Suicidal Behavior in Children and Adolescents: A Clinical and Research Perspective

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This overview presents the significant findings on suicidal risk in children and adolescents. Specifically, it outlines macroscopic domains of suicidal youth such as psychosocial, sociocultural, and philosophical features. A definition of youth suicidal episodes and descriptions of their component features are offered. Risk factors involving psychopathology in the suicidal youngster and family as well as other environmental, developmental, and physiological stresses are highlighted. Directions for clinical management and empirical research are offered.

This paper discusses risk for childhood and adolescent suicidal behavior; one of its main purposes is to provide a longitudinal perspective on youth suicidal behavior from the vantage point of population data and clinical aspects of natural course.

A MODEL OF YOUTH SUICIDAL BEHAVIOR

Suicidal ideation or a suicidal act can be defined as a discrete entity or a distinct episode [1]. The suicidal episode has an onset and a specific duration. Some episodes may occur suddenly, be brief, and appear to have an impulsive quality; other episodes may have a long duration that includes repetitious preoccupations about and preparation for a suicidal act. A youngster may be considered to have chronic suicidal episodes if these episodes are repetitious. The advantage of defining suicidal behavior as episodic is that the vicissitudes of change in such episodes can be monitored and measured. In addition, interventions can be aimed at decreasing such episodes, and the efficacy of intervention can be evaluated objectively.

Youth suicidal behavior is a multi-determined phenomenon associated with a variety of factors that elevate risk for a suicidal episode. Factors that decrease the likelihood of a suicidal episode are protective factors. The equilibrium between risk and protective factors determines whether a suicidal episode will occur. Classes of risk or protective factors [1] include adaptive or coping skills, mood or psychopathological factors, environmental stresses, and early developmental factors. Additional research is needed to identify the relative risk of these factors.

Adaptive skills involve a youngster's capacities to appraise situations adequately with a sense of good judgment and impulse control. A hopeless perception of one's circumstances has been found to be associated with suicidal behavior in preadolescents...
[2] and adults [3,4] but not in adolescents [5]. These results may imply that there may be developmental discontinuities related to suicidal risk or that there may be differences in the populations studied, such as cultural factors which may affect the degree of hopelessness experienced by the youngster. Impulsivity has been associated with suicidal behavior in preadolescents [6] and adolescents [7]; impulsivity is especially apparent among suicidal adolescents who have a borderline personality disorder [8].

Studies of the relationship between youth suicidal behavior and psychotic thinking have reported differing results. One study [9], conducted among 51 adolescents in an urban municipal hospital, suggested that psychosis was associated with suicidal behavior. Among 137 adolescents hospitalized in a large voluntary hospital [10], however, no relationship was found between suicidal behavior and psychosis. The investigators proposed that different results may have been influenced by demographic difference in the samples. Specifically, the municipal hospital sample had a high rate of minority adolescents from backgrounds of low social status in contrast to the voluntary hospital, which admitted predominantly Caucasian adolescents from middle- to upper middle-class backgrounds.

Psychopathologic states related to affective, conduct, personality, and substance abuse disorders enhance risk for youth suicidal behavior. Shaffer [11] reported relative risk data for factors associated with adolescent suicide. Among males, risk for suicide is increased 22.5 times with the presence of a history of a suicide attempt, 8.6 times with the presence of a major depressive disorder, 7.1 times with the presence of substance abuse, 4.4 times with the presence of antisocial behavior, and 3.0 times with a family history of suicide. For females, risk for suicide is increased 49 times with the presence of a major depressive disorder, 8.6 times with the presence of a prior suicide attempt, 3.2 times with the presence of antisocial behavior, 2.7 times with a family history of suicide, and 0.8 times with the presence of substance abuse. This report included 114 adolescent suicide victims and 85 normal adolescents. It is the largest study of teenage suicide utilizing the psychological autopsy method, a clinical and research technique to determine or identify characteristics about suicide by interviewing individuals who know the deceased individual and who can provide reliable information about the deceased person. It is also among the first studies to suggest relative risk of factors associated with youth suicidal behavior.

