeping medical appointments. However, no treatment superiority was found specific to reducing suicidal behaviors.

Cognitive–Behavioral Interventions

Several relevant studies have been conducted that used cognitive–behavioral and social problem-solving treatment components. Some of these studies have been conducted with adults or older adolescents, but are reviewed here because of their relevance and potential for use with adolescents. It should also be noted that treatment studies using experimental designs are difficult to conduct and a challenge for researchers.

In a preliminary report of a pilot study examining the efficacy of combined cognitive and interpersonal therapy for suicidality in adolescents, Kolko and Brent (1988) found that in a sample of 127 youngsters seen in a treatment program for suicidality, about 80% showed remission for suicidal behavior. Although this was an uncontrolled study and about one third of the sample also received medication for depression, this study is useful in pointing out the difficulty in treating suicidal youngsters. One potential problem noted by the authors of this study was compliance, with about half the sample completing treatment and follow-up. The authors suggested that active support is needed to enhance family involvement and assistance in therapy and communication.

In an experimental study with 24 adult suicide attempters, Liberman and Eckman (1981) compared a behavior-therapy approach with an insight-oriented therapy. The behavior therapy consisted of 17 hours of social-skills training, along with 10 hours of anxiety-management techniques (e.g., relaxation training) and 5 hours of "family negotiation and contingency contracting." The insight-oriented treatment consisted of 17 hours of individual insight psychotherapy, 10 hours of psychodrama and group psychotherapy, and 5 hours of family therapy. Therapy was quite intense, consisting of 4 hours of therapy per
day, administered over an 8-day period. A noteworthy aspect of this study was the continued follow-up of subjects at six points over a 2-year period. Outcome measures included depression measures and subject reports of suicidal behavior (e.g., ideation, plans, attempts). Liberman and Eckman (1981) reported relatively positive results for both groups, although the behavior-therapy group demonstrated less frequent suicidal ideation at the longer term follow-up assessments. Specific to suicide attempts at the 2-year follow-up, results were identical for both groups, with 9 subjects in each group free from suicide attempts, 3 subjects in each group who made suicide threats or preparations, and 1 subject in each group who attempted suicide postintervention. Although the level of repeat attempts appears low, we need to consider that 8% of the sample reattempted within 2 years after treatment and an additional 17% made threats or plans to attempt in each group. Before therapeutic efficacy can be claimed, we need to know the extent to which these outcomes are superior to those expected in a similar sample without treatment. Such a study becomes a complex undertaking, however, because for ethical and moral reasons we cannot conduct or condone a treatment study that includes a placebo or wait-list control group for suicidal behaviors.

In an experimental treatment study of adult suicide attempters, Patsiokas and Clum (1985) randomly assigned 15 hospitalized suicide attempters to one of three groups: a cognitive-restructuring group based on Beck’s cognitive therapy, a problem-solving group based on the procedures of D’Zurilla and Goldfried (1971), and a nondirective control group designed as an attention control. Treatments were individually administered in 10 1-hour sessions over 3 weeks. There were significant decreases in suicidal ideation and hopelessness by all groups between pretest and posttest. However, differences between experimental and control groups were nonsignificant. As one of the first controlled treatment-outcome studies, this investigation is noteworthy. Limitations in the number of subjects (5) per condition, and the fact that there was no follow-up, particularly posthospitalization, need to be noted.

In a significant study of older adolescents and young adults, Lerner and Clum (1990) examined the efficacy of a problem-solving treatment in comparison to the generalized nonspecific supportive therapy. The participants were 18 persons of ages 18–24 years with a mean age of 19.17 years, although it should be noted that these were subjects who completed the study. No data are reported for individuals who did not complete therapy. Subjects were selected on the basis of experiencing significant suicidal ideation as determined by an interview using the Modified Scale for Suicidal Ideation (MSSI) (L. W. Miller, Norman, Bishop, & Dow, 1986). There were 8 subjects in each group. Treatments were administered in 10 90-minute sessions over a 5- to 7-week period. A small-group treatment format (2–5 subjects) was used for the presentation of therapy. The active condition was a problem-solving therapy incorporating components delineated by D’Zurilla and Goldfried (1971). The supportive therapy included empathic listening, sharing of experiences, and instruction on active listening skills. Assessment with the MSSI, and measures of depression, hopelessness, loneliness, and social problem-solving, were obtained at pretest, posttest, and 3-month follow-up.

