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This issue begins the third volume of *American Indian and Alaska Native Mental Health Research*. The range of topics covered by the articles presented herein reflects the growing interest in Indian/Native mental health and new areas that are being opened to investigation. The first contribution, "Utility of a Psychiatric Screen Among the Navajo of Chinle: A Fourth Year Clerkship Experience", by Goldwasser and Badger, represents an attempt to screen for psychiatric disorders among Indian patients seen in a medical clinic. Several not so surprising difficulties were encountered: specifically, process issues, low English literacy, and uncertain follow through by physicians. Nonetheless, Goldwasser and Badger were able to demonstrate that such screening is feasible for a significant portion of the patient population and that a substantial number of those completing the screener, in this case, the General Health Questionnaire, reported symptomatology that warranted further inquiry by a health professional. Evidence is mounting that large percentages of medical patients suffer from mental health problems that are often undetected by providers. Consequently, the management of psychiatric illness in primary care settings has captured the attention of the broader scientific community. Witness, for example, the recent National Institute of Mental Health "Depression Awareness, Recognition, and Treatment" (DART) initiative. Given the stigma that continues to plague Indian/Native mental health programs, efforts to detect serious psychological dysfunction among Indian and Native medical patients and to treat them appropriately in the clinics where they are first seen hold considerable promise for success.

In one sense, Plaisier's article, "Fetal Alcohol Syndrome Prevention in American Indian Communities of Michigan's Upper Peninsula", provides us with a glimpse of the possibilities implied in the first article, albeit with respect to another, quite different mental health concern. The National Indian Fetal Alcohol Syndrome Program is analogous to the NIMH DART program. The former trained local personnel from virtually every Indian Health Service unit in FAS surveillance, education, and prevention. Plaisier's article may be the first to chronicle how this training was actually implemented by health workers and the manner as well as extent to which high-risk women in their service areas received the ensuing intervention. A series of practical recommendations emerged from this study that can help to tailor such prevention and education activities to local circumstance.

A previous issue (Volume 1, Issue 3) of this journal was dedicated to examining suicide among American Indians and Alaska Natives; particular emphasis was placed upon programmatic responses at the individual as well as community levels. Tower's article, "A Suicide Epidemic in an American Indian Community", follows in the latter tradition and details the Wind River Reservation's struggle to contain a widely publicized suicide epidemic. This article presents new, important insights into the onset and

course of that epidemic. It also summarizes a comprehensive approach to suicide prevention that proceeds in several phases and that may be adapted to other community settings.

The fourth and last article in this issue, "An Investigation of Health Decision-Making Skills Among American Indian Adolescents", by Okwumabua, Okwumabua, and Duryea, speaks to a very specific and poorly understood mechanism that underpins many of the preventive interventions being promoted for Indian/Native adolescents at high risk of alcohol, drug abuse, or mental health problems. Working with a small sample of seventh graders, the authors examined their decision-making skills in regard to a series of health and social matters. The students proved to be equally efficacious in their ability to make decisions across both types of situations. However, some intriguing differences arose in the nature of the decision-making errors committed, largely with respect to the steps taken in analyzing and implementing responses to problematic social situations. Further work along these lines may prove useful in adapting various intervention strategies to this special population.

Spero M. Manson, Ph.D.
Editor-in-Chief

UTILITY OF THE PSYCHIATRIC SCREEN AMONG THE NAVAJO OF CHINLE: A FOURTH-YEAR CLERKSHIP EXPERIENCE

HARRY D. GOLDWASSER, M.D.
LEE W. BADGER, Ph.D.

Abstract: This study presents a trial in which the General Health Questionnaire (GHQ) was introduced among general medicine clinic patients on a Navajo Indian reservation in Chinle, Arizona, to test its utility in enhancing recognition of significant psychiatric problems. It was found useful in alerting physicians to suicidal patients, and in identifying risk factors such as household size and number of children for symptoms of anxiety and depression. The few problems encountered in administration of the screening tool could easily be overcome.

As a fourth-year medical student, one of the authors (H.G.) completed a five-week family and community medicine rotation in Chinle, Arizona. While there, he examined the structure of health care delivery, with specific reference to mental health care needs of those not presenting themselves to psychiatric services, but instead seeing physicians for physical complaints.

The Navajo of Chinle, like many American Indians, live in an environment with high stressors (at least in Anglo dynamics) and few resources to treat mental illness. Some of these factors include the high prevalence of chronic illness, a financially impoverished community, and a high rate of unemployment (U.S. Bureau of the Census, 1980; U.S. Department of Health and Human Services, 1984; U.S. Office of Health Resources Opportunity, 1977). The birth rate in some parts of the Navajo reservation is more than double the national average (30.5 vs. 15.9 per 1,000) (Brod & McQuiston, 1983; Jepsen, Strauss & Harris, 1977; U.S. Department of Health and Human Services, 1984).

A relationship between stress and symptoms of mental illness is suggested by evidence that alcohol abuse is a major factor in four out of 10 of the leading causes of death among American Indians (May, 1983). Only recently have birthrates among the Navajo improved from a disastrously high morbidity and mortality. Diabetes, heart disease, stroke, and glaucoma are all more prevalent in American Indians as compared to age-matched white Americans (U.S. Department of Health and Human Services, 1984).

The etiology, recognition, and treatment of mental disorders within individual American Indian and Alaska Native tribes, and even further subgroups of people, are not well understood. Formal Indian Health Service (IHS) mental health clinics were established in 1965. Yet to this

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day, these services appear to have been unable to significantly reduce mental disorders among their constituents.

Cultural diversity suggests that mental health problems will present differently in divergent groups of people. In the case of the Navajo, for example, depression may present with symptoms that are inconsistent with white middle-class expectations. When attempting to meet the mental health needs of any group known to be culturally "different," it makes sense to begin by attempting to validate specific diagnostic assumptions and the instruments used to identify them. A standard line of inquiry (e.g., "Have you been feeling depressed lately?") used by a typically trained mental health professional or a nonpsychiatric physician could result in overlooking the mental health needs of many.

Summary of Previous Studies

In 1974, an entire journal (*Psychiatric Annals*, 1974) was devoted to American Indian mental health issues. Its descriptive and anecdotal passages directly challenged racist stereotypes (such as the drunk, uneducated, heathen American Indian). Manson, Shore, Bloom, Keepers, and Neligh (1987) used diagnostic interviews, such as the Schedule for Affective Disorders and Schizophrenia Lifetime Version (SADS-L) (Endicott & Spitzer, 1978) and portions of the Diagnostic Interview Schedule (DIS) (Robins, Helzer, Croughan, et al., 1981), to make diagnoses of mental illness among the Hopis as well as among other small communities of American Indians. Manson and his colleagues compared the questionnaires with psychiatric interviews, which were conducted only after extensive ethnographic observation and questioning of illness within that community.

The researchers concluded that self-rating scales can accurately assess mental health status among American Indians provided that they are modified to reflect basic cultural heritage and experiences (e.g., not using words like "blue" or "down in the dumps" for depression) (Manson, Walker, & Kivlahan, 1987).

Forms of mental illness were also recognized as clearly indigenous; some illnesses were related in symptomatology, but none clearly fit DSM-III diagnostic criteria. Often this was found to be due to linguistic and semantic differences, such as the DSM-III grouping of words like "sinfulness", "guilt", and "shame" (which have very different connotation to the Hopi). Another instance was the DSM-III requirement for the diagnosis of depression of a two week period of dysphoria or lack of interest, as well as many additional vegetative and cognitive symptoms. According to these studies, the Hopis suffered from two distinct illnesses, one of many depressive symptoms without sustained dysphoria, and another lasting for longer than two weeks but associated with only two symptoms of depression (again, according to DSM-III). Symptoms may be shared cross-culturally, but the criteria used in building our definitions of specific mental illnesses need to be culturally validated.

The Current Study

This paper reports the results of the introduction of an early psychiatric screen in the general medicine IHS clinics in Chinle during the fall of 1987. Such screens have been found useful in numerous studies among Anglo populations (Hoepfer, Nyuez, Kessler, Burke, & Pierce, 1984; Rand, Badger, & Coggins, 1988; Shapiro et al., 1987). If this protocol were found useful to both patient and physician in discussing mental health problems and their treatment a new tool would be available for evaluation of psychiatric needs. Such a tool must be relevant, i.e., a patient's response to specific questions should provide an indication of mental impairment. Furthermore, this method must be practical, given the time limitations of the doctor and other personnel. In addition, the results of the screen must be quickly available, since it would be difficult to bring the patient back at a later time for evaluation.

The authors hoped to progress beyond the summary recognition that mental illness exists in American Indian communities. Specifically, in the Navajo town of Chinle, this reality has long been recognized by virtue of the existence of the mental health clinic and substance abuse center; neither facility, however, is heavily utilized. This fact is supported nationally, where outpatient visits by American Indians to mental health services constitute only 2% of total visits to IHS outpatient clinics (Rhoades et al., 1980). Although the observation is anecdotal, it did seem that in Chinle, at least, Navajos are unlikely to walk through the doors of mental health centers on their own. This suggests that, secondary to the earlier statistics cited, there are many people whose mental health needs are unrecognized, untreated, or treated outside the IHS.

Methods

The General Health Questionnaire (GHQ) was used as the psychiatric screening tool (Goldberg, 1978). The GHQ has correlated well with psychiatric disorders among many Anglo communities (Hoepfer et al., 1984; Rand et al., 1988; Shapiro et al., 1987); however its validity has not been tested among any American Indian group. To reduce possible misinterpretation brought about by cultural differences, we asked two Navajo mental health workers to evaluate language usage; they saw no problems with respect to the limited goals of the project. In past studies with the GHQ, a score of less than five has been considered of "no probable significance psychiatrically"; a score of five through nine has identified a "probably case"; and a score above nine has indicated "likely significant psychiatric morbidity".

The GHQ was completed by patients in the waiting room, usually in less than 10 minutes. The acknowledged limitation of this method were that only those who could read and write English could respond (at Chinle, this was as low as 50% of patients seen a day). Thus many patients,

especially older ones were not included in the study. The GHQ was scored by a nurse of the physician prior to patient contact, and was put into the patient's chart to decide whether or not the physicians used the score and clinical judgment to discuss the indications of symptoms and the benefits of mental health assistance with the patient.

Results

All respondents (N=89) were residents of the Navajo reservation. They were young (mean=32; s.d.=13), predominantly female (69.9%), and living in large households (mean=5.1, s.d.=2.0). The average number of children of the respondents was 3.2 (s.d.=2.4). Sixty percent of this English-speaking subgroup had graduated from high school, higher than the average among all American Indians nationally. Marital status (which did not provide for those living together without marriage) showed two-thirds of the respondents to be married. The average years of education was 10.9 (s.d.=3.5) and 52% of the respondents were unemployed.

