An Examination of the Literature Base on the Suicidal Behaviors of Gifted Students.

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The following is a gifted adolescent's last journal entry before he committed suicide. It is reproduced in the same format as originally written:

I am having trouble deciding were [where] to kill myself. I can either do it here (home)

- when no one is home

- call the police before so they can clean up so my family won't have to discover me

- There is a chance the police would get here too soon and save me - My family would probably have very bad memories if they knew I did it in one of our trees

I can do it somewhere else

- someone would find me, call the police, my family would never see me

- This would receive more publicity which would be shitty for my parents and friends

Even though both are flawed I believe doing it somewhere else is the best option (Cross, Cook, & Dixon, 1996, p. 403). Research concerning suicide among adolescents consists primarily of studies of psychiatric inpatients and juvenile offenders (Holinger, Offer, Barter, & Bell, 1994). Little research examines the prevalence of suicide among another group of adolescents, the gifted, but suicide occurs among this population. In one study, Harkavy and Asnis (1985) surveyed 382 gifted students attending a special high school and found that 9% of these students reported making at least one suicide attempt, and 48% of these attempts had reached the attention of mental health professionals. Additionally, there are recent reports of multiple suicide attempts at a state-supported, residential high school for the gifted in the Midwest (Adams, 1996; Cross et al., 1996). This article will begin with a historical overview of the field of suicidology and theory on suicide. After this background is provided, the research on suicide among adolescents in general and then gifted adolescents will be reviewed. Lastly, the literature on the role schools can play in suicide prevention and intervention will be examined due to the impact educational institutions can have on the lives of gifted adolescents.

Background on the Study of Suicide

Historical Background

Suicidology, or the study of suicidal behavior, is an "interdisciplinary scientific discipline whose roots began with Durkheim (1897/1951) almost a century ago and whose emergence was signaled by the appearance of empirical, clinically guided studies" (Holinger et al., 1994, p. 2). Durkheim was instrumental in the establishment of this field. He believed that suicide was the result of society's strength or weakness of control over the individual (Shneidman, 1981). Durkheim discussed three basic types of suicide. First, when the customs or rules of a group demand suicide under certain circumstances, this is called altruistic suicide. Second, egoistic suicide occurs when the individual has too few ties with his/her community (Shneidman, 1981). Lastly, anomic suicides occur when the relationship between an individual and his/her society is suddenly damaged or destroyed, such as in the loss of employment, significant others, or finances.

As the science of suicidality developed, greater understanding about the incidence rates and risk factors of suicide among various age groups, including adolescents, ensued. In the United States, suicidology became a legitimate area of study in the late 1950s and early 1960s. According to Holinger et al. (1994), "the past decade has seen the emergence of a new scientific field within the field of suicidology--one dealing specifically with suicide among the young" (p. 14). Seiden (1969) provided the field with a review of the literature from 1900 to 1967 on suicide among children and adolescents. He noted approximately 200 articles and books concerning this topic. Holinger and Offer (1981) found that literature regarding this topic approximately doubled within 10 years after Seiden's review. Furthermore, Holinger et al. (1994) stated that two recent publications, the Department of Health and Human Services' (1989) Report of the Secretary's Task Force on Youth Suicide and the American Psychiatric Press' (Pfeffer, 1989) Suicide among Youth: Perspectives on Risk and Prevention also signified growth in the study of suicide among adolescents.

As mentioned earlier, research concerning suicide among adolescents has primarily consisted of studies of psychiatric inpatients and juvenile offenders (Holinger et al., 1994). When compared to the research base on suicide among the above populations, the research concerning suicide among gifted students is limited. However, there have been follow up studies on the Terman Genetic Studies of Genius (Lester, 1991; Shneidman, 1993; Tomlinson-Keasey, Warren, & Elliott, 1986) to determine the incidence of suicide. Other research and published articles have been concerned with suicide among students at the undergraduate level (Seiden, 1966) and among 12 to 14-year-old students (Joffe & Offord, 1983; Shaffer, 1974) and have found that more intelligent individuals committed suicide at a greater rate. Therefore, the above has been applied to gifted populations even though the samples of these studies were not clearly identified as gifted. Research (Baker, 1995; Cross et al., 1996; Harkavy & Asnis, 1985; Hayes & Sloat, 1990; Seibel & Murray, 1988) concerning suicide among the gifted has been more recent.

