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Risk Factors for Suicide Among Indian Adolescents at a Boarding School

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Synopsis.....

Suicide rates among American Indians, especially adolescents, are higher than those for the general

population. This paper summarizes the relevant literature on prevalence of, and risk factors for, suicide among American Indian groups, with a strong emphasis on adolescents.

Data concerning risk of suicide for a sample of high school students attending an Indian boarding school are presented. Approximately 23 percent of these students had attempted suicide at some time in the past, and 33 percent reported suicidal ideation within the past month. Students at greatest risk for suicide include those who reported having either family or friends who had attempted suicide and those who reported on standardized psychological measures as having experienced greater depressive symptomatology, greater quantity and frequency of alcohol use, or little family support.

In a 1988 survey of community-based programs for Indian adolescents, 194 were identified as carrying out significant suicide prevention activities. Forty-one of those programs were school-based; they emphasized early identification of students' mental health problems and reduction of specific risk factors such as substance abuse.

SUICIDE AMONG AMERICAN Indians and Alaska Natives, particularly adolescents, is of grave concern. Witness the recent series of well-publicized suicide epidemics which have plagued the Wind River and Yakima reservations as well as Native villages in the Bethel and Kotzebue regions.

In this paper we examine the phenomenon of suicide among American Indians, with special emphasis upon youth. Some findings are reported from an ongoing study of Indian adolescents attending a boarding school. These data constitute one of the first systematic attempts to determine, in a prospective fashion, the potential links among many of the personal and environmental variables thought to contribute to risk for suicidal behavior in Indian youth. Finally, we describe briefly various aspects of interventions that have been implemented in Indian communities to prevent suicides

of adolescents. Such efforts herald a new sense of responsibility and bid to improve the quality of life for these young people.

Background

The average suicide rate for American Indians and Alaska Natives for the period 1980-82 was 19.4 per 100,000, 1.7 times the rate for the nation as a whole. Suicide rates for Indians and Alaska Natives ages 10-14, 15-19, and 20-24 were considerably higher than the national averages; specifically 2.8, 2.4, and 2.3 times greater than the corresponding respective age groups (1). Clearly, Indian suicide occurs predominantly among the young, rather than the elderly, which is more common in the mainstream population (2).

Several general patterns of suicide among Indians

and Alaska Natives can be discerned from the 116 studies that have been published on the subject since 1960. In this special population, suicides are most likely to be committed by males, to have occurred in association with heavy alcohol consumption, and to have been carried out by highly lethal means (for example, guns and hanging). Those who take their lives typically belong to tribes with loose social integration that are undergoing rapid socioeconomic change. However, despite this fairly common pattern, rates vary dramatically, ranging from well below the national average in some southwestern communities to well above the national average in intermountain tribes of the Rockies (3,4).

A wide range of individual risk factors has been considered in regard to suicides of Indians and Alaska Natives (5). Frequent interpersonal conflicts (6-9), prolonged, unresolved grief (10,11), chronic familial instability (12-15), depression (16,17), alcohol abuse and dependence (18), and unemployment (19-22) have been shown to be major correlates of this phenomenon. In addition, a family history of psychiatric disorder—particularly alcoholism, depression, and suicide—often has been noted (23). The suicide rate also is higher among Indian and Alaska Native adolescents who have been seen for psychiatric problems, those with physical illnesses, those who have previously attempted suicide, those with frequent encounters with the criminal justice system, and those who have experienced multiple home placements (12,24,25). Social disintegration and acculturation also have captured a great deal of attention as possible causes of suicide in this segment of the population (26-32). Culture conflict and concomitant problems in identity formation are believed to produce a chronic dysphoria and anomie which render Indian youth vulnerable to suicidal behavior during periods of acute stress (33).

To date, few prospective studies of suicide among American Indian adolescents have been completed. In the following sections we report on one group of such adolescents and examine both the extent to which they are at risk of suicide as well as the relationship of various demographic and psychosocial variables to suicidal ideation and past attempts by members of this group.

