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ADOLESCENT SUICIDE:
A STUDY OF PREDICTION VARIABLES

A Thesis

Presented to the

Department of Counseling

and the

Faculty of the Graduate College

University of Nebraska

In Partial Fulfillment

of the Requirements for the Degree

Masters of Arts

University of Nebraska at Omaha

by

Julie M. Ohlund

December, 1990

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THESIS ACCEPTANCE

Acceptance for the faculty of the Graduate College, University of Nebraska, in partial fulfillment of the requirements for the degree Master of Arts, University of Nebraska at Omaha.

Committee

Name	Department
Kevin R. O'Neill (ex-officio)	Psychology
Thomas G. Gallahan	S&CD
Ross A. Pilkington	Counseling

Chairman

November 30, 1990

Date

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Finally, my deepest appreciation is extended to my family; Helen, Jim, Jon, Jane, Darrell, and Eric, their love, support, and encouragement throughout my masters program were very much appreciated.

DEDICATIONS

I would like to dedicate this research project to my late father, Dr. A.V. Ohlund, "Dad", who in his own special way inspired and motivated me to always strive "for the best you can be" and always "believe in yourself." Though he was not physically with me through my masters program, I know he supported me through it in his "own special way", and for this I extend my love and appreciation.

ABSTRACT

The purpose of the current study was to examine data to determine if "common demoninators" could define predictor variables for risk assessment of adolescent suicide. The aim of this project was to offer comparisons among hospitalized adolescent suicide "attempters" and "non-attempters", and outpatient adolescent suicide "attempters" and "non-attempters". The data was then compared with data from non-hospitalized adolescents nationally.

The study was designed as a systematic investigation of archival data. The data was taken from hospital records including interview forms and psychological evaluations.

The subject sample was randomly selected from a larger inpatient/outpatient population. Subjects ranged in age from 12 to 18, and included both males and females.

Analysis methods used for the study falls into the category of nonparametric statistics. Chi-square statistical methods were used. For the purpose of this study statistical significance was accepted at the level of $p<.05$.

The results of the study indicate that of the four hypotheses, only that which predicted adolescent inpatient attempters who reported abuse of drug and/or alcohol for

themselves and/or family members were found to have a higher frequency of suicide attempts when compared to the other groups. However, the inpatient adolescent attempters who reported abuse of alcohol and other substances were not found to have a statistically significant higher rate of suicide attempts.

Chi-square analysis did indicate that there was a significant difference beyond the .05 level when comparing the outpatient suicide attempter that had a history of incest with the inpatient groups, the outpatient non-attempter, and the national sample of adolescents. The other statistically significant finding was among outpatient adolescent attempters, 63.3% reported a history of physical abuse. Chi-square analysis indicated that this finding was significant at the .05 level. Though the finding does not support the predicted outcome hypothesis, it does offer a valuable clue to some of the dynamics underlying adolescent suicide.

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CHAPTER I

INTRODUCTION

Suicide is one of the alarmingly frequent, yet preventable causes of death in the United States. World-wide suicide claims approximately 1,110 people every day, one every 80 seconds (Eldrid, 1988). Statistics from the Alcohol, Drug Abuse, and Mental Health Administration report on Youth Suicide (1989), indicate that suicide is the second most frequent cause of death for all persons between ages 10 and 19, second only to accidents. The increase in the rate of adolescent suicide has resulted in suicide becoming the eighth highest cause of death for all age groups in the United States (Stillion, McDowell, & May, 1989).

When mental health professionals consistently find that for every completed suicide there are 50 to 100 attempts (Eldrid, 1988), it becomes essential that the public realize suicide is an issue of critical importance. In response to this pressure, mental health professionals, schools and communities have been faced with the task of developing intervention and prevention programs for youth at risk for completed suicide. This type of pressure

raises the question, "What are the characteristics of the young people who attempt to take their lives, and those that complete the act?" This question has lead to the development of this current study which examines "common denominators" of hospitalized adolescent suicide "attempters".

There are compelling reasons to seek "common denominators" of this behavior given the devastation to family and friends and the lost human potential that attend suicide behavior in adolescents. This study will allow examination of data to determine if such "common denominators" can define predictor variables for risk assessment. It may also allow some conclusions about early preventive intervention.

The study assesses predictive factors that discriminate among hospitalized adolescent suicide "attempters", hospitalized adolescent "non-attempters", and outpatient adolescent suicide "attempters" and "non-attempters". A comparison will contrast those findings with data of a representative sample of adolescents from the general population.

Data was analyzed to provide answers for the following questions:

1. Do adolescents who have "attempted" suicide and have been hospitalized in a psychiatric setting differ significantly from hospitalized "non-attempters", outpatient "attempters", outpatient "non-attempters", and

from adolescents in general in family background and exposure to abuse?

2. Do adolescents who have "attempted" suicide and have been hospitalized in a psychiatric setting differ significantly from hospitalized "non-attempters", outpatient "attempters", outpatient "non-attempters", and from adolescents in general in susceptibility to chemical dependency?

3. Do adolescents who have "attempted" suicide and have been hospitalized in a psychiatric setting differ significantly from hospitalized "non-attempters", outpatient "attempters", outpatient "non-attempters", and from adolescents in general in runaway behavior?

4. Do adolescents who have "attempted" suicide and have been hospitalized in a psychiatric setting differ from hospitalized "non-attempters", outpatient "attempters", outpatient "non-attempters", and from adolescents in general in academic difficulties (e.g., dropout, retained or received special services through the school)?

The list of characteristics that can be researched on adolescent suicide factors is voluminous. This study was limited to those questions presented above.

