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ADOLESCENT SUICIDE: A REVIEW OF SCHOOL-BASED SUICIDE  
PREVENTION  
IN MIDDLE AND HIGH SCHOOL SETTINGS

by

Stephanie Anne Alberico

A paper submitted in partial fulfillment  
of the requirements for the degree  
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of

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in

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Approved:

UTAH STATE UNIVERSITY  
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2000



## ABSTRACT

Suicide has been named a leading cause of death for 15 to 24 year-olds and it is evident that this public health concern warrants specific attention. The purpose of this paper was to review school-based suicide prevention programs. Prior to this review, background information on suicide including prevalence rates and general information on suicide is presented. It has been determined that adolescent males are four times as likely than females to complete suicide while females are twice as likely to attempt suicide. The most common methods of adolescent suicide completion are firearms and explosives while the most common mean of adolescent attempted suicide is ingestion of pills. Finally, the risk factors or precursors that have been found to be the most salient in predicting suicidal risk are psychopathology, precipitating events, behavioral characteristics, family and parental dysfunction, and contagion effects.

This literature review describes the structure and examines the effectiveness of school-based suicide prevention programs. Directions for future research are also provided. Even though several of the reviewed school-based prevention programs are implemented frequently in school systems, research regarding their effectiveness with ethnically diverse adolescents and their impact on actual adolescent suicide rates is lacking.

The primary school-based prevention programs which are reviewed include suicide education for students, in-service training for school personnel, and education for media professionals. Suicide education targeted toward students has received both positive and negative reviews in terms of its effectiveness in changing student attitudes

and increasing knowledge and help seeking behaviors. Education for school personnel is a promising prevention program as evaluations regarding its effectiveness to impact school staff knowledge, attitudes, and help seeking behaviors are positive. Limited research exists which examines the effectiveness of providing the media with education in order to prevent a contagion effect. However, this prevention effort is suggested frequently in the literature on school-based suicide prevention and appears to have merit. The secondary prevention approaches reviewed in this paper include crisis hotline services and multi-stage screening. Investigations of crisis hotline efficacy are somewhat inconclusive. However, some evidence demonstrates that crisis hotlines can decrease suicide rates among frequent users - young Caucasian females. The few evaluations of multi-stage screening programs which exist are primarily psychometric in nature but are promising suggesting that these instruments would be appropriate to use in multiple stage screening programs. Psychotherapy for suicidal adolescents is briefly examined as well in the section on secondary prevention approaches. Several crisis management techniques are reviewed, and suggestions for working with suicidal individuals are provided. Common therapeutic approaches to use with suicidal adolescents are also highlighted. Finally, implications for school psychologists and other school-based practitioners with regard to the development and implementation of prevention programs and postvention procedures are provided.

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## INTRODUCTION

In a culture that is oriented around youth, it is often difficult to accept and face the death of young people who have their entire lives ahead of them, especially if their death is self-imposed (Berman & Jobes, 1991). However, adolescent suicide continues to be an unfortunate reality that deserves specific attention. It has been estimated that between 2000 and 2500 youth in the United States under the age of 20 complete suicide each year (Shaffer & Craft, 1999). Further, suicide has been named the third leading cause of death for 15 to 24 year-olds and the sixth leading cause of death for 5 to 14 year-olds (Facts For Families, 1995). In addition, over the past three decades the rates of adolescent suicides have risen steadily. In 1960, the rate of suicide for 15 to 19 year-olds in the United States was 3.6 per 100,000 people and this jumped to 9.5 per 100,000 in 1996 (CDC, 1999).

The above cited statistics support the premise that adolescent suicide is a serious public health concern which is not going to disappear on its own. Several questions surround the topic of youth suicide including (1) what are the rates of attempted and completed suicide among various subgroups of adolescents, (2) when, where, and how is suicide most commonly done, (3) and what are the most common risk factors or precursors associated with suicide attempts and completions. These questions and others will be addressed in the background section of this literature review.

The second section and majority of this paper will focus specifically on the structure and effectiveness of various school-based suicide prevention strategies which are most appropriate to middle and high school settings. Professionals working in the school systems are likely to be faced with a suicidal student sometime during the course

of their career. By discussing school-based suicide prevention, this may increase school personnel's awareness of district policies for handling suicidal students and thus prepare them for a suicide crisis situation. Further, by examining the empirical literature on the effectiveness of school-based prevention programs, professionals can become more knowledgeable about prevention programs which have produced positive results in other school settings and consider initiating and/or supporting similar programs in their school system.

## BACKGROUND

### Incidence of Adolescent Suicide

According to Polland (1989), it is extremely difficult to obtain accurate statistics on the rates of suicide attempts and completions. This is especially true since suicide rates are reported in slightly different ways and from different time periods across resources. In addition, most statistics underestimate the prevalence of adolescent suicide as rates usually reflect only the documented suicides and do not take into account the “hidden” suicides which may go unreported or recorded as accidents (Polland, 1989).

National Rates. Table 1 lists suicide rates for adolescents aged 15 to 19 in 1997, which is the most current data from the CDC (1999). Table 2 lists suicide rates for adolescents and young adults aged 15 to 24 in 1998. The information in Table 2 is also provided by the CDC (2000).

Table 1. Suicide Rate Per 100,000 People for Adolescents Ages 15-19 (1997)

Group	Rate of Suicide per 100,000
All Races/ Both Sexes	9.45
Caucasian Males	16.0
African American Males	11.4
Other Males	14.0
Caucasian Females	3.51
African American Females	2.75
Other Females	3.19

\* *Note.* From Centers for Disease Control and Prevention (1999). Suicide Deaths and Rates per 100,000, E950-E959 [On-Line]. Available: <http://www.cdc.gov/ncipc/data/us9794/suic.htm>.

Table 2. Suicide Rate Per 100,000 People for Adolescents and Young Adults Ages 15-24 (1998)

Group	Rate of Suicide per 100,000
Native American Males	41.8
Caucasian Males	20.2
African American Males	15.0
Latino Males	13.4
Asian or Pacific Islander Males	10.9
Native American Females	NA (based on fewer than 20 deaths)
Caucasian Females	3.6
African American Females	2.2
Latina Females	2.8
Asian or Pacific Islander Females	2.7

\* Note. From Centers for Disease Control and Prevention (2000). Death Rates for Suicide, According to Sex, Detailed Race, Hispanic Origin, and Age: United States, 213-214. On-Line]. Available: <http://www.cdc.gov/nchs/products/pubs/pubd/hus/tables/2000/oonus047.pdf>.

As seen in both Table 1 and Table 2, males have higher rates of suicide completion across all age and ethnic groups than do females. According to the Centers For Disease Control and Prevention (CDC, 1999), males aged 15 to 19 are four times as likely than females to complete a suicide while females are twice as likely to attempt suicide.

Between the years of 1960 and 1987, the suicide rates for Caucasian adolescent males more than doubled (National Center for Health Statistics, 1989). However, the rate of completed suicide among Caucasian adolescent males aged 15 to 19 was at its highest in the late 1980's with the rate being 18.0 per 100,000 in 1986. Rates have since decreased slightly with the rate currently being 16.0 per 100,000 (CDC, 1998). In 1989,



it was reported that Caucasian adolescent female suicide rates were two times as high as they were in 1960 (National Center for Health Statistics, 1989). More recent data on adolescent suicide rates for Caucasian females suggest that they have remained level or even decreased within the past ten years (Shaffer & Craft, 1999).

According to McKeown et al. (1998), the most dramatic increase in suicide rates between 1980 and 1992 (nearly 165.3%) occurred among 15 to 19 year-old African American males. Other reports provide evidence that suicide rates for African American males aged 15 to 24 nearly tripled between the years of 1960 and 1987 (National Center for Health Statistics, 1989). As illustrated in Table 2, African American males aged 15 to 24 have the third highest rate of suicide behind Native American and Caucasian males. According to CDC data (1998), suicide rates among African American adolescent males aged 15 to 19 continue to increase from 7.1 per 100,000 in 1986 to 11.4 per 100,000 in 1997. Despite these increases, it is important to note that the adolescent suicide rate for African American males is still lower than that for Caucasian males. In 1989, adolescent suicide rates for African American females were two times as high as they were in 1960 (National Center for Health Statistics, 1989). However, as illustrated in Table 1, when African American adolescent females are compared to other ethnic and Caucasian groups, they have a lower rate of suicide (CDC, 1999).

As seen in Table 2, the suicide rate for Latino American males aged 15 to 24 is reported to be 13.4 per 100,000 and that for females is 2.8 per 100,000 (CDC, 2000). The Latino American population typically includes Puerto Ricans, Mexican Americans, Cubans, and Dominicans (Heacock, 1990). Heacock (1990) has reported that young Puerto Rican men have the highest rate of completed suicides among the Latino

population and young Puerto Rican women have the highest rate of attempted suicide among the Latino population (nearly three times that of Caucasian or African American women). Finally, the CDC (1998) reports that Hispanic high school students are more likely to attempt suicide than are other students.

During the period of 1979 to 1992, the highest national rate of deaths caused by suicide was among the Native American male adolescent and young adult population in Indian Health Service Areas with a suicide rate of 62.0 per 100,000 (Wallace, Calhoun, Powell, O'Neil, & James, 1996). It is important to note that general suicide rates differ greatly across tribes with rates being high (43.0 per 100,000) among some Apache groups and rates being relatively low (12.0 per 100,000) among Navajos (Garland & Zigler, 1993). As illustrated in Table 2, the highest suicide rate reported (41.8 per 100,000) is for Native American males aged 15 to 24.

It has been reported that Asian Americans have a lower rate of suicide completion than that of all other Americans (Range et al., 1999). Asian American typically encompasses all Asian subgroups residing in the U.S. such as Japanese, Chinese, Vietnamese, Korean, Filipino, and Pacific Islander. As shown in Table 2, the suicide rate for Asian American or Pacific Islander males aged 15 to 24 is 10.9 per 100,000 which is rate lower than that for all other males listed in Table 2. Further, in a vital statistics report which examined suicide rates across seven states, the number of deaths caused by suicide for Asian Americans and Pacific Islanders aged 15 to 24 is lower than the number of deaths caused by suicide for either Caucasians or African Americans residing in these same states (CDC, 1997). (The seven states examined in this statistics report were California, Hawaii, Illinois, New Jersey, New York, Texas and Washington.)

Global Suicide Rates. When examining global suicide rates among females and males ages 15-24, the highest rates (more than 30 cases per 100,00 people) are found among males residing in Finland, Latvia, Lithuania, New Zealand, the Russian Federation, and Slovenia (UNICEF, 1996). Residents of Japan and most Western European nations demonstrate relatively low rates of completed suicide (fewer than 15 cases a year per 100,000) among both males and females ages 15-24 (UNICEF, 1996). When considering completed suicide rates in the U.S. for males and females ages 15-24, national rates fall somewhere in the middle relative to other countries with males at a rate of 21.9 per 100,000 and females at a rate of 3.8 per 100,000 (UNICEF, 1996). The World Health Organization (WHO) notes in their Mental Health report on suicide prevention that in a third of countries including those both developed and developing, young people are those most at risk for completing a suicide (WHO, 2000). In addition, from 1950 to 1995, there was a 9% increase globally in the number of cases of suicide for people ages 5-44 while there was a 3% decrease for people ages 45 and above (WHO, 2000).

#### When, Where, and How

Research focusing solely on the “when” of youth suicide is lacking. However, studies of all age groups have concluded that suicide is more likely to occur in the spring months of the year, usually on a Monday, and it is not as likely to happen on the weekends (Berman & Jobes, 1991; Poland, 1989). Also, the majority of youth suicides occur during the afternoon or evening time (Berman & Jobes, 1991). Temporal variables such as the “anniversary effect” may also have an impact on the “when” of suicide. For example, Baron (1986) refers to a study which determined that 23% of completed youth

suicides occurred on or around their birthdays. In addition, the crisis theory strongly suggests that the anniversary of a loved one who committed suicide or was lost to some other tragedy is a potentially difficult time for anyone and can have an impact on a youth who is considering suicide (Polland, 1989).

Hoberman and Garfinkel (1988) suggest that most suicides (70% in their sample) take place in the home where the means to commit suicide are usually located and only about 22% takes place outdoors. The how of suicide is dependent on a number of factors such as accessibility, knowledge or expertise about method, meaning or cultural significance (e.g. taking pills so there will be no body disfiguration), and state of mind (Berman & Jobes, 1991). More lethal methods include firearms and hanging, and more passive methods are drug overdoses, carbon monoxide poisoning, or wrist cutting. The most commonly reported methods of suicide completion by both female and male adolescents are firearms and explosives (Berman & Jobes, 1991). Finally, the most common mean of suicide attempts among adolescents is ingestion of pills (Berman & Jobes, 1991; Reynolds & Mazza, 1993).

#### Understanding Different Suicidal Behaviors

Defining different types of suicidal behaviors is important in gaining a more thorough understanding of adolescent suicide especially since suicide itself is only one behavior included on a continuum with many other suicidal behaviors (Mazza, 1997). One obvious type of suicidal behavior is completing suicide. Completed suicide is death by intentional, self-inflicted harm. Intentionality can best be defined by the individual having in mind that the self-inflicted action will result in death (Berman & Jobes, 1991). Retrospective research on adolescents who have completed suicide suggests in

completions more lethal methods are commonly used and intention to die is typically high (Berman & Jobes, 1991).

