

## Part 4

### Special Settings

# **SUICIDE IDEATION AND SUICIDE ATTEMPT AMONG AMERICAN INDIAN AND ALASKA NATIVE BOARDING SCHOOL ADOLESCENTS**

**NORMAN G. DINGES, Ph.D., and QUANG DUONG-TRAN, M.A.**

Past reports have documented the prevalence and potential causes of suicidal behavior among American Indian and Alaska Native (hereafter Indian/Native) populations based on epidemiological and clinical data sources (Berlin, 1986; Jordan, 1988; May, 1987). Other chapters in this monograph provide a current review of the status of research in this area and suggest critical areas for future investigations.

This report will describe the development and validation of suicide ideation and suicide attempt screening measures for high-risk Indian/Native adolescents attending Bureau of Indian Affairs (BIA) boarding schools. These measures were developed as part of an ongoing effort to develop and validate mental health screening measures for the early identification of Indian/Native adolescents currently experiencing or potentially at risk for major mental illness, serious psychological dysfunction, or substance abuse (Dinges, Joos, & Duong-Tran, 1987; Dinges & Duong-Tran, 1989). The ultimate goal of these efforts was to increase the capability of health service providers to conduct appropriate and valid diagnoses of problems in order to facilitate timely referrals to treatment resources.

This report is focused on the suicide ideation and suicide attempt components of the screening survey and the confirmation of their screening efficacy by means of structured diagnostic interviews. It will also describe the project design and implementation steps and will summarize the results of the screening effort.

## **Project Design and Implementation**

The screening project focused on the following major tasks:

1. Refinement of a general screening and assessment instrument for serious psychiatric or psychological dysfunction and substance abuse among Indian/Native adolescents
2. Administration of the screening and assessment instrument to the population of students enrolled at a northwest BIA boarding school during the 1989 spring term

3. Individual diagnostic interviews with a sample of students who participated in the screening effort and were willing to volunteer for interviews
4. Determination of the utility of the various screening components for identifying Indian adolescents at risk for psychiatric disorder, serious psychological dysfunction, or substance abuse.

These goals were accomplished in two distinct phases. The first phase focused on developing, administering, and evaluating the psychometric properties of the screening instrument. The second phase concentrated on determining the presence of psychiatric disorder or serious psychological dysfunction among a subgroup of those adolescents who had completed a valid screening survey. This was accomplished through individual interviews using the National Institute of Mental Health (NIMH) Diagnostic Interview Schedule for Children (DISC) (Puig-Antich, Chambers, & Tabrizi, 1983).

The procedures involved in the development of the screening instrument, data collection, and data analysis follow:

- Step 1: Develop pool of potential screening questions
- Step 2: Administer to all attending Indian/Native adolescents at a northwestern boarding school
- Step 3: Create screening indices for various categories of disorder or dysfunction. (suicide ideation and suicide attempt the focus of this report)
- Step 4: Conduct individual diagnostic interviews (DISCS) with the sample of students involved in Step 2
- Step 5: Determine diagnostic status for all students in Step 4
- Step 6: Determine accuracy of screening indices in correctly identifying students with diagnosed DSM-III-R disorders
- Step 7: Examine degree of association among DISC diagnoses
- Step 8: Examine the relationship of psychosocial variables to DISC diagnoses

## Methods

### Project Participants

During the 1989 spring term, the screening instrument was successfully administered on a schoolwide basis at a northwestern boarding school. Approximately 340 students were officially enrolled on the

screening day and 315 of those students were available to participate in the actual screening. Of those screened, 291 voluntarily returned usable surveys (including some who completed the screening a few days later because they were not present on the day of classroom screening). The remaining students did not complete the survey or provided invalid responses. Five of the students refused to participate, which may have been related to their using drugs at the time of the survey.

### Screening Instrument Content

The content of the screening instrument was drawn from a number of existing screening measures designed for the detection and assessment of psychiatric, behavioral, and social problems among adolescents. Additional items intended to assess problems unique to Indian/Native youth were added after discussions with school personnel, health service providers, and community leaders. The major content categories were

- Biodemographic information and general health questions
- The Center for Epidemiological Studies or Depression Scale
- Paykel suicide questions
- Indian/Native adolescent stressful events questionnaire
- Perceived social support inventory (Procidano & Heller, 1983)
- The Hopkins Anxiety Symptom Checklist
- Self-esteem measures
- Alcohol and drug abuse measures (Oetting, Beauvais, Edwards, & Waters, 1984)
- Family cohesion and social support measures
- Coping measures
- Crowne-Marlowe Social Desirability Scale (Crowne & Marlowe, 1964)

Final selection of measures was made after consultation with school administrators, faculty, and counselors. Pretesting was conducted to determine acceptable language levels, culturally appropriate content, and practical administration considerations such as total response time. Subsequent experience indicated that approximately 95% of the students could provide complete and valid responses to the screening survey within a 50-minute classroom period.



## Screening Instrument Validation Interviews

The screening instrument was validated by comparing specific screening indices to the results of a structured diagnostic interview administered individually to a large subsample of the boarding school adolescents. The diagnostic interview sample consisted of a proportionate number of students in each age and sex category who had completed valid screening surveys and accounted for approximately two thirds ( $n = 205$ ) of the students.