Another class of risk factors includes current interpersonal relationships that are influenced by the quality of peer relationships, family attitudes, and psychopathology, and attitudes of and toward other adults. Suicidal risk has been found to be associated with acute conflicts such as parental discipline of the child [12], parental abuse [13], and loss of boy/girlfriend [7]. Recent environmental stresses, such as family loss as a result of death or marital separation, and family psychiatric disorders, such as affective, antisocial, and substance abuse disorders, are significant factors that decrease social supports needed to protect against youth suicidal behavior [14].

Early developmental factors involving stressful social experiences and physiological insults are risk factors for youth suicidal behavior. Deykin, Alpert, and McNamarra [13] reported that adolescents who attempted suicide were three to six times more likely to have an alleged history of child abuse than non-suicidal adolescents. This study involved 159 adolescents who were evaluated in a large urban pediatric emergency service after attempting suicide. These adolescents were compared to age- and gender-matched adolescents evaluated in the same clinical service for medical problems. Other social experiences that are perceived as stressful events and are associated
with youth suicidal behavior are parental divorce, separation, family death, and other losses [14,15].

Pre- and perinatal factors have been reported to predict adolescent suicide [16]. In a review of prenatal birth and neonatal records of adolescent suicide victims and non-suicidal adolescents, factors found to be associated with youth suicide were respiratory distress for more than one hour after birth, no antenatal care before 20 weeks of pregnancy, and chronic illness of the mother during pregnancy. This study could not evaluate the mechanisms for these results. Some explanations are that early physiological insults produced vulnerability to stress or psychopathology that was apparent in adolescence. Another explanation may be that these factors were signifiers of subsequent chronic neglectful social experiences that elicited feelings of hopelessness, helplessness, and thoughts of suicide.

MACROSCOPIC DOMAINS RELEVANT TO YOUTH SUICIDAL BEHAVIOR

Macroscopic domains relevant to youth suicidal behavior require research that utilizes epidemiological methodologies that include large numbers of individuals in order to study trends in populations or social and cultural systems. For example, research documenting variations in suicide rates [17] in different countries suggests that in 1980, the highest suicide rates for 15- to 24-year-olds occurred in Finland, Switzerland, Hungary, and Austria. The suicide rates for 15- to 24-year-olds in 1980 in these countries ranged from 18.0 to 23.6 per 100,000. Other countries with high but more intermediate rates were Thailand, Canada, Japan, West Germany, United States, Australia, and France. The suicide rates in these countries for teenagers and young adults ranged from 10.7 to 16.2 per 100,000.

National data base was used by Boyd and Moscicki [18], who reported that the rise in adolescent and young adult suicide rates is paralleled by the increase in use of firearms as a suicide method. Specifically, “the most dramatic rise in the firearms suicide rate has occurred primarily since 1970, notably among males aged 15 to 24” (page 1240). Psychological autopsy studies [19] of youth suicide corroborate this trend and suggest that “the availability of firearms and the increased use of alcohol among youth may have made a significant contribution to the increase in the suicide rate among the young” (page 3369).

A discrete example of a sociocultural change related to youth suicide is the epidemic of suicides among adolescent males in Micronesia after World War II [20]. Before the war, these islands in the Pacific Ocean enjoyed a communal culture. Traditionally, when boys became adolescents, they moved out of the parental domicile and lived in group homes. As a result, parents were less responsible for daily limit setting and discipline of their sons. This culture underwent a drastic change after World War II with the advent of a more industrialized society. Group homes were abolished, and all adolescents remained at home, thereby producing marked family tensions. Disciplinary crises led to intense despair and humiliation among adolescent males. Many contemplated and others committed suicide. In fact, the epidemic of youth suicide in this culture was partly attributed to imitation of suicidal behavior among adolescent males.