CHAPTER II

THE PROBLEM

Purpose

The purpose of this investigation was to determine through examination of specific data if "common denominators" can define predictor variables for risk assessment of adolescent suicide.

Hypotheses

The following hypotheses were statistically tested at the .05 level of significance:

1. Adolescents who have "attempted" suicide and have been hospitalized in a psychiatric setting will have histories of increased frequency of incest, sexual abuse, and/or physical abuse than will adolescent hospitalized "non-attempters", outpatient "attempters", outpatient "non-attempters", and the national sample of nonhospitalized adolescents.

2. Adolescents who have "attempted" suicide and have been hospitalized in a psychiatric setting will have a higher incidence of drug and alcohol abuse among themselves or members of their family, than will adolescent

hospitalized "non-attempters", outpatient "attempters", outpatient "non-attempters", and the national sample of adolescents.

3. The histories of hospitalized adolescents who have "attempted" suicide and have been hospitalized in a psychiatric setting will reveal a greater number who have displayed acts of runaway behavior, than will hospitalized adolescent "non-attempters", outpatient "attempters", outpatient "non-attempters", and those in the national sample.

4. The histories of hospitalized adolescents who have "attempted" suicide will reveal a greater number who have academic difficulties (e.g., dropout, retained, and/or received special services through the school system) than will hospitalized adolescent "non-attempters", outpatient "attempters", outpatient "non-attempters", and the national sample of nonhospitalized adolescents.

Limitations

1. The study population was randomly selected from the inpatient and outpatient admissions to a psychiatric hospital in Omaha, Nebraska. The population is reflective of a Midwestern adolescent population.

2. The data taken from the psychological evaluations and social histories may reflect the biases of those professionals who wrote the reports. The hospital does have standard procedures which are followed when completing

evaluations and histories, and also there are professional standards and procedures for reporting issues such as physical and sexual abuse that the professionals follow when reporting in their evaluations.

Definition of Terms

The factors included in this study were not defined by a standard definition but by the following criteria:

1) patient self-report;
2) as defined in the process of the evaluation; or
3) defined by the evaluation even if denied in the patient self-report.

The social stigma that accompanies suicide attempts and completions has created a considerable amount of the inconsistency in reporting suicide attempts and completions. Many times families are embarrassed and/or guilt ridden which makes it difficult for them to admit to themselves or others that their children attempted or committed suicide. These types of cases tend to distort the actual numbers that are reported in the literature.

Physical and Sexual Abuse

Research studies as early as 1968 and continuing in the present, indicate that family physical abuse is relatively common among young attempters and suicidal adolescents (Pfeffer, Conte, Plutchik, & Jerrett, 1979; Taylor & Stansfield, 1984). Conflicting results published from different studies merit the need for further research to examine the influence of this factor on the rate of adolescent suicide attempts (Deykin, Albert, & McNamarra, 1985; Green, 1978).

The result of the Pfeffer et al. (1979) study differ from those of Koskys' study done in 1983. Pfeffer did not find any difference in family abuse and violence between suicidal adolescents and age matched psychiatrically ill adolescents in the control group. However, in a similar study, Kosky (1983) reported child abuse in 60% of children who attempted suicide compared with only 4% of nonsuicidal psychiatrically ill adolescents.

McIntire and Angle (1973) investigated 50 individuals aged between 6 and 18 years who had been treated at a poison control center in the United States. Results indicated a significant demonstration of failure to identify suicide attempts by young people. The study revealed that the initial hospital diagnoses were "accidents" in 42% of the cases and "suicide attempts" in 58% of the cases. Then after a "psychological biopsy" was completed, which the researchers defined as a careful interview of the subjects, and when possible their parents, the evidence indicated that "suicide attempts" increased to 72% (McIntire & Angle, 1973).

As McIntire and Angle (1973) point out, there are major methodological problems that exist when defining and reporting suicide attempts and completions. There remains "inconsistent reporting, lack of unified standards, and variance in the background and training of certifying officials, such as coroners, medical examiners, community physicians, sheriffs, and others" (Shafii & Shafii, 1982). In the future the establishment of standard, universal means of assessing suicide attempts and/or completions that can be use by both professionals and the layperson would help improve the quality of the research and statistical results published on suicide.

indicate that the rates continue to increase. In 1983 white males age 15 to 19 had a suicide rate of 15/100,000 and white females 4/100,000 (U.S. Bureau of the Census, 1989).

When comparing the rates of adolescent suicide to the rates of suicide for any other age group, the numbers may not seem that significant, and may, in fact seem low. However, when one considers that suicide is the second leading cause of death among the adolescent age group, the numbers become much more significant (Alcohol, Drug Abuse, and Mental Health Administration, 1989).

Another factor to note when reviewing the rate of adolescent suicide is that it is second only to accidents as a cause of death. This finding has been hotly debated (Pfeffer, 1989). Many researchers question the criteria used to distinguish between what is determined an accident and what is considered suicide. Keith Hawton discusses in his book Suicide and Attempted Suicide Among Children and Adolescents (1986), that when considering the difficulties in identification between suicides and accidents "there is likely to be greater willingness to accept overdoses and injuries among young people, especially children, as accidental because of reluctance to acknowledge (or lack of awareness of the fact) that suicidal actions occur in this age group."

CHAPTER III

REVIEW OF RELATED LITERATURE

Overview

Suicide is a phenomenon that does not limit itself to any particular age. Research shows that persons who attempt suicide and those that complete the act range in age from the young (8 to 10 years of age) to the old (above 65 years of age). The study presented here has limited the subject population to include only "adolescent" suicide attempters.