## The Diagnostic Interview Schedule for Children

The Diagnostic Interview Schedule for Children was used to obtain pertinent diagnostic information about the type, intensity, frequency, and duration of symptoms used in making DSM-III-R diagnoses (Puig-Antich et al., 1983). The DISC provides the interviewer with specific questions that correspond directly to the symptoms of psychiatric diagnoses listed in the DSM-III-R (American Psychological Association, 1980). The DISC is a highly structured questionnaire that includes information about adolescent's relationships at home, in school, and with peers; school progress; social behavior in the community; a review of somatic symptoms; and questions covering a variety of psychiatric symptoms ranging from depression and anxiety to psychosis. Most of the questions can be answered in a "yes" or "no" response format, indicating that the symptom is present or absent. Most of the items are relevant to the mental health status of Indian/Native adolescents of the age range addressed in the screening.

The use of the DISC was indicated as a criterion measure for several reasons. It has been shown to clearly distinguish between a group of psychiatric clinic children and control children (Herjanic & Campbell, 1977), carries minimal risk to study participants, and can be used by trained interviewers of varying backgrounds. It has been shown to yield excellent agreement on symptoms that are concrete, observable, severe, and unambiguous to both children and their parents (Herjanic & Reich, 1982). Experience indicates that it is possible to train paraprofessionals to administer the DISC with high interrater reliability and test-retest reliability. In addition, experience with the DISC during a prior screening effort with Indian/Native adolescents indicated that it performed acceptably as a field-based criterion measure with which to validate the use of mental health screening measures.

The information generated by the DISC was used in two ways. First, to determine the extent to which an individual met diagnostic criteria for a given DSM-III-R disorder. Second, as an independent means of confirming the experiences of specific psychiatric symptoms and related forms of psychological dysfunction.

The latter form of the DISC data were employed in these analyses. Hence, subsequent reference to "diagnostic" and "nondiagnostic" groupings based on DISC responses is based on the endorsement of relevant items. Specifically, the "suicide ideation" and "suicide attempt" categories are operationally defined on the basis of whether or not the individual answered affirmative to the DISC questions about these experiences.

### **Interviewers**

The majority of DISC interviews were administered by well-qualified and well-trained American Indian interviewers. In addition, 42 interviews were completed by the project director and a well-trained non-Indian graduate research assistant. The selection criteria for the diagnostic interviewers included previous training in mental status interviewing or related interviewing experience and well-developed professional skills necessary to establish good rapport with Indian youth. Interviewers participated in a diagnostic interviewing seminar, in which they received intense didactic and practicum training in interviewing procedures and the DISC response format. Interviewers were continuously supervised in the field and participated in several group meetings and individual sessions in which they presented and discussed difficult diagnostic interview issues.

## **Screening Results**

### **Screening Population Characteristics**

The mean age was 16 years for a total population of 291 students who were evenly distributed in age intervals from 14 to 18. Forty-three percent of the sample was male and 57% female.

### **Suicidal Thought**

The screening survey contained the six questions originally proposed by Paykel, Meyers, Lindenthal, and Tanner (1974) to identify the presence of thoughts indicating progressively more serious suicidal ideation and actions. The questions in this series include (a) thoughts about whether life is worth living, (b) periodic wishes for death, (c) thoughts about killing oneself without serious intent to do so, and (d) serious thoughts about killing oneself, which may include plans for how one would go about doing so. The last question was chosen as the screening index question for assessing suicide ideation and is stated as follows: "Have

Table 8-1  
Summary of Frequencies and Percentages by  
Age and Sex for Suicide Ideation ( $n = 291$ )

	Age				
	14 freq(%)	15 freq(%)	16 freq(%)	17 freq(%)	18 freq(%)
Serious thought with plan to kill self	20(39)	25(43)	34(46)	24(44)	16(30)
Never	31(61)	33(57)	40(54)	30(56)	37(70)
N = 119 (41%) Serious thought with plan	(χ <sup>2</sup> = 4.44, df = 5, p = N.S.)				
	Sex				
	male freq(%)	female freq(%)			
Serious thought with plan to kill self	45(36)	74(45)			
Never	80(64)	92(55)			
	(χ <sup>2</sup> = 2.17, df = 1, p = N.S.)				

you ever reached the point where you seriously considered killing yourself, or perhaps made plans for how you would go about doing it?"

Often      Sometimes      Hardly ever      Never  
1                      2                      3                      4

Using a cutoff that included response options in the "Often" and "Sometimes" categories, approximately 41% of adolescents indicated that they had reached a point where they seriously considered killing themselves (Table 8-1). Although there were minimal variations by age, females were overrepresented among those who indicated serious suicidal thoughts (males = 36%, females = 45%). This trend did not reach statistical significance.

### Suicide Attempt

Suicide attempt was assessed by a question that asked directly if the adolescent had ever tried to kill him- or herself and placed such attempts within a temporal framework. The question was stated as follows: "Have you ever tried to kill yourself?"