Theory on Suicide

A variety of psychologists proposed alternative theories about why adolescence is the time of contemplation of suicide for some individuals. First and foremost, suicide has been linked to the presence of depression. For some individuals who are depressed, suicide becomes a viable option. For example, Golombek (Sargent, 1984) studied the relationship of depression, risk of suicide, and personality in what he identified as three stages of adolescence. According to Sargent (1984), Golombek theorized that:

> Depression is expressed differently in each of three stages of adolescence. In early adolescence, depression may be manifested by anger and disorganized or erratic behavior. In mid-adolescence, a stage of rebellion, depression may be seen in exaggerated autonomy and angry outbursts. Later adolescence brings a "new sense of separateness," with disillusionment, dissatisfaction, and a sense of loss. During this period, depression is more typically expressed by feelings of sadness and guilt and is more self-directed (p. 50).

Therefore, Golombek viewed late adolescence as the time in which suicide could most likely result from depression. Shneidman (1981) discussed four elements of suicide: heightened inimicality, exacerbation of perturbation, increased constriction of intellectual focus (tunneling or narrowing of the mind's content), and cessation. Inimicality involves "qualities within the individual that are unfriendly towards the self" (Shneidman, 1981, p. 222). This involves ways the individual is his/her own enemy, such as engaging in self-destructive behaviors. According to Shneidman (1981), perturbation refers to "how disturbed, `shook up,' ill at ease, or mentally upset a person is" (p. 223). Dichotomous thinking, blocking out memories of the past, or avoiding thought about how others would be affected are examples of constriction. Shneidman (1981) identified the concept of cessation as the spark that ignites the above potentially explosive mixture. Cessation involves the idea that one can put a stop to his/her pain, thereby producing a perceived solution for the desperate individual.

Psychodynamic explanations for suicide include Erikson's description (Denhouter, 1981) of the adolescent as "a person struggling between identity and identity diffusion. The adolescent is marked with extremes in behavior which are characterized as elation, despair, helplessness, emptiness and joy" (p. 3). Internal conflict can arise when there exists difficulty in balancing the forces of identity and identity diffusion (Willings & Arseneault, 1986). Freud, on the other hand, viewed suicide as internal conflict or aggression turned upon one's self (Grollman, 1971). A suicide attempt may also be the expression of aggression against an internalized object (Shneidman, 1981). A more contemporary psychodynamic theory of suicide is that adolescents who commit suicide escape conflict and stress (Holmes, 1991).

Evidence of the influence stress can have on the incidence of suicide includes the historical patterns apparent in the field of suicidology, for example, higher rates of suicide were observed during the Great Depression, a time of great stress.

Learning explanations for the occurrence of suicide include the concepts of imitation and behavioral contagion. An adolescent who is faced with significant problems in his/her life may hear of another adolescent's suicide, and that may suggest suicide as a solution (Holmes, 1991). Evidence for the above includes the increase of suicide ideation or depression following exposure to previous attempts or completions (Brent et al., 1993; Davidson & Gould, 1991; Hazell & Lewin, 1993). However, getting the idea to commit suicide is rarely enough to result in an adolescent committing the act. Even if an adolescent wants to commit suicide, there exists cultural restraints. Those restraints can be overcome through the process of behavioral contagion, as Holmes (1991) described: "Behavioral contagion occurs when an individual wants to do something, is restrained from doing it because society says that the behavior is wrong, sees someone else do it and `get away with it,' and then thinks that he or she can do it also" (p. 199). Learning theory also conceptualizes that suicide threats and gestures may be operant behaviors used to manipulate others and get rewards.

One cognitive explanation for suicide suggests that when adolescents lack adequate problem-solving skills and face stress-provoking problems, they develop an attitude of hopelessness and eventually attempt suicide because they see no other alternative. Holmes (1991) described this process as the following: adolescents who are unable to solve problems will experience more failures, which will increase their stress. This inability to solve problems leads to feelings of hopelessness, which can be closely related to suicide. Once cognitively rigid adolescents decide on suicide as a solution to their problems, they will pursue only that solution, and not consider or develop alternative solutions. The role that hopelessness plays in suicide is demonstrated in a study (Beck, Steer, Kovacs, & Garrison, 1985) in which inpatients administered a hopelessness scale were followed to determine which ones had committed suicide. Of the 14 patients who had committed suicide, 13 had scores of 10 or greater on the scale. Furthermore, according to cognitive explanations, suicide can stem from two different classes of cognitions: normal cognitions involving problem-solving skills and hopelessness and abnormal cognitions involving delusions and hallucinations (Holmes, 1991).