Table 1
Demographic Characteristics of Study Population (N=89)

Variable	N	Percentage
<u>Marital Status</u>		
Married	61	68.5
Divorced	3	3.4
Separated	5	5.6
Never married	15	16.9
Widowed	5	5.6
<u>Church Affiliation</u>		
Native American Church	20	22.5
Protestant	13	14.6
Catholic	16	18.0
Mormon	7	7.9
Other	3	3.4
None	30	33.7
Tribal ceremony participant	60	67.4
Tribal or clan membership	61	68.5
<u>Employment</u>		
Teacher	10	11.2
Aide (teacher's or nurse's)	2	2.3
Skilled workman	4	4.5
Professional (e.g. allied health)	8	9.0
Other (e.g., farmer shepherd)	19	21.3
Unemployed	46	51.7

Table 1
Demographic Characteristics of Study Population (N=89)
(Continued)

Variable	N	Percentage
Education		
Less than high school	36	59.0
Completed high school	28	31.5
Partial college	19	31.1
Four or more years college	6	9.9
With Chronic Diseases		
None	73	82.0
Hypertension	11	12.4
Diabetes	4	4.5
Other	1	1.1

On the GHQ, 36% scored five or above (a probable case) and 19% scored 10 or above, indicating high levels of distress. There was a borderline significant difference between the frequency of men and of women who scored above five (21% versus 44%, $p=.06$). Among men, those who were unemployed had lower scores than those who were employed (7% versus 39% for scores of 5+, $p=.10$). Among women, on the other hand, scores revealed a significant and opposite trend: GHQ scores above five were obtained more often by women who were unemployed (61% versus 27%, $p=.01$). Men and women also answered specific GHQ questions significantly differently. In addition, there was a significant correlation between total GHQ score and number of children in the home ($r=.23$, $p=.02$).

Table 2
Responses to Selected GHQ Items with a Significant X^2
Difference by Sex

Item	% Men	% Women	P
3. Been feeling run down and out of sorts?	3.7	36.1	.003
5. Been getting any pains in your head?	14.3	37.7	.050
6. Been getting a feeling of tightness or pressure in your head?	10.7	29.5	.090
10. Felt constantly under strain?	3.6	26.2	.020
19. Felt that you are playing a useful part in things?	10.7	29.5	.090

With regard to specific subsections (i.e., somatic, anxiety, psychosocial, and depression) of the GHQ, the most positive responses were within GHQ part B, the anxiety subsection. The lowest positive responses were in GHQ part D, the depression subsection. There was a significant positive correlation between number of children in the home and scores on GHQ part B ($r=.20$, $p=.03$) and negative correlation between age and scores on GHQ part D ($r=-.16$, $p=.06$). Overall, those in larger households were more likely to respond positively to more GHQ questions ($r=.15$, $p=.08$). The score on the GHQ was not related to specific church affiliation, participation in tribal ceremonies or holding tribal membership, education level, type of employment, languages spoken, or chronic diseases suffered.

Table 3
Average Subsection Scores on the GHQ and Percentage Scoring Above 5

GHQ Section	Mean	% scored 5
A - Somatic	1.4	8.8
B - Anxiety	1.4	14.1
C - Psychosocial	1.3	9.8
D - Depression	0.6	4.3

Note: Each subsection has a maximum score of 7.

Discussion

This trial was implemented as a preliminary test of the usefulness of a screening tool to alert primary care physicians to the mental health problems of the Navajo of Chinle. There was no attempt in this preliminary study to test the criterion validity of GHQ scores with DSM-III diagnoses. Evaluation of patients who present with medical complaints for psychiatric symptoms appears possible, even (as in this case) by an interviewer with only limited cultural knowledge of the people. Our conclusions were similar to results found in previous trials with the GHQ in Anglo settings, where 30 to 50% of those responding to the GHQ scored five or above (Ficken, Milo, Badger, Leeper, Anderson, & Jones, 1984; Hoepfer et al., 1984; Rand et al., 1988; Shapiro et al., 1987). Thus, the Chinle Navajo who responded to the GHQ revealed symptoms at a rate near to those of Anglo communities. The Navajo seem willing to record these feelings on paper, as have other U.S. population groups (Ficken et al., 1984).

The routine in the waiting room, where the GHQ was handed to patients, worked well. The nurses directed all those with GHQs to see the physician for their medical complaints. The physician was then able to

address mental health issues in a general way, and to educate the patients about the mental health assistance available to them.

Another procedural note of interest is that patients would only take the form when it was handed to them directly by the clerk. If the clerk was busy at the time a person signed in, patients would not pick up the GHQ from the counter. On several occasions, people would cautiously stand flipping through the questionnaire while pencils sat to the side, untouched. According to the clerk, when she directly asked those who could read and write to fill out the questionnaire, however, no one refused; several forms were returned only partially completed. How this behavior might vary in other settings is unknown.

Use of the GHQ does not ensure that all patients who need mental health services will get them. Any patient may choose to terminate a discussion of mental health issues or ignore any suggestions for help. At the least, however, with this approach mental health concerns have been raised. Within this protocol, the notation of the GHQ in the chart could serve as a reminder to the physician of these needs in future meetings.

Additionally, the GHQ can be broken down to reveal specific symptoms that indicate a person may be depressed or suicidal, conclusions that travel beyond DSM-III diagnosis or statistical significance. People indicating that they feel "the possibility that you might do away with yourself" (Q#25) deserve attention regardless of total GHQ score. A Navajo mental health professional cautioned that directly mentioning death was taboo to many traditional Navajos. In her words, "To think of death invites it." Thus, if anyone answered positively to such an inquiry, there would be all the more reason to provide information and a caring ear. It seems reasonable that any Navajo willing to respond to such questions, and in some sense "invite it" (death), might be indirectly requesting attention and assistance. In this study, those responding "definitely so" to suicidal thoughts were urged to seek help, and an actual referral was offered. Of the four who responded to such questions, three allowed the physician to make appointments for them with the mental health clinic.

Some may question the ethics of bringing up ideas such as suicide without assurance that the patient will follow up with help from the IHS. Yet it is known that discussing mental health problems does not provide the impetus for dangerous action. And there is the possibility that one can begin down a path of healthier thought and action, whether it be through consultation with the IHS or perhaps a Medicine Man or Woman; even just answering the GHQ may begin a process of self-reflection sufficient to bring up such feelings on the next visit to the doctor.

The significant difference between the responses of men and women, especially in questions indicating somatic complaints, parallels earlier studies with the GHQ where women more frequently respond positively to somatic complaints (Rand et al., 1988). However, the inverse relationships between gender and work status and GHQ score (i.e., among women, the unemployed scored higher on the GHQ depression scale, while

while among men, the employed scored higher) was an interesting finding. Perhaps these data reflect differences in the roles of men and women on the reservation, or perhaps women experience the domestic stresses of economic deprivation more than men. While it is difficult to speculate on what forces shape this unexpected result, it is likely that job roles also make a substantial contribution to the mental well-being of Indians, as they do to other cultural groups.

Questionnaires such as the GHQ may be helpful in assessing Navajos' mental health status. They could alert physicians to their patients' suicidal thoughts. They could also highlight certain risk factors, such as household size and certain somatic complaints among women, to a patient's possible need for mental health services. Attention to these problems have tantamount implications for the Navajos' well-being. The grim statistics of alcoholism, suicide, and homicide tell resoundingly that Anglos just being there with mental health services offered is not enough, or perhaps even bad if we continue to be unsure of how the Navajo culture affects our interpretation of psychiatric problems. To aid these people in solving problems of mental distress, we need first be able to recognize what their needs are, be willing to implement such systems of recognition throughout their health care program, and learn how to treat their disorders. We know little about how to treat mental disorders in Anglo primary care settings, whether the same treatments, as used by psychiatrists in psychiatric settings, work on primary care patients, Anglo or American Indian.

Summary

The trial which has been reported here suggests that a screening tool like the GHQ may be useful in bringing symptoms of mental health problems to the attention of a primary care physician working in a non-psychiatric setting. The few problems in administration of the screen could easily be overcome, and perhaps the medical centers would deem this method important enough to provide oral translators for those unable to respond to the questionnaire on their own. Ultimately, various treatment modalities could be tested for effectiveness in ways which Navajos find comfortable and reassuring.

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FETAL ALCOHOL SYNDROME PREVENTION IN AMERICAN INDIAN COMMUNITIES OF MICHIGAN'S UPPER PENINSULA

KATE J. PLAISIER, M.D.

Abstract: Attitudes and knowledge about Fetal Alcohol Syndrome (FAS) were examined among American Indian communities of Michigan's Upper Peninsula. Indian health workers and community women were interviewed. Education about FAS was provided in each community. The results indicate that information on FAS is reaching many women in these communities and that traditional cultural patterns can support the development of a strong Indian women's health program. At the same time, more must be done in the near term to help those women who are at greatest risk.

Fetal Alcohol Syndrome (FAS) is a totally preventable birth defect found in children of mothers who consumed large amounts of alcohol during pregnancy. Children who are diagnosed with FAS typically have low birthweight, characteristic facial deformities, and signs of mental retardation. The term Fetal Alcohol Effects (FAE) is given to children of mothers who had consumed substantial amounts of alcohol during their pregnancy and who exhibit only part of the syndrome (Smith, 1981). FAE may also be produced by older women who are moderate drinkers.

The amount of alcohol which can be safely drunk during pregnancy is unknown. Timing of alcohol use during pregnancy, maternal age, and parity all appear to be variables. It is also hard to sort out the role of other lifestyle factors such as malnutrition, stress, smoking, other drugs, and socioeconomic status (Majewski, 1981). Low birthweight has been found however, with the daily consumption of as little as two drinks per day (1.0 ozs. absolute alcohol) in early pregnancy (Little, 1977). The complete syndrome is usually associated with maternal consumption of four to five drinks per day or more (2-2.5 ozs. absolute alcohol) (Rosette & Weiner, 1984a).

Prenatal exposure to alcohol is thought to account for approximately 5% of all congenital anomalies (Sokol, Miller, & Reed, 1980). The incidence in the United States is estimated to be approximately 1/750 live births (Streissguth et al., 1980). While FAS occurs in every cultural and socioeconomic group, it varies considerably among subpopulations, being of more concern for communities where there is a high alcohol consumption pattern among women of reproductive age.

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FAS and American Indians

In 1979, the FAS Project sponsored by the Indian Health Service (IHS) investigated the prevalence of FAS in American Indian populations of the southwest (May, Hymbaugh, Aase, & Samet, 1983). The incidence ranged from 1.3/1000 live births for the Navajo tribe to 10.3/1000 live births for the Southwestern Plains tribes. The variation was attributed to differences in tribal social and cultural patterns. There has been no information on the prevalence of this birth defect in other Indian communities. To date May's work is the only study on the occurrence of FAS in American Indian populations (May et al., 1983; May & Hymbaugh, 1983; in press).