1. Yes, within the last six months.
2. Yes, within the last year.
3. Yes, more than a year ago.



Table 8-2  
Summary of Frequencies and Percentages by Age and Sex for Suicide Attempt (N = 291)

	Age				
	14 freq(%)	15 freq(%)	16 freq(%)	17 freq(%)	18 freq(%)
Within last 6 months	3(6)	3(5)	7(10)	5(9)	4(7)
Within last 7–12 mos.	7(14)	1(2)	8(11)	6(11)	4(7)
More than 1 year ago	5(10)	12(21)	8(11)	7(13)	10(19)
Never	36(71)	42(72)	51(69)	36(67)	35(66)
N = 90 (30%) Total Suicide Attempt	$(\chi^2 = 16.29, df = 15, p = N.S.)$				

	Sex	
	male freq(%)	female freq(%)
Within last 6 months	5(4)	17(10)
Within last 7–12 mos.	9(7)	17(10)
More than 1 year ago	18(14)	25(15)
Never	93(74)	107(64)
	$(\chi^2 = 5.45, df = 3, p = N.S.)$	

#### 4. No, never.

The results for suicide attempts indicated that 30% of adolescents had attempted suicide. Table 8-2 shows the distribution of suicide attempts by recency of attempt for both age groups and sex. Although there was no difference based on age group, there was a trend for females to have made a greater number and more recent suicide attempts than males. These trends, however, did not reach statistical significance.

### Screening Indices and Diagnostic Classification

The ultimate goal of this project was to determine the usefulness of the screening measures in identifying those adolescents who also met the diagnostic criteria for either suicide ideation or suicide attempt. Diagnoses of suicidal ideation or suicide attempt were determined by use of DSM-III-R criteria.

Table 8-3 presents the classification of adolescents into diagnostic groups using the DISC versus the screening measures. Chi-square



Table 8-3  
Comparison of Diagnostic Interview and Screening Index Classification  
(N = 205)

Suicide Ideation		Diagnostic Interview	
Screening	Non-Diagnosed	Diagnosed	$\chi^2 = 22.98$ $p = <.00001$
Positive	39	38	Sensitivity = 61%
Negative	24	104	Specificity = 73%

  

Suicide Attempt		Diagnostic Interview	
Screening	Non-Diagnosed	Diagnosed	$\chi^2 = 75.66$ $p = <.00001$
Positive	25	31	Sensitivity = 92%
Negative	2	147	Specificity = 82%

analyses indicated that the screening indices for suicide ideation and suicide attempt were significantly related to diagnostic status at the time of DISC interview ( $p < .003$ ).

The sensitivity and specificity of the respective screening indices also are reported in Table 8-3. The Suicide Ideation Index was moderately sensitive (.61) and slightly more specific (.73). The Suicide Attempt Index was quite sensitive (.92) and also fairly specific (.82).

### Interrelationship of DISC Diagnoses

The relationships between suicide ideation, suicide attempt, and other DISC diagnoses also are of interest in understanding the efficacy of screening indices. Table 8-4 presents the results of these analyses. The chi-square tests of association between DISC diagnoses of suicide ideation and suicide attempt, depression, drinking, and drugs are all highly significant ( $p < .004$  or greater). Similarly, the chi-square tests of association between DISC diagnoses of suicide attempt and depression and drinking and drugs are also highly significant ( $p < .001$ ). Drinking and drugs were defined using the DSM-III-R substance abuse disorder criteria.

### Discriminant Analyses

A final question explored with these data was how the psychosocial variables contained in the screening questionnaire related to the DISC diagnoses of suicide ideation or suicide attempt. Differences in mean scores between diagnosed and nondiagnosed groups and zero-order correlation coefficients indicated that a number of variables other than the suicide ideation or attempt screening indices were significantly related to

Table 8-4  
Interrelationship of DISC Diagnoses ( $\chi^2$  and  $p$  values) N = 205

	Depression	Drinking	Drug	Suicide Attempt
	23.43			
Drinking	(.001)	—	—	—
	5.68	63.52		
Drug	(n.s.)	(.0001)	—	—
Suicide	24.34	21.57	14.49	
Attempt	(.0001)	(.0001)	(.0007)	—
Suicide	29.98	10.92	14.01	70.52
Ideation	(.0001)	(.004)	(.0009)	(.00001)

diagnostic group membership. Stepwise discriminant analyses were used to determine which of the other screening indices or psychosocial variables made a significant independent contribution to the prediction of diagnostic group category. The DISC diagnosis was the criterion variable, and the other screening indices and psychosocial variables were used as the predictor variables.

Initial analyses included the stressful life events scales. The results indicated that these scales contributed a small amount of variance but forced the realignment of other psychosocial variables in the discriminant function. They were therefore excluded in the present analysis and will be examined separately in future analyses of psychosocial contributions to prediction of diagnostic status.

Accuracy of case classification for predicted group membership was 74.27% for suicide ideation and 89.32% for suicide attempt. The results indicate that the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977) was the most important variable and made the largest contribution to the discriminant function in explaining diagnosed versus nondiagnosed group membership for both suicide ideation and suicide attempt (Table 8-5). The mean for CES-D score for the diagnosed suicide attempt group ( $\bar{x}$  = 31.12) was nearly double that of the nondiagnosed group ( $\bar{x}$  = 16.43) and was also significantly higher for diagnosed ( $\bar{x}$  = 23.85) versus nondiagnosed suicide ideation group ( $\bar{x}$  = 15.41).

Other screening indices and variables also contributed significantly to the prediction of each diagnosis. The diagnosed suicide ideation group used more alcohol and drugs, reported more somatic symptoms, had lower family cohesion, and were more typically female. The

Table 8-5

Standardized Coefficients, Canonical Correlations, and Wilk's Lambda for Group Classification of Suicide Ideation and Suicide Attempt Diagnoses

Suicide Ideation Diagnosis	Canonical Coefficients	Canonical Correlations	Wilk's Lambda
CES-D Total Score	.78	.47	.77
Somatic Symptoms	.59		
Drug Screening Index	.50		
Drinking Screening Index	.47		
Family Cohesion	-.39		
Sex	.38		
<b>Suicide Attempt Diagnosis</b>			
CES-D Total Score	.89	.49	.75
Somatic Symptoms	.61		
Drug Screening Index	.54		
Support by Father	-.30		

diagnosed suicide attempt group used more drugs, reported more somatic symptoms, and received less support from their fathers.