At pretest, the problem-solving group showed higher scores on measures of depression, suicidal ideation, and hopelessness. After treatment, both groups reported reductions in suicidal ideation. A significantly greater reduction in depression was found in the problem-solving group as compared to the support therapy at posttreatment. At the 3-month follow-up, the problem-solving group continued to show treatment superiority on measures of depression, hopelessness, and loneliness. Although not statistically significant, an increase in suicidal ideation was reported for the supportive therapy group at follow-up. The relatively small sample size and limitations in the power of this study are concerns in the interpretation of the data; however, the results are generally positive. Experimental studies specific to the treatment of suicidal behaviors in adolescents and adults are
virtually nonexistent. Thus, the Lerner and Clum study is an important contribution to our understanding of methods for the treatment of suicidality in young people.

**Role of the Family**

Most of the anecdotal and clinical literature on the multimodal treatment of suicidality in young people notes that family involvement in therapy or family therapy is an important component. The inclusion of the family in the treatment of suicidal youngsters is not a new or novel perspective (e.g., Motto, 1975). As we noted above, family dysfunction and parent–child relationship problems are frequently found among suicidal children and adolescents (Asarnow et al., 1987; Carlson, 1983; Kerfoot, 1987; Orbach, 1988; Pfeiffer, 1981b, 1986, 1989a; Sabbath, 1969; Schutz & Michels, 1969).

The role of the family in the treatment of suicidal behavior among children and adolescents is complex and to a large extent dependent on the existing family situation and dynamics. Treatment will vary as a function of the integrity of the family, as well as the extent to which family or parental problems may contribute to, or maintain, suicidal behavior in youngsters. A number of researchers have noted the importance and utility of integrating contemporary individual psychotherapies and family-systems approaches for the treatment of suicidal adolescents (Brent & Kalko, 1990; Cantor, 1992; Turgay, 1989; Vazaleal, 1989; Zimmerman & La Sorsa, 1992). The involvement of the family is particularly important when dealing with what Smith (1992) refers to as suicidogenic family processes, which are particularly problematic in families in which children are overtly rejected by their parents. Family members can also play a critical role in assisting in removing or securing potentially lethal methods of self-harm, such as weapons and medications (Motto, 1975). The role of parents in limiting access to handguns is particularly important and can result in a significant decrease in adolescent suicides and attempts (Cantor, 1989, 1990).

Family therapy is rarely presented as the sole treatment modality, nor is it recommended for all suicidal youngsters. Aspects to consider when evaluating the potential of family therapy have been described by Frances and Clarkin (1985). Relying to a large extent on family involvement and therapy, Gustein and Rudd (1990) described the Systemic Crisis Intervention Program, an intervention designed for use with suicidal children and adolescents and their families. The authors present this treatment as an outpatient therapy and define some criteria for who might best be served by this intervention. Suggestions for the efficacy of this program were provided on a sample of 47 youngsters and their families and included long-term follow-up evaluations.

**Efficacy of Suicide-Prevention Programs**

Schools across the country are becoming increasingly aware of the possibility of student suicide. Although most evident in adolescents, suicidal behavior occurs in children and even preschool-age children. Because of the limited avenues for the identification of suicidal youngsters and the delivery of preventative and therapeutic services, schools are in a unique position to intervene with at-risk children and adolescents. After many years of unsubstantiated claims of efficacy (e.g., Ross, 1983, 1987), a number of investigators have examined the response of adolescents to school-based suicide-prevention programs and curricula. For the most part, reviewers find little empirical evidence to support claims of prevention-program efficacy (e.g., Diekstra, 1992). This is not to say that there may not be some positive results from the implementation of a school-based suicide-prevention curriculum. Spirito, Overholser, Ashworth, Morgan, and Benedict-Drew (1988) found a small increase in adolescent’s knowledge of suicidal youths as a function of participation in a school-based suicide-awareness curriculum.