FAS Prevention Activities

Because FAS is a preventable birth defect, considerable effort has been made to warn the public against drinking large amounts of alcohol during pregnancy. Projects have been designed to prevent FAS through patient education, and physicians have been encouraged to screen obstetrical patients for alcohol problems (Sokol & Miller, 1980; Rosette, Weiner, & Edelin, 1983).

Broadly targeted FAS education and prevention efforts have been developed by Rosette, Weiner, and Edelin at Boston City Hospital (1983). Their studies include the development of educational programs as well as evaluation of the effects of these efforts on the outcome of pregnancy.

The FAS Project developed a culturally sensitive training program designed for use within American Indian communities throughout the United States. The goals of this initiative were to increase the awareness of FAS among Indian health workers and for them to provide education to members of their communities.

FAS and Michigan's American Indians

Although very little work has been done to assess the incidence of FAS in Michigan's American Indians, it is a concern for the tribal communities. Current statistics show that alcoholism and disease characteristics from the abuse of alcohol are the cause of many years of potential life lost within Indian communities. A task force report completed in July, 1985, "Meeting the Health Needs of Michigan's Indians," reported that American Indian women in the state are at higher risk for alcohol abuse than their male Indian and non-Indian counterparts. The death rate for Michigan's American Indian males due to cirrhosis of the liver was only slightly above the Michigan white male rate; however, the death rate for Indian females was more than double the rate for non-Indian females.

Accordingly, FAS prevention efforts have been undertaken in the American Indian communities of Michigan. In 1985, one to two Indian health workers from each of the tribal communities attended workshops

conducted by the National Indian FAS Program (May & Hymbaugh, in press).

The present project was designed to investigate the effects of FAS prevention efforts in Michigan's Upper Peninsula. Indian health workers were interviewed regarding their FAS prevention programs. Childbearing Indian women were interviewed regarding their knowledge and attitudes about drinking alcohol during pregnancy. The project was also designed to bring FAS education programs into the communities.

Indian Communities Studied

History of Upper Peninsula Indian Communities

American Indian people living in the Upper Peninsula of Michigan are of the Ojibwa (Chippewa) tribe and the Potawatomi tribe (Trigger, 1978). Originally, bands of Ojibwa hunters, fishermen, and food gatherers lived autonomously on the peninsula. However, treaties restricting Ojibwa lands to reservations were enacted in the 1700s and continued through 1934. The Ojibwa are currently represented by four tribal communities on reservations: the Sault Ste. Marie tribe of Chippewa Indians, the Bay Mills Indian community, and the Keweenaw Bay and Lac Vieux Desert tribes. The Potawatomi Indians living in the Upper Peninsula have descended from a group of people who fled northward from Wisconsin in response to the Relocation Acts of 1850. These Acts forced the majority of Potawatomi to accept reservation lands in Kansas. The Potawatomi Indians of the Upper Peninsula live in the Hannahville Indian Community and reservation.

After a period of rapid acculturation and integration with non-Indian culture, the American Indians in this area recently have been experiencing a period of traditional renewal (Trumper, 1985). While many individuals choose to continue to assimilate with their non-Indian neighbors, others are acquiring an increased awareness of themselves as Indian people. In contrast to the situation during recent decades, when practice of Indian traditions appeared to be a thing of the past, Indian values and cultural practices have experienced a renaissance in many of the communities. During the summer, each community sponsors a pow-wow where traditional ways and values are taught and celebrated. These teachings are incorporated into local substance abuse recovery programs, where they are used as a tool of self-discovery and pride. Following recovery, individuals are more aware of their Indian heritage, a value system that enables them to make informed decisions within the context of a community to which they belong.

Health Care Services for Upper Peninsula Indians

At present, each tribal community has a contract with the IHS to provide health care to eligible Indian people. The health care system varies

between communities, depending on the providers, facilities, and services available in a given community. All contracts are administered through the Kincheloe Indian Health Center in Kinross, which is the base for IHS activity in Michigan. In addition to tribal contracts, the Center provides ambulatory care and a prevention-oriented community health service program. (See Figure 1 for a map indicating the location of tribal communities in Michigan's Upper Peninsula). The reservations vary in size of population from 300 to 5,000 people, with landholdings of 36 to 14,000 acres. See Table 1 for reservation service populations and corresponding landholdings.

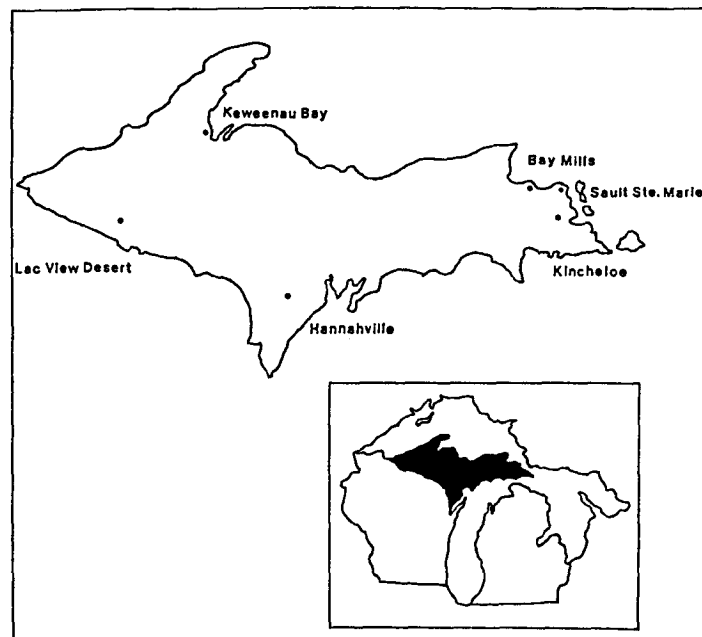


Figure 1: Map of the Upper Peninsula of Michigan Showing Location of Tribal Communities

Table 1
Upper Peninsula Tribal Health Sites
Population and Land Holdings

Federally Funded Tribal Health Sites	1985 Service Population	Reservation Land Holdings (acres)
Sault Ste. Marie	5,180	N.A. ¹
Bay Mills	612	2,000
Keweenaw Bay	1,700	14,000
Lac Vieux Desert	300	36
Hannahville	343	3,408
Kincheloe Indian Health Center ²	N.A.	N.A.

¹ Sugar Island and dispersed housing sites

² Ambulatory care facility and base for Indian Health Service activity in Michigan

Source: Michigan Commission on Indian Affairs and the Michigan Department of Public Health, 1985.

The Sault Ste. Marie Tribe of Chippewa Indians has members distributed over a seven-county area in the eastern Upper Peninsula. A parcel of land on Sugar Island near Sault Ste. Marie has been designated as the reservation. Housing sites are widely dispersed. Outpatient services are provided by community health nurses. Individuals who live near the Kincheloe Indian Health Center use it for health care services; others use contract funds to purchase the services of private practitioners.

The Bay Mills Indian Community is located on Whitefish Bay of Lake Superior in the eastern Upper Peninsula. Health services are provided through the Kincheloe Indian Health Center, a federally funded community health center located on the reservation that offers outpatients medical and dental care to the general public.

The Keweenaw Bay Indian Community lies in the western part of the Upper Peninsula, around the shores of Lake Superior known as Keweenaw Bay in Baraga County. The community provides direct patient care through a facility staffed with a physician, a nurse, and a dentist. In addition, community health services are provided with a community health nurse, a nutritionist, and a mental health social worker. Individuals also use contract health care services to gain access to private practitioners in the area.

The Lac Vieux Desert Tribe of Chippewa Indians occupy two small parcels of land in the far western part of the peninsula. Health care is provided through a contract with IHS. Direct care is provided one-half day per week by the physician from Keweenaw Bay Indian Community. Specialized services are provided by private practitioners in the area.

The Hannahville Indian Community is composed of Potawatomi Indians. The reservation is located in the south central part of the Upper Peninsula, in Menominee County. Health care is provided through a contract administered by Kincheloe IHS. Most individuals seek the services of private practitioners, using contract funds.

Prenatal Care for Indian Women

Pregnant American Indian women in the Upper Peninsula are served by a variety of health care providers. Women living near the Kincheloe clinic are seen at the clinic until the fifth month of their pregnancies, at which point the practitioners who are to assist their deliveries take primary responsibility for their care. Women living in other areas seek private practitioners serving the non-Indian community for prenatal care and delivery. All babies of normal pregnancies are born in local hospitals, while women with high-risk pregnancies are sent to the nearest regional tertiary care hospital for delivery.

To assure adequate prenatal care for the women of their tribe, the community health nurses of the Sault Ste. Marie and Keweenaw Bay communities provide health education during three prenatal visits and one postnatal visit.

In most communities, the individual most aware of all the pregnant women in each community is the coordinator of the local Women, Infants, and Children (WIC) program. This program provides supplemental food coupons for eligible pregnant and nursing women and their children (up to age six). WIC program coordinators indicate that virtually all pregnant women in the Indian communities know about WIC and avail themselves of the program's food coupons. Through periodic interviews and outreach services, the WIC coordinator maintains contact with the childbearing women of her community.

Methods

Data Collection

This study was coordinated through each Indian community's health administrator. Two sets of interviews were performed in each community. First, Indian health workers were interviewed regarding their FAS outreach activities. In the second set of interviews, Indian women were asked questions regarding their knowledge about FAS.

Health Worker Interviews

Indian health workers, Indian and non-Indians employed to serve the Indian community as community health nurses, social workers, educators, nutritionists, WIC program coordinators, substance abuse

workers, and community health representatives were interviewed regarding their specific FAS outreach activities. Each interview lasted approximately one hour. Information was gathered on the amount of FAS training each worker had been given, attitudes they had toward the problem in their community, and on past and present intervention efforts in their communities. At the conclusion of each discussion, plans were defined for the project team to provide FAS education in the community under consideration.

Prospective on New Mother

During the 10 weeks of the project, 29 women were interviewed. Most of the women who were interviewed were asked to participate by Indian health workers. These women were usually well known to the health workers or at least closely associated with the tribal centers. Others were asked to participate during WIC clinics. Each woman interviewed was either pregnant or had delivered an infant within the last year. All of the women were told they would be asked questions about their pregnancies in general, and that their responses would be confidential.

In the interview, women were asked general questions about their prenatal practices. They were asked if they knew about FAS, where they had learned about it, and if their physicians had talked to them about drinking during pregnancy. Each interview lasted approximately 20 minutes. During the interview, women were encouraged to discuss what they believed about FAS. Additional education was provided based on their current level of understanding. Highlights of the FAS information provided during such discussions are included in Table 2.