Physiological explanations of suicide have consisted of the examination of the involvement of neurotransmitters and genetic factors in predisposing adolescents to suicide. Concerning brain chemistry, it is believed that higher levels of stress, lower the levels of neurotransmitters and bring on depression, which can then lead to suicide in some adolescents (Holmes, 1991). Studies (Holmes, 1991) of suicide among families, twins, and adoptees have provided evidence for a genetic influence on suicide.

Literature on Suicide Among Adolescents in General

In 1990, 30,906 people died by suicide in the United States of America. The 15- to 24-year-old age group had the third highest number of suicides during this time (4,869). The number of suicides, however, must be distinguished from the rate of suicide, which is calculated based upon the population size of a particular age group. Because the population size of 15- to 24-year-olds is larger in comparison to most other age groups, this group has the second lowest rate of suicide (Holinger et al., 1994). The incidence of suicide has grown dramatically since 1955, now becoming the second leading cause of death among adolescents (Felner, Adan, & Silverman, 1992; Vital Statistics, 1986). In addition, historical patterns of attempted and completed suicides appear among the 15- to 24-year-old age group. High rates were observed in the 1930s (the Great Depression), lower rates in the 1940s (World War II), and steady growth in rates from the 1950s to the present. Holinger et al. (1994) suggested that some of the increase in suicide may be due to misclassification errors. It remains, however, that suicide among adolescents merits serious attention in terms of its escalating numbers.

Research on the incidence of suicide among adolescents consists of epidemiological and clinical studies (Holinger et al., 1994). Epidemiological studies concern the frequency and distribution of suicide, whereas clinical research involves the study of symptoms and course of suicide ideology, attempts, and/or completion among individual adolescents. Epidemiological and clinical perspectives integrate on two levels of abstraction, microscopic and macroscopic. On the microscopic level, epidemiological and clinical data are used to assess and treat individual adolescents. For instance, epidemiological trends in the literature and information from clinical studies are utilized in assessing the risk of self-harm of individual students. Holinger et al. (1994) described the utility of the microscopic perspective: "The specific clinical cases generate ideas and hypotheses, which are then explored on the large epidemiologic level, and these generalizations in turn ultimately influence clinical practice. There is, then, a constant interchange of information between the epidemiologic and clinical perspectives" (p. 27). On the macroscopic level, epidemiological and clinical viewpoints interact at the level of the entire population. For example, prevention strategies involving the training of professionals and paraprofessionals in recognizing potentially suicidal youth consist of an integration of epidemiological and clinical viewpoints on a macroscopic level.

Epidemiological research suggests that the incidence rates of attempted suicide vary for different groups of adolescents. For example, in specific studies it is found that as many as 10% of all adolescents (Smith & Crawford, 1986), 33% of troubled adolescents (Tomlinson-Keasey & Keasey, 1988), and 61% of juvenile offenders (Alessi, McManus, Brickman, & Grapentine, 1984) attempt suicide. Males have a higher rate of completed suicide at nearly every age level and are at greatest risk for attempting suicide in the 15-19 and 20-24 age groups (Holinger et al., 1994).

Students are considered at-risk for suicide when they present a variety of risk factors and begin thinking or planning about taking their life. Salient risk factors related to suicide include psychiatric disorders, family relations, family history of psychiatric disorders and/or suicide, drug and/or alcohol abuse, environmental stressors, exposure to other attempts, social isolation, homo-sexuality, prior suicidal behavior, and firearms present within the home (Dixon & Scheckel, 1996; Holinger et al., 1994). Schuckit and Schuckit (1991) examined substance use and abuse as a risk factor in adolescent suicide. Controlled substances and/or alcohol are frequently used as the means of self-harm or as a prelude to a suicidal act, contributing to reducing one's inhibitions, increasing one's impulsivity, and impairing one's judgment. Farber (1977) identified various factors in determining the incidence of suicide within families. These factors include: social and economic problems, dependent personalities within families, imitative behavior patterns, problems in personal interaction, styles of child-rearing, and genetic factors in depressive disorders. Family factors associated with high risk of suicide include exposure of high levels of stress, especially at an early age (Pfeffer, 1991). Such stress can include: loss of social supports through death, parental separation or divorce, change in school environments, and problems with peer relationships. If family disorganization, parental psychopathology, and family violence increase the risk of suicide, then the qualities of empathy, consistent availability, and capacity to set limits and offer structure may reduce the risk of suicide.