Clusters of youth suicide [21] have been described. Imitation of peers’ suicidal behavior [22], of suicidal individuals publicized in the news media [23], or of suicidal characters depicted in fictional stories [24] are risk factors for youth suicidal behavior.
Philosophical features involve another macroscopic domain of youth suicide. Concepts about death that are influenced by ethical and religious teachings are apparent among children and adolescents. Such teachings are interactive with developmental processes to determine specific beliefs about causality and finality of death; however, appreciation of the finality of death is not necessary in defining a youngster as being suicidal [1]. An essential element of suicidal behavior is that a youngster has an intent to kill him- or herself. The aim is to die, regardless of how the child or adolescent conceptualizes death. Therefore, a youngster of any age can be considered to be suicidal if he or she intends to cause self-injury that may lead to death.

LONGITUDINAL ELEMENTS OF YOUTH SUICIDAL BEHAVIOR

Outcome data on suicidal youth are relatively sparse, especially because there are few follow-up studies of children and adolescents who express suicidal ideation or who have attempted suicide. In addition, most studies of youth suicide attempters report suicide as the main outcome variable but do not highlight other aspects of outcome such as social functioning and degree and types of psychopathology and incidence of non-fatal suicidal behavior. The results of short-term studies of children and adolescents who thought about or attempted suicide with a follow-up time of up to five years [25,26,27] as well as findings of long-term studies with follow-up times of up to 15 years [28,29,30,31,32] suggest that suicide is a rare event. Approximately 0 percent to 9 percent of individuals who were followed committed suicide. Furthermore, these studies suggest that individuals with a history of either suicidal ideation or suicidal acts will repeat suicidal behavior. Pfeffer et al. [33] suggested that suicidal behavior in preadolescents is stable within a two-year follow-up period. Among 65 preadolescents studied in a community, four of the eight who initially exhibited suicidal ideation or acts reported suicidal behavior at follow-up.

The concept of developmental psychopathology involves a longitudinal perspective that compares suicidal risk features at different stages of development. National United States statistics [34] indicate that rates of suicide are lowest among 0- to 14-year-olds. The rates of suicide for 15- to 24-year-olds are distinctly higher and have surpassed the average rates for all ages. In 1988 [34], 12.8 per 100,000 population of 15- to 24-year-olds committed suicide, compared to rates for 5- to 14-year-olds of 0.6 per 100,000. The average suicide rate for all ages in 1988 was 12.3 per 100,000. Suicide rates among white males are highest. The differences in suicide rates among developmental groups may be related to variations in prevalence of types of psychopathology such as depression, substance abuse, antisocial personality, use of suicidal methods, and responses to environmental and physiological changes.

Longitudinal analyses of population data suggest that cohort effects are operative in creating differences in suicide rates [35]. In these studies, individuals who were born within a defined time period were considered a cohort. Different cohorts were defined by different birth periods. Such cohort effects are evident in the higher suicide rates among 15- to 24-year-olds who were born after World War II, the so-called "baby boom" generation, than among the individuals of the same age who were born before World War II. The mechanisms underlying such generational effects are unknown but may be related to a variety of temporal changes in social, environmental, and biological factors, collectively called "Agent Blue" [35].

Intergenerational trends have been documented for suicide among families [36]. For example, Egeland and Sussex [37] reported that suicide ran in families of the Old Order Amish community of Lancaster County, Pennsylvania. Twenty-six suicide
victims clustered in four families. In each of these families, there was a high prevalence of affective disorders. Furthermore, there were other families with a high prevalence of affective disorders but no suicide. This finding may suggest that suicide is transmitted genetically independent of affective disorders. Other evidence for a greater transmission of suicide is derived from adoption studies [38], suggesting that biological relatives of adopted suicide victims have higher rates of suicide than biological relatives of adopted non-suicidal individuals. Twin studies [36] also suggest a higher rate of suicide among monozygotic than dizygotic twins.

DIRECTIONS FOR CLINICAL PRACTICE

With the realization that youth suicidal behavior is a multi-determined clinical entity, identification of and intervention for this problem require a broad focus. Assessment of the suicidal episode involves a methodical evaluation of its components such as suicidal intent, lethality, and potential for rescue. The detailed characterization of the suicidal episode may provide clinical data useful in predicting or preventing future suicidal episodes.