Another form of suicidal behavior is attempted suicide (Berman & Jobes, 1991). A true suicide attempter has the intent to die and has chosen a method that is lethal enough to actually complete the job but either he or she did not succeed or was rescued by a family member or friend. Although still considered to be suicide attempters, most teens who are brought into emergency rooms or who are receiving psychiatric care for self-harm behaviors do not fully meet this criterion. The most typical teenage suicide attempter is female and takes pills ( a method considered to be passive) in the presence of her family after an argument (Berman & Jobes, 1991). According to Berman and Jobes (1991), there are two different subgroups of female attempters. One group is characterized by the rebellious, risk-taking teen and the other group is described as the passive, over conformed adolescent. Since there can be various types of attempters, all attempters who have engaged in deliberate self-harming behaviors, including those who often deny what their intent is when questioned about it, have been termed parasuicides (Berman & Jobes, 1991).

Self-mutilation is another kind of suicidal behavior. Some of the most common types of self-mutilation treated in clinical settings are wrist cuts and cigarette burns. More severe and less common forms include genital castration and eye enucleation which are characteristic of schizophrenia and mania. The themes that trigger self-mutilation are very similar to those found among suicidal youths and self-mutilators often make suicide attempts as well (Berman & Jobes, 1991).

Two other groups of suicidal behaviors are threateners and ideators (Berman & Jobes, 1991). As many as 80% of completers and attempters have made some kind of verbal threat before the actual suicide or attempt. Although there are numerous threats that are not followed by completion, any verbal warning should be taken seriously. Ideators are those who have “transient thoughts about the meaning of life or suicide” (Berman & Jobes, 1991, p. 87). In addition, they are preoccupied by these thoughts and appear to have the intention of turning the thoughts into actions. It has been reported by various researchers that nearly 10% to 13% of junior and senior high school students have experienced at some point moderate levels of suicidal ideation (Mazza, 1997). Adolescents who report high levels of suicide ideation are likely to have made an attempt and are also more likely than nonideators to report negative life stress, limited support, and poorer adjustment (Dubow, Blum, & Reed, 1988).

The relation between these suicidal behaviors is important to understand as suicidal behaviors have been found to be predictive of future suicide completion and attempts. For example, suicidal ideation has been found to be a precursor of both threats and attempts (Gould, King et al., 1998) and prior attempts are strong predictors of future suicide completion and later attempts (Berman & Jobes, 1991). According to a study on risk factors most associated with adolescent suicide attempts, two of the most significant predictors of future suicide attempts are history of a past attempt and the presence of current suicidal ideation (Lewinsohn, Rohde, & Seeley 1994). Similarly, in a study of adolescent suicidal behaviors, suicidal thoughts predicted future threats and suicide attempts predicted later ideation (Reifman & Windle, 1995). Thus, it appears that some of the best predictors of future suicide attempts and completions are past behaviors such

as ideation, attempts, and threats. It also seems that thoughts, threats, and past attempts work as a continuous cycle that may ultimately result in completion.

### Risk Factors

Several risk factors have been identified which help to explain the relationship between past and future suicidal behaviors and can signal risk that is recognizable before any self-harm behavior has occurred. The most commonly discussed risk factors include psychopathology, precipitating events, behavioral characteristics, family and parental characteristics, and suggestibility and/or cluster suicides. However, it is important to note that there is no absolute answer to the question of what factors cause a teen to attempt or commit suicide (Polland, 1989). Leder (1987) notes that there may be as many as 15 potential causes of suicide. Each individual who encounters suicidal risk factors will respond in different ways based on their personal experience. The following correlates or risk factors are some of the most salient but are not an exhaustive list.

Psychopathology and Adolescent Suicide. A strong relationship between suicidal teens and psychiatric illness has been documented in a number of studies. One retrospective study of completed adolescent suicides in San Diego found that 92% of the adolescents could be diagnosed with a DSM-III disorder (Rich, Young, & Fowler, 1986). In addition, it has been reported that only a small proportion of teens who commit suicide are free from symptoms of mental illness (Shaffer, Garland, Gould, Fisher, & Trautman, 1988). In a study of psychopathology associated with adolescent suicide ideation and attempts, nearly half (47.6%) of the attempters had more than one psychiatric diagnosis as compared to 7.7% of nonsuicidal youths (Gould, King et al., 1998). Similarly, Reinherz et al. (1995) reported that for both males and females, the onset of a psychiatric

disorder by the age of 14 increased the risk for suicidal ideation and attempts in later adolescence. Numerous pathologies are noted to have a relation to adolescent attempted and completed suicide but some of the most frequently reported disorders which appear to put youths at risk for suicidal behavior are depression, substance abuse disorders, and conduct disorder.

A frequently reported mood disorder among parasuicides and completers is depression, both unipolar and bipolar (Rich et al., 1986; Shaffi, Carrigan, Whittinghill, & Derrick, 1985). Depression seems most directly correlated with suicide ideation (Velez & Cohen, 1988). More recent research further suggests that the onset of major depression by the age of 14 in females greatly increases the risk of suicidal ideation by the age of 15. It was also reported that early onset of depression was found to significantly increase the risk of lifetime suicide attempts (Reinherz et al., 1995). Similarly, the presence of depression has been noted as one of the strongest predictors of future suicide attempts among adolescents (Lewinsohn et al., 1994). Also, psychosocial risk factors such as negative cognitions, low self-esteem, and past suicide attempts have been found to be associated with both depression and future suicidal behavior (Lewinsohn et al., 1994). Finally, among a sample of 662 sophomore, juniors, and seniors in western New York State, depression predicted later thoughts about suicide, communication to others about suicide, and also later attempts (Reifman & Windle, 1995).

Substance abuse commonly co-occurs with depressive disorders among adolescents. Research has found that drug and alcohol abuse is very common among adolescent parasuicides and completers (Rich et al., 1986; Shaffi et al., 1985). Studies of teenage substance abusers have concluded that suicide attempts occur three times as often



as compared with controls and the “wish to die” is much more prevalent among attempters after the onset of substance abuse (Berman & Schwartz, 1990). Perhaps most importantly, alcohol use during the time of suicidal behavior has been found to have a direct relation with the lethality of the method used as an intoxicated youth is more likely to use a lethal method such as a firearm (Brent, Perper, & Allman, 1987). Alcohol consumption has been found to be predictive of thoughts and communication to others about suicide as well as attempts (Reifman & Windle, 1995; Gould, King, et al., 1998). A study of 400 youths who were followed from the ages of 5 to 18 years old reported that early onset (before the age of 14) of substance abuse in males was a predictive risk factor of suicide ideation (Reinherz et al., 1995). Additionally, it was found that when depression and substance abuse occur together by the age 14, there is an increased risk for later suicide attempts (Reinherz et al., 1995). Finally, when examining a sample of abused teens, those who had attempted suicide were more likely (among other factors) to be dependent on or abusing alcohol and drugs than teens who were abused but who had not attempted suicide (Kaplan, Pelcovitz, Salzinger, Mandel & Weiner, 1997).

A third frequently found pathology among suicidal teens which often co-occurs with both depression and substance abuse is conduct disorder (CD) (Berman & Jobes, 1991). In several studies, antisocial behavior has been found to be prevalent among many teens who commit suicide (Plutchik, van Praag, & Conte, 1989; Shaffer & Gould, 1987; Shafii et al., 1985). It has also been reported that aggression exhibited in early childhood among females (a precursor to the development of CD) is a significant risk factor for suicidal ideation in adolescence (Reinherz et al., 1995). In a study on psychopathology and suicidal behaviors, disruptive disorders (e.g. conduct disorder and oppositional

defiant disorder) did not have a significant effect on suicide attempts but did independently contribute to suicidal ideation in children younger than 12 years of age (Gould, King et al., 1998). However, even though a significant correlation between disruptive disorders and suicide attempts was not found, an independent correlation between substance abuse and attempts was noted. Given the increased risk for individuals with CD to abuse drugs and alcohol (Van Kammen & Loeber, 1994), the relationship between disruptive disorders and suicide attempts in other studies may be accounted for in this study by a connection with substance abuse (Gould, King et al., 1998). Also of importance is the notion that CD may play a greater role in adolescent suicide behavior than depression does. In a study of hospitalized adolescents, teens with CD scored higher on suicidality scales included in the Schedule for Affective Disorders and Schizophrenia for School-Age Children (K-SADS) than teens who had a major depressive disorder (Apter, Bleich, Plutchik, Mendelsohn, & Tyano, 1988). Similarly, in a sample of 163 hospitalized adolescents at a psychiatric inpatient unit, those diagnosed with CD were one of two groups of patients (the other were Anorexia Nervosa patients) with the highest scores on instruments assessing suicidal behaviors (Apter et al., 1995). More generally, violent behavior (typical of CD individuals) was significantly correlated with high suicidal behavior scores. It is important to note that the relationship between violent symptoms and depressive symptoms in this study was insignificant suggesting that the relationship between violent behavior and suicidal behavior is independent of depression (Apter et al., 1995). Thus, it was concluded that suicidal behavior (thoughts and feelings) among CD patients appears to be more impacted by frustration and

impulsivity than by depression (Apter et al., 1995).

Other typical, less researched mental health problems found among some parasuicides are affect dysregulation, impulsivity, and anxiety disorders (Berman & Jobes, 1991). Adolescent psychiatric patients who had attempted suicide before being hospitalized showed higher levels of affect dysregulation than patients who just had suicidal thoughts (Zlotnick, Donaldson, Spirito, & Pearlstein, 1997). Also, histories of past suicide attempts were positively correlated with a stronger level of affect dysregulation (Zlotnick et al., 1997). Impulsivity is characteristic of youths who have a hard time dealing with frustration and who do not plan their suicide. A great deal of completed adolescent suicides are impulsive and only about one in four are actually planned (Berman & Jobes, 1991). When examining anxiety disorders, state and trait anxiety have been assessed in adolescent inpatient suicide attempters. Ohring et al. (1996), found that both state and trait anxiety are risk factors for suicidal behaviors but only trait anxiety is independent of depression in its impact on suicidal behavior risk. Consistent with other research, Ohring et al. (1996), reported that trait anxiety appears to intensify adolescent suicide risk.

Precipitating Events. Researchers have found that often completed or attempted suicides, particularly among mentally ill adolescents, are immediately preceded by some type of shameful or humiliating experience. Precipitating events cited in research include an arrest or other disciplinary crisis, break-up with a significant other, school failure, an argument with a parent, or physical and/or sexual abuse (Shaffer & Craft, 1999; Garland & Zigler, 1993). Shaffer and Craft (1999) hypothesize that when a youth is suffering from a psychological disorder such as those previously discussed and then is faced with

some type of stressful event, this combination may greatly increase his or her risk of engaging in suicidal behaviors. In a sample of 229 youth suicides, arguments with a parent or significant other were the most common precipitating events while difficulties at school were the next most common (Hoberman & Garfinkel, 1988). In addition, interpersonal conflict was reported to be the precipitating event in 70% of youth suicide cases studied by Brent et al. (1988).

Behavioral Characteristics. Certain behavioral characteristics have been found to be typical of suicidal teens and are reported risk factors. The most common characteristics documented in several studies are social isolation and social alienation (Farberow, 1989). Suicidal adolescents have reported that they do not have any close friends (Khan, 1987) and typically do not have a close companion (Topol & Reznikoff, 1982). Similarly, it has been found that suicidal substance abusers, when compared to normal controls and non-suicidal abusers, have characterized their childhood as being more lonely (Berman & Schwartz, 1990).

Family and Parental Characteristics. Another major risk factor for suicide among adolescents is the presence of a dysfunctional parental system. When suicidal teens are compared with normal controls, they report more instances of poor familial relationships and conflict (Reinherz et al., 1995) including violence (Levin & Schonberg, 1987) and report receiving less affection and family social support (Poland, 1989; Berman & Jobes, 1991; Lewinsohn et al., 1994). Suicidal teens also characterize the time they spend with their parents and other family members as not enjoyable and have less positive views of their parents (Berman & Jobes, 1991). In a controlled study of suicide completers, there were greater levels of family chaos which included violence and suicidal tendencies

(Shafii, Carrigan, Whittinghill, & Derrick, 1985). Pfeffer (1989) summarized two familial factors which research has found to be most closely related with adolescent suicidal behavior and those are: 1) Familial stress such as loss, death, separation, and divorce, and 2) Parental dysfunction, suicidality, and psychopathology which includes abuse and neglect of children.

In another more recent study, adolescents who had been physically abused by a parent and who had made a suicide attempt viewed their mothers as more non-caring and their families as unconnected when compared to abused teens who did not make an attempt. Additionally, the abused attempters noted more hostility in their household and reported being exposed to more peer or family suicidal behavior (Kaplan et al., 1997). In another study assessing the effects of divorce and separation on 120 adolescent suicide completions, parental break-up was not directly related to teen suicide but did significantly increase the risk of substance abuse (Gould, Shaffer, Fisher, & Garfinkel, 1998). The investigators propose that separation and divorce can have an indirect influence on suicide by increasing the risk of substance abuse and other mood and disruptive disorders. Finally, when suicide completers were compared with community controls, they were significantly more likely to come from one parent families (Gould, Shaffer et al., 1998).

Suggestibility and Cluster Suicides. Research indicates that suggestibility which includes exposure to suicidal behavior and suicide clusters are also significant risk factors for adolescent suicide attempts and completions (Berman & Jobes, 1991). Literature has shown that it is more common among teenage suicide completers than compared controls to be subjected to suicidal behavior in the social network or within the family (Shafii et

al, 1985). High school surveys of non-patient attempters and ideators reported more frequently to have known a peer, friend, or family member who had attempted suicide (Smith & Crawford, 1986). Lewinsohn et al. (1994), report that exposure to suicidal behavior by peers is significantly associated with future suicide attempts. These researchers also found that a recent suicide attempt by a friend was significantly associated with a future suicide attempt when in combination with other risk factors (Lewinsohn et al., 1994). It is important to note that exposure alone to suicidal behavior does not *cause* a teen to commit suicide. However, if the youth has been exposed to other risk factors discussed above (e.g. psychopathology, family dysfunction, or social impairment) then the completed or attempted suicide of a friend may greatly enhance the likelihood that the youth will attempt or complete suicide (Brent et al., 1989).