Holinger et al. (1994) reviewed retrospective and prospective research on suicide. These authors found that the research indicated most adolescents who kill themselves meet criteria for diagnosable psychiatric disorders, including affective disorders (25-75%) and/or personality disorders (25-40%). The comorbidity of affective disorders, personality disorders, and/or substance abuse appears to be particularly lethal. Approximately 25 to 50% of adolescents completing suicide have a family history of psychiatric disorders and/or suicides, and 25 to 50% have made previous attempts at taking their own life. The number and lethality of attempts also are found to correlate positively with completed suicide. In addition, when firearms are found within the home, a marked increase in the risk of suicide is observed. Gender identity issues, such as homosexuality, also increase the risk of suicide among adolescents.

Research (Sargent, 1984) has indicated that suicide completers have generally tended to be brighter than average. Sargent (1984) also reported that family histories of suicidal adolescents show high incidence of economic stress, absence of both parents (fatherless home and working mother), drug and/or alcohol abuse, affective disorders, and suicide attempts. Another possible risk factor of suicide, perfectionism, has been studied by Adkins and Parker (1996). Results from these authors' sample of 129 undergraduate students suggest that individuals who are passive perfectionists are at-risk for attempting suicide. Passive perfectionists are individuals for whom perfectionism creates impediments, fear of making mistakes, and procrastination. From their results, Adkins and Parker (1996) suggest that perfectionism predisposes depression and suicide ideation. However, the results of this study were based upon correlational, not experimental, data, so it is unclear how such a causal claim can be made.

Literature on Suicide Among Gifted Students

Theory on Suicide Among Gifted Students

Dixon and Scheckel (1996) summarized various characteristics of gifted adolescents that are often associated with increased risk of suicide. These characteristics include: unusual sensitivity and perfectionism (Delisle, 1986), isolationism related to extreme introversion (Kaiser & Berndt, 1985), and overexcitabilities identified by Dabrowski. Dixon and Scheckel (1996) described the five overexcitabilities identified by Dabrowski and reiterated by Piechowkski (1979) as: "psychomotor (e.g., fast games and sports, acting out, impulsive actions), sensual (e.g., sensory pleasure, sexual overindulgences), intellectual (e.g., introspection, avid reading, curiosity), imaginational (e.g., fantasy, animistic and magical thinking, mixed truth and fiction, illusions), and emotional (e.g., strong affective memory, concern with death, depressive and suicidal moods, sensitivity in relationships, feelings of inadequacy and inferiority)" (p. 389). Emotional overexcitabilities are of special concern when it comes to suicide among the gifted. Perfectionism has also been identified as playing a role in suicide among bright individuals (Blatt, 1995).

Other authors (Roeper & Willings, 1984; Willings & Arseneault, 1986) applied Rollo May's existential view specifically to the experience of being gifted. They indicated that gifted adolescents can perceive themselves as being without significance, as in the statement: "I am without significance unless I am on top: unless I am the superstar.... I am nothing unless I am seen to be achieving something spectacular" (Willings & Arseneault, 1986, p. 11). These beliefs are further illustrated by Webb, Meckstroth, and Tolan's (1982) contention that American society favors mediocrity, thereby putting the gifted adolescent at-risk for feeling inferior and potentially attempting suicide. Furthermore, much discussion exists in the literature (Delisle, 1990) about potential characteristics, such as sensitivity and overexcitabilities, that may make a gifted individual more vulnerable in this area. Warning signs among gifted students have also been discussed. Delisle (1982)

reviewed research on the signs of suicide among gifted students and cited lack of friendships, self-deprecation, sudden shift in school performance, total absorption in schoolwork, and frequent mood shifts as possible warning signs. Little empirical research exists examining the prevalence of suicide among gifted adolescents. There are, however, reports of the occurrence of suicide among this population (Adams, 1996; Cross, et al., 1996).