Table 2
FAS Information Provided to Pregnant Women in the Study

Fetal Alcohol Syndrome

Alcohol syndrome is a birth defect caused when a woman drinks large amounts of alcohol while she is pregnant.

A birth defect is when a baby is born who doesn't look right on the outside or when something doesn't work right on the inside.

Alcohol Syndrome is a common birth defect because a lot of women drink alcohol and do not know that large amounts of it can damage their baby.

How Alcohol Affects the Fetus

Table 2
FAS Information Provided to Pregnant Women in the Study.
(Continued)

A baby develops inside its mother during the entire nine months of a woman's pregnancy. The baby begins as a single cell and develops all the complex parts of a human being.

While the baby develops, the mother's blood provides everything it needs to grow properly, like vitamins and oxygen.

When a woman drinks alcohol it enters her bloodstream. So, when a pregnant woman drinks alcohol it travels in the blood to her baby. This alcohol prevents the cells of the growing fetus to develop normally, and the baby is born with birth defects.

What Babies with Fetal Alcohol Syndrome Look Like

There are three main things that aren't right with Fetal Alcohol Syndrome babies:

- 1) They are very small at birth and remain small throughout their lives. They never catch up with other kids.
- 2) Their brains do not grow normally and they are mentally retarded.
- 3) They look different than other children, too. They have very distinctive faces with small, narrow eyes, a large space between their eyes and a small head.

What You Can Do To Prevent Fetal Alcohol Syndrome

Doctors don't know how much alcohol is going to cause Fetal Alcohol Syndrome. It may be that occasional drinking of large amounts of alcohol will cause problems for the fetus.

The first three months of pregnancy are very important for a baby's development. So, it is important not to drink during those three months. However, if a woman has had alcohol to drink, not knowing she was pregnant, it is still important for her to stop drinking for the rest of her pregnancy. She can still prevent worse fetal effects from occurring.

You can help your friends to prevent FAS by telling them not to drink and by not drinking with them while they are pregnant.

Husbands and fathers can help prevent FAS by helping their wives to not drink alcohol during their pregnancies.

Methodological Issues

Providing Education

One of the primary goals of this project was to contribute to local prevention efforts by providing education. While the findings of this study may help these communities to develop more effective FAS intervention strategies, the direct service component of this project had an immediate and positive impact. The educational services of this project were a vital prerequisite for entry into some of the communities. In all of the communities this information was well received. Educational materials were used from the teaching package developed by Rosette and Weiner (1984b), as well as from the FAS Project (May & Hymbaugh, in press).

Access to Women and Sensitivity of the Issue

The assistance of Indian health workers who knew women in the community and who were willing to facilitate communication with these women was vital to the success of this project. Nonetheless, access to individuals and data was constrained by both the sensitivity of the issue and the lack of a clinical setting. One time the Indian health workers said a woman refused to be interviewed because she had heard the research was about FAS and she was afraid of discussing her drinking behavior during her pregnancy.

A clearer understanding of the severity of drinking during pregnancy would be helpful in determining a community's level of risk for FAS. However, the barriers to obtaining accurate information prevented the systematic collection of such data in the present study.

Self-reported alcohol consumption patterns are rarely accurate. This problem is exacerbated during a woman's pregnancy by factors of timing as well as by the sensitivity of the issue. As Rosette and Weiner found in their study of alcohol consumption among pregnant women, responses to questions about alcohol consumption differed depending on whether the woman was pregnant or postpartum (1984). During the course of the present study, the findings of Weiner and Rosette were strongly confirmed: "During pregnancy, concern for the health of the baby helps the woman to respond honestly. Once the baby is born, fear of censure for past drinking behavior may influence her to deny alcohol use" (Rosette & Weiner, 1984a, p. 109).

In a clinical setting, questions about alcohol consumption are perceived by the client as part of good patient care during pregnancy. However, interviewing women in their homes, the researcher for this project was perceived as an investigator rather than as a health care provider. One case clearly illustrates this problem.

One of the few times the interviewer for this project experienced full candor on the part of a woman was during an interview with a woman who was seven months pregnant and who had requested to be part of the study. She was frightened about the potential effects on the fetus of her drinking practices during the first two months of her pregnancy. She gave detailed information about her exposure to enable a practitioner to accurately evaluate the potential effects. Even so, the outcome was unpredictable. While other women were also asked about their drinking practices before and during pregnancy, none were as forthcoming as this woman. She was told about research done by Weiner and Rosette demonstrating that women who were heavy drinkers during the first trimester were able to prevent the most severe alcohol damage to their infants. Despite this information, and given the inability of current knowledge to provide more precise forecasts of fetal alcohol effects, this woman's concerns were not alleviated. Information alone was not enough to fully and effectively address the tremendous guilt and anxiety that such mothers experience.

Educator Interview Results

Attitudes and Knowledge

Indian health workers who had attended the training workshop given by the National Indian FAS Program (May & Hymbaugh, in press) were interviewed regarding FAS. While most of these individuals responded warmly toward the study, others reacted with subtle, self-protective patterns of defensiveness or quiet distance. Most demonstrated a high level of awareness and concern for FAS in their communities. One individual expressed feelings that Indians were unfairly targeted as being at risk for FAS. All of the individuals were aware of the basic causes and characteristics of FAS, and they are advocates for its prevention. This understanding reflects the training they received from the FAS Program and helped the study to be well received in their communities.

Of the six trainers (i.e., Indian health workers who had attended the training workshop given by the FAS Program) interviewed, five were women and four were American Indian. They had all received a high school education and were employed as Indian health workers for their respective communities.

FAS Prevention Activities

Health workers expressed their concerns about and their desire to perform outreach activities. Interviews indicated that they employed creativity and flexibility in their efforts. Table 3 specifies the educational activities trainers provided in their communities. These activities ranged from poster displays to community workshops. Such workshops attracted participants in some communities but not in others. Barriers to workshop

attendance included lack of transportation and daycare, as well as motivational factors.

Table 3
Educational Activities Identified in Communities and Performed During Current Project

Previous	During Current Project
2 community workshops WIC office posters	3 community workshops 2 WIC program workshops School program Parental education packets

One community's success appeared to be due to both the small size and cohesiveness of the community, as well as to the educator responsible for coordinating the workshop. This woman was a substance abuse worker who was also particularly at ease with women's issues. She had a longstanding, caring commitment to the community. She felt the participants responded to her efforts to warn them about FAS because they knew she cared about them.

This personal relationship with community members is more difficult in some of the larger, geographically dispersed communities. One educator expressed discouragement after her efforts to put on a community workshop drew only a handful of professional people. Nonetheless, she was able to find another way to reach the childbearing women in her community. The community health nurses of her tribe provide prenatal education to pregnant women in the community during three prenatal visits and one postnatal visit. Packets of information were compiled for these visits, including an FAS pamphlet.

Interviews indicated that while health care workers understand basic FAS concepts, many are not aware of new FAS research findings that could be critical in providing information that would enable women to make informed decisions during pregnancy. Educators discussed feeling uncomfortable about discussing substance abuse problems and were unaware of information that would enable them to provide positive and non-judgmental intervention.

Interviews with health care workers anecdotally reinforced knowledge that their communities are at risk for FAS. They often expressed concern for women who they knew were drinking heavily during their pregnancies. They referred to children whose mothers had consumed large amounts of alcohol during their pregnancies and who manifested FAE.

The health care workers were appreciative of the project's goal of providing FAS education. They were cooperative and helpful in planning programs, as well as in encouraging women to participate. The project

sponsored community-wide workshops, school and senior citizen programs, as well as one-on-one counseling at WIC clinics.

Indian Women Survey Results

Characteristics of the Population Studied

The women interviewed ranged in age from 15 to 33 years with a mean age of 22 years. Forty-eight percent were pregnant at the time of the interview and 52% had delivered infants within the last year. Seventy-one percent had sought medical care during the first trimester of their pregnancies and 8% during the third trimester. Twenty-four percent had less than 10 years of formal education and 59% had a high school education or beyond. Forty-one percent saw themselves as being traditional Indians. Ninety-six percent participated in the WIC program. Sixty-five percent were living with the father of the baby, 17% with their parents, and 17% alone or with their children.

Level of Knowledge About FAS

The findings of this study regarding Indian women's knowledge about FAS are presented in Table 4. Highlights of these findings are presented below.

Table 4
Sources of FAS Information

Sources	No. of women
WIC Program	6
Pamphlets and Posters	4
Physician's Assistant	3
Physician	3
Substance Abuse Counselor	3
Community Health Nurse	2
Community Health Representative	1
School	2
Total no. of women who knew about FAS	24
% of women who knew about FAS	83%
% of women who learned about FAS from their physicians	10%
% of women who sought medical care during their 1st trimester	71%
% of women who were pregnant at interview	48%
% of women who saw themselves as traditional	41%
% of women with a H.S. diploma	59%

Eighty-three percent of the 29 women interviewed had heard of FAS. Of the five women who replied that they had not heard of FAS before, three began prenatal care during the fifth month of their pregnancies and one individual said she never went in for prenatal care. Two of these women considered themselves as traditional; this was her first pregnancy for one.

When asked what they knew about FAS, 50% of the 29 women interviewed were able to state one or more specific characteristics. Other individuals made general statements about FAS being a birth defect, or that drinking during pregnancy was bad for the baby.

When asked how much alcohol was safe for a woman to drink while pregnant 25% of the 29 women said none at all and the remainder said they didn't know.

Sources of FAS Information

Sources of information about FAS are as varied as the health care providers who work with pregnant women. Answers reflected the effectiveness of school programs in targeting teenagers, and of community health nurses who deliver prenatal educational packets. Women who had been treated for substance abuse recalled the information from counselors. Education coordinated by a WIC coordinator, whose office was wallpapered with FAS posters and pamphlets, showed a major impact in her community. Other women, unable to pinpoint an individual source, mentioned seeing information on television, posters, or pamphlets.

Only 10% of the women interviewed said they first learned about FAS from their physicians. Of the 29 women interviewed, 39% reported that their doctors mentioned alcohol use during pregnancy.

Alcohol Histories as Part of Prenatal Care

As previously noted, 39% or 11 of the 29 women, said their physicians discussed drinking during pregnancy with them. When probed about this, women said their physicians asked them if they drank alcohol. When asked what happened after that, most women said they answered "no", and the issue was dropped.

Discussion And Recommendations

The results of this survey confirm that the educational efforts of a variety of health care workers in each community have been successful. Through collaborative efforts, information about the effects of drinking alcohol during pregnancy is reaching the American Indian women of Michigan's Upper Peninsula. However, because access to many of the women was made possible by Indian health workers, many women interviewed were well-connected with the tribal health center. Women who were

more socially isolated, and therefore more likely to be at risk for alcohol abuse were not interviewed. Similarly, they are less likely to be reached by FAS prevention efforts and by supportive individuals who can assist them in making wise decisions about drinking during pregnancy.