Adolescents are a group of people who are typically more vulnerable to modeling behaviors of others than adults. Therefore, when suicides occur in clusters, youths may be influenced or triggered by these events to attempt or commit suicide. The Centers for Disease Control has defined a "cluster" as being three or more events that occur in a series (Berman & Jobes, 1991). For troubled teenagers, especially those who have suicidal tendencies, experiencing the suicide of a peer and the perceived attention given to that event may lead to their attempt or suicide. Disturbed youth may start to believe that the attention and notoriety a suicide receives particularly from the media is what he or she is seeking and will be satisfying even if the individual is dead when receiving it. Additionally, if the model suicide was committed by a peer who is considered a "star" in the community, this may lead to irrational beliefs such as "If he or she couldn't hack it, what chance do I have?" (Berman & Jobes, 1991, p.102) . They may see ending their life

as the only way to solve their problems since this is what someone else who was feeling the same way they do did (Berman & Jobes, 1991). Suicide clusters among the adolescent population is a potential risk factor and should be attended to in any community ( Berman & Jobes, 1991; Poland, 1989).

Culturally Specific Risk Factors. In addition to the above individualistic psychological risk factors, it is important to consider that there may be several cross-cultural risk factors related to adolescent suicide. A comprehensive discussion regarding culturally sensitive risk factors is beyond the scope of this paper. However, several general risk factors will be highlighted which are unique to the most populous minority groups in the U.S.; African Americans, Latino Americans, Native Americans, and Asian Americans. A brief discussion on gay and lesbian risk factors will also be included. Because there is not a great deal of research specific to adolescent suicide risk factors among different cultural groups, results of studies conducted with the adult minority populations will be applied to the discussion here (Heacock, 1990).

As noted earlier, the most dramatic increase in suicide rates between 1980 to 1992 (nearly 165.3%) occurred among 15 to 19 year-old African American males (McKeown et al., 1998). For African American youth, several sociocultural factors may help explain this rise in suicide. Researchers in this area have hypothesized that a higher incidence of family violence and violence in the community may be risk factors more common to African American youth (Heacock, 1990). Risk factors such as suffering from intense situational reactions and lack of psychiatric support at the time of a first attempt have been found to be related to suicide attempts in the African American population (Heacock, 1990). Consistent with the previous discussion regarding psychological

disorders and their relation to suicide risk, psychological disorders have also been noted as risk factors among African American youth. In a study of 15 urban African American adolescents who attempted suicide and 15 urban African American adolescents who had not, depression, aggression, thought disorders, and delinquency in addition to alcohol and substance abuse were all significantly more prevalent in the attempters than the controls (Jones, 1997).

The Native American culture is very diverse as there are reported to be more than 500 tribes within the U.S. and more than 200 languages spoken among them (Range et al., 1999). In addition, suicide rates differ greatly across tribes with less traditional tribes often having higher rates. As discussed earlier, the highest suicide rate among 15 to 24 year-olds is found in the Native American male population. Several culturally specific risk factors may help explain this high suicide rate. The factors which may be those most associated with suicide among Native American youth belonging to less traditional tribes include the disruption of culture or the pressure to acculturate. This disruption often interferes with tribal unity and causes intergenerational trauma and alcohol abuse all of which are usually tempered by feelings of hopelessness and identity diffusion (Range et al., 1999). It is important to note that in more traditional tribes, where the pressure to acculturate is not as prevalent and there may be great deal of social support available, this may help to buffer against suicidal risk (Garland & Zigler, 1993).

Since the Latino population is not a homogeneous group in the U.S., it is difficult to produce an exhaustive list of risk factors that would generalize to all Latino youth (Heacock, 1990). With this in mind, it has been reported in studies on Latina females that socioeconomic disadvantages, acculturation stress, cultural identity, intergenerational



trauma, culturally induced anger and frustration, and socialization are factors which were found to have some impact on their suicide attempts (Heacock, 1990). In addition, it has been suggested that the many stressors brought on by the acculturation process can cause Latino youths to experience feelings of ambivalence toward their heritage and toward the majority culture. Thus, the pressures associated with recent migration and acculturation (e.g. poverty) in addition to language barriers may increase the risk of psychological disorders and possibly suicidal behaviors (Heacock, 1990). Several studies have demonstrated that there are higher rates of suicide completion among migrants as compared to non-migrants (Heacock, 1990). Researchers have also hypothesized that the significance placed on fatalismo (the religious belief that “divine providence regulates the world, thus people personally have no control over adverse events”) (Range et al., 1999, p. 417) in the Latino culture may impact suicidal behaviors in youth (Heacock, 1990; Range et al., 1999). For a troubled youth who strongly believes in fatalismo, suicide may appear to be the only solution for a problem that is perceived to be out of his or her control. Even though these cultural forces are among those associated with Latino suicide, they may impact a youth differently based upon the individual’s personal experience (Range et al., 1999).

Asian Americans are also considered to be a diverse group in the U.S. For many Asian Americans, it has been hypothesized that religious and/or cultural beliefs may have an influence on a youth’s decision to attempt suicide (Range et al., 1999). On one hand, suicide is viewed as selfish and disrespectful because an adverse act such as this will affect everyone around him or her, especially the individual’s family. If this view is taken by a troubled youth, it may help to buffer against suicide ideation or attempts.

Conversely, taking one's own life may be viewed as an acceptable solution if the act will spare the individual's family from shame or embarrassment (Range et al., 1999).

Psychological risk factors and social characteristics among Asian youth have also been identified in a study of 13 Asian adolescents who attempted suicide by drug overdoses. Consistent with previously discussed research, the psychological and social risk factors found in this study were high rates of depression and hopelessness, presence of a previous overdose, and social isolation (Kingsbury, 1994).

Suicidal risk factors for gay and lesbian youth are also important to be aware of as it has been asserted that suicide is the leading cause of death for this population (Saulnier, 1998). While it has been determined that homosexuals are most at risk for suicide during their adolescent years, Saulnier (1998) argues that the actual suicide rates among homosexual youth are uncertain. Common risk factors found among suicidal homosexual youth are stressors surrounding their sexual orientation such as ridicule from peers and the fear of disclosing their identity. Alcohol abuse, paternal alcohol problems, and family violence are other risk factors reported to be common among gay and lesbian youth at-risk for suicide. In addition, socialization problems such as feeling isolated from peers, lacking of intimate relationships, and a shortage of positive role models are also hypothesized risk factors for gay and lesbian youth (Saulnier, 1998).

## SCHOOL- BASED SUICIDE PREVENTION IN MIDDLE AND HIGH SCHOOL SETTINGS

Given the severity of adolescent suicide and knowledge regarding risk factors most salient in predicting suicidal behaviors, adolescent suicide prevention is an important goal (Shaffer and Craft, 1999). During the late 1980's, a surge of school-based suicide prevention programs were developed and implemented in response to the increases in youth suicide (Mazza, 1997). Many of these prevention programs continue to be implemented in school systems throughout the country, although data on the effectiveness of these programs is sometimes lacking. It is important for school personnel to be knowledgeable of the empirical literature on school-based suicide prevention programs before developing and implementing a district or school-wide suicide prevention program.

The following sections of this paper will review the structure of some common suicide prevention programs which have been evaluated in school and community settings. Both primary prevention which refers to “efforts designed to intervene with individuals before any manifestation of a particular disorder occurs” (Miller & DuPaul, 1996, p. 222) and secondary prevention which is described as “identification of problems in individuals in their early stages, before problems become severe” (Miller & DuPaul, p.222) will be discussed. Conclusions regarding their effectiveness and goals for future research will be provided.

The inclusion criteria for the studies included in this review of school-based suicide prevention are as follows: (1) studies must have been published after 1988, (2)

studies must be empirical in nature, and (3) studies must be applicable to suicide prevention in the middle and high school settings. However, the section which examines the effectiveness of crisis hotlines does not meet the first inclusion criterion (all studies published after 1988) as the majority of studies which investigated crisis hotline effectiveness were published before 1988. However, in order to provide a complete review of crisis hotline effectiveness, these articles will be included and discussed.

### Primary Prevention

#### Suicide Education for Students

Since the mid and early 1980's, various school systems have implemented curriculum based programs as a primary suicide prevention effort. The goal of most curriculum approaches is to increase students' knowledge regarding the warning signs and risk factors of teen suicide, change maladaptive attitudes, increase help-seeking behaviors, and promote healthy coping skills through suicide education typically provided by teachers (Miller & DuPaul, 1996). Researchers who are critical of curriculum approaches believe that providing students with suicide education can actually *increase* rates of suicidal behavior. As will be discussed later, there is some data which supports this view and also some evidence which refutes it (Mazza, 1997). In a survey conducted in 1987, it was estimated that at least 115 curriculum based suicide prevention programs targeted mainly at high school age students were implemented in school systems throughout the country (Garland, Shaffer, & Whittle, 1988).

The theoretical orientation, structure, and content, of curriculum based prevention programs vary. The majority of programs developed in the 1980's follow a "stress model" orientation in which suicidal risk is talked about in terms of an individual's stress level

(Garland et al., 1988). The view is the more extreme stress a teen is enduring, the more likely the teen is to attempt a suicide or engage in suicidal behaviors such as ideation. This view indicates that anyone can resort to suicide given enough stress (Garland et al., 1988). In Garland's et al. (1988) survey, 96% of the school systems which had implemented curriculum prevention programs reported subscribing to the stress model whereas only 4% based their programs on the theoretical approach that suicide is typically related to mental illness even though this orientation is highly substantiated by research. Advocates of the mental illness orientation feel that by highlighting the relationship between mental illness and suicidal behavior, this may help make suicide a less appealing option to teens given the stigma associated with having a mental illness. In addition, advocates of the mental illness orientation hypothesize that when suicide risk is discussed in relation to stress level, it normalizes the behavior and thus can make it seem more appealing to adolescents (Mazza, 1997).

Most curriculum based prevention programs, especially those developed in the 1980's, provide suicide education to all students within the school system regardless of their suicidal risk. Programs vary in length with some lasting a full school semester to others lasting only one hour. Most curriculum programs typically provide information regarding warning signs and myths of suicide, where and how to seek assistance, and how to use adaptive coping skills.

Following is a review of various curriculum based approaches which have been systematically evaluated in a school setting from the late 1980's to the mid to late 1990's. Most studies evaluate program effectiveness by a pre/post-test questionnaire which assesses knowledge gains, changes in attitude, and coping abilities. Attitude changes in

the desired direction usually indicate that students do not feel suicide is an option to solving their problems, and they view suicide as a serious problem as they would seek help from an adult if they or a friend were suicidal. It is important to note that few studies evaluate program efficacy by exploring decreases in actual suicidal behaviors.

Spirito, Overholser, Ashworth, Morgan, and Benedict-Drew (1988) investigated both the negative and positive impact of a suicide awareness curriculum on students. Participants, regardless of suicidal risk, were randomly selected from five different high schools located in both urban and rural areas. Two hundred and ninety-one students were placed in an experimental group in which they were required to attend a six week curriculum class which included discussions about students' attitudes toward suicide, awareness of the suicide severity, facts and myths, warning signs, identification, intervention, and referral techniques which they could use with at-risk peers. One hundred and eighty-two students were placed in a control group. Ethnicity of participants was not reported. The suicide awareness curriculum being evaluated followed the stress model orientation. Both groups were administered a pre-test (given before the suicide awareness education) and post-test (given 10 weeks after the experimental group completed the suicide education). The assessment measures examined knowledge gains, attitudes, helping behaviors, and the frequency of using several common coping strategies. Spirito et al. (1988) also assessed hopelessness in order to determine if the program had a negative impact on participants. No measurement to assess actual rates of suicidal behavior was employed. The authors found that desired changes in attitude, knowledge gains, and lower hopelessness scores were a function of both participation in the curriculum in addition to taking the pre-test. These findings suggest that the

information presented on the pre-test benefitted participants who received the curriculum. In addition, females, regardless if they had received the curriculum, were more likely to support appropriate attitudes toward suicide and helping suicidal peers seek counseling than did males. Spirito et al. (1988) did not provide an explanation for these gender differences but noted that they should be explored further in order to determine their origin and parameters. Finally, no negative effects of the program were found based on the results of the assessment measures (Spirito et al., 1988).

Overholser, Hemstreet, Spirito, and Vyse (1989) also examined the effectiveness of a suicide awareness program which subscribed to the stress model approach and that targeted all students regardless of risk status. The impact of the curriculum on students who had a personal experience with a suicidal friend was also investigated as were gender differences. Ninth graders from three high schools participated in this study. Participant ethnicity was not reported. Two hundred and fifteen students received the curriculum while 256 students were placed in a control group. As with the suicide awareness program evaluated in Spirito et al. (1989), the content of the five session program employed in Overholser et al. (1989) covered attitudes toward suicide, facts and myths, warning signs, identification, healthy coping skills, and referral techniques. Students in the experimental and control groups were assessed before program implementation and four weeks after the program had ended. Assessment measures investigated the participants' personal experience with suicide, level of hopelessness, suicide knowledge, attitudes, and the frequency of using adaptive coping strategies. Suicidal behaviors were not measured. The most significant findings noted in this study were in relation to sex differences. Following the curriculum, female participants demonstrated a decrease in

hopelessness, more appropriate attitudes, and less dependence on unhealthy coping strategies. Conversely, males in the experimental group displayed minimal but significant increases in hopelessness, undesired attitudes, and an elevation in inappropriate coping strategies. It is important to note that the elevation in hopelessness scores for males was significant relative to the pre-test but still within the average range. Relatively weak effects were observed for having a personal experience with suicide and program effectiveness. Overholser et al. (1989) hypothesize that the significant sex differences may be a function of differences in learning styles, a function of the duration of the program, or potentially a function of the style of teaching. Overholser et al. (1989) suggests that these sex differences be studied further and possibly separate training programs should be developed for females and males.