Review of the Research Literature on Suicide Among Gifted Students

Epidemiological research on suicide among gifted adolescents is largely concerned with the incidence of attempted and completed suicide. Cross (1996a) characterized the literature on gifted adolescents and suicide as consisting of three basic patterns. The first pattern was described as a "tendency for authors to make conclusions and recommendations about the incidence of suicide without supporting data" (p. 46). For example, the literature is greatly concerned with discussing the prevalence of suicide among the gifted in comparison with other adolescents. However, the majority of these discussions regarding the prevalence of completed and attempted suicide among gifted students generally lacks empirical evidence. Literature fitting this pattern (Delisle, 1982/1988; Lajoie & Shore, 1981; Leroux, 1986; McCants, 1985; Schauer, 1976) often cites dated or marginally related studies in an attempt to support authors' claims about whether suicide among gifted students is the same, lower, or higher than other groups of adolescents.

Cross (1996a) also noted the tendency of authors (Delisle, 1986; Farrell, 1989; Weisse, 1990) to cite the work of others in the literature on suicide among gifted populations. Unfortunately, upon reviewing the available research, the work that was cited by others tended to be the studies noted above, those based on speculation. Cross described the impact of this pattern as a "reification of speculation" (p. 47), for the estimates of a select few consistently reappear throughout the literature even though such publications lack empirical support.

The final pattern delineated by Cross (1996a) was a "tendency for authors to advocate for gifted children amidst their manuscripts" (pp. 46-47). In this tendency, authors stepped out of their role as objective researchers to become advocates for protecting "the image of gifted children" (Cross, 1996a, p. 47). Hidden agendas rather than objective research practices appeared throughout the literature which adhered to this trend. These hidden agendas tended to consist of efforts attempting to "normalize" gifted students, not wanting to make them seem emotionally unstable. Some authors, however, appeared to hold hidden agendas that did not advocate depicting gifted students as problem-free in an attempt to justify additional social and emotional services for the gifted.

In spite of the above patterns existing in the literature, there remains some things that can be said about the existence of suicide among gifted adolescents. Cross (1996a) presented the following points as being what researchers can honestly say about the topic of suicide among this population:

> Adolescents are committing suicide; gifted adolescents are committing suicide; the rate of suicide has increased over the past decade for the general population of adolescents within the context of an overall increase across all age groups; it is reasonable to conclude that the incidence of suicide of gifted adolescents has increased over the past decade, keeping in mind that there are no definitive data on the subject; and given the limited data available, we cannot ascertain whether the incidence of suicide among gifted adolescents is different than in the general population of adolescents (pp. 47-48).

Nevertheless, some valuable studies do exist in the literature base. A variety of studies examined the prevalence of suicide ideation, depression, and/or significant amounts of stress among gifted adolescents. For example, Baker (1995) examined the prevalence and nature of depression and suicide ideation in "exceptionally" gifted students (n = 32), defined as those scoring above 900 on the Scholastic Aptitude Test (SAT) at age thirteen; gifted students (n = 58), defined as those in the upper 5% of their class rankings or scoring above the 95th percentile on standardized achievement tests; and academically average students (n = 56), defined as those at the midpoint of their class rankings. All three groups completed the Reynolds Adolescent Depression Scale (RADS) and Suicidal Ideation Questionnaire (SIQ). No significant difference was found among the three groups on either the RADS or SIQ. In addition, no significant difference was found concerning the nature of depression among "exceptionally" gifted, gifted, or academically average students. Overall, 12% of the "exceptionally" gifted adolescents, 8% of gifted adolescents, and 9% of average adolescents experienced significant levels of depression. Therefore, in this study's sample, the incidence rate of depression and suicide ideation was similar for both gifted and average adolescents. Baker (1995) described the following implications of her findings for educators of the gifted:

> ... educators of the gifted should be alerted that approximately 10% of their students may be suffering from clinically significant levels of depression. This finding supports the need for faculty to receive training in recognizing and intervening with depressed students in their classrooms.... gifted students, like their average peers, could benefit from preventive affective education or from support to understand their affective development and to cope with stressors and psychological distress. Given the incidence of depressive symptomatology in adolescents, school-based curricula seem warranted to address the mental health needs of high school students (p. 223).