Unfortunately, many of the positive claims for the efficacy of school-based prevention
programs are anecdotal or based on secondary attitudes or knowledge without a determination of effects on those youngsters who are at risk or whether at-risk youngsters are identified or referred for services. In a study of school-based suicide-prevention programs that examined effects on adolescent attempters and nonattempters, Shaffer et al. (1990) found that there was little positive change in adolescent suicide attempters' attitudes after exposure to the prevention program.

It has been found that curriculum-based suicide-prevention programs generally ignore or even downplay the role of mental health problems associated with at-risk youngsters (Garland, Shaffer, & Whittle, 1989). This is a significant oversight, since mental health problems are prevalent among school-based adolescent suicide attempters. In a school-based mental health study, Andrews and Lewinsohn (1992) found that approximately 80% of adolescent suicide attempters met criteria for a psychiatric disorder, with major depression the most frequently found mental disorder (64.5% of male attempters, 55.6% of female attempters). In their survey of school-based curriculum programs in the United States, Garland et al. (1989) reported that fewer than 1% of adolescents are exposed to these programs. On the basis of their review of programs and efforts by schools, Garland et al. (1989, p. 933) concluded, "Not only is the potential impact of these programs limited by the low risk strategy used, it has yet to be shown that the programs are either effective, safe or necessary." Although well meant, the reality is that there is little quality research to support the efficacy, expense, and false sense of intervention of curriculum-based suicide-prevention programs. There is also evidence to suggest that such programs may have a deleterious effect on some youngsters (Overholser, Hemstreet, Spirito, & Vyse, 1989).

It is important that school-based as well as other mental health professionals have a well-grounded understanding of the nature of this problem, be aware of potential avenues for the identification of suicidal youngsters, and be able to evaluate procedures suggested for the prevention of suicide in children and adolescents. Toward the latter point, Streiner and Adam (1987) have provided useful guidelines for the design and evaluation of suicide-prevention programs.

In addition to school-based programs, suicide hot lines and community prevention and crisis centers have also targeted adolescents as a group in need of intervention. Although a large number of such hot lines and suicide-prevention centers exist around the country, their effectiveness appears to be minimal (Dew, Bromet, Brent, & Greenhouse, 1987; Garland & Zigler, 1993). In a similar manner, there are few data to support the widespread implementation of school-based postvention programs that target students in schools following adolescent suicides. In one of the few outcome studies, Hazell and Lewin (1993) examined levels of suicidal behavior of students who were counseled and those not counseled after exposure to adolescent suicide, controlling for a number of salient variables such as proximity to the completed suicide, past suicidal behavior, and subject characteristics. Results indicated no difference in levels of suicidal ideation or related domains of self-reported problem behaviors between students who were counseled after a suicide completion in the school and those who did not receive counseling. It is evident that we need to develop an adequate empirical basis and documentation of efficacy of school-based prevention and postvention programs.

Issues and Difficulties in the Study of Suicidal Behavior

A major difficulty in studying and synthesizing existing information on adolescent suicidal behavior is the amount of diversity in the methodologies, settings, and populations being studied. The settings in which suicidal behavior research are conducted are quite diverse, ranging from psychiatric hospitals (Carlson & Cantwell, 1982; Christoffel et al., 1988; Garfinkel et al., 1982; Robbins & Alessi, 1985) to psychiatric outpatient clinics
The interpretation of research on clinical disorders among youngsters who demonstrate suicidal behaviors needs to consider the variability of settings. Differences in the type, nature, and severity of psychiatric disorders can be found across different settings that focus on different populations. Thus, differences in prevalence of suicidal behaviors in youngsters with psychopathology may occur as a function of inpatient vs. outpatient, psychiatric vs. general hospital, mental health setting vs. correctional setting, private vs. public facility, and other setting differentiation. Research has shown that prevalence rates for comorbidity of addictive disorders and other psychiatric diagnoses vary as a function of setting type (e.g., N. S. Miller & Fine, 1993). Likewise, it can be expected that the suicidality found among youngsters with psychiatric disorders and problems will also vary as a function of these setting variables. For instance, a youngster with an affective disorder may be more likely to be referred or receive services in a particular setting if the depressive disorder is accompanied by serious suicidal behavior.