Similar to Spirito et al. (1988), and Overholser et al. (1989), Kalafat and Elias (1994) evaluated the effectiveness of a school-based suicide awareness program which subscribed to the stress model approach and targeted all students regardless of suicidal risk. The participants in this study were 253 10th grade students from two suburban, middle class schools in a northeastern community. The ethnicity of the students was not reported. The experimental group which included 136 participants, attended three 40-45 minute suicide education classes. The remaining participants were placed in a control group and attended physical education rather than suicide awareness classes. The suicide education classes covered information and attitudes regarding suicide, the impact of stress on an individual and its relation to suicide, suicide warning signs, resources to refer friends or seek help, and the detrimental effects of not responding to suicidal peers. A pre- and post-test self-report questionnaire which assessed knowledge and attitudes



toward suicide, help seeking, and reaction to suicide education was given to both experimental and control groups. The authors reported that overall, the experimental group demonstrated significant knowledge gains on the post-test as compared to the control group. With regard to the questions on the pre-and post-test which examined help-seeking behaviors, students who had attended the suicide education classes were more likely to respond to a hypothetical situation in which a peer was suicidal by asking the friend what was bothering him or her or telling another friend or adult what they had observed. However, even after receiving the curriculum, students in the experimental group were still unlikely to tell a hypothetical suicidal friend to call a mental health clinic. Finally, it was concluded from the pre-test that participants in both groups held reasonable views regarding suicide and its severity. The results of the post-test demonstrate that these sensible views were not impacted in an undesired direction among those who received the curriculum. Kalafat and Elias (1994) propose that a curriculum program such as the one they evaluated can have the preferred effects on student's attitudes which they believe can impact social behavior.

As in all the studies reviewed above, Orbach and Bar-Joseph (1993) examined the effectiveness of a curriculum suicide prevention program targeted toward all students regardless of risk status. Although this 14 hour program subscribed to the stress model orientation as in previous programs, it differed slightly from those programs described above in the way that it attempted to improve coping with stress "through an introspective exploration of feelings related to suicidal tendencies" with a goal to "immunize against self-destructive feelings" (Orbach & Bar-Joseph, 1993, p.120). Eleventh graders from six high schools, whose ethnicity was not reported, participated in

this study. Two hundred and fifteen students were randomly placed in the experimental group and 178 students were placed in the control group. The content of the program included discussions about students' own emotional experiences and similarities between experiences, discussions about coping with stress or suicidal urges, learning adaptive ways to cope, and encouragement of the self-help and peer-help approach. The impact of the program was measured by a pre-/post-test given before and after the program which examined suicidal tendencies and risk, hopelessness, ego identity, and coping skills. It is important to note that this study assessed for decreases in suicidal tendencies which is one strength as compared to other studies discussed thus far. Overall, the program was effective in decreasing students' suicidal feelings and in increasing coping abilities. The results for program effects on hopelessness were mixed but there was evidence which suggests that the program did seem to decrease feelings of hopelessness among some students. For a subgroup of special-education conduct disordered students included in the experimental group, the program impacted suicidal tendency scores in the desired direction but did not have an impact in any other areas. In addition, these students rated the program less favorably indicating that it was "too exposing" (p.127). The researchers hypothesize that given the history of how conduct disordered students typically handle their problems (e.g. by acting out), they may prefer a program which is more structured and places less emphasis on sharing of personal experiences. Consistent with some studies already discussed, females in this study responded more positively to the program than males as evidenced by their lower scores on the suicide tendency and hopelessness scales. Orbach and Bar-Joseph (1993) suggest that females may have benefited more from the program because they are typically more sensitive to and open about the

discussion of personal feelings regarding suicide.

The effectiveness of three different suicide education programs that, like all other programs reviewed previously, targeted every student regardless of suicide risk were investigated in a group of high school students (Shaffer, Garland, Vieland, Underwood, & Busner, 1991). A particular strength in Shaffer et al. (1991) as compared to the previous studies is that the researchers included a substantial number of minority students in both experimental and control groups in order to examine different reactions to the programs based on ethnicity. Gender differences were also explored. Seven hundred and fifty-eight ninth and tenth grade students were placed in experimental groups and 680 students were placed in a control group. One program was four hours in duration and followed a mental illness approach while another program lasted three hours and subscribed to a stress model orientation. The third program was one and half hours long and followed a stress model approach. The purpose of the three programs was to increase student knowledge regarding risk factors and warning signs of suicide, promote positive attitudes toward seeking help for emotional problems, and deter views that might encourage suicidal behaviors. All participants were administered a pre-test before program implementation and a post-test one month following completion of the programs. The pre-/post-test assessed knowledge, attitudes, program acceptability, and knowledge of available resources. Overall, a high proportion of the participants rated the programs favorably with females and minority students (African American and Hispanic) rating the programs more positively than males or Caucasians. Relatively weak effects were observed for differences in program effectiveness and preference. Similar to Spirito et al. (1988), participants in the present study demonstrated significant knowledge gains as a

result of the programs particularly in regard to knowing where to seek help. Fewer than 10% of the students felt that the program had intensified any emotional problems they or a friend may have had. As with Overholser et al. (1989), the programs evaluated in the present study did have an undesired effect on some participants. A small but significant number of males changed their view from pre- to post-test from not viewing suicide as a solution to emotional problems to viewing it as a possible solution. Finally, those participants who admitted to having thought of or attempted suicide, rated programs less favorably than nonsuicidal participants (Shaffer et al, 1991). In a follow-up study of these prevention programs which assessed student's actual frequency of help-seeking behaviors and suicide morbidity during the 18 months following completion of the program, no evidence of program effect was found on students' actual help-seeking behaviors (Vieland, Whittle, Garland, Hicks, & Shaffer, 1991).

An evaluation of a curriculum program that followed a mental illness orientation and similar to all previous studies reviewed, targeted every student regardless of suicidal risk, was conducted with 324 tenth grade students (203 placed in an experimental group and 121 placed in a control group) (Cliffone, 1993). Ethnicity of students was not reported. The prevention program lasted one class period and covered the warning signs of suicide, appropriate and inappropriate responses to use with a distressed peer, the relationship between mental illness and suicide risk, adaptive coping strategies, how to use listening skills, and where to find community resources which offer assistance. The effectiveness of the program was measured by an attitudinal survey in which the frequency of undesirable attitudes were compared from pre- to post-test. The survey assessed attitudes regarding suicidal behaviors, self-disclosure, seeking help from an

adult when troubled, and encouraging a distressed friend to seek professional assistance. More students receiving the program were likely to report they would disclose personal thoughts to a peer and boys were more likely to report that they would obtain professional help for problems. Of those students who reported that suicide was a possible solution to problems on the pre-test, 55% of them still felt it was an option after receiving the program (Cliffone, 1993).

Unlike the studies discussed thus far, Shaffer, Vieland et al. (1990) examined program effectiveness with a group of adolescents who reported having made a previous suicide attempt. Shaffer, Vieland et al. (1990) examined students' reactions to two curriculum programs similar in content and that were implemented in seven suburban and rural high schools. Thirty-five of the previous attempters were placed in one of the two curriculum programs. Their responses were compared with 28 previous suicide attempters who did not receive any curriculum. A group of 910 non-attempters also received one of the two curriculum programs and their responses were evaluated. Ethnicity of the participants was not reported. Both programs evaluated subscribed to the mental illness orientation and provided facts regarding the severity of and precursors to adolescent suicide. Advice about referral techniques and encouragement for suicidal youth to disclose their feelings in order to receive appropriate assistance was also provided. One program was three hours while the other program was one and a half hours. A questionnaire which assessed attitudes toward suicide, knowledge regarding warning signs of suicide, and attitudes toward pursuing help for emotional distress was administered to all participants before program implementation and one month after program completion. Overall, the investigators found that the program did not impact

attempters attitudes toward suicide. Based on the pre-test results, attempters in both experimental and control groups were likely to view suicide as a solution to distressing problems, likely to state they would keep emotional distress to themselves, and likely to view and admit to using alcohol and drugs to cope with emotional problems. These maladaptive views among the attempters were not changed among those who were exposed to the program. When compared to non-attempters, attempters receiving the program were less likely to support presenting the program to other students and more likely to report that the presentation of such a program may increase the likelihood of some students killing themselves. Possibly the short length of the program, style of administration, and the presence of psychopathology which is not easily altered by a short education program, may potentially explain why the program had no impact on the group of attempters (Shaffer, Vieland et al., 1990).

Different from any evaluation study reviewed previously, only students most at risk for dropping out of school were identified and selected as participants in Eggert, Thompson, Herting, and Nicholas's (1995) evaluation of a school-based curriculum prevention program. The curriculum program evaluated followed both a mental illness and stress model orientation and targeted only students at risk for school failure. A sample of 105 9-12th graders from 5 different high schools participated in the study. All participants were asked to complete a self-report measure to assess for suicide-risk behaviors, depression, and drug involvement. The youth who were identified as at suicide-risk based on the results of the self-report measure were then interviewed by a school counselor or psychosocial nurse with the Measure of Adolescent Potential for Suicide (MAPS). The MAPS is a two hour structured interview used to measure suicide-

risk and related factors. Participants were then placed in one of three groups; Group 1) assessment plus 1- semester Personal Growth Class (PGC), Group 2) assessment plus 2 - semester PGC and Group 3) assessment only. The PGC consisted of providing social support to students in a group format. In addition, mood management, monitoring of school attendance and drug use, and anger, depression, self-esteem, and stress management were provided. In order to examine the effectiveness of the PGC program, all participants were assessed before implementation of the PGC program, at the time of completion of 1-semester PGC (post-test), and after completion of the 2-semester PGC (follow-up). The self-report measures used at the pre-, post-test, and follow-up assessed suicidal behavior, stress, hopelessness, depression, anger, social support, personal control, and self-esteem. Eggert et al. (1995) reported that all groups demonstrated significant reductions in suicidal behaviors, stress, anger, hopelessness, and depression at the post-test and follow-up relative to baseline. Significant increases in self-esteem and social support were also found for all three groups. Except for not impacting levels of personal control (in which there were demonstrated increases for students in both curriculum groups), the assessment only group was as effective as either of the curriculum programs; a result which the authors believe provides some support for using the MAPS as a primary prevention strategy (Eggert et al., 1995). It is important to consider that simply the passage of time and possibly regression to the mean may have had some impact on the assessment-only group's improvements on the post-test.

Unique in content from any program evaluated above, Hennig, Crabtree, and Baum (1998) investigated the impact of a "no harm agreement" (NHA) training curriculum on a sample of 396 students attending two high schools. A survey was first

given to all students which examined demographic characteristics, experience with suicide, and utilization of counseling services. Based on the results of this initial survey, 30% reported knowing someone who had completed suicide, nearly 60% indicated they knew someone who had attempted suicide, and 15% noted they had attempted suicide themselves. Only 20% had ever obtained counseling and over 50% said they would tell a friend if they were experiencing suicidal thoughts. Participants equally matched on age and ethnicity were then placed in either an experimental or control group. The experimental group received the NHA training curriculum as part of their health class. The 90 minute training curriculum which is targeted toward only those students not at risk for suicide covered myths and facts about suicide, warning signs, and basic rules for intervention. However, unlike the curriculum approaches discussed thus far, the NHA training provided instructions to students on how to obtain a No Harm Agreement which is a type of peer contracting. The goal of the no harm agreement is to delay suicidal behavior until professional assistance can be provided. To assess the impact of the training, a test questionnaire which included items about how to intervene with suicidal peers, myths about suicide, and attitudes toward suicide was given to students in both the experimental and control group following implementation of the curriculum training. Significantly more students receiving the training were likely to ask a friend about suspected suicidal thoughts and more likely to respond to a suicidal crisis appropriately (e.g. by calling 911). Most importantly, experimental students were more likely than controls to report that they would obtain a NHA from a suicidal peer. In addition, students in the experimental group were also more likely than controls to identify several myths and facts about suicide. Finally, the majority of participants receiving the



curriculum indicated that it was both helpful and safe while 7% of participants questioned its safety and 10% reported having known someone upset by it. The investigators report that overall, the effectiveness and feasibility of the brief NHA curriculum training has been demonstrated in this study. They further report that in the years before this curriculum had been implemented in the schools where this study took place, approximately two suicides per year were occurring. In the three years following implementation of this curriculum into health classes, there were no reported suicides. While the investigators cannot conclusively say if this program is responsible for the reported decrease in suicides, they do feel that more research should be conducted on the effectiveness of NHA curriculum with a specific focus on the long term impact of the NHA training on suicide rates (Hennig et al., 1998).

Conclusions. Overall, results of the studies reviewed here suggest that suicide education targeted toward all students regardless of their suicidal risk can increase knowledge, promote healthy attitudes which encourage help-seeking behaviors, and encourage the use of adaptive coping strategies particularly among female adolescents (Spirito et al., 1988; Overholser et al., 1989; Shaffer et al. 1991; Clifone, 1993; Kalafat and Elias, 1994; Hennig et al., 1998). In most of these studies, it is important to note that questionnaires which measured knowledge gains and changes in attitude were used to assess program effectiveness. According to Clifone (1993) and Berman and Jobes (1995), little empirical evidence exists which supports the notion that increases in knowledge or changes in attitude are linked to a reduction in suicidal behaviors. Thus, the positive outcomes of these studies should be interpreted cautiously as the programs may have limited efficacy in reducing actual suicidal behaviors. However, it is important

to point out that two studies which measured program effectiveness by examining decreases in suicidal risk behaviors or tendencies, found that a suicide curriculum program can decrease suicidal tendencies and behaviors among both participants identified as at-risk for suicide and among those not assessed for suicidal risk (Orbach & Bar-Joseph, 1993; Eggert et al., 1995).