Interviews with educators and women in the community indicate shortcomings in the identification and treatment of pregnant women with drinking problems. Health care workers and women in the community are aware of individuals who are drinking, but at this time there appear to be no resources for intervention. Women who are at greatest risk for FAS are those who are more socially isolated and consume substantial amounts of alcohol. These women will require more than education to be able to make wise decisions during their pregnancies.

Pittman (1980) has shown that few alcoholics change their drinking patterns in response to public health campaigns. Likewise, Minor and Van Dort (1982) have reported that 20% of informed women considered themselves as at risk for infants with alcohol related birth defects. Streissguth, Darby, Marr, Smith, and Martin (1983) compared drinking and smoking habits of pregnant women over a six-year period, from 1974/75 to 1980/81. This research showed that while the proportion of women who drink alcohol during pregnancy had declined, the proportion of women who reported heavier drinking showed no decrease. To effectively address the problem of FAS, aggressive outreach efforts should be undertaken to provide information and services to these women.

Given the pervasive nature of alcohol-related abuse and its attendant problems in these communities, it is important that a multi-faceted strategy be employed to prevent FAS. Absent other information, it should be assumed that all women are at risk. Because health care services for pregnant women are fragmented, involving both Indian health care workers and outside practitioners, intervention becomes the responsibility of every person who works with these women. In addition to the physician, this includes the WIC coordinator, community health nurses, nutritionists, social workers, substance abuse workers, and community health representatives. Active participation problems also point to the need to provide programs to groups of individuals who may not be of childbearing age, but who may be able to influence pregnant women in the community. These groups include senior citizens, alcohol awareness groups, tribal councils, men's groups and schools. In these ways Indian men can be made aware of the supportive role they can play in helping women to stop drinking during pregnancy.

Providers should be updated regularly on knowledge about alcohol-related birth defects. This will help them provide consistent, sound, and realistic information about drinking alcohol during pregnancy, enabling the women they reach to make informed decisions. These individuals need to be trained in counseling techniques so that women who are at risk will be able to hear the information and will be motivated to seek additional resources for assistance if they are having problems with alcohol.

As Rosette and Weiner have pointed out in regard to treatment strategies, attitudes of the intervening health professionals are critical in affecting change (1984). Their findings indicate the importance of timing and positive education statements in prevention, and of direct, non-judgmental alcohol screening during prenatal evaluations. Most importantly, their work confirms the studies by Swedish researchers (Olegard et al., 1979) which show that women identified early in pregnancy as heavy alcohol users who were able to stop drinking altogether by the last trimester were able to prevent the worst FAS effects.

Counseling women about drinking during pregnancy should be realistic and consistent. The amount of alcohol that is safe to drink during pregnancy is controversial; however, it appears that < 1.0 oz. of absolute alcohol per day is probably not harmful to a fetus (Rosette & Weiner, 1984a). If women are led to believe that even a small amount of alcohol during pregnancy may cause harm to a baby, they may be saddled with an unfounded sense of responsibility for the outcome of the pregnancy. By clearly emphasizing the way the amount of alcohol consumed over time determines blood alcohol levels and consequently, the amount of alcohol being delivered to the fetus, women can make their own decisions about the amount of alcohol that is safe to drink during pregnancy. Knowledge about the causes and prevention of alcohol-related birth defects is increasing, and should be more rapidly disseminated to health care professionals.

Studies have shown that individuals who are given a specific resource for assistance with substance abuse problems are more likely to follow through with a referral than those who are given a more general recommendation. In small, rural communities where information channels are both informal and complex, a specific individual needs to be identified as a resource for referral. As one community in this study demonstrated, it is important that this person be a woman who is trusted and committed to resolving the needs of women in her community, aware of current FAS facts, and able to counsel people who are experiencing alcohol problems.

Physicians need to be aware of community concerns and resources for FAS referral. As primary care providers, they have the ability to act as advocates for FAS prevention. For example, they need to be more aggressive about screening women at risk for FAS. Work by Rosette and Weiner (1984a) indicates that assuming that women drink alcohol and directly asking them about their drinking practices elicits much more information than asking them, "Do you drink?" In addition, by providing education (explaining the tangible risks alcohol to the fetus), physicians can enable the woman to make a decision about drinking that is based on solid information rather than the subtle hints of the physician. Clearly, physicians should be encouraged to discuss drinking behavior, and to make drinking histories a part of every prenatal intake interview.

The present research strongly supports the recommendation that research be performed to define the incidence of FAS in the Upper Peninsula. At present, informal and anecdotal evidence suggests that there are

FAS children in these communities. Furthermore, the 1985 Michigan Indian Health Task force has reported alcoholism to be the number one health problem affecting Indian communities. A FAS incidence study similar to that by May et al. (1983) in the southwest would help to identify and track FAS individuals, as well as to provide assistance in their treatment. This initiative would also require the assistance and training of local practitioners, helping them to be more responsive to the needs of the community. To perform such a study, health care professionals and community members in each community must make common cause with one another to advocate for resources at the local, state, and national levels. The information provided by this study would be another important element in an effective, multi-faceted strategy to address the problem of FAS in Michigan's Indian population.

Long-range recommendations for preventing FAS and improving the quality of care for Indian women in these communities can be drawn from traditional sources. Culturally, Indian women come from a tradition of self-sufficiency and sovereignty in their health care and in the birth of their children. They have been taught at puberty to care for themselves and their children, both physically and spiritually (Landes, 1969; Nietzhammer, 1977). The Ojibwa women interviewed in this study speak of themselves as leaders, as bearing responsibility for the preservation of their families and their communities. From this strength and the traditional ways can be drawn the basis for the development of an effective Indian women's health program. The idea of translating traditional concepts into a practical tool for organizing women's health care is embodied in the Women's Dance Health Program founded by Katsi Cook in Minneapolis (Cook, 1981), and has been developed nationally as the Circle of Life. These organizations develop and implement women's health projects that enable women to work toward improving their own health care. Nearly one-half of the women interviewed in this survey considered themselves traditional, making such an effort a worthwhile undertaking in the Upper Peninsula.

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A SUICIDE EPIDEMIC IN AN AMERICAN INDIAN COMMUNITY

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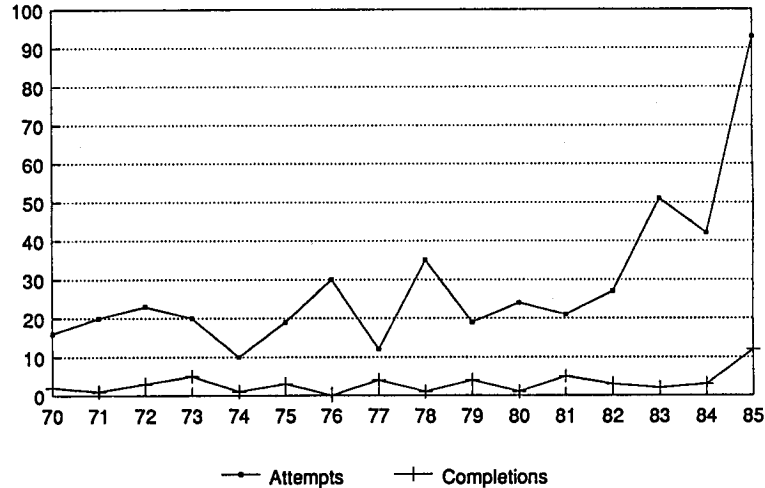
Abstract: Suicide among American Indians has long been a concern for public health professionals and the communities which suffer these losses. The focus on suicide among American Indian adolescents is more recent and has engendered a great deal of apprehension about the forces that impinge upon the lives of these young people. In particular, the epidemic-like occurrence of teenage suicide and suicide attempts has increased general awareness of this problem.

This paper describes the suicide epidemic which occurred on the Wind River Reservation during August and September of 1985. During this two-month period, there were 12 reported deaths from suicide and an additional 88 verifiable suicide attempts or threats. The Wind River Reservation is like many other Indian reservations where a suicide occurs, a cycle of additional suicides follows, and the community attempts to reassert a sense of control. This discussion of the Wind River experience begins with an overview of suicides and attempted suicides, and a brief summary of the epidemic itself. A three-stage model for intervention during an epidemic will be presented, and long-term programs which were developed will be described.

The Suicide Epidemic And Its Context

The Behavior Health Program (BHP) on the Wind River Reservation has kept statistics on suicide attempts and completions since 1970 (Figure 1). Until 1981, the statistics showed an inverse correlation between attempts and completions (that is, when attempts were high, completed suicides were low, and vice versa). Then, in 1981, the numbers of both attempts and completions began to shift upward. While the numbers are too small for statistical comparisons to be significant, in retrospect the Program's staff felt that this pre-epidemic upward trend was an early warning sign.

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*Figure 1: Suicide Attempts and Completions
From 1970 Through 1985*

When the BHP staff prepared a graph reflecting the geographic distribution of attempts and threats, they found that the highest incidence occurred in the housing projects on the reservation. In addition, law enforcement statistics indicate that most calls for assistance come from those projects, and that a large number of calls pertain to violence stemming from alcohol and drug abuse. Alcohol intoxication was a factor in four of the nine suicides, and a history of alcohol abuse and/or history of suicide attempts or completion within the extended family or immediate peer group of the victims was also found.

Other underlying issues were identified by tribal leaders. These included high unemployment, negative attitudes toward American Indian people in surrounding non-Indian communities, and loss of attention to tribal ceremonies and traditions. The tribal leaders felt that loss of traditions (including the traditional proscription against suicide), along with loss of the tribal languages, had contributed to a lack of positive values for young people. All of these factors were cited as having contributed to feelings of hopelessness and helplessness within the community at large.

Although the issues identified above may have created an environment that was vulnerable, there are many communities across the country with similar issues in which no epidemic has occurred. The question then becomes: *Why did this epidemic occur?* One possible explanation involves the combination of an unexpected adolescent suicide in a vulnerable community. Another factor in the contagion among adolescents may be what has been called the "romance of suicide", i.e., a lack of appreciation

"trigger" by stimulating a wave of overwhelming despair among other adolescents and the community at large.

Long (1986a) has made several interesting points that may be relevant here. She states that the contagion effect of suicide is greatly enhanced on reservations because "it is not happening to strangers", Long (1986b) also points to the "mix of transcultural pressure and prejudices resulting in a 'no-win' situation for Indian youths" as contributing factors.

In the final analysis however, there is no good answer to why an epidemic of suicides occurred on the Wind River Reservation in 1985. It seems likely that a combination of factors were involved. Only further study will reveal the relative strength of each of these factors and the extent to which they are multiplied when more than one is present.