Baker's study does provide evidence that some gifted adolescents seriously consider taking their own lives and display warning signs (e.g., depression) about this consideration. Therefore, the role the school can play in identifying such warning signs may prove as beneficial in saving a student if he/she decides to take the next step and act upon his/her ideations. Hayes and Sloat (1990) examined the prevalence of suicide among the gifted and studied attempted and completed suicide among 69 schools in a four county area. These authors found that 19% (or eight cases) of the 42 reports of suicide-related occurrences were among gifted students. None of these eight cases, however, involved a completed suicide. Hayes and Sloat considered these results preliminary because of a lack of clear definition of gifted among the schools sampled. However, these authors support the need for further study and intervention in this area to potentially save lives because of the highly personal levels of concern they received from school personnel participating in this study.

Ferguson (1981) examined whether gifted students experience similar stressors to those who are not considered gifted. Ninety-six ninth graders from a suburban Philadelphia school district (25 gifted, 71 non-gifted) completed an adaptation of the Adolescent Life Change Event Scale (Yeaworth, York, Hussey, Ingle, & Goodwin, 1980), a measure rating various life events in respect to the degree to which adolescents would feel upset. Ferguson added two additional items to this scale that were related to the topic of suicide. Both groups ranked stressors in a similar fashion, but females perceived items as more stressful. On the two items that dealt with the topic of suicide one was ranked 4 (friend considers/attempts suicide) and the other was ranked 15.5 (subject considers suicide). In a follow-up study, Metha and McWhirter (1997) found that the mean number of life-change events experienced by "nongifted" students was significantly higher than "gifted" students using the same scale as Ferguson (1981). These authors, however, did not offer any explanations for this finding. They also found, as did Baker (1995), that gifted students did not significantly differ from nongifted students in the areas of depression and suicide ideation.

Parker and Adkins (1995) studied perfectionism among Honors College students and their more typical peers. Honors College students demonstrated significantly higher scores on subscales of an instrument that has been considered indicative of neurotic perfectionism. However, these authors questioned whether this elevated perfectionism is indicative of "predisposition to maladjustment or is a healthy component of the pursuit of academic excellence among the highly able" (p. 303).

Research also is concerned with what gifted adolescents know and think about suicide. Sloat and Hayes (1991) surveyed a sample of gifted and non-gifted high school students. The results indicated that more than 50% of both groups knew someone who attempted suicide, more than 20% had seriously considered suicide themselves, and over 70% believed that depression, withdrawal, and giving away possessions were signs of suicide. A significant difference was observed between the two groups regarding who they would see as the primary intervention person when they learned about a potential suicide. The gifted sample indicated that they would be that intervention person, where the other students in the sample more readily sought help from others (e.g., parents, psychologists). Limitations were noted in the differences between the schools surveyed where the two samples were drawn.

Clinical research studies examining potential risk factors of suicide among gifted adolescents and adults also exist in the literature. One longitudinal study (Lester, 1991) examined individuals from Terman's sample who had committed suicide. Lester found that participants whose mothers experienced longer pregnancies and who themselves experienced an early loss of another by death were more likely to have committed suicide at a younger age. Other studies (Tomlinson-Keasey & Warren, 1987; Tomlinson-Keasey, Warren, & Elliott, 1986) utilized longitudinal data from Terman's sample, but focused entirely on female participants. In these two articles, discriminant function analyses were performed utilizing seven risk factors as predictors of membership in three groups, those who committed suicide, living controls, and deceased controls. Signatures of suicide (e.g., previous suicide attempts, anxiety, depression), temperament, mental health, loss of father before age 20, stress in the family of origin, physical health, and alcohol abuse correctly classified 37 of 40 participants (93%). However, as with the majority of research utilizing Terman's sample, questions have been raised regarding how accurately these individuals represent gifted adolescents in the 1990s.

A variety of individual case studies (Johnson, 1994; Peterson, 1993; Willings, 1985, 1994; Willings & Arseneault. 1986) document the occurrence of suicide among

this group along with the consistent need for students to feel adult understanding in their lives. For example, based upon case study data, Willings and Arseneault (1986) claimed that:

> The creatively gifted are particularly vulnerable to the boredom and depression which accompanies isolation during the adolescent years and earlier. This combined with parents and peers' expectations and the inability to find meaningful career opportunities poses numerous problems for the creatively gifted and often result in the drastic decision that life has no more to offer (p. 10).