In various studies, there was evidence that suicide education programs can produce undesired outcomes as well as desired outcomes. Slight increases in hopelessness, maladaptive coping strategies, and inappropriate attitudes regarding suicide, all of which were particularly apparent among male participants, were found in several studies (Overholser et al., 1989; Shaffer, Vieland et al., 1990; Shaffer et al., 1991; Clifone, 1993). For example, in Shaffer et al. (1991), there was a small but significant group of male students receiving the curriculum who changed their response from pre- to post-test as not viewing suicide as a potential solution to viewing it as a solution. In addition, the results of Shaffer, Vieland et al. (1990) demonstrate that the program did not have the desired impact on the maladaptive attitudes of suicide attempters; a group most in need of a prevention program. Even after receiving the curriculum, students who had made a previous suicide attempt still viewed suicide as a potential solution to distressing problems and indicated that they would not seek assistance when troubled but would use alcohol or other substances to cope with problems (Shaffer, Vieland et al., 1990). These results suggest that curriculum programs such as those evaluated here can potentially have detrimental effects on students who may be most at-risk for suicide (e.g. previous attempters) and on adolescent males. Given that male adolescents are four times as likely than females to commit suicide (CDC, 1999), it is vital that practitioners consider the

ramifications of implementing curriculum programs in their schools before subscribing to the view that “something is better than nothing” (Mazza, 1997).

Mazza (1997) has offered some explanations as to why various curriculum programs such as those reviewed above have shown limited effectiveness or produced negative results. One potential factor may be that the majority of the programs evaluated used a universal strategy whereby all students were targeted rather than those most at-risk for suicidal behaviors or tendencies. Opponents of the universal approach contend that it may be more feasible and cost-efficient to develop programs targeted only toward those students most at-risk for suicidal behaviors and who are those most in need of suicide prevention programs (Mazza, 1997). Only one study reviewed here identified at-risk students for participation in a suicide curriculum program through a screening procedure. As noted above, no negative effects were noted and significant reductions in suicidal behaviors, stress, anger, hopelessness, and depression at the post-test and follow-up were found in this study relative to baseline as well as significant increases in self-esteem and social support (Eggert et al., 1995). It is important to note also that in Shaffer et al. (1990) where subgroups of students who had made a previous suicide attempt were included in the experimental group, the programs evaluated were ineffective in changing these at-risk students’ maladaptive attitudes. Authors of this study proposed that the very brief duration of the programs in addition to the style of administration may be potential reasons for program ineffectiveness. Mazza (1997) also contends that the stress model orientation, which a number of the programs evaluated here subscribed to, may also play a role in program ineffectiveness. As mentioned previously, the stress model orientation suggests that the more extreme stress a teen is enduring, the more likely the teenager is to

attempt a suicide or engage in suicidal behaviors such as ideation. This view has been criticized as it tends to “normalize” suicide and could possibly increase suicide as it may be seen as a feasible option under stressful conditions (Ciffone, 1993). Mazza (1997) recommends that curriculum programs for students subscribe to a mental illness model to explain suicidal behavior as this view has been substantiated by research. Further, by discussing the relationship between suicide and psychopathology, teens may see suicide as a less attractive method to cope with problems and be more likely to solicit help. Therefore, it may be that spending a substantial amount of time with students, choosing an appropriate style of administration and/or theoretical orientation, in addition to targeting only those students most at-risk may all have an impact on program effectiveness. All of these issues are of paramount importance and should be taken into account by practitioners who are considering implementation of a curriculum based program.

Direction for Future Research. More research should be conducted in this area in order to determine if curriculum based approaches do in fact reduce suicidal behaviors among those students identified through screening procedures as most at risk. Future research in this area should also attempt to measure program effectiveness consistently by incorporating measures which examine actual suicidal behaviors (e.g. ideation, attempts) as this was obviously one limitation to many of the studies reviewed here. In addition, the long-term impact of curriculum programs which have produced positive short-term outcomes should be evaluated in order to determine if these programs have any long lasting impact on suicidal behaviors among at risk students. Further, differences between female and male reactions to curriculum programs among at risk students should be

focused on in future studies as the research here indicates that male and female reactions to programs among the general population of students may differ. In addition, future research should examine cultural differences among groups of at risk students with regard to program effectiveness.

#### Professional Education for School Personnel

In the survey conducted by Garland et al. (1988), of 115 school systems which reported to have a school-based suicide curriculum program for students, 89% of the programs indicated that they also provided suicide education or training for school staff which is another primary prevention effort. Since in-services for school personnel are not student focused, there is a minimal risk of the program adversely affecting students which, as noted earlier is one potential problem with student focused curriculum approaches. Directing the focus toward school personnel rather than toward students makes this type of program not only more acceptable to many school administrators and teachers, but also to many parents (Klingman, 1990). Another benefit of in-service training is that it provides school personnel with the opportunity to develop crisis management teams and policies or review an already existing policy (Miller & DuPaul, 1996). King, Price, Telljohann, and Wahl (1999), surveyed 228 high school health teachers from urban, suburban, and rural schools across the country regarding their perceived self-efficacy in handling suicidal students. Teachers' self-efficacy toward offering support to suicidal students, referring students to a counselor, and identifying suicidal students differed significantly based on whether or not the teacher worked at a high school that offered an in-service program and had a crisis intervention team. This survey study supports providing in-services on suicide prevention to teachers as their

effectiveness in identifying and referring at-risk children may be enhanced by a training program (King et al., 1999).

Like the curriculum based approaches, the purpose of many in-service prevention programs are to increase school staff knowledge, awareness, and help-seeking behaviors regarding adolescent suicide. More importantly, the goal of staff training programs is to ensure that suicidal students are obtaining the appropriate services and are not being overlooked (Davidson & Range, 1999). In-services typically cover information about the warning signs of suicidal students, how to identify and refer at-risk students, the common myths/facts about suicide, and review of the policy for crisis situations (Miller & DuPaul, 1996). The duration of the in-service can vary with some programs being as brief as one hour to others that are as long as 18 hours. Typically a mental health professional, social worker, or a school psychologist provides the in-service.

Following is a review of various staff training programs which have been systematically evaluated in a school setting from the late 1980's to the mid to late 1990's. Program effectiveness is typically measured by self-report questionnaires which assess participants' knowledge gains, attitudes toward the severity of suicide, and frequency of help-seeking behaviors. As with the majority of evaluations on curriculum based programs, no studies on in-service training for school staff evaluate program efficacy by exploring decreases in actual suicidal behaviors among students.

In 1988, Shaffer, Garland, Whittle and Underwood, reported the effects of a suicide in-service program given to school staff in one of the first documented evaluations of such a prevention program. In-service training was given to 307 school personnel working in high schools located in urban, suburban, and rural areas in the state

of New Jersey. School personnel receiving the in-service were predominately teachers but also included counselors, administrators, nurses, PTA representatives, and school psychologists. The two hour in-service which covered the warning signs of suicide and crisis intervention training was provided by community mental health professionals. To measure the effects of the program, participants were given a self-report questionnaire before they attended the in-service and then again immediately after attending the in-service. Shaffer, Garland, Whittle et al. (1988) found that after school staff had attended the in-service, there was an increased percentage of participants who knew where to refer students who may be at-risk and an increased percentage of participants who could identify suicidal warning signs. In addition, a higher percentage of school personnel felt that after the in-service training, it was their responsibility to refer at-risk students (Shaffer, Garland, Whittle et al., 1988). Similarly, Reisman and Sharfman (1991) evaluated the effectiveness of another in-service program which was very comparable in content to Shaffer, Garland, Whittle et al. (1988) including the warning signs of suicide, crisis training, and symptoms of mental illness. Unlike Shaffer, Garland, Whittle et al. (1988), this program which was implemented in New York City high schools, included information on community referral resources and was longer in duration with six weekly 1 ½ hour sessions. Reisman and Sharfman (1991) found that following the in-service sessions, there was increased knowledge among participants on where to refer students and about teen suicide demographics. Also, Reisman and Sharfman (1991) reported that there was an increase in referrals to outside sources following the sessions and participants became more aware of their responsibility to refer. Finally, participants reported great satisfaction with the program. It is important to note that Reisman and

Sharfman (1991) did not base their conclusions on statistically significant findings but based their conclusions on anecdotal participant reports and general trends found among the participants. Despite some limitations, the prevention programs evaluated by Shaffer, Garland, Whittle et al. (1988) and Reisman and Sharfman (1991) appeared to produce positive outcomes in terms of knowledge increases, attitude changes, and help-seeking behaviors among school staff who participated.

Suicide education for school personnel is not a program specific to just schools within the United States. Klingman (1990) evaluated a school staff suicide awareness training program implemented in several junior high schools in Northern Israel. Fifteen school counselors all of whom were female participated in this study. Counselors were required to attend a 90 minute workshop where role plays and vignettes were used to assist in training counselors on how to appropriately respond to suicidal students. Participants were administered the Suicide Intervention Response Inventory (SIRI) as a pre- and post-test measure to assess the effectiveness of the workshop. The SIRI is a self-report measure which presents respondents with a hypothetical statement from a potentially suicidal student and requires respondents to choose their response from two statements. This instrument was administered to the counselors at the beginning of the workshop and then again two weeks following the workshop. Klingman (1990) reported that following the workshop, counselors scored significantly higher on the SIRI than before the workshop. It was concluded that this relatively brief workshop which used role playing and vignettes as methods to teach crisis intervention skills was effective in increasing participants' ability to deal with suicidal students appropriately (Klingman, 1990). However, it is important to note that the SIRI was used as a teaching guide in the



workshop and given the fact that this instrument was also used as the primary assessment tool, participants might have learned how to respond to test questions in an expected way by the time of the post-test (Klingman, 1990).

Angerstein, Spindler and Payne (1991) also evaluated a staff education program and found encouraging results. The 18 hour in-service given to counselors and school administrators working in middle and high schools was part of a district wide comprehensive prevention program which included other components. Angerstein et al. (1991) evaluated the effectiveness of each component of their program separately and so only the results of the staff education component will be discussed here. Like those programs already discussed, the suicide in-service evaluated by Angerstien et al. (1991) covered the warning signs of suicide, information on identifying and referring students, and provided crisis management training. This program also included intervention and postvention training. A self report survey which assessed awareness, attitudes, and knowledge toward suicide prevention was given to the 150 participants following their participation in the in-service and was also given to a control group of school staff outside of the district who did not receive any in-service training. Angerstein et al. (1991) reported that significantly more school staff who had attended the training sessions knew district related procedures for suicide incidents and felt suicide awareness should be provided to parents than did staff who had not received the training. In addition, staff with the training were more aware of the severity of adolescent suicide and were more eager to educate parents than staff without the training.

Unlike the studies already discussed which explored the effectiveness of prevention programs at the secondary level, Davidson and Range (1999) examined the

effectiveness of a one hour prevention training module for elementary school teachers. This in-service training was provided to 75 elementary school student teachers who had not yet received their Bachelor's degree. The majority of the participants were female and Caucasian. Much like many of the in-service programs implemented in the middle and high school settings, the one hour training session covered the warning signs of suicide, information regarding referral resources in the school and community, and information on how to identify at-risk students. The investigators evaluated the impact of the program by administering pre- and post-tests to participants which assessed attitudes toward suicidal students, knowledge about handling a crisis situation, and referral practices. Scores from pre- to post-test revealed a significant increase in teachers' willingness to view a suicidal threat more seriously and take specific actions such as refer the child to a school counselor in order to prevent it (Davidson & Range, 1999).

Conclusions. Even though in-service training for school personnel has become a common prevention approach implemented in various school settings (Garland et al., 1988), there are a very limited amount of studies which have evaluated the effectiveness of this type of program. The above studies have attempted to systematically evaluate the effectiveness of in-service programs on school personnel's attitudes, knowledge, and help-seeking behaviors. In summary, all researchers found that some type of in-service training on suicide prevention, regardless of duration, had a positive impact on participants. The positive outcomes reported across the studies included knowledge gains, changes in attitude, increased awareness, increase in referral practices, and perceived usefulness of the program. It appears that the use of in-services for school staff as a suicide prevention effort does have merit and can produce positive results. As illustrated

by Davidson and Range (1999), the in-service can be as brief as one hour and still produce encouraging results. Despite these promising findings, it is important to note that not all students who are suicidal exhibit the external warning signs such as those discussed in many in-service programs (Shaffer & Craft, 1999). Therefore, not all students who are at risk for suicide will be identified by school staff who have received in-service training.

Direction for Future Research. Some limitations of the above studies should be highlighted as well. First, none of the studies reviewed attempted to conduct follow-up investigations to determine whether or not the in-service continued to produce positive effects with the passage of time. This is one dimension that would greatly contribute to this area of research and should be considered for future studies especially since many of the studies reviewed measured outcomes by the use of a pre- and post-test. It is possible that participants learned how to respond to questions on the post-test after taking it the first time and this accounted for the positive outcomes more so than did participation in an in-service program. In addition, no studies examined the effect that the implementation of in-services for school staff has on the rates of suicidal behaviors among students. As research matures in this area, investigating the long-term impact that in-services have on rates of suicidal behavior is essential and is the sole purpose of implementing suicide prevention programs.