## Discussion

### Prevalence Rates

The overall rates of serious suicide ideation (41%), based on screening survey response for this population of Indian/Native adolescents, exceeds by a considerable degree recent reports of approximately 15% derived from epidemiological studies among non-Indian/Native secondary school students (Provonost, 1990). The confirmed rate of serious suicide ideation based on diagnostic interview results (15.6%) is much closer to the self-report rates from school-based survey studies of non-Indian/Native youth. In addition, the time span between screening and diagnostic interviews in the present study may have actually lowered the overall confirmed suicide ideation rate.

Several unavoidable delays occurred between the screening and diagnostic interview. One delay was due to the death by automobile accident of a well-known, longtime teacher at the school. Another delay occurred because of the accidental death in a sporting event of one of the more popular students at the school. Considering both the volume of



interviews to be conducted and these unavoidable delays, the time between screening and diagnostic interview reached 10 weeks in some cases. This time gap may account for some discrepancy between screening and diagnostic classification. Clinical impressions also indicate that suicide ideation among adolescents may be a relatively unstable phenomenon without the presence of more enduring psychiatric disorders such as dysthymia or major depression.

The suicide attempt rates of 30% based on screening results also are dramatically higher than the 3.5% overall rate reported in recent studies of non-Indian/Native adolescents (Provonost, 1990). The confirmed rate of 12.9% for suicide attempt as determined by diagnostic interviews is nearly four times greater than reported in other studies. Assuming that diagnostic interviews would lead to similar proportionate confirmed rates of both suicide ideation and suicide attempt in non-Indian/Native populations (i.e., approximately one third of the survey report rates), it would appear that this boarding school population is characterized by a significantly higher rate of past suicide attempts than would be expected based on non-Indian/Native population norms.

These results may be explained in part by selection factors in school enrollment. The majority of students who attend this boarding school are referred from their communities because treatment facilities for serious psychological dysfunctions or diagnosed disorders are either inadequate or nonexistent. In addition, approximately one third of the student enrollment for this boarding school was drawn from a region of the country in which higher suicide attempt rates prevailed. A number of the students came from communities in which cluster suicides had occurred. Examination of the community origins of the confirmed suicide attempts indicated that a disproportionate number of students were from these higher-risk subpopulations. There were no significant differences by age group for either the suicide ideation or suicide attempt screening indices, nor were gender differences statistically significant, even though there was a trend for females to show somewhat greater frequencies for both indices. The lack of clear sex differences is contrary to past findings, which typically show females to have higher overall rates of both ideation and attempts. Again, these results may be explained by boarding school selection factors by which higher-risk students of both sexes are referred from their communities because of the lack of residential treatment facilities for potentially suicidal adolescents. This selective referral process could result in diminished sex differences for diagnosed suicide attempt in a quasi-clinical, high-risk population. Irrespective of statistical significance, the trend for higher levels of recent ideation and attempts by females may be an important factor in screening and allocating treatment and prevention resources.



## Diagnostic Sensitivity and Specificity

Although the Suicide Attempt Index was quite sensitive and specific as well, the Suicide Ideation Index showed lower sensitivity and specificity. As described above, the lower sensitivity and specificity for the Suicide Ideation Index may also be due in part to the unavoidable time span between screening and diagnostic interview. The time frame for the Suicide Ideation Index in the screening survey asks for responses based on occurrences within the past month, while the time frame for the Suicide Attempt Index is based on reported suicide attempts that occurred any-time in the past. The shorter time frame on which the Suicide Ideation Index is based obviously allows for greater potential disparity between predictor and criterion measures if a significant lapse of time occurs between screening and diagnosis. Moreover, suicide ideation among Indian/Native adolescents, as among many non-Indian/Native adolescents, is very likely an episodic phenomenon that will vary over time with the degree of stress or current conflicts in their lives. Ambient stressors and conflicts, as well as the presence of more serious disorders such as major depression, obviously need to be considered in the assessment of serious suicide ideation.

The sensitivity of the Suicide Ideation and Suicide Attempt indices are encouraging for the purposes of broad-band screening in an Indian/Native adolescent population. The specificity levels are well within acceptable levels considering that the consequences of not identifying someone with serious suicide ideation or a recent suicide attempt are likely to be more serious clinically than are those of referring someone for diagnostic evaluation who does not meet the diagnostic criteria. Increased sensitivity of the Suicide Ideation Index would be highly desirable in future screening efforts and can probably be significantly enhanced by closer temporal proximity of screening and the diagnostic interview. For example, results from prior pilot projects with Indian/Native adolescents in which a highly similar suicide ideation screening index was used produced sensitivity results of nearly 80% when the screening and diagnostic interview occurred within a time span of approximately 5 weeks (Dinges et al., 1987).