Adolescent suicide is an ever important issue in our country. Looking back in time and reviewing the statistical rates of adolescent suicide it is noted that over the years from 1950 to the present day there has been a steady increase in numbers. According to Stanley Lesse, M.D. in his book What We Know About Suicidal Behavior and How To Treat It (1988) when comparing United States statistics from 1950 with rates from 1975, there was a significant increase for white males and females, age 15 to 19. The rate for white males was 3.7/100,000 in 1950 and increased to 13/100,000 in 1975. For white females the rate rose from 2.0/100,000 in 1950 to 3.0/100,000 in 1975. Statistics from the National Center for Health Statistics

Another study performed by Shafii, Carrigan, Whittinghill, and Derrick (1985), reported on 20 adolescents who had committed suicide. They found that, "55% of these youngsters compared to 29% of nonsuicidal peers experienced parental physical and emotional abusiveness." Results from this study can be used to substantiate the use of physical and/or emotional abuse as a predictive variable in assessing adolescents at risk for suicide.

A study by Blumberg (1981) dealing with abused and neglected children and adolescents, indicated that even nonviolent sexual abuse is likely to have serious emotional consequences. This study shows that physical and violent abuse has negative effects on children, and almost all types of abuse can be viewed as having some type of negative consequences on an impressionable child. Negative consequences do not have to be displayed physically, but may show up in a child's low self-esteem and negative self-image. In most cases, children who are abused try to get help by telling a parent or significant other, yet many times those cries for help are ignored or discredited. According to Blumberg (1981), sexually abused youngsters become suicidal, "usually after their efforts to communicate concerns about such sexual activity have failed to bring relief."

Stanley Lesse, (1988) states that "anger and fear are the predominant emotions experienced when one is physically (and/or sexually) attacked, and it is well known that anger and fear tend to eliminate objectivity and rationality." Many studies of suicide in children and adolescents reveal that physical abuse and sexual molestions are the most common immediate precipitating factors (Ackerly, 1967; Blumberg, 1981; Green, 1978; & Rosenfeld, 1977). This is not surprising in view of the fact that "anger which cannot be expressed outwardly is often turned inward upon the self" (Lesse, 1988). With this in mind one can see how physical and sexual abuse can be used as a significant prediction factor of risk for suicidal behavior in adolescents.

The studies conducted by Deykin, Albert, and McNamarra (1985) and also by Green (1978), support the need for further research into the correlation between family violence, abuse and youth suicidal behavior. Deykin et al. (1985) surveyed the records from a Social Service Department in Massachusetts looking for evidence of abuse and/or neglect for 159 adolescents that had been admitted to an emergency service after a suicide attempt. A comparison with adolescents treated for other medical conditions in the same emergency service was then completed. The results of this study suggested that there was a positive correlation between child abuse and/or

neglect and suicide attempts. However, "the study could not discern whether there were differential effects of abuse or neglect with regard to adolescent suicidal behavior" (Deykin et al., 1985).

Green's study (1978) used a high risk population to evaluate self-destructive behavior in adolescents. The study population consisted of 60 physically abused children, 30 neglected children, and 30 normal children. The results of the study revealed that there was a higher incidence of self-destructive behavior in abused children than in the two comparison groups.

Overall, the conclusions cited in the Secretary's Task Force on Youth Suicide (Alcohol, Drug Abuse, and Mental Health Administration, 1989) found that "there does not appear to be a markedly high rate of attempts among abuse victims." Even so, the authors did state that two groups that may have elevated rates of attempts would be males and females that have been sexually assaulted or raped. The literature reviewed above reports several studies that support the theory that physical and sexual abuse can be used as significant risk factors when assessing the potential for suicide. The conclusions from the Task Force suggest that further research be conducted using abuse as a predictive factor in the assessment of adolescent children at risk for suicidal behavior.

Substance Abuse

In reviewing characteristics of adolescents at risk for suicidal behavior, the use and abuse of alcohol and other related drugs are factors which are often reported. It is important when reviewing the statistics on these factors that the difference between "use" and "abuse" is examined. Poteet (1987) found that 45% of her suicidal subjects showed evidence of alcohol or drug use at the time of death; Pfeffer (1989) found that at least 38% of the suicides in her study showed similar evidence. Yet, the alcohol and drug use was documented as unrelated to the cause of death, although this finding may be viewed as questionable. Even though the alcohol and/or drug use may not have been the method "used" in the attempt or completion of suicide, some researchers would agree that the person used the alcohol and/or drugs as a disinhibitor which allowed them to be able to complete the act.

Adequate definitions of substance "use" and "abuse" would aid in the clarification of suicide statistics. Many of the reported studies do not define how the use of alcohol and/or drugs play a part in the attempt or completion of suicide. When examining suicide it would be valuable to know the availability of the substance to the adolescent attempter, whether it was a vehicle or whether a substance abuse problem existed.

One must also consider the effects of alcohol abuse within the family and how this may influence the adolescent. Not only does alcohol abuse by adolescents have negative effects on them; research also indicates that parental substance abuse is also a significant risk factor. Tishler and McKenry (1982) conducted research on a population of 42 adolescents aging in range from 12 to 18. These adolescents were hospitalized in an emergency service for attempted suicide and were evaluated through use of a questionnaire. The results of the study indicated that both fathers and mothers of the suicide attempters abused alcohol and/or drugs more than the nonsuicidal adolescents. Since the adolescent years tend to be a very impressionable time frame, family members often serve as role models for the young. When role models develop behavior patterns in which they abuse alcohol and/or drugs the adolescent tends to learn this behavior. The effects of an addiction within the family can suggest to the adolescent that "using" is an acceptable behavior.