Statistical Breakdown Of Suicide Attempts And Completions

During August and September of 1985, there were nine deaths from suicide and 88 verified suicide attempts or threats on the Wind River Reservation. Table 1 details the ages of individuals attempting or threatening/attempting suicide.

Age Range	Total
0 - 12	2
13 - 19	40
20 - 29	24
30 - 39	15
40 - 49	5
50 - 59	1
60 - 69	<u>1</u>
TOTAL	88

Completed Suicides

Four of the victims were between the ages of 14 and 19, and five were age 23 to 26. Alcohol was a direct contributing factor in four of the suicides, with two of the deaths occurring while the victims were in jail, intoxicated. In fact, the first suicide that occurred was in jail. According to a national study of jail suicides (Hayes, 1983), the typical suicide in jail occurs within 24 hours of incarceration, with the typical victim being a young adult male arrested for public intoxication and presumably under the influence of alcohol or drugs at the time of arrest. Both of the suicides that occurred in jail in this study fit Hayes' general profile.

While there were nine suicides during this epidemic, many people on the reservation felt that three additional deaths -- of males between the ages of 18 and 23 -- should also be considered as connected to the epidemic. The three additional victims had close ties to the reservation and to some of those who died in the epidemic.

Suicide Attempts/Threats

During the two month period of the study, there were 88 verified suicide attempts or threats. Of these, 46 of the individuals involved were male and 42 were female; 29 attempts occurred before the epidemic began and 59 occurred afterwards. Alcohol was involved in 47 of the attempts/threats. Fifty-nine individuals were hospitalized, with the majority of hospitalizations occurring during the epidemic.

The greatest number of attempts/threats (40) occurred among adolescents ages 13 to 19. The second highest number of attempts/threats (24) was in the 20- to 29-year age group. Both attempts and completions were highest in these two age groups. Fourteen-year-olds had the highest frequency of attempts/threats for a single age group, with 12 attempts or threats made (three by males and nine by females).

Immediate Response

The immediate family members of all the victims received crisis intervention and grief counseling by BHP staff. Other friends and relatives who were thought to be at risk were provided with follow-up counseling and referral through the combined efforts of BHP, Community Health Representatives (health technician/patient advocates), and the Community Mental Health Center.

The BHP staff held several community information meetings after the first three suicides occurred. They provided suicide prevention information through the media and began working with school counselors to contact students who were considered to be at risk. BHP also began to diagram family and friendship ties of the victims in order to conduct a psychological autopsy of the victims and to identify other at-risk individuals. These sociograms provided vitally important information early in the epidemic.

At the same time, the Shoshone and Arapaho Tribes began taking other steps to remedy the situation: one night of Bingo was cancelled and the halls were made available for youth recreational activities. Many parents volunteered as chaperons and recreation leaders. The schools extended hours for learning labs and gymnasiums. The Alcohol Treatment Program began holding weekly alcohol-free teen dances, which were widely attended. Community Health representatives and groups of concerned parents organized Halloween parties, "fun runs," field trips, and a youth recognition program. All these activities were designed to provide a safe

environment for young people and to communicate the concern of the community. This support from the parents was effective in alleviating the extreme level of fear felt by many adolescents during the epidemic -- and probably in preventing further suicides.

During the initial phase of the epidemic, the Indian Health Service (IHS) and the Bureau of Indian Affairs (BIA) instituted an augmented emergency response system. An important part of this system included hospitalization as an alternative to jail for intoxicated patients with suicide attempts/threats. Nearly all adolescent attempters were considered to be at high risk and were admitted to short-term psychiatric care. BHP staffing was increased to provide 24-hour emergency coverage to augment the emergency coverage provided by IHS physicians and the State Community Mental Health Center. The BIA added law enforcement personnel and increased the coverage to high-risk location. The law and order staff, IHS physicians, and BHP staff formed an Emergency Task Force which met frequently and worked together closely at the local level. At the Area level, the IHS and BIA formed a Joint Suicide Prevention Task Force that met weekly to review the status of the epidemic and to make additional resources available when indicated.

During the epidemic, tribal spiritual leaders and other spiritual leaders of all faiths on the reservation joined forces to help one another and the families of the victims. This laying aside of theological and political differences was widely commented upon in the community, and was seen as a positive force. In addition, during the first full week in October, Tribal ceremonial leaders also performed a historical, traditional medicine ceremony. This ceremony was held following the ninth suicide. It was an important cultural and spiritual event that aided in the resolution of grief and increased cohesiveness in the community. No further deaths occurred after this prayer ceremony was held. The suicide attempts remained abnormally high for approximately two months following the ninth suicide, and then attempts, too, began to subside.

Impact Of Media Coverage

During the initial phase of the epidemic, there was exhaustive coverage by the media. This coverage tended toward sensationalism and at times was intrusive and insensitive, e.g., a television crew attempted to enter a funeral service for a victim. The extensive media coverage was felt to be highly detrimental to efforts to stop the epidemic, and the tribal leaders eventually barred reporters from the reservation. A high number of attempts followed directly on the heels of the heaviest media coverage in mid-September.

Agency Coordination

During the height of the epidemic, the IHS brought in outside, University-based psychiatrists to consult to the Community Task Force. There was mixed reaction within the community to the outside consultants. The principle learned in regard to consultants was that local staff have the best knowledge of community problems and know the past history, values, and lifestyle. Outside experts can provide valuable input regarding the dynamics of an epidemic and case consultation, but they should not be the primary decision-makers.

After the epidemic subsided, it was recommended by the Community Task Force that the Service Unit/Agency directors of the IHS and BIA, the director of the Community Health Representative Program, and the BHP staff remain involved with Tribal Council. The purpose of the proposed committee was to facilitate communication, resolve program and funding problems, and maintain a united front.

Although prevention activities such as youth employment programs, supervised recreation programs, emergency child care programs, increased law enforcement staff and community development activities were seen as being outside the direct responsibility of the IHS, these issues were seen as having a direct impact on the problem of suicide. The perception of the Task Force was that each agency had a responsibility, along with the Tribe, to communicate and coordinate activities in the interests of building a comprehensive system of programs within the community.

Long-term Prevention

Maintaining an adequate law enforcement system and developing consumer controls was seen as important in dealing with high levels of violence and crime in the housing projects. Since the epidemic, the community has acquired a large grant for prevention of violence, suicide, and alcoholism. This grant was one of only 12 awarded nationwide by the Kaiser Foundation. The tribes, the IHS, the BIA, and the State Community Mental Health Center participated in the development and planning process.

The project focuses on programs such as parent groups, education on parenting skills, use of the media for community education, SADDs, ALATEEN, school prevention, and intervention programs for youth substance abuse, cultural/recreational groups, wilderness experiences for youths, consumer action groups, and the improving of community relations. The Youth Recognition program which was expanded to include a reservation-wide Youth Council, was a joint effort of the Community Health Representative Program, the Tribal Council, and the schools.

In January 1986, the tribes brought in resources to assist Tribal members in setting up their own businesses. Federal, state, and Tribal

resources were coordinated to bring employment services and jobs to the reservation.

Child abuse and neglect along with alcoholism was recognized as a problem underlying many suicides. A study by Deykin and associates (Deykin, 1985) pointed to early child abuse as a risk factor for suicide attempts in adolescence. To address the problem of child abuse on the reservation, intensive efforts were instituted to coordinate the BIA and IHS with state and federal agencies for investigation, protection, and treatment of abused children. In 1986, an inter-agency Memorandum of Agreement was implemented between the BIA and the IHS regarding child protection team responsibilities.

In order to address the problem of adolescent alcohol abuse, the Anti-Drug Abuse Act of 1986, P.L. 99-570 (which focused national attention on the problem of adolescent substance abuse, child abuse, and suicide prevention), was utilized to increase prevention and treatment services. The Shoshone and Arapaho Tribes utilized P.L. 99-570 to bring additional resources to the community for training, treatment, and recreation for adolescents. Locally, and at the area office level, IHS policies were rewritten to include multidisciplinary case staffings on all child abuse cases and all adolescent inpatient referrals. Interagency training was provided on child protection services and alcoholism as a family illness in an effort to improve coordination of services.

The need for additional BHP staff was another long-term goal identified by the Community Task Force. Positions for a psychologist and social worker were added in 1986 by the IHS.

Because the epidemic had a bimodal age distribution (i.e., 14-18 years and 23-26 years), somewhat different issues were considered in terms of long-term planning for the two age groups. Nationally, a significant portion of the American Indian male population between the ages of 19 and 35 are at risk for suicide (Hayes, 1983). The clinical experience in the BHP staff indicated that there was a high incidence of undiagnosed, untreated depression in 19-24 year old males. In this age group, the profile of the victims was an unemployed individual who lacked job skills, was abusing alcohol, and who was involved in marital and child custody problems. During the epidemic, the most important intervention for this age group seemed to be referral to a primary residential treatment for alcoholism. Alcoholism treatment seemed to represent a "window of hope" for a number of male attempters 19-24 years old. In contrast, the "window of hope" for the younger adolescents seemed to be the efforts of the parents, spiritual leaders and Tribal Council on their behalf.

Anniversary Of The Epidemic

The anniversary date of an epidemic is a critical time for relatives and friends of victims, and for the community as a whole. The plan for the anniversary of the epidemic was developed by the Community Task Force

comprised of Tribal Council members, Director of the Community Health Representative Program, the IHS, the BIA and university-based child psychiatric consultants.

The plan that was developed included some items which ultimately were not carried out, but they are presented here as guidelines to be considered by other communities. The recommendations were:

1. BHP staff would contact the families of the nine suicide victims for grief counseling.
2. Community Health Representative Program and BHP staff would offer services to persons who attempted suicide during the epidemic.
3. Community/parent information meetings would be held to discuss the anniversary phenomena.
4. A Tribal ban on media coverage would be developed to avoid sensationalizing an epidemic.
5. IHS and BIA would coordinate with schools and Tribal programs to provide a summer youth recreation program.
6. IHS would provide an update on diagnosis and treatment of depression for IHS physicians.
7. BHP and law enforcement staff would review the reservation's emergency call system and the protocol for referral of suicide attempts and intoxicated/depressed individuals.
8. State Community Mental Health Center personnel would provide awareness training in off-reservation jails.
9. IHS would make plans for the possible increase in need for psychiatric hospitalizations for serious suicide attempts/threats.

There were no suicides on the anniversary of the epidemic. In retrospect, the Behavioral Health Program staff felt that the most important preventive measures were the many traditional spiritual ceremonies which were performed during that time.

Community Response To An Adolescent Suicide Epidemic

One important principle we learned during the epidemic was that many strategies must be implemented simultaneously. Based upon this experience and others like it in different American Indian communities, some general strategies for intervening in a suicide epidemic can be offered.