#### Suicide Education for the Media

Given the reported contagion effects that a youth suicide may have on other youngsters in the surrounding community or school, educating the media on the reporting of adolescent suicide is another recommended primary prevention effort (Miller &

DuPaul, 1996). Prominent displays of suicide in the media may produce an increase in the rate of suicide particularly among people ages 15-19 for a one to two week period following the suicide. In addition, following a publicized suicide, suicide clusters among adolescents have been found to happen more frequently than as anticipated by chance alone (Shaffer, Garland, Gould et al., 1988). These findings indicate that school practitioners should strongly encourage the media to report adolescent suicides in a way that avoids sensationalism, and that de-emphasizes the suicide and the method used. In addition, media professionals should be urged to highlight the preventative efforts that the school is taking and report where students can go to seek assistance (Miller & DuPaul, 1996). Finally, Wenckstern and Leenaars (1993) recommend that following a crisis in a school such as a suicide, a spokesperson who is involved in the postvention procedures should be assigned to talk with the media in order to ensure that the information given to the media is both accurate and consistent. The positive aspects of the postvention procedures should also be highlighted when talking with the media (Wenckstern & Leenaars, 1993).

The CDC has set forth a list of guidelines for the media to follow when reporting a teen suicide. These preventative guidelines stress the minimization of suicide facilitation (Shaffer & Craft, 1999). If adhered to by media professionals, these guidelines may help to diminish the negative and possible contagious effect of publicity about suicide and assist in the promotion of further referrals (Berman & Jobes, 1995). Unfortunately, there are no outcome studies available for review which have investigated the effectiveness of the CDC guidelines (Shaffer & Craft, 1999). However, the effectiveness of preventing suicide by influencing media reporting has been demonstrated

in Vienna (Etzersdorfer & Sonneck, 1998). After implementation of a subway system in Vienna, it became an increasingly used method of suicide for residents. Reports of the suicides made by the media were widely recognized as being sensational with pictures of the deceased and graphic titles plastered across front pages of the newspapers. The media was given suggestions from the Austrian Association for Suicide Prevention (OVSKK) on how to report suicides more appropriately. Information which was provided emphasized the potential impact that mass media reporting can have on suicidal individuals in the surrounding community and on family members of the deceased. Media reporting of suicides changed greatly following the suggestions provided by OVSKK with reports becoming increasingly moderate. In addition, subway suicides and attempts decreased and have remained relatively low since (Etzersdorfer & Sonneck, 1998). Overall suicide rates also decreased as well in the year following the modification of media reporting. Even though the investigators in this study cannot conclusively say that the changes in media reporting were solely accountable for the decrease in suicide rates, this field project provides preliminary support for the effectiveness of educating the media.

### Secondary Prevention

#### Crisis Hotlines

Crisis hotlines have been noted to be one of the most prevalent types of secondary prevention efforts for both adolescents and adults. Research suggests that crisis hotlines are appealing to teenagers (Miller & DuPaul, 1996) particularly because they are open throughout the night, sustain anonymity, and contact is made through the telephone which is an especially favorite method of communication for youngsters

(Berman & Jobes, 1995). Further, research has shown that adolescents may be potentially more likely to use hotline services following participation in a suicide curriculum program (Shaffer et al., 1991).

Most hotline services are offered through mental health associations, hospitals, colleges, or volunteer groups. Hotline services typically share similar characteristics such as they are open 24 hours a day, anyone can call to receive assistance for a variety of problems particularly suicide, callers can remain anonymous, and advisors are usually nonprofessional and paraprofessional workers (Bleach & Claiborn, 1974; Shaffer, Garland, Fisher, Bacon, & Vieland, 1990). In addition, it has been noted that unlike more conventional mental health services, the training hotline counselors receive is minimal (Bleach & Claiborn, 1974). Within these similarities, differences in emphasis may exist as well. For example, some hotline services may focus more on providing general information and then referring the caller to a mental health agency after determining the problem. Conversely, other services may provide counseling by fostering a therapeutic and supportive environment and recommend that callers drop in for further counseling from a more qualified supervisor (Shaffer, Garland, Fisher et al., 1990).

Since crisis hotlines are associated with treatment as well as prevention and are not as conducive to school settings as other approaches are, they are typically not thoroughly reviewed in discussions of school-based prevention programs. Because implementation of a crisis hotline into a school system is feasible and hotlines are popular among teenagers, studies which have investigated their effectiveness will be reviewed here. Investigators in these studies attempt to explore hotline efficacy in a number of ways including rating hotline workers effectiveness in handling simulated calls,

reviewing self-reports of individuals which have reported using crisis hotlines, or examining changes in suicide rates in communities which have introduced hotlines.

Slem and Cotler (1973) explored the impact of a "Hotline" telephone service introduced in Oakland County (suburban Detroit) in 1970. The three primary objectives of Hotline were (1) to assist callers with an immediate crisis such as anxiety or suicidal thoughts, (2) to help callers in settling common problems in living with peers or family, and (3) to provide the community with information regarding current adolescent problems. The investigators administered a "Community Awareness Questionnaire" which included questions about the perceived effectiveness, awareness, and utilization of Hotline to 1,763 students at a high school which was serviced by the telephone crisis center. To obtain more information, a compilation of the demographics of all incoming calls at Hotline were analyzed by researchers during the year of 1971. In order to assess the influence of Hotline on the surrounding community, investigators also examined annual reports of the Birmingham (Michigan) Police Department and the Oakland County Juvenile Court.

Results of the Community Awareness Questionnaire demonstrated that with regard to awareness and function of Hotline, 98% said they heard of Hotline, and 79% indicated that they knew the general purpose of the service (Slem & Cotler, 1973). In addition, Hotline ranked high with regard to favorability among students. Five percent of respondents reported having used Hotline (significantly more females than males), 33% of respondents knew someone who had used the Hotline service, and 78% could see themselves using a nontraditional facility such as a Hotline to assist with problems. Of the students who reported using Hotline, 68% responded positively suggesting that

Hotline had adequately assisted them with their problems while 32% reported a negative experience. In order to assess students' perceptions of Hotline, questions regarding reasons why people might contact Hotline were included. Overall, students responses were consistent with the primary goals of the program suggesting that students hold sensible views about the function of Hotline. According to the investigators, results of this questionnaire indicate that through publicity, the purpose, availability, and usage of hotline programs can become widely recognized. After evaluation of incoming calls during the year of 1971, it was concluded that the two most common problems presented to Hotline were arguments between the caller and their significant other, and family conflicts. With regard to the potential impact of the service on the community, a significant reduction of incidences of youth police and court contacts were noted during the year of 1971. Investigators report that this decrease may well be due to the introduction of Hotline in addition to a community wide effort to be sensitive to problems experienced by youth (Slem & Cotler, 1973).

Similar to Slem and Cotler (1973), King (1977) evaluated the effectiveness of a telephone counseling center by administering a questionnaire to a large population of students serviced by a hotline center. King (1977) was specifically interested in responses of individuals who had reported using a telephone service to obtain counseling. A questionnaire which assessed respondents actual experience of the hotline service or expected experience of using the service was distributed to 3,000 sophomore through senior college age students. Of the students surveyed, 66 reported having used hotline services to obtain counseling. The telephone listeners were all community volunteers who could consult with four on-site professionals. Of the 66 reported users, 42 were female



while only 24 were male providing further evidence that females more commonly utilize telephone counseling services. Among the male callers, 67% indicated that telephone counseling had assisted them at least somewhat. Female callers, particularly those who talked with male counselors, reported a significantly larger and more positive effect on their life than did males as a result of the telephone counseling. More specifically, 80% of female users reported positive results of telephone counseling. Only 8% of the 66 reported users of the telephone service indicated they were receiving other more traditional treatment at the time of the call suggesting that hotline services may be reaching a population not reached by other mental health services. According to King (1977), the results of this study suggest that telephone counseling services can have a positive impact on users, particularly females, even when staffed by paraprofessional workers.

Unlike the two studies above, Bleach and Claiborn (1974) explored the effectiveness of hotlines by evaluating the adequacy of information and counseling provided by hotline listeners. Four different hotlines which provided services mainly to high school and college age individuals were examined. These hotlines were also primarily staffed with high school and college age students. The adequacy of the hotline advisors to counsel and provide callers with appropriate and accurate information was investigated by making a series of simulated problem calls to each of the four hotlines services. Four problem calls were developed to mirror those typically encountered by hotlines and included pregnancy, loneliness, parent difficulties, and drug-related problems. Hotline counselors were blind to when the simulated calls would be administered but were made aware of the experimental calls. Each of the four problem

calls were made to each of the four hotlines six times by six undergraduate students who were trained to respond to hotline advisors in a consistent and standardized fashion. The investigators measured the counselors' effectiveness in responding to these simulated calls by calculating the number of alternative problem solutions given by the hotline workers and the number of referrals made to other community resources. In addition, a rating of the accuracy of information provided was made. Counseling skills such as empathy, warmth, and genuineness were also examined. One significant finding in this study was that the hotline service which was staffed by only college students and which required a more rigorous interview procedure for acceptance of volunteer counselors, was rated significantly more superior in regard to counseling skills as compared to the other three hotline services. Other results indicated that across all four hotline services, significantly fewer alternatives were provided by hotline workers and accuracy of information level was significantly lower for drug-related calls as compared to other problem calls. In addition, across all problem calls and hotline services, the level of accuracy of the information provided to callers was generally low with 15% of callers receiving false or inaccurate information. Finally, no relationship was found between the amount of time the counselor had worked at the hotline service and the quality of information provided or his or her ability to effectively counsel. Improvement may require that workers participate in a training program. The investigators noted some limitations to their study including the fact that calls were arbitrary and more artificial in nature than a regular call, and the scales which were used to measure the effectiveness of the calls may be more relevant to traditional psychotherapy services and clients (Bleach & Claiborn, 1974).

Like Bleach and Claiborn (1974), Apsler and Hodas (1976) also explored crisis hotline effectiveness in providing accurate and appropriate information to callers. However, in this study, the simulated calls dealt with a “non-crisis” problem. Specifically, information regarding dental problems was requested. A total of 21 simulated calls were made by two callers - one male and one female. The callers were instructed to respond to hotline listeners in a standardized fashion. The hotline being evaluated was operated by approximately 50 volunteer listeners and seven full time paid personnel. All hotline counselors were required to pass a selection process and undergo training before being approved as counselors. In order to provide callers with appropriate information, the investigators determined that counselors needed only to obtain four pieces of information from callers and had readily available lists of community dental services to which they could refer callers. Results demonstrated that of the 21 simulated calls, in only nine were completely appropriate suggestions or referrals received from hotline advisors. In the 12 remaining calls, all callers were given one or more incorrect referrals. An example of an incorrect or inappropriate referral would be if a counselor referred a caller to a dental center that was farther from their home than another adequate service. No relationship was found between the amount of information obtained by counselors and the referral provided. Some counselors requested all required information and still failed to give callers an accurate referral. One potential factor suggested by the investigators which may explain the inaccuracy of information provided is the belief among counselors that the provision of non-crisis services is not as important as providing crisis intervention services. The investigators further stated that even though it is impossible to generalize the results of their study to other requests for types of

information, hotlines should carefully assess counselor's competency in providing non-crisis and other information to callers (Apsler & Hodas, 1976).

In a more recent study by Miller, Coombs, Leeper, and Barton, (1984) actual suicide rates among various age and ethnic groups in counties which implemented crisis hotline centers were compared to counties which did not have a crisis hotline center or which experienced no change in number of crisis centers between the years of 1968 to 1973. Twenty-five locations in the U.S. which had no crisis hotline service prior to 1968 and then implemented a crisis hotline service by 1968 were compared to 50 locations which showed no change in crisis center implementation between 1968 to 1973. Age, race, and gender specific suicide rates were investigated for all years among all centers. The researchers found that a small but significant reduction among young White female suicide rates (55% decline in the mean suicide mortality rate) occurred in the counties which introduced a new service as compared to counties that did not introduce a new service. The introduction of a crisis center did not impact suicide rates among any other population studied. This study was repeated with data from a different time span and these results were replicated. Given the fact that most hotline callers are young females, the investigators in this study report that this may explain why significant reductions in suicide rates among other populations studied were not found.

Conclusions. The efficacy of telephone counseling has been questioned by a number of mental health professionals (Shaffer & Craft, 1999). Because many hotlines are operated by workers who are community volunteers with no formal clinical training, the belief exists that paraprofessional hotline workers have the potential to provide inaccurate or generic information to callers (Shaffer & Craft, 1999). Based on the above

studies, it difficult to draw any firm conclusions regarding the effectiveness of hotline services staffed by paraprofessional workers as each investigator attempted to evaluate hotline efficacy in a slightly different way and found varying results. According to consumer reports of hotline effectiveness, it is apparent that the counseling provided by hotline advisors can have a positive impact on callers, particularly young females (King, 1977). In addition, there is evidence which demonstrates that hotlines may influence suicide rates in the desired direction among those most frequently reported to use them - young Caucasian women (Miller et al., 1984). However, among the studies which investigated crisis hotline effectiveness by rating simulated calls, hotline advisors demonstrated limited effectiveness in providing callers with correct or accurate information (Bleach & Claiborn, 1974; Apsler & Hodas, 1976).

Practitioners contemplating hotline implementation should consider that these services have shown limited effectiveness. In addition, successful implementation of a hotline into the community or a school system is highly dependent on support provided from mental health services (Garland & Zigler, 1993). If school systems do choose to implement a crisis hotline service, it is suggested the services are operated by rigorously screened and highly trained counselors who are closely supervised by qualified mental health professionals. Finally, as hotlines have shown to be of some benefit to frequent callers (Caucasian females), the use of hotline services should be strongly encouraged among high risk groups (Garland & Zigler, 1993).