A second major difficulty in studying suicidal behavior, particularly suicide completion, is that the event of suicide itself is rare. The suicide rate in the United States is just under 13/100,000 per year (Hawton, 1986) and somewhat lower for adolescents. Even among high-risk groups, a study would need to encompass a very large number of subjects over a long period of time to provide reliable and valid results (i.e., hundreds of thousands of subjects over a 10- to 15-year period). This type of research study is neither economical nor realistically feasible (Eisenberg, 1984). However, as we have shown, estimated base rates for suicide attempts and suicidal ideation are sufficiently high to alleviate some of the statistical problems inherent in the study of suicide completion.

A third difficulty involves assessing suicidal ideation and intent, which are considered internal cognitions. Unless specific questions are asked pertaining to suicide or thoughts of suicide, assessing suicidal ideation and intent in adolescents is extremely difficult. Most schools do not use assessment measures or interviews that ask these pertinent questions because they do not have the time or the trained personnel to do so. Even when the opportunities or resources are available, parents or school boards often reject programs that have been offered.

Sample and Design Characteristics

Unraveling the interpretability and generalizability of research findings is in large part a function of understanding the characteristics of the sample used in the research. Berman and Carroll (1984) described three major methodological flaws that are related to sample characteristics and are commonly found in suicide research: combining diverse groups to increase sample size, making inappropriate generalizations across different groups, and the
lack of a control group. Combining of diverse groups is problematic, because it implies that suicidal adolescents are a homogeneous group. One example of this problem is combining youngsters who are thinking about suicide with those who have attempted suicide and characterizing them "suicidal" or "at risk." Ellis (1988) reported the necessity of defining suicidal groups and the importance of keeping these groups separate when conducting research and making generalizations. In this chapter, we have also noted the difficulty in conceptualizing suicide attempters as a homogeneous group given the variability in lethality, intentionality, and other differences in attempt characteristics. Berman and Carroll (1984) note that a distinction needs to be made between adolescents with current suicidal thoughts without a history of suicide attempts and those with a past history of suicidal behavior.

According to Ellis (1988) and Berman and Carroll (1984), there appear to be five important groups that need to be kept separate when conducting suicidal behavior research: (1) suicide completers, (2) suicide attempters who are currently thinking about suicide, (3) suicide attempters who are not currently thinking about suicide, (4) suicidal ideators (those who are currently thinking about suicide but have not made a suicide attempt), and (5) a control group (nonsuicidal adolescents, those who have not attempted suicide and are not currently thinking about suicide). A caveat regarding the creation of suicide groups, particularly nonfatal groups, is the diversity within groups (Goodwin & Runck, 1992). Issues of severity, intentionality, and other factors related to attempts, as well as the determination of what constitutes a clinical level of suicidal ideation, need to be examined in the determination of group membership and subsequent generalizability of research findings.

The implementation of a control group in suicidal-behavior research cannot be emphasized enough (Berman & Jobes, 1991; Berman & Carroll, 1984). According to Berman and Carroll, one of every two empirical research studies of suicidal behavior in youths from 1980 to 1983 did not incorporate a control or comparison group. Research results derived from groups of suicidal youngsters should be evaluated in relation to a control group to provide a meaningful comparison. Too often, results are linked to causation or given great importance without incorporating the findings from the control group (Berman & Carroll, 1984). In clinical settings, control groups are often nonsuicidal psychiatric patients, although the makeup and generalizability of this group across studies and settings are difficult. Another control group to consider is that of nonsuicidal depressed youngsters. Because of the prevalence of depression among suicidal youngsters, the differentiation of factors specific to suicidal adolescents as distinct from depression needs to be considered. The best case for making this distinction can be found in the research program of de Wilde and colleagues (de Wilde, 1992; de Wilde, Kienhorst, Diekstra, & Wolters, 1993), who found that many of the psychosocial variables that differed between adolescent suicide attempters and nonattempters did not differentiate attempters from depressed nonattempters.