Methods

The data we present were collected as part of a longitudinal survey of American Indian students attending a Bureau of Indian Affairs (BIA) funded,

but tribally administered boarding school in the Southeast. The survey was intended to establish the prevalence and incidence of symptoms of depression, anxiety, and substance abuse within this setting, as well as to shed light on the relative contribution of specific phenomena—notably stressful life events, coping strategies, social support, competence, and self-esteem—to these outcomes.

The boarding school is a fully accredited secondary school situated on 194 acres and occupying 39 buildings including dormitories. Of approximately 200 students attending the school, 96 percent live there throughout the school year. The vast majority reside within the State and belong to one of five local tribes. The specific school and tribes are not identified to protect the confidentiality of the persons and agencies involved.

Beginning with the 1987-88 school year, a self-report questionnaire has been administered to the students twice during each academic year (November and May, corresponding to the first and fourth quarters) at the same time of day (second period, 9:15 a.m.). Teachers explain the purpose and nature of the questionnaire and of informed consent to the students. National Center for American Indian and Alaska Native Mental Health Research faculty and staff are on site to assist with its administration. The students are encouraged to answer the questions honestly since they will not be identified. Most students complete the 37-page questionnaire within approximately 1 hour, during the second and third class periods. Compensation is provided through school-wide prize raffles.

This process is being repeated each year for at least 4 years, following each student from enrollment to dropout, transfer, or graduation. Unique identifiers enable the study team to link data specific to each respondent across all waves of data collection.

The student questionnaire comprises 14 areas of measurement. For this paper, the analyses were restricted to data collected during the first wave in a select number of these areas. No suicides occurred at the school during the year in question.

The student's suicide potential was ascertained with responses to two items, "Have you ever tried to kill yourself?", and "*During the past month:* (a) I haven't had any thoughts about killing myself, (b) I have had thoughts about killing myself, but I would not carry them out, (c) I would have liked to kill myself, and (d) I would have killed myself if I got the chance." Thus, the first question provided a "Yes or No" answer to whether the student had

ever attempted suicide, while the second formed an index of current risk for suicide. Though limited, similar measures are commonly used in survey research of this nature (34).

Additionally, students were asked if a close friend or relative had ever attempted or committed suicide; these were recoded as dichotomous measures for the purpose of this analysis. Furthermore, three items from the life events measure assessed whether the students had experienced the death of (a) a sibling, (b) a parent, and (c) a friend as well as a rating of the stressfulness of these events.

Current depressive symptomatology was assessed with the Center for Epidemiologic Studies Depression (CES-D) Scale (35). CES-D scores above 16 indicate a possible diagnosis of depression. A quantity-frequency of alcohol use index was constructed using items from the Adolescent Alcohol Involvement Scale (AAIS); (36). The resulting quantity-frequency scale has a range from 1 through 28, where 1 indicates no drinking the past month and 28 indicates drinking 10 or more times in the past month and drinking 6 or more drinks at a time. Finally, social support provided by family and peers was assessed using the Perceived Social Support Index (37).

Results

Two hundred and four students were enrolled at the boarding school when the questionnaire was first administered in 1987; 190 (93 percent) students were in attendance on the day of the survey, 188 of whom completed the questionnaire, for an overall participation rate of 92 percent. Of the 188 questionnaires completed, 7 were excluded from the current analyses due to too many missing values on the CES-D Scale (more than 8), and 2 were excluded due to obvious inattention to the questions on the survey. Of the CES-D response sets on the remaining 179 questionnaires, 1 had two missing values and 16 had one missing value. In these cases, the conservative strategy of replacing missing values by the population median response for each item was implemented.

Table 1 presents the characteristics of the study population, which has more females than males. The population falls predominantly in the 15-17-year-age range (74 percent), and students are relatively evenly distributed across the four school years: 24 percent freshmen, 28 percent sophomores, 26 percent juniors, and 22 percent seniors. The students are members of 17 different tribes with 84 percent coming from three local tribes.

Table 1. Demographic characteristics of study population of American Indian boarding school students

Characteristic	Number	Percent
<i>Gender</i>		
Females	97	54
Males	81	45
<i>Age</i>		
12-14 years	24	13
15-17 years	134	74
17-20 years	19	10
<i>Grade</i>		
Freshmen	43	24
Sophomores	49	28
Juniors	47	26
Seniors	39	22
<i>Tribal affiliation</i> ²		
Southeastern A	105	59
Southeastern B	29	16
Southeastern C	16	9
Others	29	16

¹ Percentages do not total 100 percent because of missing values.