A study done by Murphy, Armstrong, Hermele, Fischer, and Clendenin (1979) incorporates interpersonal loss as a predictor factor along with history of alcoholism. The study showed that alcoholics who committed suicide tended to have recent loss of close interpersonal relationships. Humphrey, Puccio, Niswander, and Casey (1972) identified a characteristic sequence when examining histories of former

psychiatric patients who committed suicide that started with drinking problems followed by difficulties with family, sex, friends, and work. The sequence which was regarded as reflecting the lifestyle of the patient suggested that the alcohol problems lead to gradual social deterioration which lead to a hopeless, helpless suicide completion.

A study done by Humphrey et al. (1972) of an adult population suggested the significance of examining life events of an adolescent for clues towards prediction of suicidal tendency. Many times the death of a significant other or a break up of a significant relationship becomes the precipitating event in an adolescents life which prompts an attitude of "there is no use living." The correlation between interpersonal loss and the abuse of alcohol and/or drugs is very high with adolescents because many times the "use" is their coping mechanism which allows them to get over the hurt, yet it becomes a crutch in which they "use" to "feel better", in reality only leading to a hopeless, helpless feeling. It is at this point in which many adolescents turn to suicide as a "way out" of the pain.

Harlow, Newcomb, and Bentler (1986) examined whether high levels of depression and self-degrogation can lead to a lack of purpose in life, which can lead to substance use and possible suicide ideation. They proposed that long

periods of negative emotions can lead to a sense of meaninglessness, which then leads on to experimentation with alcohol and/or drugs, and even thoughts of ending one's own life through suicide. The results of the study show that there was a difference between the males and females. Males tended to experiment with substances after they develop negative self attitudes, where females tended to turn toward alcohol and drugs when they felt they had no purpose in life. The study did not yield a direct statistical correlation that substance abuse could be used as a predictive factor of suicide ideation; however, on a clinical level there is significance in using substance abuse as an indication of suicidal risk.

Runaway Behavior

"Runaways are inherently a suicide risk group inasmuch as the behavior is associated with emotional disturbance, family conflicts and strife, school and learning problems, social alienation, and other negative conditions, all of which are associated with suicidal risk" (Alcohol, Drug Abuse, and Mental Health Administration, 1989). Nilson (1981) conducted a study comparing 18 runaways with 18 other court referrals who were not runaways. He found that 12 demonstrated clear evidence of suicidal ideation, and 14 of the 18 made suicide attempts or gestures. In the nonrunaway group, only 2 of the 18 made a suicide attempt or gesture and 11 showed signs or ideation. The difference

between the two groups was significant at the .02 level of confidence.

Other researchers have found that a history of running away is not a useful prediction factor of suicidal risk. Jacobs (1971) states that "runaway" is the third stage in the development of the "suicidal state", and that it is more an indicator than a prediction factor. Marks and Haller (1977) found in their study that the presence of running away was significant as a prediction factor between suicidal boys and emotionally disturbed nonsuicidal boys, but not between the girls.

The strongest statement against using running away as a differentiating factor comes from the results of the Pfeffer, et al. (1980), and Cohen-Sandler, Berman, and King (1982) studies. These studies found that running away is more "a symptom of emotional disturbance than necessarily of suicidal risk" (Cohen-Sandler, et al., 1982). When examining the contributing factors that lead to emotional disturbances what emerges is an adolescent that feels as though his or her life is not manageable, and believes he or she is consistently misunderstood by significant others. They tend to demonstrate low self-esteem, and develop a hopeless, helpless feeling about their life. Research indicates that these factors are indicators of suicidal risk. Given the preceding, the question of runaway behavior as a predictor of suicidal tendency is raised for empirical examination.

Academic Difficulties

Other contributing factors of adolescent suicide such as academic difficulties should be given some attention. Since most adolescents spend over half of their day involved with school or some type of school activity the likelihood that school plays an important role in the formation of self-worth is significant. Since school is the second major social system involving adolescents it adds its own pressures and stresses to the traditional ones (Alcohol, Drug Abuse, and Mental Health Administration, 1989). A number of investigators of adolescent suicide have found academic behaviors such as failures, truancy, and discipline significant risk factors for suicidal behavior.

Several studies report school as a factor frequently studied when researching suicidal adolescents. Tischler, McKenry, and Morgan (1981) conducted a study of 108 adolescent suicide attempters and reported that school problems were noted in 30% of the cases. Another study involving 65 adolescents who attempted suicide found that 75% had very poor school records (Rohn, Sarles, Kenny, Reynolds & Heald, 1977).

In academic performance, Shafii and Shafii (1982), found that failure in performance was a characteristic of young suicide attempters 15 years and younger when compared to a nonsuicidal psychiatric patient population. In a

study conducted by Barter, Swaback, and Todd (1968) the percentage of suicidal adolescents that were performing poorly in school was 78% of the sample population. Hawton, O'Grady, Osborn and Cole (1982) noted that 58% of the suicidal cases they examined reported poor academic performance.

Shaffer (1974), examined the relationship between suicide and truancy or dropouts and found truancy in 33% of the boys and in about 10% of the girls in his study. He also reported that over 50% of the boys in his study had not been in school the day before their death. Other investigators such as Barter, et al.(1968), and Garfinkel and Golombeck (1983), noted truancy as a factor with the adolescent population they studied.

Investigators of adolescent suicide have found disciplinary problems reported frequently as a precipitating factor. Shaffer (1974) noted in his study that in 31 percent of his cases a disciplinary crisis occurred preceding the attempt. Rohn, et al. (1977) found that 35 percent in his study of suicide attempters were having behavior or discipline problems in school.