These authors found 16 out of a small sample of 24 creatively gifted graduates had contemplated suicide and devised a means to kill themselves and 8 out of 16 had made at least one suicide attempt. They described four of these eight cases in their article. Another way researchers have attempted to study the signs of suicide is through conducting psychological autopsies. A psychological autopsy is a process designed to assess the behaviors, thoughts, feelings, and relationships of individuals who are deceased (Ebert, 1987). As a posthumous evaluation of mental, social, and environmental influences, this technique allows researchers to investigate the lives of victims in an attempt to reduce the likelihood of suicidal behaviors in other individuals (Cook, Cross, & Gust, 1996; Cross, 1996b). In the psychological autopsies of three gifted students attending a residential high school in the Midwest, Cross et al. (1996) found the following commonalities: all subjects were adolescent Caucasian males, all manifested four emotional states (i.e., depression, anger, mood swings, and confusion about the future), all showed similar behaviors (i.e., poor impulse control and substance use and abuse), all had relational difficulties (i.e., romantic relationship difficulties, self-esteem difficulties, conflictual family relationships, and isolation from persons capable of disconfirming irrational logic), and all shared warning signs (i.e., behavior problems, period of escalation of problems, talking about suicide, changes in school performance, and family histories of psychological problems).

Literature on the Role of Schools in Suicide Prevention & Intervention

Theory on the Role of Schools

With the growth in literature concerning the topic of suicide among adolescents, there is growth in the level of concern about how schools can meet the needs of students who commit suicide. Schools' roles in responding to suicidal behavior fall within established missions to not only educate, but also protect the health and safety of their students (Kalafat, 1994). Concern exists regarding the potential liability school personnel may have if they fail to respond adequately to students at-risk for attempting suicide. For example, the federal court decision of Kelson v. City of Springfield (1985) held that the parents of a suicidal youth may sue the school if their child's death allegedly resulted from inadequate training in suicide prevention. Furthermore, Davis and Sandoval (1991) noted that professionals may be charged with negligence or malpractice if they fail to perform according to a recognized standard in the profession.

Suicide among students is considered a contemporary issue in education (Lamorey & Leigh, 1996). School personnel are identified as having the potential to be instrumental in preventing suicide among students because of their daily interaction with students (Seibel & Murray, 1988). In order to help students, school personnel must be familiar with epidemiological and clinical data on suicide especially when emergency situations arise and outside mental health professionals are not on the scene (Bauer & Shea, 1987; Pollard, 1986).

Berkovitz (1987) viewed schools as possibly being the last public agency that can provide assistance before other social or legal agencies are called. Therefore, he described two key components as being necessary for the success of schools in meeting these needs in their students. First, the climate of the school is essential to the success of a suicide prevention/intervention program, because an understanding, supportive, and challenging environment can provide validation, growth, support, training, and enhancement of students. Administrators play a paramount role in establishing such environments. Second, Berkovitz cited a need for schools to establish enhanced psychological services and increased assistance of mental health consultants from outside agencies. He did realistically state: "Often it takes a suicide to mobilize faculty, support staff, community, and students to provide more effective inschool attention to the needs of depressed, alienated, or otherwise needy students" (Berkovitz, 1987, p. 505). Unfortunately, often a crisis must occur before a school will mobilize.

Schools have been identified as potential locations to identify, educate, and intervene with students at-risk for attempting suicide (Kalafat, 1994). However, Holinger et al. (1994) reported that epidemiological data are not used effectively in the assessment of individual suicidal behavior. Rosenberg et al. (1987) estimated that additional training of "gatekeepers" (e.g., clergy, primary care physicians, school personnel) about suicide in adolescence would result in the saving of approximately 750 lives per year. The roles of school personnel could include education, identification and referral of students at-risk for committing suicide, creating a supportive school environment, and maintaining solid working relationships with community gatekeepers and parents (Kalafat, 1994). Holinger et al. (1994) recommended school classes dealing with the topic of suicide and the availability of counselors to screen students for risk when it comes to attempting suicide. School classes concerning suicidality should attempt to enhance students' knowledge about helping resources and warning signs, improve students' skills responding to suicidal peers, and increase the likelihood of students taking responsible action in response to these peers (Kalafat, 1994).

Along with the necessity that school personnel have the appropriate skills to recognize warning signs and respond appropriately, the school environment must be conducive to allow these individuals to work together in the prevention of suicide. School environments which are perceived as competitive and/or impersonal tend to be ineffective in preventing suicide in students (Berkovitz, 1987; Davis & Sandoval, 1991; Jackson & Hornbeck, 1989; Kalafat, 1994).