## Interrelationship of DISC Diagnoses

The high degree of co-morbidity indicated by a significant degree of statistically related DISC diagnoses is a finding of considerable significance for both clinical assessment and practice, especially because of the overlap of suicide ideation or suicide attempt diagnoses with diagnoses of depression and substance abuse. In the boarding school context, the clinical presentation of major substance abuse or dependence and the proportionately greater resources currently being devoted to

treatment in this area are likely to mask other serious problems that go undetected, undiagnosed, and untreated. Indeed, there is impressionistic and behavioral evidence reported by school and clinic staff that adolescents returning from successful treatment for chemical dependency are now manifesting serious depressive symptoms, combined with anger, that are often acted out in self-destructive ways. The co-morbidity found in this population is clearly suggestive of the need for more comprehensive assessment aimed at differentiating high-risk, co-morbid subgroups for whom different clinical services might be required.

### Discriminant Analyses

Recent studies suggest that there are a number of risk factors for adolescent suicide behaviors (Brent et al., 1988; Metha & Dunham, 1988). The present analysis explored the relationship of psychosocial variables that might serve as risk factors through discriminant function analysis. As expected, the CES-D clearly contributed to the prediction of diagnostic status for suicide ideation and suicide attempt. The heightened levels of depressive symptomatology in the suicide attempt group, even when the attempt may have occurred in the distant past, strongly suggests continuing risk among a subgroup of approximately 15% of the students surveyed. However, it is important to note that recent reviews caution against the assumption of a linear relationship between depression and suicidal behaviors, indicating that depression is an important but far from perfect predictor (McWhirter & Kigin, 1988).

The contributions of other screening indices and psychosocial variables to understanding diagnostic status also are important. Suicide ideation appears to occur more among females who report heightened somatic symptoms and lower family cohesion, as well as among those using more alcohol and marijuana and experiencing increased depressive symptoms. Similarly, people who attempt suicide are characterized by greater use of marijuana (but not alcohol), heightened somatic symptoms, and less support from their fathers. These patterns indicate some of the complexities involved in developing and validating effective screening measures for informing and guiding clinical practice for suicide ideation or suicide attempt among Indian/Native adolescents.

Several other variables for each diagnosis were significantly related to diagnostic group in univariate tests of mean group differences. The lack of contribution to the discriminant function does not mean that the other psychosocial variables contained in the screening survey are of no importance in explaining diagnoses, but rather that their relationship probably is indirect and mediated by the other statistically significant variables. Although it is beyond the scope of the present report, a more detailed analysis of the psychosocial variables contained in the screening survey is



clearly indicated in developing a more comprehensive understanding of suicide ideation and suicide attempt among Indian/Native adolescents.

### Postscript

Although they are typically not intended as interventions, studies of the type reported here may have important primary and secondary prevention implications. During the course of the project, several depressed and potentially suicidal students were identified and referred for immediate diagnostic evaluation and treatment. The project was not designed to provide treatment, yet a valuable service was provided by the detection and timely referral of a number of at-risk students, two of whom reported serious suicidal intentions at the time of the diagnostic interviews.

Such projects also have a humbling side. One successful suicide occurred among those students who had participated in the screening survey and interviews. The student had left the boarding school and returned to his home community for approximately 6 months before committing suicide. Examination of both screening survey results and diagnostic interview outcomes for this student were distinguished by a striking absence of any significant indications of suicidal intention.

The boarding school can serve as a protective environment for potentially at-risk students and can provide a setting for prevention programming for larger populations of Indian/Native adolescents. From the inception of screening efforts beginning in 1987 and continuing through the 1989 school year, no successful suicides or serious suicide attempts occurred in this boarding school. By contrast, there were several reported suicides and numerous serious suicidal attempts among Indian/Native adolescents from communities in the geographical area served by the project boarding school. Although it has been popular to criticize the deficiencies and the (historically accurate) failings of the boarding schools, their potential as protective environments in which at-risk students can be identified and receive timely and appropriate treatment is greatly underestimated today. Considering the difficulties of establishing, funding, and staffing residential treatment facilities for adolescents, a more productive course of action might be to provide the existing boarding schools with increased resources for acquiring trained and experienced treatment staff, enhancing the capacity of present staff through training, and developing viable, appropriate, and effective intervention programs for Indian/Native adolescents. The baseline data derived from school-based surveys of the type reported here can serve both to inform treatment program development and to provide a means of evaluating improvements in the overall mental health status of Indian/Native adolescents.

## References

- Berlin, I. N. (1986). Psychopathology and its antecedents among American Indian adolescents. In B. B. Lahey & A. E. Kazdin (Eds.), *Advances in clinical child psychology* (Vol. 9, pp. 125-152). New York: Plenum.
- Brent, D. A., Perper, J. A., Goldstein, C. E., Kolko, D., Allan, M., Allman, C. J., & Zelenak, J. P. (1988). Risk factors for adolescent suicide. *Archives of General Psychiatry*, 45, 581-592.
- Crowne, D., & Marlowe, D. (1964). *The approval motive*. New York: Wiley.
- Dinges, N., & Duong-Tran, Q. (1989). Replication and cross-validation of mental health screening measures for American Indian adolescents. Final Report to the Mental Health Branch. Portland, OR: U.S. Indian Health Service.
- Dinges, N., Joos, S., & Duong-Tran, Q. (1987). Development and validation of a mental health screening measure for American Indian adolescents. Final Report to the Mental Health Branch. Portland, OR: U.S. Indian Health Service.
- American Psychological Association. (1980). *Diagnostic and statistical manual of psychiatric disorders* (3rd ed.). Washington, DC: Author.
- Herjanic, B., & Campbell A. (1977). Differentiating psychiatrically disturbed children on the basis of a structured interview. *Journal of Abnormal Child Psychology*, 10, 127-134.
- Herjanic, B., & Reich, W. (1982). Development of a structured psychiatric interview for children: Agreement between child and parent on individual symptoms. *Journal of Abnormal Child Psychology*, 10, 307-324.
- Jordan, J. B. (1988). Interventions with Native Americans. In D. Capuzzi & L. Golden (Eds.), *Preventing adolescent suicide* (pp. 299-322). Muncie, IN: Accelerated Development.
- May, P. (1987). Suicide and self-destruction among American Indian youths. *American Indian and Alaska Native Mental Health Research: Journal of the National Center*, 1(1), 52-69.
- McWhirter, J. J., & Kigin, T. J. (1988). Depression. In D. Capuzzi & L. Golden (Eds.), *Preventing adolescent suicide* (pp. 149-186). Muncie, IN: Accelerated Development.
- Metha, A., & Dunham, H. (1988). Behavioral indicators. In D. Capuzzi & L. Golden (Eds.), *Preventing adolescent suicide* (pp. 49-86). Muncie, IN: Accelerated Development.