The review of the literature reveals reports in which academic difficulties can be seen as a significant prediction of suicidal risk. However, in a study conducted by Shafii, et al.(1985) conflicting data about school performance was noted. They found no difference between

suicidal subjects and the control subjects classified as being a school dropout or having poor academic performance. However, the results did show that disciplinary problems and suspension from school contributed to a significant difference found between the suicidal subjects and the control subjects.

Cohen-Sandler, et al. (1982) found, "in contrast to the high frequency of school adjustment problems reported by other investigators, that school refusal, poor concentration, and poor school work failed to discriminate among the children." They report that only 20% or fewer suicidal children from the sample population reported school problems.

In summary much of the research supports the use of academic difficulties as a significant risk factor. However, the evidence in the studies of Shafii, et al. (1985), and Cohen-Sandler, et al. (1982) indicate the importance of using caution when using school problems as a prediction of suicide behavior. While it is apparent that academic difficulties can be an important clue or indicator of suicidal risk, without future research it would be difficult to classify it by itself as a predictor of suicidal risk in adolescents.

Summary

It appears from the literature review presented here that adolescent suicide is an area of great concern for those in the mental health profession. With the loss of human potential and meaningful life that is lost with each completed suicide the need for intervention and prevention is well merited. The ideal would be to have indicators that would warn families, professionals and other significant persons that an attempt or completion is being planned. These indicators, or characteristics include many influential factors.

This study chose four such factors to examine: 1) history of incest, sexual abuse, and/or physical abuse; 2) history of alcohol and/or drug abuse for self and/or family; 3) history of runaway behavior; and 4) history of academic difficulties. A review of the current literature indicates that each factor has been supported as a predictor in assessing the risk of adolescent suicide behavior. However, other studies cited in the review report that the factors are not statistically significant as a predictor of adolescent suicide.

Overall, the contrast in the findings allows for further investigation on prediction characteristics of adolescent suicide. It is the opinion of this writer that

all research findings, whether they are statistically significant or not, can be reviewed to uncover any data that may have some clinical applications. The more that is known about suicide and those that attempt and complete the act, the more likely we as professionals and as members of society can intervene and offer preventative alternatives.

CHAPTER IV

METHODOLOGY

Subjects

Subjects were randomly selected from adolescents admitted to a psychiatric hospital in Omaha, Nebraska between January, 1986 and June, 1990. The adolescents ranged in age from 12 to 18 and included both males and females. The subject list was randomly selected from a computer generated list of random numbers. Only those falling in the age range noted above were used in the random pool of subjects available to be included in the study.

A total of 200 subjects were used for this research project. A total of 100 inpatient adolescents and 100 outpatient adolescents cases were reviewed. There was not an inclusion criterion on the number of males as compared to females. A review of literature indicates that adequate research exists to date that shows the significant difference in the act of attempted and completed suicide comparisons between males and females.

Contrast data was drawn from national statistics on a non-hospitalized "normal" adolescent population. These statistics were taken from the National Statistics

published in the U.S. Bureau of the Census Statistical Abstract (1989).

Variables

After drafting the hypothesis for the study, a list of variables were developed in which the data was collected. The data collection worksheet (see Appendix A) includes more variables than were actually examined for this study. Collecting data on other factors was undertaken as personal interest on the part of the writer to do further research on the subject of adolescent suicide.

The factors reported consisted of data already available in the hospitalization records of the target population. Demographic factors included: age, gender, inpatient/outpatient status, diagnostic impression, and parental home/marital status. Suicide factors included: history of suicide attempt, total number of suicide attempts, and method of suicide attempt(s). Psychiatric factors included: history of previous psychiatric hospitalizations, history of incest, history of sexual abuse, history of physical abuse, history of chemical dependency, family history of chemical dependency, runaway behavior, and number of runaway attempts. Educational factors included: dropped out of school, retained in school, received special education services, and education level completed.

These factors were not defined by a standard definition but by the following criteria: 1) patient self-report; 2) as defined in the process of the evaluation, or 3) defined by the evaluation even if denied in self-report.

Research Design

The research design was a 2 x 2 factorial design. The study population was randomly selected from an adolescent population admitted to a psychiatric hospital in the Midwest. The data was collected from archival data taken from hospital records including interview forms (both patient and family), and psychological evaluation/assessment data. The research design consisted of 4 groups. One group consisted of inpatient adolescent "attempters", the second group consisted of inpatient adolescent "non-attempters", the third group outpatient adolescent "attempters", and the fourth and final group consisted of outpatient adolescent "non-attempters".

Data Analysis

The data was compiled and statistically analyzed using the computer program SPSS-X (Norusis, 1987). Analysis methods used for this study fall into the category of nonparametric statistics, since suicide does not appear to follow a "normal" distribution. The nonparametic chi-square statistical methods are designed for application to a very likely skewed population of hospitalized suicidal

adolescents (Borg & Gall, 1979). This type of analysis is a nonparametric statistical test that according to Borg & Gall, is used "when the research data are in the form of frequency counts" (1979). For the purpose of this study statistical significance was accepted at the level of $p<.05$.

CHAPTER V

RESULTS

This section describes the findings of the analyses conducted to compare characteristics of adolescent hospitalized suicide "attempters" with adolescent hospitalized "non-attempters", outpatient "attempters", and outpatient "non-attempters", and then contrast the data to that reported on national groups of non-hospitalized adolescents from the general population.

A frequency distribution on each variable was completed. Table I presents the frequency of each variable researched within the study.