Initial Phase

First, each community needs to look at their own particular situation and develop the plan that will work for them. Involvement of Tribal leaders is critical because youths need to see that community leaders are concerned and in control. It is important to form an Emergency Task Force consisting of members of the Tribal council and key agency staff in order to develop an immediate plan for dealing with emergencies, providing counseling, arranging for community education, and controlling exposure in the media.

Development of an abbreviated psychological autopsy of victims is important to identify at-risk individuals and to develop an understanding of the epidemic. During this epidemic it appeared that with an adolescent suicide, any friend of the victim was at high risk for a period of time. Providing supportive counseling in the school is also important early intervention strategy. Providing culturally-appropriate grief counseling to a victim's family and friends is an immediate task.

The Emergency Task Force should develop a plan of action and assign specific responsibilities. For instance, the 24-hour emergency response system should be reviewed in order to fix any gaps in the system, i.e., need for equipment, need for law enforcement staff to transport individuals to a hospital rather than jail or need for increased staffing. A plan must be developed to provide a clinical response to intoxicated individuals, who will be at a higher risk for suicide during the epidemic. It is also important to provide training in crisis intervention for law enforcement and jail staff.

The Emergency Task Force may consider obtaining consultation from an outside group that has had experience in managing a suicide epidemic on an Indian reservation. Other outside resources which could be considered during the initial phase are the Centers for Disease Control in Atlanta, the Special Initiatives Team of the IHS Mental Health Program, as well as university medical school staff. However, it is important to point out that bringing too many outsiders into the community may create confusion and increase the community's sense of loss of control. While many individuals may offer to help, it is important to screen out self-styled "experts" who claim to have all the answers.

Middle Phase

In this phase it is important to form a Case Management Team to follow patients admitted to inpatient and outpatient services, and to continue to identify at-risk individuals. At this time it may be appropriate to develop a Community Task Force to replace the Emergency Task Force. This larger group can focus on community education and development. The value of the Community Task Force is that it can begin to address prevention and the needs of the community at large. A developmental strategy is to bring all community service providers together (including churches) for an educational workshop. This will also provide an opportunity to review and coordinate the services being provided. In this phase, weekly meetings of the Community Task Force are important to build communication and avoid fragmentation.

End of the Epidemic

After the epidemic has ended, it is painful but important for the Community Task Force to evaluate what has been learned. This is also the time when plans for long-term prevention programs should be initiated and planning for the anniversary of the epidemic should begin. All staff who have been deeply involved in the epidemic need a support workshop or debriefing session. Staff need to express the almost universal feelings of guilt and responsibility which develop during the epidemic.

While conducting an in-depth epidemiological study through local resources may not be possible, an outside group such as the Center for Disease Control in Atlanta or the National Center for American Indian and Alaska Native Mental Health Research might be considered for this effort. The importance of the epidemiological data is that it can provide the base for grant proposals to fund long-term prevention projects. In this case, the local BHP staff developed the epidemiological data presented in this paper; however, if staff time or expertise is not available locally, an outside group can be very useful.

The Community Task Force should be prepared to deal with a higher-than-normal number of attempts for at least one year following a suicide epidemic, and possibly for two years. There will also be new suicides which may or may not be related to the epidemic. Thus, establishing an ongoing epidemiological database is crucial in order to determine trends.

Conclusion

Suicide among American Indians and Alaska Natives is a national issue. The statistics provided by IHS headquarters in the Chart Series of February 1985 and fiscal year 1986 (U.S. Department of Health and Human Services, 1986) indicate a preponderance of suicide in the age group

between 15 and 24 years old. The rate for male American Indian and Alaska Natives is 50/100,000, while the rate for this age group in the United States population as a whole is 20/100,000. In this epidemic, the age range of deaths was 14 to 26.

A look at the ages for all suicide deaths on the reservation indicate that 59% of all deaths were among 15-to 24-year-olds; and 41% were among 25-to 60-year-olds. This may support what some people on the reservation have been saying: suicide among older American Indian people is increasing, which is contrary to the national norm. Considering the important role elders play in American Indian culture, this trend toward a higher than expected incidence of suicide among older American Indian people may be an important point to consider in terms of prevention of epidemics among adolescents.

There is a developing body of experience that can help cope with suicide epidemics on Indian reservations even though each situation will have somewhat different dynamics and will need to be considered individually. Each community does, ultimately, possess the strengths within itself to stop an epidemic. This epidemic and the national statistics point to a need for the IHS to involve Tribal leaders, mental health professionals, American Indian research resources and American Indian psychiatrists from across the country in a long term effort to address the problem of suicide in American Indian communities.

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The opinions expressed in this paper are those of the author and are not necessarily those of the IHS.

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AN INVESTIGATION OF HEALTH DECISION-MAKING SKILLS AMONG AMERICAN INDIAN ADOLESCENTS

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Abstract: The investigation examined the health and social decision-making skills of a sample of 44 seventh-graders (mean age = 12.6 years) of American Indian descent. The students were presented with 10 scenarios describing a young person in the act of making a decision and were required to identify the next step the youth in the scenario should take to make a "wise" decision. There were no differences in the students' efficacy in making decisions with a health or social focus. However, some interesting differential patterns emerged for making health and social decisions. These findings may be beneficial to school health curriculum specialists, school psychologists, health behavior specialists, and health personnel who interact regularly with American Indian adolescents.

Introduction

Competence in decision-making may be an important prerequisite for children to achieve optimal health (Duryea, 1983; Lammers, Kreuter, & Smith, 1984). Relatively little is known, however, about the health decision-making of children. The available information is not only piecemeal and fragmentary but the data is largely derived from samples of black and/or white children residing in metropolitan areas (Mann, 1971; Duryea, 1979; Lammers, Kreuter, & Smith, 1984). There appears to be a complete absence of data concerning health decision-making among American Indian children.

American Indian children are frequently cited, however, as a group at high risk for engaging in health-compromising behaviors. For example, drug use is higher in all categories of mood-altering drugs (e.g., marijuana, inhalants, and cocaine) among American Indian adolescents than it is for their counterparts in the mainstream population (Beauvais & LaBoueff, 1985). Similarly, risky alcohol and drug-related behaviors such as drinking and driving, riding with drinking drivers, and using marijuana are prevalent among Indians, and are considered major factors contributing to the high morbidity and mortality rates among Indian youth (Oetting, Edwards, Goldstein, & Garcia-Mason, 1980). The morbidity and mortality rates among Indian youth are four times higher than the national average (Rhoades, 1982).

In light of these findings and the postulated relationship between decision-making and risky health behaviors, it is imperative that decision-

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making skills among American Indian adolescents be examined. The present investigation represents an effort to provide information concerning the process and dynamics of health decision-making among a sample of these adolescents.

Methods

Subjects

The sample consisted of 44 seventh-graders (mean age = 12.6; range = 11 to 13 years) of American Indian descent. There were approximately equal numbers of males (n=23) and females (n=21) in the sample. All of the participants attended a boarding school exclusively for American Indian children. The sample represented 85% (N=52) of the seventh-graders at the study school. The school is located in a major metropolitan city in the Southwest but served American Indian children from throughout the United States. The student body included children from the 19 Pueblo tribes with a significant number of Navajo, Apache, Hopi, and Jicarillo Indians. There were also students from the Blackfoot, Caddo, Cheyenne, Choctaw, Comanche, Kiowa, Sioux, and Ute tribes.

Contrary to descriptions of boarding schools for Indians provided elsewhere (Schottstaedt & Bjork, 1977), the school was operated by the All Indian Pueblo Council, Inc., not the Bureau of Indian Affairs. The All Indian Pueblo Council was the first Indian organization to contract and operate its own school under the Indian Self-Determination Act (P.L. 93-638). In addition, the sole criterion for admission to the school was that a child be at least one-quarter Indian. The school was not intended for children with emotional, psychological, or social problems. Respect for American Indian culture and tradition as well as academic excellence are emphasized in the school's curricula, policies, and administration.

Decision-Making Instrument

A modified version of the Decision-Making Instrument (Centers for Disease Control, 1984) was used to assess students' decision-making skills as well as to examine their understanding of the general decision-making process. The Decision-Making Instrument consists of a series of written scenarios describing a young person in the act of making a decision. For each scenario, a selected step in the decision-making process is provided within the scenario and/or in a series of choices that follow the written presentation. Decision-making choices include defining the problem; identifying possible solutions; weighing costs/benefits of each solution; making a decision; and evaluating a decision. Students are required to read the scenario, think about the risky behaviors depicted in the passage, consider options available to the youth, and then select (from possible alternatives) the next step the youth described in the scenario would take to make a

"wise" or health-enhancing decision. The instrument has been found by the Centers for Disease Control (CDC) to be reliable and valid in assessing adolescents' decision-making skill.

The Decision-Making Instrument was slightly modified in the present investigation to be culturally relevant and comprehensible to a sample of American Indian youth. That is, realistic aspects of American Indian culture and life were depicted in each scenario. For example, there were references to familiar Indian reservations (e.g., Santo Domingo Pueblo), activities (pow-wows), familial relations (aunts as key familial figures), and celebrations (San Felipe Fiesta). The structural fidelity of the instrument was not altered.

The instrument was also modified to examine student's decision-making skill based on a four-step, rather than the conventional five-step, decision-making process. This approach was adopted because research has shown that the most important components of decision-making involve four-steps: 1) define the problem; 2) identifying possible solutions; 3) weighing costs and benefits; and 4) making a decision (Janis & Mann, 1977). Evaluating the decision, the fifth step posited in the Decision-Making Instrument, is not considered a core component of the standard decision-making process but rather a beneficial evaluation component (Janis & Mann, 1977; Kolbe et al., 1981; Duryea, Kreuter, & Braza, 1981; Renaud-Salis, 1980). Except for these modifications, the decision-making assessment used in this investigation was identical to the CDC Decision-Making Instrument.

A total of 10 decision scenarios were presented in the present study. Each scenario depicted all but one step of the decision-making process. For example, scenario #1 illustrated all but step #2 (identifying possible solutions); scenario #2 illustrated all but step #1 (defining the problem); and scenario #4 excluded step #4 (making a decision). As in the conventional procedures, students were required to read the passage, think about the risky behavior depicted in each scenario, consider possible solutions available to the youth, and then identify the next appropriate step the youth described in the scenario should take to make a "wise" or health-enhancing decision. Five of these scenarios involved a social-decision focus (e.g., deciding how to avoid a conflict with a sibling) and five involved a health-decision focus (e.g., deciding whether or not to ride with a drinking driver).

Extensive review of the instrument by curriculum specialists and teachers at the study school was used as a minimal measure of the instrument's comprehensibility and ethnic propriety in assessing relevant health and social issues among Native Americans. Reliability of the instrument was assessed at .81 by employing a Pearson test-retest correlation procedure. Face validity of the instrument was judged and found to be appropriate by a panel of experts from the University of New Mexico, local American Indian curriculum specialists, and participating teachers at the study school.