² 17 tribes were represented.

Table 2. Psychosocial correlates of attempted suicide and current suicidality

Psychosocial variable	Attempted suicide		Current suicidality	
	r	P	r	P
Age	-.08	.29	-.10	.19
Gender .....	.11	.12	.11	.15
Attempted or committed suicide:				
Relative .....	.30	.001	.16	.03
Friend .....	.35	.001	.20	.01
Experienced death of:				
Sibling .....	.03	.65	-.10	.17
Parent .....	.01	.92	.05	.53
Friend .....	.16	.03	.18	.01
Depressive symptomatology:				
Total score .....	.41	.001	.41	.001
Possible diagnosis (>16) .....	.20	.01	.36	.001
Alcohol quantity and frequency ..	.19	.01	.12	.11
Perceived social support:				
Family .....	.20	.01	.08	.28
Friend	-.12	.12	-.18	.02

Forty-four students (23.4 percent) reported having attempted suicide at some time. During the past month, 20.9 percent had thought about suicide, 9.6 percent would have liked to kill themselves, and 2.8 percent would have killed themselves if they had the chance.

The relationship of attempted suicide and current risk of suicide to selected demographic and select psychosocial variables are presented in table 2. Somewhat surprisingly, no age or gender differ-

Table 3. Events reported in student histories, survey of 41 school programs, 1988

History of—	Number	Percent of schools
Emotional difficulties.....	35	85
Previous suicide threat or attempt	34	83
Poor academic performance.....	34	83
Family disruption.....	34	83
Parental alcoholism.....	33	80
Abuse or neglect.....	32	78
Substance abuse.....	32	78
Parental divorce.....	29	71
Delinquency and crime	29	71
Recent death of relative or friend	27	66
Personal physical assault	26	63
Multiple home placements	24	59
Physical handicap or illness	19	46
Negative boarding school experience ...	13	32

Table 4. Assessments of student risk by staff of 41 school programs

Thought at high risk for—	Number	Percent of schools
Suicide.....	35	85
Substance abuse or dependence ...	35	85
School drop-out.....	34	83
Serious emotional or psychological problems	33	80
Serious criminal behavior	20	49

Table 5. Goals of 41 school-based intervention programs

Program intervention goals	Number with goal	Percent of schools
Promote mental health.....	35	85
Recognize risk factors.....	34	83
Alleviate situations of risk.....	33	80
Promote cultural identity	32	78
Increase or enhance program or community resources.....	29	71
Improve educational opportunities	24	59
Promote physical health	19	46
Limit access to means of self-harm	16	39
Improve socioeconomic situation.....	12	29
Influence legislative actions	6	15

ences were found. There is a strong relationship between relatives or friends having committed or attempted suicide and the students' attempts and current risk of suicide. Having experienced the death of a sibling or parent is not related to either suicide indicator in students, although the death of a friend is related to both student attempts and current suicide risk. This latter finding is not surprising when one considers that a substantial number of the friends' deaths are probably suicides

and, in fact, 46 percent of those who experienced the death of a friend also report that a friend attempted or committed suicide.

Depressive symptomatology is strongly related to both past suicide attempts ($r = .42$; $P < .001$) and current risk for suicide ($r = .41$, $P < .001$). Furthermore, the dichotomous measure of possible diagnosis of depression (CES-D score above 16) is also strongly related to past attempts ($r = .20$, $P < .01$) as well as current risk ($r = .36$, $P < .001$). Greater consumption of alcohol was positively correlated only to attempted suicide ($r = .19$, $P < .01$). The number of stressful life events experienced by the student was only marginally related to either indicator of risk of suicide. Finally, little reported support from family was correlated with attempted suicide ($r = .20$, $P < .01$), while high peer support was related to greater current suicide risk ($r = -.18$, $P < .02$).