Chi-square analysis of the data was then conducted to find if there is statistical significance among the hypotheses researched. Table II presents the percentage reported of each variable by inpatient attempters and non-attempters, outpatient attempters and non-attempters, and the percentage found in normal adolescents.

The hypotheses under investigation are repeated and the findings from the statistical analyses will follow each hypothesis in sequence.

Hypothesis I states that there will be a higher frequency of incest, sexual abuse, and/or physical abuse among adolescents who have attempted suicide and have been

Table I

Frequency Distribution by Variables

Age

Value	Frequency	Percent	Valid Percent	Cum Percent
12	17	8.5	8.5	8.5
13	26	13.0	13.0	21.5
14	26	13.0	13.0	34.5
15	41	20.5	20.5	55.0
16	47	23.5	23.5	78.5
17	31	15.5	15.5	94.0
18	12	6.0	6.0	100.0
Total	200	100.0	100.0	

Sex

	Value	Frequency	Percent	Valid Percent	Cum Percent
(M)	1	117	58.5	58.5	58.5
(F)	2	83	41.5	41.5	100.0
	Total	200	100.0	100.0	

Status of Patient

	Value	Frequency	Percent	Valid Percent	Cum Percent
(I)	1	100	50.0	50.0	50.0
(O)	2	100	50.0	50.0	100.0
	Total	200	100.0	100.0	

History of Suicide Attempts

	Value	Frequency	Percent	Valid Percent	Cum Percent
(Y)	1	41	20.5	20.5	20.5
(N)	2	159	79.5	79.5	100.0
	Total	200	100.0	100.0	

History of Incest

	Value	Frequency	Percent	Valid Percent	Cum Percent
(Y)	1	10	5.0	5.0	5.0
(N)	2	190	95.0	95.0	100.0
	Total	200	100.0	100.0	

History of Sexual Abuse

	Value	Frequency	Percent	Valid Percent	Cum Percent
(Y)	1	42	21.0	21.0	21.0
(N)	2	158	79.0	79.0	100.0
	Total	200	100.0	100.0	

History of Physical Abuse

	Value	Frequency	Percent	Valid Percent	Cum Percent
(Y)	1	61	30.5	30.5	30.5
(N)	2	139	69.5	69.5	100.0
	Total	200	100.0	100.0	

Chemical Dependency History

	Value	Frequency	Percent	Valid Percent	Cum Percent
(Y)	1	66	33.0	33.0	33.0
(N)	2	134	67.0	67.0	100.0
	Total	200	100.0	100.0	

Family History of Chemical Dependency

	Value	Frequency	Percent	Valid Percent	Cum Percent
(Y)	1	96	48.0	48.0	48.0
(N)	2	104	52.0	52.0	100.0
	Total	200	100.0	100.0	

History of Runaway Behavior

	Value	Frequency	Percent	Valid Percent	Cum Percent
(Y)	1	60	30.0	30.0	30.0
(N)	2	140	70.0	70.0	100.0
	Total	200	100.0	100.0	

Dropped out of School

	Value	Frequency	Percent	Valid Percent	Cum Percent
(Y)	1	12	6.0	6.0	6.0
(N)	2	188	94.0	94.0	100.0
	Total	200	100.0	100.0	

Retained a Grade Level in School

	Value	Frequency	Percent	Valid Percent	Cum Percent
(Y)	1	24	12.0	12.0	12.0
(N)	2	176	88.0	88.0	100.0
	Total	200	100.0	100.0	

Received Special Education Services

	Value	Frequency	Percent	Valid Percent	Cum Percent
(Y)	1	67	33.5	33.5	33.5
(N)	2	133	66.5	66.5	100.0
	Total	200	100.0	100.0	

Table II

Results per Variable

Variable		Inpt. Att.	Inpt. Non-Att.	Outpt. Att.	Outpt. Non-Att.	Nat. Sample
Hx. of Incest	No	100.0%	94.3%	72.7%	96.6%	
	Yes	0%	5.7%	27.3%	3.4%	
Hx. of Sex. Abuse	No	83.3%	81.4%	54.5%	78.7%	85-95%
	Yes	16.7%	18.6%	45.5%	21.3%	5-15%
Hx. of Phy. Abuse	No	80.0%	68.6%	36.4%	70.8%	96.3
	Yes	20.0%	31.4%	63.6%	29.2%	3.7%
Pt. D&A Abuse	No	46.7%	58.6%	54.5%	82.0%	78.0%
	Yes	53.5%	41.4%	45.5%	18.0%	22.0%
Family D&A Abuse	No	43.3%	42.9%	54.5%	61.8%	65.0%
	Yes	56.7%	57.1%	45.5%	38.2%	35.0%
Runaway Behavior	No	70.0%	64.3%	54.5%	76.4%	90.0%
	Yes	30.0%	35.7%	45.5%	23.6%	10.0%
Received Sp. Ed.	No	83.3%	68.6%	54.5%	60.7%	89.0%
	Yes	16.7%	31.4%	45.5%	39.3%	11.0%
Drop Out of School	No	96.7%	94.3%	90.9%	93.3%	92.9%
	Yes	3.3%	5.7%	9.1%	6.7%	7.1%
Retained in School	No	96.7%	85.7%	63.6%	89.9%	
	Yes	3.3%	14.3%	36.4%	10.1%	

hospitalized in a psychiatric setting than among adolescent hospitalized non-attempters, outpatient attempters, outpatient non-attempters, and the national sample of non-hospitalized adolescents.