**Issues in the Assessment, Measurement, and Operationalization of Suicidal Behavior**

Making comparisons across studies, particularly those that focus on suicidal ideation, is to some extent dependent on the manner in which the specific component of suicidal behavior is operationalized and measured. The use of single- or several-item questionnaires provides little evidence of reliability and validity from a measurement perspective. For example, a number of investigators (e.g., Friedrich, Reams, & Jacobs, 1982; Kaplan, Hong, & Weinbold, 1984) evaluated suicidal ideation in young adolescents by the suicide item on the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), and Domenech, Canals, and Fernandez-Ballart (1992) evaluated suicidal ideation in young
adolescents with a single item from the Children's Depression Inventory (Kovacs, 1979). Simons and Murphy (1985) sought to explain the etiology of suicidal ideation in adolescents using the item “Do you ever have thoughts about possibly ending your life?” as the sole dependent variable of suicidal ideation. Without any indication of severity, time frame, or specificity of thoughts, it is difficult to consider this as an adequate assessment of youngsters’ suicidal ideation.

Even a multiple-item scale may not show sufficient reliability. For example, Howard-Pitney, LaFromboise, Basil, September, and Johnson (1992) studied suicidal ideation in Zuni adolescents using an 8-item measure of suicidal ideation adapted from the Suicide Probability Scale. The authors report an internal consistency reliability of 0.69 for this measure, significantly lower than reliabilities they report for related measures of psychological distress. Numerous other studies base their evaluation of suicidality on one to four questions without the determination of reliability or validity (e.g., Rey & Bird, 1991). Particularly problematic is the classification of suicidality based on single questions from structured interviews such as the Diagnostic Interview Schedule for Children—Child Version. Reckless, Noam, and Borst (1992) classified adolescent psychiatric patients as suicidal ideators if they responded “Yes” to the question “Have you ever thought of killing yourself?” It is difficult to conceptualize this group of adolescents as suicidal ideators given the lack of specificity, frequency, duration, or time frame inherent in the single question. Rubenstein, Heeren, Housman, Rubin, and Stechler (1989) included youngsters as “suicidal” if they answered “True” to the statement “I tried to hurt myself” over the past year. Although they also classified students as suicidal if they responded “Yes” to the statement “I tried to kill myself,” only 6 of 60 students classified as suicidal responded affirmatively to the latter statement. On the basis of the group of 60 students who answered affirmative to the two questions listed above, Rubenstein et al. (1989) reported that 20% of their sample engaged in suicidal behavior in the past year. This is a tenuous assumption since 90% of the suicidal group did not report making a suicide attempt, and there is no way of knowing what an affirmative response to the question concerning the attempt to “hurt myself” means. For some youngsters, it may mean hitting their hand against a wall in anger or frustration. Unfortunately, data such as the 20% prevalence rate described by Rubenstein et al. (1989) have been used by others to characterize rates of suicide attempts among adolescents (e.g., Cantor, 1992; Diekstra, 1993; Garnefski et al., 1992).

Summary

The current literature and research findings suggest that suicidal behaviors are a prevalent problem among adolescents and, to a lesser extent, children. School and community-based studies of adolescents suggest that between 10% and 13% of adolescents in the United States have made one or more suicide attempts and that approximately 7% of adolescents make suicide attempts of varying lethality each year. Because these studies generally do not include special at-risk populations of youngsters, such as those in mental health and correctional settings, as well as runaways and dropouts, these prevalence and incidence values are most likely underestimates.