Discussion

According to the 1980 census, 43.4 percent of the Indian population is 19 years of age or younger, with slightly more than half of these youth between 10 and 19 years (38). Although the percentage of students attending BIA-funded schools has dropped sharply over the years, from 39 percent in 1930 to 23 percent in 1977 (the last year for which this statistic is available), significant numbers of these youth continue to be educated in such settings (39). For example, approximately 13,400 presently attend boarding schools, constituting about 14 percent of the Indian high school population. Clearly, the respondents in this study represent an important segment of the Indian community, in terms of their age as well as educational experience.

The ability to screen for those at highest risk for suicide is essential if prevention efforts are to succeed. The results we reported suggest possible screening mechanisms and also generally support previous findings on risk factors for suicide among adolescents: specifically, depressive symptomatology, alcohol use, and little family support. Risk for suicide is also more common among students who have personal knowledge of a suicide victim, that is, those who have had a relative or friend attempt or commit suicide. This finding suggests that an imitative mechanism may also operate among these students. The fact that high peer support is related to greater risk for suicide is troubling, especially in light of the importance of peers to these students living away from home. Further research with this

sample will examine these relationships longitudinally in a multivariate fashion.

Given the fact that American Indian adolescents are at special risk for suicide, what programs or interventions have or are being developed to help these students? Community responses to suicides of Indian adolescents and to related risk factors were recently surveyed under a contract with the Indian Health Service (IHS), by S. M. Manson, C. W. Duclos, D. W. Bechtold, and W. H. Sack of the National Center for American Indian and Alaska Native Mental Health Research. Information was sought about the nature of ongoing preventive activities from approximately 850 appropriate providers and agencies. This survey identified 194 programs carrying out significant prevention activity as of May 9, 1988.

The majority of these programs are located in human service and community settings. Approximately one-quarter are based in schools. Nearly one-half of the 194 programs are sponsored by local tribes or Native organizations; one-third are managed by private nonprofit groups; one-quarter are administered by the IHS. Two-thirds of the interventions involve counseling and psychotherapy; one-half provide specialized training or case consultation. Roughly one-third emphasize recreational and cultural activities.

Seven percent of the 194 programs focus exclusively on suicide prevention. More than one-third of these are part of the mandate of mental health agencies or projects. Twenty-two percent are carried out by substance abuse programs. Most of these efforts are clinically based, providing traditional counseling and psychotherapy and addressing more general mental health issues.

Of the 41 school-based programs identified in the survey by Manson and coworkers, 59 percent target adolescents 13–19 years old, and 32 percent address school children 7–12 years old. Substance abuse is the main focus for 22 percent of these programs. Another 27 percent emphasize more general mental health issues. Approximately one-half are operated or sponsored by local tribes and 27 percent by private nonprofit corporations. Funding sources for these school programs include the IHS, 46 percent; State, 39 percent; and tribe, 20 percent.

School staff report that the students in their programs experience a wide spectrum of physical and emotional stresses. Those most frequently observed by the staff are listed in table 3. They, in turn, believe that such stresses contribute to self-destructive behavior. Examples of such actions are summarized in table 4.

The majority of these school-based preventive interventions rely upon counseling and psychotherapy (71 percent), education and training (66 percent), case consultation (61 percent), recreational activities (44 percent), and cultural heritage programming (39 percent). Special facilities—for example, a medical holding room, detox center, or teen center—are available in one-fifth of the schools.

When asked about the goals of the intervention, school program staff most frequently cite promoting the well-being of their students. Other, more specific, goals are listed in table 5.

These data indicate that school-based prevention programs in American Indian and Alaska Native communities emphasize the early identification of students' mental health problems, as well as the reduction of specific risk factors such as substance abuse. Innovative programs are emerging that hold considerable promise for suicide prevention (40). Little or no outcome data are available in regard to the effectiveness of the programs that responded to this survey. This finding is consistent with the extensive 1987 survey of school and community-based substance abuse prevention programming by Owan and coworkers (41).

In summary, American Indian adolescents are at elevated risk for suicide. Risk factors suggested in the literature, and substantiated by the present study, include depressive symptomatology, alcohol use, and lack of familial support. The presence of an imitative mechanism that is characteristic of cluster suicides is also apparent in the results. School-based prevention efforts have, to date, emphasized the early identification of Indian students' general mental health needs and focused upon substance abuse as a primary risk factor for intervention.

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