The first hypothesis was not supported. Among the population of inpatient adolescents that attempted suicide, 0% reported a history of incest, 16.7% reported a history of sexual abuse, and 20% reported a history of physical abuse. In comparison, the finding of the outpatient attempter group was much more significant. Chi-square analysis indicated that there was a significant difference beyond the .05 level of confidence when comparing the outpatient suicide attempter that had a history of incest with the inpatient group and the national sample of adolescents. Also, among outpatient adolescent attempters, 63.6% reported a history of physical abuse. Chi-square analysis indicated that this finding was significant at the .05 level of confidence. Sexual abuse was not statistically significant within this study.

The second hypothesis states that a higher incidence of drug and alcohol abuse would be found more frequently among inpatient adolescent suicide attempters and among their family members when compared to inpatient non-attempters, outpatient attempters, outpatient non-attempters, and a national sample of adolescents.

Hypothesis II was supported regarding the incidence of drug and alcohol abuse found among family members, but not statistically supported in regard to the inpatient attempters themselves. Inpatient attempters that reported a personal history of drug and/or alcohol abuse included 53.3% of the population; 46.7% of the adolescent attempters investigated did not report a history of substance abuse. This implies that adolsecent abuse of alcohol and drugs may not by itself be a significant prediction factor for suicidal behavior.

A comparison of statistics found on inpatient suicide attempters with the other groups on frequency of substance abuse among family members, indicated a significant difference at the .04 level of confidence.

The chi-square analysis of outpatient adolescents that reported a history of suicide attempts and a history of substance abuse reached significance beyond the .05 level of confidence in comparison to the inpatient population and the adolescent national sample.

Hypothesis III stated that hospitalized adolescent suicide attempters, as a group, will have a greater frequency of displaying runaway behavior when compared to inpatient non-attempters, outpatient attempters, outpatient non-attempters, and adolesents in general.

The third hypothesis was not statistically supported. The findings reveal that of the inpatient population, only 30% of the attempters reported runaway behavior. When comparing the numbers to the inpatient non-attempters, 35.7% reported runaway behavior. In the outpatient group 45.5% of the attempters and 23.6% of the non-attempters reported runaway behavior. The outpatient findings do support a trend towards runaway behavior in those adolescents that reported a history of suicide attempts, however, it was not statistically significant.

Hypothesis IV states that the histories of inpatient adolescent suicide attempters will reveal a higher frequency of academic difficulties (e.g., dropout, retained, and/or received special services through the school system) when compared to inpatient non-attempters, outpatient attempters, outpatient non-attempters, and adolescents from the national sample.

The fourth hypothesis was not supported statistically. The findings of the inpatient attempters indicate only 16.7% reported receiving special education. Of the inpatient non-attempters 31.4% of the population reported receiving such services.

The only factor out of the three (dealing with academic difficulties) that was statistically supported was that of outpatient suicide attempters that have been retained. Chi-square analysis indicated the finding was

significant beyond the .02 level of confidence. This supports the belief that outpatient adolesents with a history of retention in school could be a significant prediction factor in the risk of suicide. This result does not lend support to the hypothesis that there "will be a greater frequency" among adolescent hospitalized suicide attempters.

Summary

The intent of this investigation was to improve the identification of risk factors of adolescent suicide using predictors to identify discriminators that can be used toward prevention and intervention. The findings indicate that inpatient adolescent suicide attempters have many of the same characteristics that emotionally disturbed adolescents display. It was the intent of this study to single out a few of the common factors and try to discriminate if they can be found more frequently in the histories of inpatient adolescent attempters.

Adolescent inpatient suicide attempters were found to have a higher frequency of alcohol and/or drug abuse themselves and among members of their family. A chi-square statistical analysis revealed that the inpatient population of adolescents that reported a history of substance abuse among the family members had statistical significance. This significance was at the .04 level of confidence.

None of the other discriminative factors examined were found to have a higher frequency among the inpatient adolescent attempters when compared to the frequency reported on the inpatient non-attempters, outpatient groups, and the adolescent national sample.

The investigation revealed a significant trend in outpatient findings. Many of the findings revealed that the frequency of the characteristics under investigation for the outpatient adolescent attempter were significantly higher when compared to the two non-attempter groups and that of the national adolescent sample. This can be seen as clinically significant, since there characteristics may be used as indicators of an adolescent who is at risk for suicidal behavior.

In summary the inpatient adolescent suicide attempter appeared to differ from the "normal" adolescent in general yet not consistently from the dsyfunctional youth that was represented in the inpatient and outpatient adolescent population. This finding is consistent with the belief that there is no one characteristic that can successfully predict suicidal behavior in an adolescent. There are however, multiple characteristics that have proven to be indicators of an adolescent who may be a risk.

Although statistically significant differences were identified between the inpatient adolescent attempter and the "normal" adolescent from the national sample, there

were no statistically significant differences when comparing this group to the inpatient non-attempters and the outpatient groups. The findings of this study revealed that the prediction of adolescents at risk for suicidal behavior still remains a difficult task. The use of the discriminative characteristics identified in this investigation as "indicators" of those at risk for suicidal behavior instead of as a "prediction factor" can be viewed as clinically significant. Any step towards intervention and prevention that a clinician is able to use in prolonging the life of an adolescent at risk can be seen as significant.

CHAPTER VI

DISCUSSION

A review of the literature on adolescent suicide reveals the importance of continued research in the area of intervention and prevention. In summary, the results of this study focused on the four characteristics investigated and did not provide findings of statistical significance for predicting suicidal behavior among the adolescent inpatient attempters. However, these factors do seem to have clinical significance.