Adolescents, as well as children, find themselves under tremendous stress. Problems most often occur when stresses at home, school, with peers, and in other circumstances are concomitant with minimal social and emotional supports. As was described, a consistent finding is the role of parents and family dysfunction as reasons for suicidal behavior in children and adolescents. These problems are further exacerbated if the youngster lacks adequate coping strategies or if serious cognitive or behavioral deficits or dysfunctions exist. Our research has shown that many adolescents are at greatest risk for suicidal behaviors when they are experiencing major negative life events, having many daily hassles, and have few social supports (Reynolds & Waltz, 1986).
When considering suicidal behavior in children, it is important to view the act itself as primary and attend less to the question of whether the child understands that death is permanent. The same is true with regard to determining the seriousness of a child's suicidal behavior. As Pfeffer (1986) notes, a child's understanding of the lethality of a suicidal action is difficult to determine. It is therefore expedient to place primary emphasis on the observable behavior and aspects of intention, rather than on the child's understanding of his or her actions, in evaluating the seriousness of the suicidal behavior.

A significant but minimally researched question is that of what predisposes youngsters to suicidal behaviors. Knowing that suicidal behavior occurs in psychiatric disorders, such as major depression or adjustment disorder, does not deal with the question of why, since many youngsters with these disorders do not engage in suicidal behavior. Likewise, environmental stressors and interpersonal difficulties or crises are experienced by many adolescents, the majority of whom do not engage in self-destructive behaviors. Smith (1992), drawing from the literature and his clinical experience, has posited an "ego vulnerability model" to explain why some youngsters are vulnerable to suicidal behavior. This interactional model incorporates a number of ego structures, including an excessively demanding or harsh conscience, and high self-expectations, along with an internalized sense of helplessness, dysfunctional impulse control (either over- or undercontrolled), and overdependence on external approval for the regulation of self-esteem.

Attempts at the clinical prediction of suicidal behavior in adolescents are generally concerned with a myriad of variables, such as demographic characteristics (e.g., age, gender, race), family structure, parental psychopathology, social class, loss, psychiatric disturbances, major and minor stressors, previous suicidal behavior, exposure to other's suicidal behavior (modeling), substance use, and other characteristics. These variables are generally described as "risk factors," although most of these variables are considered risk factors when considered in a multivariate model rather than in isolation.

For the most part, the aforementioned factors are external to the individual, although some variables such as psychiatric disorders are trait or state characteristics that may have a major impact on the increased probability of or risk for suicide. For example, in an autopsy study of 170 youngsters who completed suicide in New York, Gould, Shaffer, Fisher, Kleinman, and Morishima (1992) found that for males with an affective disorder, the risk for suicide was 60/100,000 compared to the general rate of 16/100,000 for adolescent males. The highest risk of suicide was found for males who had a history of prior suicide attempts, with an estimated incidence of 250/100,000. What is generally overlooked in the prediction of suicide and suicidal behaviors is the cognitive and intrapsychic aspects of the individual that may predispose the individual to, or interact with other factors to increase the individual's vulnerability to, suicidal behavior.

It is not surprising to find that the highest risk for suicide among the demographic and personal variables studied by Gould et al. (1992) was a history of previous suicide attempts, since such a history is probably most indicative of youngsters who manifest incompetence in cognitive and intrapsychic domains. The critical nature of a suicide attempt in adolescence can be seen in the high rates of repeat attempts. In a study of adolescent suicide attempters in the Netherlands, Klenhorst et al. (1991) found that 12.5% made a repeat attempt between an initial interview and a 1-year follow-up. Brent et al. (1993b) and Spirito et al. (1992), respectively, conducted 6- and 3-month follow-up evaluations of attempters, reporting reattempt rates of 14.6% and 10%, respectively. In a sample of children and young adolescents previously hospitalized for suicidal behavior and followed up 6–8 years later, Pfeffer et al. (1991) found that 23.2% had made at least one repeat suicide attempt vs. 6.3% in a nonpsychiatric comparison sample. In the total sample, there were 26 youngsters who had attempted suicide at the initial evaluation, 30.8% of whom subsequently reattempted during the follow-up period. From these studies, we can see that a significant number of adolescent suicide attempters, including those who receive treatment for their attempt, go on to make one or more additional attempts.
Researchers studying at-risk groups of youngsters typically find relatively high rates of suicidal behavior. In a study of 576 runaway youths in New York City, Rotheram-Borus (1993) found that 29% of males and 44% of females had a history of suicide attempts. Furthermore, 12.7% of males and 15.5% of females reported having made a suicide attempt in the past month. In a sample of 291 adolescents who were seen in a home for runaway youths, Stiffman (1989) reported that 30% of the sample had a history of suicide attempt. Approximately 19% of the suicide attempters had made their initial attempt before 12 years of age.