- Oetting, E. R., Beauvais, F., Edwards, R., & Waters, M. (1984). *The drug and alcohol assessment system: Instrument development, reliability and validity*. Fort Collins, CO: Rocky Mountain Behavioral Science Institute.
- Paykel, E. S., Meyers, J. H., Lindenthal, J. J., & Tanner, J. (1974). Suicidal feelings in the general population: A prevalence study. *British Journal of Psychiatry*, 124, 460-469.
- Procidano, M. E., & Heller, K. (1983). Measures of perceived social support from friends and from family: Three validation studies. *American Journal of Community Psychology*, 11, 1-24.
- Provonost, J. (1990). Epidemiological study of suicidal behavior among secondary-school students. *Canada's Mental Health*, 38(1), 9-14.
- Puig-Antich, J., Chambers, W. J., & Tabrizi, M. A. (1983). The clinical assessment of current depressive episodes in children and adolescents: Interviews with parents and children. In D. P. Cantwell & G. A. Carlson (Eds.), *Affective disorders in childhood and adolescence* (pp. 157-179). New York: S. P. Medical & Scientific.
- Radloff, L. S. (1977). The CES-D Scale, a self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1(3), 385-401.
- Schoenbach, V. J., Kaplan, B. H., Grimson, R. C., & Wagner, E. H. (1982). Use of a symptom scale to study the prevalence of a depressive syndrome in young adolescents. *American Journal of Epidemiology*, 116, 791-800.

## Discussion

**Dr. Beasley:** The two and a half years that I spent at an Indian boarding school, my main preoccupation, besides looking into people's mouths, was dealing with their social pathologies. The idea that boarding schools are concentrations of social pathologies or concentrations of psychopathologies has been an ever-present concept.

A significant number of children in these settings are coming and going. They are in such a flux that I refer to those children as the "drifters." I don't think we've ever really looked at that population. What happens to those kids? Norm was able to do studies on 291 of the 340 enrolled students. I wonder what happened to those 50 students that were not picked up by screening nor by anyone in mental health.

I'd also like to bring up the timing when this was done. I wonder if the results might have been different had it been done in the fall instead of the spring. Certainly, from some of the things that you have said about suicide occurrence being higher in the fall in adolescents, we might have seen a little bit different figures at that time.

I think when we talk about cultural issues, we have to differentiate boarding schools and their geographic location. Certainly, this boarding school is unusual because it is essentially a little government island surrounded by a great white sea of the Willamette Valley or the town of Salem. It is government territory. It's a different kind of situation.

At the boarding school, the culture there was what I'd call a boarding school stew — a stew that was never quite finished. Ingredients were always being added and always being taken away. For example, the boarding school at one time had a very high proportion of Navajo children. Next it had a very high proportion of kids from Alaska, particularly Eskimo kids. That's a very important issue with boarding schools. You just can't, I think, take the generic term "boarding school" and have it mean the same thing.

I think it's amazing in the 8 years that I've been associated with boarding schools, I've not experienced or not heard about a suicide at either Chemawa or Riverside. I think that's a fairly unusual kind of phenomenon. I do think we need to look at the protective factors. Then I would also think along the lines of what Philip May presented in terms of most of the suicides occurring close to home. If you've listened to the stories and reports of the kids that do not come back, you will find that some of these kids do go home and kill themselves. That is one of the things that we also ought to look at — what's the communication process between boarding school and homes?

**Dr. Manson:** In terms of a variety of different areas of inquiry, I'll just sort of take the prerogative of putting one up on the table. For the most part, I think when we talk about preventive intervention efforts, we seem to be largely considering primary prevention. It's my sense that that type of mechanism also has a great deal of currency in Indian and Native communities.

I'm struck by the incredible opportunity to conduct secondary preventive intervention efforts. In my view, there are more immediate potential payoffs from those kinds of efforts in terms of time and cost put into it, vis-à-vis the primary prevention. Now, one of the things that your presentation is, in part, about is, in fact, secondary prevention, especially for those 24 students over those 2 years. I think that educational settings like this represent one welcome opportunity to do that.

I wonder why we don't think about primary care settings for adolescents or some of the other settings in which they're most frequently seen. These can be other potential services settings in which we are likely to encounter them in a nonstigmatized fashion and could build these screening and detection techniques into them. We could develop protocols in a relatively cost-effective fashion, and then refer, as appropriate. This is assuming, of course, there are available resources, which isn't necessarily always the case, as we've heard on several occasions.