Direction for Future Research. Even though research demonstrating crisis hotline effectiveness is limited, these services have received favorable ratings among many adolescents (Slem & Cotler, 1973; Shaffer et al., 1991; Berman & Jobes, 1995). In

addition, there are indications that hotlines are reaching a population of troubled young adults not being reached by other traditional counseling services (King, 1977). Thus, more research, particularly with the adolescent population, should be conducted to further determine the efficacy of this prevention strategy. Researchers should attempt to examine the effectiveness of these services in a consistent and comprehensive fashion by examining their impact on actual youth suicide rates, by reviewing reports of consumer satisfaction, and examining accuracy of information provided by hotline advisors.

#### Multiple Stage Screening Approaches

A self-administered method of direct screening is another proposed secondary prevention effort. Advocates of direct screening approaches point out that unlike some primary prevention programs such as curriculum approaches and in-service training for school personnel, direct screening does not impose on students and teachers the responsibility of acting as mental health professionals (Shaffer & Craft, 1999). Instead, most screening methods are proactive as they involve asking teens directly to disclose their mood state and whether or not they are suicidal; a procedure which is particularly essential following a youth suicide in the community. A two or three-step systematic screening procedure is typically employed with the goal of assessing for the precursors of suicide (Shaffer & Craft, 1999). In the first step of the screening process, teachers commonly administer an initial school-wide screening instrument. A school psychologist or other trained mental health professional typically conducts the second stage of the screening process which involves an in depth interview to assess for more serious suicidal behaviors with youngsters identified as at risk based on the initial screening (Reynolds, 1991). The third step involves referring at risk teens for further assessment and/or

psychiatric treatment (Shaffer & Craft, 1999).

Following is a review of studies which have examined the effectiveness of various screening instruments to accurately identify suicidal adolescents. It is important to note that data on the effectiveness of these screening instruments so far is primarily psychometric in nature. Unlike the prevention programs discussed previously, outcome studies regarding the impact that screening procedures have on the individual or more importantly on actual rates of suicidal behaviors has not yet been studied. In the following studies, the efficacy of screening procedures has been assessed by examining the sensitivity rate of the initial screening instrument (proportion of true cases correctly identified as at risk ) and/or the specificity index (proportion of cases correctly identified as not at risk) (Reynolds, 1991).

Reynolds (1991) demonstrated the effectiveness of a two-step screening procedure with an ethnically diverse high school student population. Students were initially screened in stage one with the Suicide Ideation Questionnaire (SIQ) which is a paper and pencil self-report measure used to assess the level of suicide ideation exhibited by the youth. Based on a conservative cutoff, a group of 71 teenagers from the original sample were identified as potentially at risk. This group of students were then interviewed in stage two by trained graduate students in school psychology or students holding Bachelors degrees who had previous experience with at risk youth. A semi-structured interview called the Suicidal Behaviors Interview (SBI) was used to examine "specific suicidal behavior risk status" (Reynolds, 1991, p. 69). Interviewers in this study were unaware of participants' SIQ scores and were not provided with any other information relative to the youth's risk status. Using a cutoff score on the SBI, 18 participants were

then identified as at risk for serious suicidal behaviors. When examining participants' SIQ scores, there was a significant difference between those identified as at risk on the SBI as compared to those not identified as at risk. In addition, the reported sensitivity rate of the SIQ using a conservative cutoff score was 100% demonstrating that there were no false negative cases (missing a youth who is truly at risk) based on the SIQ. The specificity index, however, was 49% indicating that there was a substantial over identification of at risk students at the first stage of screening. Reynolds (1991) has suggested that over identification is more acceptable than is making false negatives or missing youngsters who are in fact at risk. Reynolds (1991) notes some limitations specific to these identification procedures including that this process rests strongly on the accuracy of each student's own self-report. If students are unwilling to disclose their current levels of suicidal ideation, then this procedure will be ineffective. However, despite limitations and given the severity of adolescent suicide, Reynolds (1991) asserts that a prevention effort which is proactive in nature such as multiple stage screening procedure should be considered as it has demonstrated efficacy in identifying large numbers of at risk students.

Shaffer and Craft (1999) have also developed a multi-stage screening process for the identification of suicidal students. In the first of three stages, all students are administered a brief self-report questionnaire called the Columbia Teen Screen. Students who are at clinical levels on this measure then advance to the next stage in which they are assessed further for suicide risk by the Diagnostic Interview Schedule for Children (DISC), a structured computerized interview that includes all common child and adolescent diagnoses. In stage three of the screening process, the clinician personally



interviews each student whose DISC results indicate they are at risk and then determines whether the youngster is in need of treatment or further evaluation. Students who are deemed at high risk are those who confess to a recent suicide attempt or ideation, have either a major depressive disorder or dysthymic disorder, or have an alcohol or substance abuse problem. Lastly, a case manager notifies students' parents to assist students in receiving treatment or other interventions. The efficacy of this screening procedure was investigated in a 1996 study with 2004 youngsters from eight metropolitan area high schools. Of the original sample, 546 students were identified as at risk based on scores from The Columbia Teen Screen. This indicated that they met one of the initial screening criteria for depression, dysthymia, substance or alcohol abuse, or chronic suicide ideation or previous attempt. The researchers reported a sensitivity rate of 88% (proportion of true cases of suicidal risk identified) and a specificity index of 76% (proportion of cases correctly identified as not at-risk) for the Columbia Teen Screen given at the first stage of screening (Shaffer & Craft, 1999).

Conclusions. Reynolds (1991) and Shaffer and Craft (1999) found promising results in their preliminary studies of various multiple stage screening procedures. Despite these findings, limitations to using screening procedures should be highlighted. First, the accuracy of standardized screening devices to predict highly variable, individual behavior is limited (Garland & Zigler, 1993; Miller & DuPaul, 1996). The effects of chance events may not be taken into account by screening instruments (Garland & Zigler, 1993). In addition, as has been illustrated in the above studies, initial screening instruments used in the first stage of the screening process may greatly over identify students as at risk for suicide which could be possibly dangerous given the contagion

impact of suicide (Garland & Zigler, 1993). However, it has been asserted that even though these identified students may not necessarily be immediately at risk for suicide, they may be experiencing other problems which warrant some intervention (Miller & DuPaul, 1993). Also, Reynolds (1991) has argued that over-identification is actually safer than missing a youth who is truly at risk for suicide.

Although there is no empirical research which supports the view that exposure to suicidal screening instruments will in itself promote suicidal behaviors, practitioners should be aware that screening methods may not be widely accepted among school administrators and parents for this reason (Miller & DuPaul, 1996). In a study which surveyed the acceptability of three school-based programs for prevention (curriculum approaches, staff training programs, and school wide student screening programs), school wide screening was deemed the least acceptable prevention program based on the responses of 185 high school principals (Miller, Eckert, DuPaul, White, 1999). Thus, it may be that practitioners who wish to develop and incorporate school wide and multiple stage screening for suicidal risk will be faced with resistance from either parents and/or administrators. In addition, given the limited resources which are available to school psychologists and counselors, screening all students within a school may not be feasible (Miller et al., 1999; Miller & DuPaul, 1996).

Despite these obstacles, the significance of assessing for suicidal risk should not be overlooked. At the very least, school psychologists and counselors should be familiar with instruments and in-depth interviews which assess for suicidal risk and be competent in assessing suicidal potential in all students (Miller & DuPaul, 1996).

Direction for Future Research. As many screening instruments are in the developmental stage, studies available for review on their effectiveness are primarily psychometric (Berman & Jobes, 1995). Therefore, it is clear that more research should be conducted to examine the efficacy of various screening instruments in identifying and treating suicidal students. In addition, future research in this area should also examine the sensitivity rate and specificity index of using various suicidal screening instruments with ethnically diverse groups of adolescents. Finally, as research expands in this area, it will be important to assess the impact of multiple stage screening on actual adolescent suicide rates.

#### Counseling and Psychotherapy

Another suggested secondary suicide prevention approach which typically occurs following the identification of at risk youth, is counseling and/or psychotherapy. Many youngsters who engage in or who are strongly thinking about engaging in self-harm behaviors are placed in inpatient units or provided with extensive outpatient treatment (Berman & Jobes, 1991). In-depth counseling and psychotherapy for suicidal adolescents is typically considered to be beyond the domain of school-based practice and more typically associated with treatment rather than prevention. Thus, unlike previous sections of this paper which have examined empirical literature on various prevention programs, outcome studies on the effectiveness of therapeutic approaches with suicidal clients will not be thoroughly reviewed here. Some highly recommended crisis intervention techniques, general suggestions for counseling suicidal clients, and several commonly used therapeutic approaches will be discussed briefly. School psychologists should not only be competent in assessing and screening for suicidal risk but they should be

somewhat knowledgeable about crisis intervention and counseling techniques to use if placed in a situation with a potentially suicidal student (Poland, 1989).

Psychotherapy for a suicidal adolescent should begin by implementing the appropriate crisis interventions to reduce and protect the teen from any self-harm behavior. Some of the most important crisis intervention techniques that Berman and Jobes (1991) have suggested in order to reduce teens' self-harming behavior are to: (1) restrict access to means of harm (e.g. working closely with caregivers to help remove firearms, pills from house), (2) use a "no-suicide agreement" where the teen agrees not to hurt him or herself for a certain period of time, (3) decrease isolation (e.g. arranging for suicide watch by a significant other), (4) implement a problem solving intervention (e.g. problem exploration, problem definition, developing alternative solutions), and (5) assure the student that the counselor is available and accessible to him or her in all emergency situations by providing the youth with emergency phone numbers (Berman & Jobes, 1991). In addition, when talking with a suicidal student, Poland (1989) recommends that counselors remain calm and use their listening and reflecting skills while being careful not to minimize the student's problem. Also, the counselor should work to foster a caring, trusting, and working relationship with the student. Finally, when a counselor or psychologist learns that a student is suicidal, the child's parents or guardian and potentially the school principal need to be notified immediately (Poland, 1989).

Beyond crisis intervention, providing effective therapeutic treatment to suicidal adolescents is of paramount importance. Outpatient individual psychotherapy is the most common intervention used with suicidal adolescents. Clinicians have suggested that individual psychotherapy with suicidal clients be highly structured and cognitive-

behavioral in orientation (Berman & Jobes, 1991; Brent & Kolko, 1990; Weishaar & Beck, 1990). The effectiveness of using cognitive-behavioral treatment with depressed adolescents has been documented in several outcome studies (Reinecke, Ryan, & DuBois, 1998). Given that depressed adolescents are at risk for suicidal behavior, cognitive-behavioral therapy may be an appropriate method of treatment for suicidal adolescents. Berman and Jobes (1991) indicate that since many suicidal adolescents demonstrate cognitive deficits, cognitive-behavioral therapy is helpful in teaching the youngsters to monitor and eventually decrease their negative thoughts while learning to increase positive thoughts and activities. Cognitive problem-solving behaviors are also taught to the adolescent in this type of therapy. He or she learns to identify the problem, develop alternative solutions, generate possible consequences and reactions of others to the solutions, make decisions, and devise a plan to carry out the selected solution. In a study comparing the effectiveness of supportive therapy and a problem solving approach to therapy in treating young adults (aged 15 to 24) who experience clinically significant levels of suicidal ideations, problem solving therapy was more effective than supportive therapy in decreasing depression, hopelessness, and loneliness at a three month follow-up. However, both therapy approaches were equally effective in reducing suicidal ideations (Lerner & Clum, 1990).

A number of other therapeutic approaches for suicidal adolescents have been discussed in the literature (Berman & Jobes, 1991). Group outpatient therapy has been suggested in treating suicidal clients as group support has been shown to help clients learn healthy ways to cope with stress and emotions, and improve both self-control and self-esteem. One therapeutic approach documented in several studies to be effective in

treating depressed adolescents which may also be appropriate to use with suicidal teens is interpersonal therapy (Mufson, Weissman, Moreau, & Garfinkel, 1999; Fombonne, 1998). Desensitization or anxiety management training, which is particularly appropriate when the suicidal youth exhibits behaviors characteristic of anxiety, is another area which can be focused on in individual or group counseling. In addition, interventions that teach suicidal individuals how to deal with loneliness without becoming anxious or sad may also be appropriate. Social skills training for the suicidal adolescent who has difficulty handling and attaining relationships with others has also been employed in therapy. Anger and aggression management training has been recommended as well for adolescents whose suicidality is characterized partially or mainly by aggression. Finally, individual or group counseling for substance abuse problems has been recommended for suicidal teens who deal with their problems by abusing drugs or alcohol (Berman & Jobs, 1991).

As discussed earlier in this paper, familial and parental dysfunction can put adolescents at risk for suicidal behaviors. Therefore, family therapy for these suicidal adolescents has been suggested and focuses primarily on decreasing family dysfunction (Berman & Jobs, 1991). The goals of family therapy are typically to increase effective parent-child communication (specific focus is placed on parents with psychopathology), increase family support for the child, especially if the adolescent has recently made a suicide attempt, and improve the family's problem-solving techniques (Berman & Jobs, 1991).

The therapeutic approach most appropriate for suicidal adolescents varies based on each youngster's presenting problems which surround his or her suicidality. Research

indicates that this population of clients is highly noncompliant with treatment (Shaffer, Garland, Gould et al., 1988) which makes it easy for counselors to become discouraged and react in a negative fashion toward the suicidal youngster (Berman & Jobes, 1991). However, the provision of counseling services to adolescents who demonstrate significant levels of suicidality is crucial and should be considered a vital component of any secondary prevention effort.

## IMPLICATIONS FOR SCHOOL PSYCHOLOGISTS AND OTHER SCHOOL PRACTITIONERS

The school psychologist's role in the prevention of adolescent suicide spans primary, secondary, and postvention programs. As highly trained mental health professionals in the school system, school psychologists can advocate for and assist in the implementation of various school-based prevention programs. School psychologists are also in a logical position to aid in the formation of school crisis management teams. Further, school psychologists can help write and then follow procedures outlined in a written suicide prevention and postvention policy.