Concluding Thoughts

The number of adolescents who engage in suicidal behaviors may be considered to be of epidemic proportion. Although completed suicide remains a relatively rare event, other suicidal behaviors such as suicide attempts and suicidal ideation are experienced by a significant proportion of young people. It is clear from this review and others (e.g., Pfeffer, 1989b) that a multitude of factors are associated with children's and adolescents' suicidal behaviors. The number, magnitude, and complexity (e.g., interactions among factors, predisposing conditions) of these factors make it nearly impossible for any one study to adequately evaluate or explain suicidal behavior in children and adolescents. Likewise, the heterogeneity of suicidal behavior creates further complexity in attempts to study it and ascertain its etiology.

As we noted earlier, the generally accepted rate of suicide in adolescents is approximately 11/100,000. This rate may be considered a conservative underestimate that ignores suicides presented as accidents (e.g., single car fatalities, drowning, drug overdoses) and failures or errors in coroners' reports. Data from the CDC and other studies suggest that approximately 8% of school-based adolescents make a suicide attempt each year, with higher rates found in clinical and other at-risk populations. The data suggest that every year between 1 and 2 million adolescents attempt suicide in the United States and that a significant number of attempts are of severity sufficient to require medical attention.

Several responsible questions to ask are these: How do we prevent such behaviors from developing? Given the existence of these problems how do we intervene? We believe that schools can and should do more to take a proactive approach to the prevention of suicide in children and adolescents. Likewise, we feel that professionals can do more to work and provide consultation with schools in procedures and methods for the prevention of suicidal behavior in young people. Both authors have been dismayed, on numerous occasions, to find that a school or school district proudly presents its program for crisis intervention or postvention after a suicide has occurred, yet has not plans or programs for the prevention of the initial suicide. We do not wish, however, to dissuade schools from development of crisis-situation programs. Several school-based crisis-situation programs have been developed for use in schools that relate to youth suicide as well as other serious events that appear reasonable responses to such crises (e.g., Poland & Pitcher, 1990; Pitcher & Poland, 1992). Likewise, a number of authors have provided suggestions for the development of school-based postvention programs (e.g., Leenaars & Wenckstern, 1991; Wenckstern & Leenaars, 1993).

Given the general failure and often poor conceptualization of school-based psychoeducational approaches for suicide prevention, schools and society would be better served by the identification of youngsters at greatest risk and the focusing of resources and efforts on this group. Medical professionals must also take a more active role in the identification of suicidal youth (Blumenthal, 1990b). Research suggests that adolescents seen in pediatric settings are unlikely to be asked about current or previous suicidal behavior (e.g., Hodgman & Roberts, 1982; Slap, Vorters, Khalid, Margulies, & Forke, 1992). Professionals
and the general public should also be aware that targeting only suicide completion as the focus of intervention ignores the vast numbers of youngsters who are at risk for other suicidal behaviors. Although many of these suicidal behaviors, such as suicidal ideation and suicide threat, may not be immediately life-threatening, they are meaningful aspects of psychopathology and frequent precursors to more serious and sometimes lethal behaviors.

The prevention of suicide in actively or potentially suicidal youngsters is an enormously involved and challenging undertaking, even for a well-trained therapist. To expect schools to be efficacious in this endeavor may be overextending the role and function of the school. However, schools can do a great deal in the active identification of at-risk youngsters who can then be referred for further evaluation and, if deemed advisable, treatment. Poland (1989) has presented a useful set of guidelines and recommendations for schools in dealing with suicidal youngsters. We anticipate that significant reductions in the incidence of suicidal behavior among children and adolescents will be realized when mental health professionals and school personnel engage in collaborative programs of active identification, treatment, and support of youngsters at risk for suicidal behaviors.

References