Children and adolescents can communicate about suicidal episodes either verbally or by means of other mechanisms. Clues to youth suicidal tendencies have been discovered by peers, relatives, school professionals, or in notes. It is essential to the evaluation of youth suicidal episodes that sufficient time be allotted to establish a communication atmosphere of trust, patience, support, and effectiveness. Usually, it is essential to obtain information also from other informants such as parents, teachers, and peers. The information to be obtained during the assessment of youth suicidal behavior is derived from questions about [1]:

1. Suicidal fantasies or actions
2. Concept of what would happen
3. Circumstances at the time of the suicidal behavior
4. Previous experiences with suicidal behavior
5. Motivations for suicidal behavior
6. Experiences with and concepts of death
7. Depression and other affects
8. Family and environmental situations

Children and adolescents can talk openly about their suicidal impulses. It is the main task of a clinician to be aware of such communication, to take it seriously, and to explore the fantasies and behaviors fully. Two examples of youth suicidal communication are [1]:

Example I: Nina, a seven-year-old girl, said, "I wish I were dead" or "I wish I would hurt myself but will not do it." . . . "Sometimes I feel everything's falling apart and I think of killing myself, like ending it all" (pages 178–179).

Example II: Sandy, a 12-year-old boy said, "I want to hurt myself when I get upset. Once my grandmother found me with my head in the sink and I said that I was washing my face. However, I really was trying to drown myself. I wish I were dead" (page 179).

Such fantasies and behaviors may often go unnoticed until a self-destructive act occurs. Suicide prevention is most effective when early signs of distress are identified and appropriate intervention offered.

Intervention involves a crisis-oriented approach, focused on decreasing the immedi-
ate state of distress and ensuring the safety of the child or adolescent. This purpose may best be accomplished by enhancing a support network that can offer solace, constructive suggestions, observation for signs of impending suicidal acts, and a source for ventilation of distressing feelings and ideas. Appraisal of risk factors and intervention aimed at decreasing them is essential. Medication may be indicated to relieve excessive signs of depression, anxiety, anger, or disorganized thinking. Therapeutic work with the family is essential, especially since a source of stress may be in the family. In fact, specific psychotherapy or psychopharmacological intervention for parents may be indicated to create a family atmosphere conducive to adequate growth of the youngster. Finally, if the youngster or the environment is too unpredictable, hospital treatment may be needed to provide controls for the youngster's potential state of impulsivity and to reduce the degree of environmental stress.

**DIRECTIONS FOR FUTURE RESEARCH**

Despite the burgeoning research on youth suicidal behavior, a variety of issues require new investigative attention. Biological correlates of suicidal behavior in adults [39] have been discerned but not studied in children and adolescents. For example, neuroendocrine and monoamine factors such as serotonin have been reported to be associated with suicide risk. New directions for biological treatment of suicidal individuals can be developed as more data are collected on the biological components of suicidal risk. For example, if depletion of serotonin is associated with suicidal behavior [39], development of suitable serotonergic medications may be useful in re-establishing a physiological equilibrium necessary to prevent a suicidal act.

Identification of chronic personality traits that are associated with suicidal risk will enable treatments to be oriented toward diminishing factors that interact with such personality traits to cause high risk for suicidal behavior. For example, the presence of borderline personality disorder in adolescents with major depressive disorder enhances risk for suicide attempts [8]. Efforts to treat such personality disorders may include targeting the basic ingredients of impulsivity as an underlying feature of suicidal risk.

Additional studies are warranted to characterize high-risk youngsters whose family history includes a high prevalence for suicidal behavior. Finally, there are no controlled treatment studies of youth suicidal behavior. Such studies should also try to determine whether there are developmental differences in the youngsters that account for which types of interventions are most effective.

**SUMMARY**

Recent empirical data have drastically enlarged the scope of understanding youth suicidal behavior to the extent that, by means of developing effective public health policies and clinical assessment and intervention programs, it may be possible to envision a significant reduction in youth suicide rates. This paper has elaborated upon the types of data currently available and directions for future research that may affect the efficacy of clinical management of suicidal youth.

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