**Dr. Dinges:** I think that is a great idea. That is exactly what I proposed to the school. This should be a regular, maybe twice-yearly event. Robert is right; I should be there in the fall. It's pragmatically very difficult to be there just at the fall. You might catch, indeed, a number of other students. The school systematically eliminates those students for whom they simply cannot provide anything and who present a disruptive influence on the school. In terms of cost effectiveness, it might be one of the better things you can do because it does not cost that much with some demonstrated efficacy of the screening measure. Even when you do all the interviews, we're not talking about huge amounts of money, at least not in terms of what IHS gave us. What it really costs is a different matter.

**Dr. Neligh:** I think your issues of family practice doctors as a nexus for intervention both in secondary, as you and Phil perhaps can attest, as well as tertiary intervention may be one of the most effective and cheapest interventions we can do. Throughout the whole rural West, and not just in Indian country, family practice doctors and those who work in emergency rooms typically treat an intoxicated suicidal adolescent with gastric lavage or sutures of the slashed wrists, then sends him home with no further follow-up. Everything that we've heard in this conference suggests that having had a previous suicide attempt is a risk factor. One of the things that we can do that would be inexpensive would be to train family practice doctors to refer people who come into emergency rooms with a suicide attempt to mental health or hold them till we can intervene. Another one is making sure that kids get good mental health services.

**Dr. Somervell:** I think it's a little hard to draw the line between primary, secondary and tertiary prevention when it comes to suicide. In fact, when I think of real primary prevention, Evelyn's comment about the larger social context points to what it would be. I think in choosing between different strategies, questions of access and cost effectiveness play a role. For example, emergency rooms might be a relatively efficient place to pick up suicide attempters, but are we as effective treating them at that stage in preventing further suicides than we would be if we picked up something much earlier. So there's a question of effectiveness, which we don't know very much about.

**Dr. Toussieng:** Referrals made from the emergency room receive very poor compliance. Well over half of the kids do not show up for the first appointment, and very few show up for the second one. It's also difficult to get the parents' cooperation because lots of times the parents minimize the whole thing when the kid survived or are embarrassed by it. So that's one major obstacle for the emergency rooms to become an effective prevention area.

**Dr. Somervell:** I honestly don't know whether adolescents normally use primary care in large enough volume to pick things there.

**Dr. Schoettle:** I think one of the things we have to look at is how we can use the suicide process in and of itself to those kinds of standards for the actual preventative process. Then we must do some research about understanding how the clinicians work with suicide as well as how we look at prevention systems and prevention interventions both in a micro and a macro sense.

**Dr. Clark:** I would like to echo the idea about working with the environments that the kids spend the most time as having the best potential for prevention. I recently attended a couple of meetings in Anchorage where we were looking at the problem of Native adolescent suicide. Interestingly enough, there was no one from the public school system invited. Kids spend most of their time in a school setting. That's the best data base to observe kids. I think any suicide prevention system that doesn't involve the school setting is missing a very major opportunity. We've used that strategy in our community; it's something that's essential for any community plan dealing with the problem.

**Dr. Dinges:** Treatment for alcohol and substance abuse is one of the number of historically unidentified risk factors for suicide. We only have clinical impressionistic data for this at this point. At the boarding school, for example, a lot of the progressive treatment programs are stimulated by black and white documentation of the problems that people knew had been there for 20 years when the program started. Now when the kids come back, we have another high-risk category — those from successful alcohol or drug treatment programs. Diagnosed depression emerges from long-standing types of, probably, prealcohol abuse disorders and suicide ideation.

As we start to get successful in one sphere, I think we have to be alert to another risk factor. Historically, I would agree that the boarding school is probably a risk factor but we might look at it in a certain context in certain parts of the country as a protective factor. We have to be much more open to that than, I think, the non-Native/non-Indian literature would like to suggest. As I read the literature and I go down the list of risk factors for adolescent suicide, I don't see those dynamic types of considerations where successful treatment becomes a risk factor.

**Dr. Grossman:** I wanted to respond to Phil. It seems that we're talking about two different types of secondary prevention. The first is prevention of repeat attempts for those that have come to medical attention and have already been under the care of a physician, either for injuries resulting from the attempt or mental health basis. Secondary prevention that we're talking about is actually screening for people who have a history of a previous attempt based on the method we talked about. Phil is also correct when he questions the frequency of care by adolescents for general care or primary medical care. In fact, most adolescents don't receive very good comprehensive medical care, and it's quite unstable in terms of frequency



for a lot of reasons. I think it would be an unreasonable way to think about population-based screening, which is really what was alluded to.

Another point, I would be really very concerned about the concept of screening in school for essentially a medical intervention. I question whether or not the schools really have the right setup to do such a screening; whether they have the right setup to maintain confidentiality; and it raises the whole question of screening itself.

I just wanted to make two other comments about the effects of false names, labeling and stigmatization, especially in the cultural context of suicide, which is enormously loaded. My experience with the Navajo and also in northwest Washington in the Salish culture has shown me that the concept of suicide is an act inflicted by others upon an individual who's still very much alive. Many still believe in the concept that a suicide attempt by an adolescent is really an act that's perpetrated by someone else that's witching them. Most of the adolescents that I've interviewed in northwest Washington still, in spite of the acculturation by outward appearances, have very strong beliefs in the supernatural power of possession. The power of the supernatural is the primary mode by which they become ill and sick, and by which they should be treated as well. The social stigmatization of suicide attempts is so enormous because it isn't as medicalized as it is in Western society. It carries a strong traditional loading. I think this requires us to be more cautious than in the general society towards thinking about screening.