The area of abuse (incest, sexual, and physical) indicated in the literature is one area that has been supported as a prediction factor. However, the current findings did not support this theory, that there would be a greater frequency of suicide attempts among inpatient adolescents when compared to the other groups in the study. These findings would correlate with the results of the Pfeffer et al. (1979) study in which he also found no statistically significant difference in his adolescent population. Interestingly enough the current study did reveal that a history of incest among outpatient suicide attempters was a prediction variable statistically significant beyond the .02 level of confidence. Also, among the outpatient suicidal group a history of physical abuse was a prediction variable statistically significant at the .03 level of confidence.

Though the findings from this study do not statistically support the first hypothesis regarding inpatient adolescent attempters, the use of the factor as a clinical indicator can be supported. The study did reveal that statistically significant differences were found among the outpatient suicide attempters when a comparison was made to the other groups. This trend toward a greater frequency among outpatients suggest that those adolescents that are most "at risk" are the ones who are not getting the help and services they need.

The use of substance abuse has been supported in the research as an indicator of an adolescent at risk. This study supported that fact. Inpatient adolescent suicide attempters did not have a higher frequency of abuse. Alcohol abuse appeared to be a frequent characteristic in each of the attempters groups and also of high frequency in the inpatient non-attempter group. This finding may suggest that substance abuse is a significant prediction factor for those adolescents at risk for some type of emotional disturbance in which inpatient treatment is required. Current findings suggest that substance abuse in and of itself should not be used solely as a prediction factor of adolescents at risk for suicidal behavior, since the frequency is also high in those adolescents that reported no history of suicidal attempts. The findings on substance abuse correlate with the results of the study

conducted by Pfeffer (1989), which revealed that even though a high percentage of adolescents report a history of substance abuse, it can not be used alone as a significant predictive factor of suicidal behavior.

In this study, runaway behavior was not a statistically significant factor in predicting suicidal behavior in adolescents. Again, there was a significant number that reported runaway behavior among the outpatient attempters. This finding could be viewed as representing a trend; those adolescents that run away and are seen clinically as outpatients have a greater risk of developing the hopeless, helpless feeling that is associated with suicidal behavior which leads to a greater risk of attempting suicide.

Academic difficulties were not found to have significant prediction value for suicidal tendency in an adolescent. This finding does not support the results of the Shafii and Shaffii (1982) study which reported failure in academic performance to be a characteristic of young suicide attempters. However, it does support the investigation conducted by Cohen-Sandler, et al. (1982) that revealed that school refusal, poor concentration, and poor school work failed to discriminate among the sample population.

Nonetheless, in the outpatient suicide attempter group the findings indicate that retention was statistically significant at the .02 level of confidence. Again, like the discriminative factor of runaway behavior, retention in school can be seen as a characteristic that can identify those adolescents who may be at a greater risk for feeling like a failure, hopeless, and looking for a "way out", increasing the risk of suicidal behavior.

Conclusions

When examining the characteristics of an adolescent hospitalized for suicidal behavior a rough profile can be developed producing some clinical usefulness. Although this study did not find the discriminative factors to be consistently statistically significant it did reveal trends, which suggest that for those adolescents that emerge from dsyfunctional homes and chaotic family backgrounds which involve physical and/or sexual abuse, substance abuse, runaway behavior, and academic difficulties, the likelihood of suicidal behavior is quite probable.

Other factors then, may also play a significant part in the discrimination of adolescents at risk. This study does provide some insight into the importance of these factors and the influence they may make on an impressionable adolescent.

It is the belief of this investigator that the significance of this study reveals that those adolescents that are at the "highest risk" for suicidal behavior are also those adolescents that are not coming in, or are not being refered to the hospital to receive help. The presence of any one or more of the discriminative factors investigated in this study can be clinically used as an indication of an adolescent that is in high "need" for some preventative counseling. The use of these characteristics can serve as warning signs to those in contact with the adolescent; peers, siblings, parents, teachers, and/or a helping professional. It also signifies that some type of intervention or prevention is needed for the adolescent to develop adequate coping skills to adjust to the pressures of adolescent life..

Recommendations for Future Study

A similar study of discriminative characteristics of adolescents in which a more indepth description of the suicidal behavior should be developed. This study could include those adolescents who may have suicidal ideation, may have made suicidal plans, but have never attempted, along with a sample of those adolescents that have a history of attempts.

An ideal study for this investigator would be to use a population of adolescent attempters that are currently hospitalized and develop a clinical interview that would

investigate the demographic, psychiatric, educational, and suicidal factors, and also investigate the precipitating factors. This investigator was not able to meet the subjects. Some of the data gathered from the assessments are questionable because not every professional that completed the assessments focused on suicidal behavior or the tendencies for prediction of the behavior if the subject did not present in such a manner to warrant further investigation. Though the current investigation collected data from assessments done by licensed and certified psychologist and masters level social workers, this investigator was not able to validate the information through any means of cross reference.

Research into adolescent self-image and self-esteem would also be a worthwhile project. Low self-image was a constant theme seen in the assessments reviewed and also the feeling of "failure" as self-reported by the subject. With the format of the report writing as it is, these characteristics could not be collected at the current facility without a change in the assessment procedures.

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Appendix A

Data Worksheet

ID #	AGE	SEX	STATUS	DSM III CODE	S. IDEA.	HX. S. ATT.	# S. ATT.	S. METHOD	COMP. S.	HX. PSY. H.	HX. INCEST	HX. SEX. AB.	HX. PHY. AB.	C.D. HX.	FAM. HX. C.D.	RUNAWAY B.	# RUNAWAY	DROP OUT	RETAINED	ED. COMP.	P. MAR. ST.	P. LOSS	FAM. HX. PSY.