Literature on Suicide Prevention and Intervention in Schools

A variety of studies examined school personnel's attitudes toward suicide prevention and intervention. Ross (1980) found school personnel in San Mateo County, California eager to receive training and assistance in dealing with suicidal adolescents. These participants cited an increased frequency of suicide as having a notable effect on their desire to learn more about warning signs in students. In addition, teachers frequently reported that they did not respond appropriately to suicidal messages given by their students because they did not want to suggest the topic to them. Significant differences were noted in the attitudes and competency of school personnel following a training program. Ross also conducted a preliminary survey among the students at several high schools within the county. This survey asked the question: "If you were considering suicide to whom would you turn for help?" The results showed that a friend was consistently the overwhelming choice over parent, other relative, teacher, school counselor, and nurse. Therefore, Ross identified the need for peer counseling programs in addition to ongoing support and training for school personnel.

In an action research study, Klingman (1990) surveyed 118 teachers and 23 counselors regarding their existing knowledge and attitudes toward suicide prevention. This author found that 28.3% of the teachers and 91.3% of all counselors encountered students they considered to be at high risk for attempting suicide, and 12.4% of the teachers and 69.6% of the counselors received formal guidance (i.e., lecture, workshop) on how to react to potential suicide. This sample, however, was exclusively from Israel, thereby limiting generalizability to American teachers and counselors.

Siehl and Moomaw (1991) found that 92% of the counselors they sampled felt comfortable assessing suicidal risk if team approaches were used; 52% felt comfortable when they were solely responsible for suicide assessment. Kush and Malley (1991) reported that 51% of the school counselors they surveyed felt confident about their level of adolescent suicide prevention/intervention training in relation to their capacity to function as a suicide prevention agent. These authors also reported that 51% of the schools sampled nationwide had a formal suicide prevention/intervention policy. However, the perception of faculty in how comfortable they would feel completing suicide assessment was not studied. What is apparent from the above is that these studies support the notion of team interventions in school.

One article specifically dealt with suicide prevention/intervention in a state-supported, residential high school for gifted adolescents. Adams (1996) outlined the response of one school following three completed suicides of past or current students within one year. When the school was founded, "specific provisions for addressing the social and emotional needs of gifted students had been omitted on the assumption that gifted students were very bright and had few social and emotional problems" (Adams, 1996, p. 413). After the suicides, however, the school took action to employ additional mental health professionals and alter the admission process. Changes in the latter included procedures for following teacher recommendations of incoming students that expressed concern about mental health or emotional wellness, and questions of emotional, social, and mental wellness in required student interviews. Two attempts also were made to train staff in reacting to students at-risk for attempting suicide. However, such attempts appeared unsuccessful in respect to faculty attendance because only about 20% of the personnel who had been at the school during the time of the suicides attended. The most common reason given for lack of attendance was that these individuals needed to come to terms with their own pain. However, in a crisis management workshop given several months later, only the principal, one guidance counselor, one residence counselor, five secretaries, and one faculty fellow attended. No regular faculty members were present at this workshop. Adams cited the recent change in leadership at the school as a potential factor in poor faculty turnout. However, from the above review of the literature it appears training school personnel in the area of suicide prevention/intervention is justified and imperative. Therefore, training in this area needs to be pursued.

Conclusion

Knowledge about suicide among adolescents has grown dramatically since the conception of the field of suicidology. Various theories (Blatt, 1995; Delisle, 1986;

Dixon & Scheckel, 1996; Kaiser & Berndt, 1985; Piechowski, 1979) about characteristics of the gifted have suggested that this population has a higher risk of suicide than their average peers. However, the literature base directly concerned with the topic of suicide among gifted adolescents is filled with much conjecture rather than empirically sound research. At this time there is no significant research to support the notion that the rates of attempted or completed suicide among the gifted differ from rates on nongifted adolescents. However, research does indicate that suicide occurs among this population. Because of this, it is apparent that school personnel need to develop and maintain skills in suicide intervention and prevention among gifted students, as they would with other adolescents. One publication (Adams, 1996) showed that at least one state-supported, residential high school for gifted students attempted to train faculty in the area of suicide, but experienced apathy when it came to attendance of such trainings. Therefore, this review of the literature indicates a need for further research examining and clarifying the prevalence of suicide among gifted adolescents and school personnel's perceptions of their roles in preventing or intervening with students in this area.

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Manuscript submitted January, 1998.

Revision accepted August, 1998.

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