**Dr. Somervell:** You are talking about something that's very important, and the practical implications of false positives can vary by culture. If positive predictive power is poor, a high proportion of kids who screen positive really aren't suicidal. The question is, What are the consequences of falsely saying the kid may be suicidal? Within that culture, the consequences are serious, so it's a big problem. For someone else, the consequences might not be so serious, and we might be able to accept the poor predictive value of the test, depending on what is happening in that culture.

One way around that might be to look at a screening that's earlier — in the sense of the primary rather than secondary prevention, based on a profile of risk factors. We have to be sure enough of what a risk factor profile is of the potential suicider. That way, we don't even have to say that we're screening for suicide and we can simply offer some care and some help.

**Dr. Grossman:** That presupposes that you have an effective screening tool. That would avoid the self-fulfilling prophecy which is at least on Navajo always present. The concept of risk assessment on Navajo is one of the things that got me interested in the issue to begin with. The concept of preventative medicine on Navajo is completely perplexed by this issue by the way our society thinks about prevention in terms of individual risk

assessment. Navajo society thinks basically about witching. If you start to put someone in a higher-risk category, then it's your fault, you did it.

I think those things really have to be dealt with extremely carefully. I would guess that it is far more widespread than most people are willing to discuss. Within the concepts of death and the power of death, there's a lot of commonalities between tribal cultures on those issues. A lot of people, I think, are aware of that. It's not just Navajos.

**Dr. Dinges:** You're right about that. I have some 1975 data with central reservation Navajos in about 120 families, around 75% of whom will acknowledge that they've been the victims of witching and had ceremonial redress to counter the witching.

**Dr. Schoettle:** As a clinician, I could listen to that from different vantage points. At triage, let's work toward treatment. On one hand, it could be looked at as witching. They must be integrated, therefore potential suicide risk is lower. Whereas if I'm looking at it from a Western, Caucasian clinical vantage point, I might say this is an externalization of blame. There's a total sense of hopelessness, helplessness. There's no sense of internal empowerment, and a person's an extremely high suicide risk.

You see, depending on what my mind-set is, I can either see it as an asset or a liability, depending on what my reference point is. I personally have to be very clear with my own reference above and beyond what the literature says. That's an individual child that's sitting in front of me, and a family.

**Dr. Guilmet:** Pathological discussions utilize metaphors of healing. These very discussions can be perceived as negative by researchers but are indeed a language of illness. If we can interpret that language of illness, then they're already telling us that there are risk factors for this person. We might not agree with that metaphor, but they don't agree with some of the metaphors we use for illness, either. So if you find these kinds of things, they are exactly the situations that would presuppose some sort of intervention.

**Dr. LaFromboise:** I would like to address the statement made about doubting whether people in school settings would be capable of doing such screening. It would seem to me that if people were trained to do such screening, it wouldn't be as awkward to do it in a school setting, where students normally go to school everyday, as opposed to a hospital to see a higher-level professional, where it may be more obvious what's going on.

**Dr. Clark:** There's an important issue here and I think it revolves around what we mean by "screening." I think school personnel can be trained to screen, but all that should do is just set that kid up for a more in-depth look by someone that has a higher level of training. We shouldn't think



that our screening instruments ever identify a suicidal person, but just call that person to our attention for a more in-depth look.

**Dr. Neligh:** What Norm's project does is look and see what factors actually temporally predicted the development of risk behaviors. Using Phil's idea of screening earlier would be nice; then we could see what factors actually predict what outcomes in an adolescent population. We then would have a screening tool that will predict at-risk kids.

**Dr. Manson:** Another question we haven't raised that seems pretty evident to me as I think more about it is that Bob's correct. There are a variety of different kinds of boarding schools. The elements of risk are present in each, yet the manifestation of the stresses are in terms of greater depressive symptomatology and frequency of attempts in one and then another. We can begin to look at, through some comparative fashion, those educational and environmental factors they represent. Then we can begin to ask, for example, the question that we've been afraid to ask, because it's been so political: Does the boarding school administered by a tribe and all that's assumed there (more culturally sensitive, less responsive, etc.) make a difference, as opposed to a boarding school administered by the Bureau of Indian Affairs? Reservation versus off-reservation? Those are, from my point of view, with respect to the educational environment of the boarding school, the central questions of the day. It seems to me that those have major policy implications in terms of subsequent funding and the longevity of these schools.

**Dr. Bromet:** There are not major selection biases of who goes to these kinds of schools?

**Dr. Manson:** Yes, there are. But there are enough at these different kinds of schools. I think that you can begin to select schools that have similar kinds of selection biases and/or develop contrasts. You could do a series of contrasts depending upon what the driving research question is. There are other schools that are also quasi-residential treatment programs. If you wanted a control for that, you could take those two schools. They have different kinds of administrative structures and different responses to the shaping of the educational environment of those students. You could begin to, I think, ask in a fairly potent fashion, what difference the environment makes.

**Dr. Bromet:** What scares me about this whole discussion is that it assumes that if you figure out a mechanism for identifying these kids that there are validated treatments out there that are going to help them.