Procedure

Informed consent was obtained from parents and students prior to the start of the study. The school utilizes a blanket consent from parents for the purpose of administering informal tests and questionnaires. The instrument was administered to consenting students by their teacher during a regularly scheduled health class. The teacher read a standardized format of instructions which described the purpose of the project, assured confidentiality of students' responses, and provided directions for completion and return of the instrument. Students were instructed not to place any identifying information (e.g., name, social security number) on the assessment instrument and to place completed forms in a box at the back of the room. At the end of the class, a student delivered the box to the principal's office.

Data Analysis

A total of 10 scenarios was analyzed (five with a health-decision focus and five with a social-decision focus). The criterion level for a student's successful performance on both of these decision-making categories was established at 80% (i.e., 4 out of 5 correct responses). That is, at least four correct decision-making choices out of the five scenarios for each decision-making category (i.e., health and social) were required for successful performance.

Students' incorrect responses were classified into one of four categories according to the CDC's (1984) method of annotation. The errors could involve a response that 1) is unrelated to effective decision-making and may deflect the decision-maker from taking necessary action (deflective action); 2) describes a decision-making step but is clearly inconsistent with one or more of the step's described characteristics (ineffective implementation of a step); 3) describes one of the decision-making steps that occurs after the correct step (skipped step); or 4) describes one of the decision-making steps that has already occurred (repeated a step).

Results

In general, students responded successfully to approximately 50% of the decision-making scenarios (mean=5.2; s.d.=1.67; range=1-9). There were no statistically significant differences in the students' efficiency at making decisions with a health-behavior or social-behavior focus. The average student successfully responded to 2.61 (s.d.=1.06; range=0-5) scenarios with a health-behavior focus and 2.68 (s.d.=1.19; range=1-5) scenarios with a social-behavior focus.

In addition to considering the students' overall decision-making skills, an attempt was made to evaluate the process of student decision-making. This was achieved by subjecting the students' incorrect responses

to an error analysis. Error responses were tabulated and classified according to the method of annotation described previously (CDC, 1984). According to this method, students' errors in decision-making were classified as involving a skipped step, a repeated step, an ineffective implementation of a step, or a defective action. All incorrect responses were placed within one of these categories. Table 1 shows the error distribution for both the health behavior and social behavior focus scenarios.

Table 1
Mean Number of Errors in Decision-Making Involving Skipped Step, Repeated Step, Ineffective Implementation of a Step, and Deflective Action

Error Type	Problem Focus					
	Health			Social		
	Mean	S.D.	Range	Mean	S.D.	Range
Skipped Step	.75	.75	0-2	1.15	.88	0-3
Repeated Step	.95	.74	0-2	0	0	0
Ineffective Implementation of a Step	.25	.53	0-2	.81	.89	0-3
Deflective Action	.20	.40	0-1	.36	.57	0-2

The total number of errors tabulated was 206, with 104 derived from scenarios with a health-behavior focus and 102 from scenarios with a social-behavior focus. There was no statistical difference in the number of errors students made in their responses to either decisions with a health-behavior or social-behavior focus. T-test comparisons of the mean number of errors for the scenarios with a health or social focus revealed significant differences in the number of errors involving skipped steps ($t=2.36$, $df=43$; $p < .05$), repeated step ($t=-8.84$, $df=43$; $p < .05$), and ineffective implementation of a step ($t=4.07$, $df=43$; $p < .05$).

As shown in Table 1, children made more errors involving "skipped step" (mean=1.15, s.d.=.88) and "ineffective implementation of a step" (mean=.81, s.d.=.89) when the scenario had a social-decision focus than when it involved a health-decision focus. Students never made the error "repeated step" when the scenario had a social-decision focus. Conversely, when the decision scenario was health-related, students made more errors involving "repeated step" (mean=.95, s.d.=.74) than any other error category. They were also less likely to ineffectively implement a step (mean=.25, s.d.=.53) if the scenario had a health focus.

Discussion

This study examined the decision-making skills of a sample of American Indian adolescents. Findings from this and prior studies (e.g., Duryea, Kreuter, & Braza, 1981) suggest that adolescents are equally efficacious in their ability to make decisions with a health or a social focus. It may be appropriate to speculate that in making decisions, there is a transition in children's thinking where they shift from basing their decisions on the health consequences of behavior (e.g., becoming ill as a result of one's behavior) to focusing on the social consequences of behavior (e.g., not being accepted by one's peer group as a result of one's behavior).

Supposedly, this transition takes place between 11 and 13 years, the age of most children in this study. If indeed children shift from health priorities to social priorities between the ages of 11 and 13 years in their decision choices, differences in the health and social decision-making skills among this sample of American Indian adolescents should not be expected.

Perhaps the most intriguing finding in this study pertained to the students' pattern of incorrect responses to the decision-making scenarios. Students seemed to make more errors involving "skipped steps" and "ineffective implementation of a step" when the scenario had a social focus than when it involved a health focus. Furthermore, students never reported an error of "repeating step" when the scenario had a social decision focus. In contrast, when the decision focus was health-related, students made more errors involving "repeating a step" than any other error type.

Exactly why students responded in this manner is unknown. Some would argue, however, that the different response patterns may be due to the students' cognitive capabilities. That is, it may be that the different error types were made by children at various stages of cognitive development. Certainly, Piaget (Inhelder & Piaget, 1964a) emphasized stages of children's cognitive development from preoperational (about 3 to 6 years) through concrete operational (about 7 to 11 years) to formal operational (about 12+ years).

Although children's level of cognitive development was not assessed in this study, previous studies have shown that there are clear limitations in the kinds of plans or strategies children at various cognitive levels are capable of manifesting (Gholson, Levine, & Phillips, 1972; Gholson, Phillips, & Levine, 1973; Gholson, 1980). For example, preoperational children lack the cognitive capacities to manifest any strategy. Hence, in a decision-making situation a preoperational child is likely to exhibit random responses that involve no logical structure. In contrast, concrete operational children can think relationally, generalize to and from others, and are capable at reversing causal explanations. They have the logical structures necessary to formulate a systematic plan and carry it through (Inhelder & Piaget, 1964a). However, children at this stage may have problems integrating several variables in causal relationships. It is only the child in the formal operational stage who is capable of thinking

hypothetically and abstractly. In essence, the formal operational child is capable of differentiating between self and environment and considering multiple alternatives in decision-making situations.

Based upon the findings from this investigation, it is obvious that additional studies are needed to clarify the relationship between children's cognitive level and their pattern of responding in decision-making situations. We hope that this study will generate more research endeavors in health decision-making dynamics among adolescents, particularly among American Indian adolescents. For instance, issues such as content of thinking during decisions, consistency of thinking, the most effective level of reflection, as well as cultural factors need to be systematically investigated within specific tribal populations.

It is hoped that individuals such as health curriculum specialists, school psychologists, health behavior specialists, pediatricians, and health personnel who work regularly with American Indian adolescents will be encouraged to consider the cognitive developmental level and decision-making skills of the children with who they are working. This may be a critical initial step in efforts to design appropriate intervention strategies to promote health and prevent disease among American Indian adolescents as well as the mainstream adolescent populations.

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SPECIAL COMMENTARY

This American Indian and Alaska Native Mental Health Research Agenda has been developed by Dr. Bill G. Douglas, Director of Mental Health Data Analysis and Research of the Indian Health Service, pursuant to a Delphi process which involved Indian and research personnel across the country. It was developed to identify research topics for possible funding, with the primary criterion that the results yield clinical, program, or other benefits to improve the mental health of American Indian and Alaska Native people.

American Indian and Alaska Native Mental Health Research Agenda

Category I: Better definitions of the nature and scope of mental health problems in American Indian and Alaska Native populations. These range from general descriptive data, which can be used to make comparative assessments within and between IHS service populations as well as with non-Indian populations, to specific kinds of problems and sets of issues.

What are the incidence and prevalence rates for mental disorders (as currently defined by DSM-III-R) in American Indian and Alaska Native populations, and how can these data be organized in such a way that meaningful comparisons, both between various aggregates of Indian populations and with non-Indian populations be made?

What is the incidence of physical abuse, sexual abuse and neglect of children in American Indian and Alaska Native communities?

What are the significant cultural, social, and psychological factors, and their interactions, associated with suicide behavior in American Indian and Alaska Native populations?

How are American Indian and Alaska Native suicide completions associated with previous suicide attempts?

What is the incidence of childhood sexual abuse in male and female patients seeking mental health services?

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What are the inter-relations and inter-dependence between alcoholism and suicide in American Indian and Alaska Native populations?

What is the incidence of childhood abuse in patients who attempt/complete suicide?

What is the prevalence of depressive symptoms in older American Indian and Alaska Natives?

How is depression related to chronic disease in older American Indian and Alaska Natives?

Category II: Assessments of the validity of the methods and materials used to evaluate psychiatric and psychological conditions to determine their appropriateness for use in cross cultural settings.

What particular psychiatric diagnostic criteria are appropriate for American Indian and Alaska Native populations in general? Do these vary by Tribe?

What are the most reliable (and cost-effective) means of screening for serious psychological dysfunction and major mental disorders in American Indian and Alaska Native communities?

How valid are existing standard psychiatric diagnostic instruments with Indian populations, and how should they be adapted for these populations?

How can norms be established for the appropriate interpretation of the widely used standardized psychological tests for American Indian and Alaska Native populations? Is development of specific tribal or language tests necessary?

Category III: Identification of significant predictors of positive mental health in American Indian and Alaska Natives populations.

What characteristics of childrearing in American Indian and Alaska Native populations are especially associated with a healthy outcome in children?

What are the differences in the mental health status of those American Indian and Alaska Native families that can

be characterized as well functioning when compared with those that could be characterized as malfunctioning?

What are the differences between "healthy" and "un-healthy" Indian community functioning?

Category IV: Identification of significant predictors of mental disorder, psychological disruption or serious personal stress.

How and how much are the problems of American Indian and Alaska Native children related to problems of their families?

How likely are abused children to develop mental health symptoms requiring clinical intervention?

What is the natural history and outcome(s) of particular mental health problems in American Indian and Alaska Native populations compared with the results when they are identified and treated by mental health service providers?

Category V: Questions addressing the issue of "What Works?", in treatment and prevention particularly.

What types of treatment modes work for American Indian and Alaska Native patients, in what type of tribal settings, and why?

How effective are the various activities related to preventing mental illness in American Indian and Alaska Native communities?

What combinations of traditional and western medicine are most helpful in dealing with psychiatric conditions in American Indian and Alaska Native populations?

What impact do cultural factors have on the process of psychotherapy with American Indian and Alaska Native patients? Are some forms of psychotherapy better than others with specific groups?