Several primary school-based suicide prevention approaches were discussed previously including suicide education for school personnel. This primary prevention program received promising evaluations in the literature. School psychologists should, therefore, ensure that their school system implement annually (at the very least) in-service training on suicide prevention for all school staff involved with students such as teachers, nurses, school administrators, social workers, and counselors. School psychologists can first advocate for in-service programs by talking with school principals, special education directors, and other school administrators about their implementation. Most importantly, school psychologists should offer to develop and provide the in-service in their school system. An in-service program should last a minimum of one hour and have the goal of educating school staff on the severity of suicide, warning signs, and how to go about referring a potentially suicidal student. In-service programs should not only emphasize the warning signs (e.g. previous attempt, mood changes, academic



failure, giving away valued belongings) and causes of suicide, but should also be sensitive to cross cultural factors that play a role in suicidality among ethnically diverse students. As reported earlier, Native American males aged 15 to 24 have the highest rate of suicide in this age group when compared to males and females of other ethnic backgrounds. Thus, school staff working in areas with a high population of Native Americans should especially be made aware of cultural risk factors specific to the Native American culture (e.g. disruption of tribal unity). During suicide prevention in-service training, it is also important that school psychologists ensure all school staff are aware of who serves on the school's crisis team and what their role is in the prevention and postvention of suicide. In addition, in-service training should include a review of the school's written suicide prevention and postvention policy procedures.

School psychologists can further expand their role in the prevention process by advocating for and assisting in the development and implementation of other school-based prevention programs reviewed previously in this paper such as curriculum education for students. School psychologists should be cautious, however, when developing suicide curriculum given the reported undesired effects on students of some programs. It is suggested that school psychologists advocate for and adopt a curriculum program which follows a mental illness orientation, targets only those students most at risk, and is lasts at least a full school semester.

The introduction of a crisis hotline was another secondary prevention program reviewed in this paper which appears to be a popular program among adolescents. School psychologists who feel their school system would benefit from a crisis hotline particularly following a student suicide should work closely with community agencies to

provide their students with access to a hotline. School psychologists should research community hotlines made available to their students to ensure that hotline advisors have been screened and trained accordingly, are providing appropriate information to callers, and are supervised by qualified mental health professionals. School psychologists can then provide students, school staff, and parents with information on how students can go about accessing the appropriate community crisis hotline through school web pages or during in-service training.

Finally, school psychologists involved in the prevention of adolescent suicide should consider that other school systems have adopted comprehensive approaches to prevention which incorporate several primary and secondary programs in addition to postvention. Systematic evaluations of comprehensive programs in the literature are lacking. However, preliminary evaluations of comprehensive programs are encouraging (Angerstein, et al., 1991; Zenere & Lazarus, 1997).

Even though crisis management teams and written suicide prevention and postvention policies were not addressed in the review of literature, both are essential to have. A written suicide prevention policy should be followed when a suicidal student initially seeks assistance from the school and there is no time to refer the student to an outside mental health agency. Written postvention procedures are important to follow after a student suicide where the primary goal is to prevent further student suicides. In addition, having a crisis management team and a written suicide prevention and postvention policy help to facilitate the implementation of more extensive programs. The school psychologist's role in the formation of a crisis management team and in the development of a written suicide prevention and postvention policy will be addressed

briefly. More focus will be placed on the school psychologist's role in following specific prevention and postvention procedures and how their duties relate to the implementation of specific school-based prevention programs.

If a crisis management team has not been formed in a particular school system, school psychologists can advocate for its development by contacting the appropriate school administrators (e.g. school superintendent or assistant superintendent) and discussing implementation. A crisis management team typically intervenes after a crisis such as a suicide, murder, or accident to provide services and answer questions. One primary purpose of a crisis management team in suicide prevention is to follow and/or oversee the procedures outlined in the written suicide prevention and postvention policy. A crisis management team should be composed of some or all of the following school staff members: school psychologist, school counselor, regular and/or special education teachers, school nurse, and assistant superintendent.

After forming a crisis management team, a written suicide prevention policy should be produced which gives school staff specific steps to follow when a student threatens suicide or manifests potential intent to attempt or commit suicide. School psychologists can initiate the development of a policy by seeking out the appropriate school administrators or other crisis team members and working closely with them to generate the procedures. Among other information, the policy should specify who conducts the in-depth crisis interview with the adolescent identified as suicidal. Given the training of a school psychologist, he or she is most likely to conduct the crisis interview and assesses the severity of the suicidal threat. In addition, the policy should address who is involved in formulating a plan of action, and if and when social services,

parents, or a mental health agency should be contacted. It is suggested that the school psychologist who conducts the interview meet with another crisis team member to develop a plan of action if needed. As highlighted earlier in this paper, school psychologists should be competent in crisis management techniques (e.g. forming a no suicide agreement) as the application of these skills may be very important in the development of a plan of action. In addition, the written suicide prevention policy should outline specific procedures regarding how to document each step in the prevention process, and what to do if a suicidal student happens to contact a school staff member during non-school hours.

After a suicide prevention policy is in place, school psychologists and other crisis team members should also generate written postvention procedures. The postvention policy should highlight the importance of having a school mental health professional such as a school psychologist provide referral forms to all school staff and track all student referrals. In addition, the policy should require that school psychologists somehow identify students who may be at risk following the student suicide. One way to identify large numbers of at risk students is through multiple stage screening procedures which were discussed earlier in this paper as a potentially effective secondary prevention program. School psychologists who have sufficient resources and support from crisis team members and school administrators should consider implementing multi-stage screening programs not only following a student suicide but on an annual basis. School psychologists should refer any adolescent identified as suicidal to a reputable mental health professional for in-depth counseling. In some schools, adequately trained school psychologists may provide these counseling services themselves.

The postvention policy should also require that a crisis team member work with the media to decide what information they should receive and report following a student suicide. Educating the media was discussed previously in this paper as a primary prevention strategy. Thus, school psychologists could potentially implement this program by serving as the media liaison after a student commits suicide. The school psychologist should provide the media with information which emphasizes what the school is doing to help students and staff deal with the youth's death and information that de-emphasizes how he or she died. In addition, the school psychologist can educate the media on the reporting of suicides and their potential contagion impact by creating brief handouts and passing them out to all media professionals. Even before a suicide has occurred, school psychologists may want to work closely with other mental health professionals in the community in an effort to frequently educate the media (through brief in-services or by handouts) on contagion effects, severity of adolescent suicide, and the need to report suicide in a none dramatic manner. Poland (1989) dedicates an entire chapter in his book *Suicide Intervention in the Schools* to dealing with the media. School practitioners interested in more detailed recommendations on how to handle the media should refer to this chapter.

Other postvention procedures should be outlined in the policy as well. Even though school psychologists will potentially play less of a role in these duties, they still warrant brief mention. Thus, the postvention policy should specify who is to verify the student death and how the impact that the suicide had on the student body is to be measured. In addition, the policy should designate a school administrator or professional to contact the adolescent's parents. The policy should suggest that the student's parents

be contacted by a school professional within 48 hours of the suicide to further confirm the suicide and express the empathy of the school. Postvention procedures should also ensure the news of the youth's death is presented to all students as soon as possible in order to prevent spreading of rumors. Finally, the policy should stress the importance of holding meetings to educate staff on ways for them to help students cope, deal with their own grief produced by the suicide, and to help make them more aware of students who may be most vulnerable to the negative impact of a suicide (Sandoval & Brock, 1996).

## CONCLUSION

Along with accidents and homicides, suicide has been named a leading cause of death for adolescents (Sandoval & Brock, 1996). In addition, it has been determined that males have higher rates of suicide completion than do females across all age and ethnic groups while females are twice as likely to attempt suicide. As addressed in background section of this paper, the most dramatic increase in suicide rates between 1980 and 1992 occurred among 15 to 19 year-old African American males. Despite this increase, the rate of suicide for African American adolescent males is still lower than the rate for Caucasian adolescent males. The suicide rate for Native American males aged 15 to 24 is higher than the rate for either Caucasian males or males of other ethnic backgrounds in this age group. Along with Asian American and Pacific Islander males aged 15 to 24, Latino males have a lower rate of suicide when compared to Native American, Caucasian, or African American males.

As also discussed in the background section of this paper, adolescent suicide typically takes place in the spring months of the year, can be triggered by an event such as a birthday or anniversary of a loved one's death, and usually occurs in the adolescent's home. The most common methods of adolescent suicide completion are firearms and explosives while the most common mean of adolescent attempted suicide is ingestion of pills. The best predictors of a future suicide completion may be the presence of past suicidal behaviors. Several suicidal behaviors examined in this paper and that may lead up to a completed suicide are attempted suicide, self- mutilation, ideations or thoughts about suicide, and threats about killing oneself. Finally, some of the most common risk

factors or precursors associated with suicidal behaviors reviewed in this paper include psychopathology such as depression or substance abuse disorders, precipitating events such as a break-up with a significant other, behavioral characteristics such as social alienation, family and parental dysfunction, and suggestibility and/or cluster suicides. Cross cultural factors such as acculturation stress in the Latino and Native American culture or community violence in the African American culture were briefly highlighted as well as potential risk factors.

As there is a clear need for suicide prevention efforts, the primary focus of this paper was to describe the structure and effectiveness of various school-based prevention programs. By reviewing the empirical literature on various school-based suicide prevention strategies which are most appropriate to middle and high school settings, school psychologists and other practitioners can become more cognizant about primary and secondary prevention programs which have demonstrated positive results and consider promoting and/or implementing similar programs in their school system. Both primary prevention and secondary prevention programs were discussed. Overall, research regarding the effectiveness of these various prevention approaches is lacking.

The primary school-based prevention programs highlighted in this paper were suicide education for students, professional education for school personnel, and suicide education for the media. Suicide education targeted toward students has received both positive and negative reviews regarding its effectiveness. It has been proposed that these programs may be more effective if they were targeted only to those students most at risk for suicide, were longer in duration, and followed a mental illness theoretical orientation. Education for school personnel appears to be a promising prevention program as all



studies reviewing its effectiveness reported positive findings. In-service training for school staff should be considered a vital component in any school-based prevention program. With regard to providing the media with education in order to prevent a contagion effect, only one study in Vienna has been conducted to demonstrate the benefit of this program. There are no studies to date evaluating the effectiveness of this prevention effort on adolescent suicide rates in the U.S. Nevertheless, this prevention effort is recommended frequently in the literature on school-based suicide prevention and does appear to have merit. Overall, there is a need for future research to demonstrate further support for the effectiveness of these primary prevention approaches. More specifically, research is lacking which demonstrates that these programs can significantly reduce actual adolescent suicide rates or can have a significant impact on ethnically diverse adolescents.

The secondary prevention approaches reviewed in this paper include crisis hotline services and multiple stage screening. Results of studies investigating crisis hotline efficacy are inconsistent and mainly investigate their effectiveness among young adults rather than adolescents. There is some evidence which suggests that crisis hotlines can decrease suicide rates among frequent users - young Caucasian females. Thus, it has been recommended that the use of crisis hotlines be encouraged among all groups of adolescents, especially young Caucasian males. More research, particularly with the adolescent population, should be conducted to further determine the efficacy of crisis hotlines. Further, there is a need for researchers to investigate the effectiveness of these services in a consistent and comprehensive fashion by examining their impact on actual youth suicide rates, by reviewing reports of consumer satisfaction, and examining

accuracy and information provided by hotline advisors. For multi-stage screening programs, the studies examining this program's effectiveness are primarily psychometric in nature. Results of initial psychometric studies are encouraging demonstrating that initial instruments would be reliable and valid to use in multiple stage screening programs. However, there is evidence which indicates that the initial screening tools used in the first stage of the screening procedures have a tendency to over identify suicidal students. In addition, the feasibility of screening an entire school is questionable given the limited resources within most school systems. More research is needed which further examines the efficacy of various screening instruments to accurately identify suicidal students particularly those who are ethnically diverse. In addition, the effectiveness of multi-stage screening procedures to impact actual adolescent suicide rates has yet to be investigated.

Psychotherapy for suicidal adolescents was briefly discussed as well in the section on secondary prevention approaches. Because this prevention strategy is usually beyond the realm of school-based practice, the empirical literature examining its effectiveness was not reviewed. However, several crisis management techniques were examined which should be employed before intensive psychotherapy begins and some suggestions when working with suicidal individuals were provided. The therapeutic approach most appropriate for suicidal adolescents will vary based on each youngster's presenting problems. It has been reported, however, that cognitive-behavioral therapy is most frequently used with suicidal clients. Other potential therapeutic approaches employed with suicidal clients in both individual and group therapy settings include interpersonal psychotherapy, desensitization or anxiety management training, management of

loneliness, social skills training, anger and aggression management training, and substance abuse counseling. Finally, family therapy for suicidal adolescents living in dysfunctional homes has been suggested.

As discussed extensively in the section regarding the school psychologist's role in the prevention and postvention of suicide, school practitioners, particularly school psychologists, should be responsible for the advocacy, development, and implementation of school-based prevention policies and programs. Despite the lack of research in this area, experienced school psychologists and other school practitioners should look to the available research for guidance in the development of a prevention program and conduct annual evaluations to ensure the program is of benefit to students. The prevalence of suicide among adolescents is a reality that warrants specific action. It is clear that this public health concern is not going to diminish quickly. The school system is a logical place to begin for the prevention of adolescent suicide. At the very least, every school system should provide annual in-services on suicide prevention to all school personnel, develop a crisis management team, produce a written suicide prevention and postvention policy, and ensure that school psychologists are competent in assessing for suicidal risk.

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