

American Indian and Alaska Native Mental Health Research

The Journal of the National Center

Volume 2, Number 1

Published by the National Center

**University of Colorado Health Sciences Center
Department of Psychiatry
4200 East Ninth Avenue
Denver, Colorado 80262**

ISSN 0893-5394

EDITOR-IN-CHIEF
SPERO M. MANSON, PhD

JOURNAL MANAGER
DEBORAH J. ARMJO

RESEARCH ASSOCIATES

MORTON BEISER, MD
Department of Psychiatry
University of British Columbia

PHILIP A. MAY, PhD
Department of Sociology
University of New Mexico

R. DALE WALKER, MD
Alcohol & Drug Dependence Treatment Unit
Seattle Veterans Medical Center & Hospital

TERESA LAFROMBOISE, PhD
School of Education
Stanford University

GEORGE GUILMET, PhD
Department of Comparative Sociology
University of Puget Sound

JOHN RED HORSE, PhD
American Indian Studies Center
University of California, Los Angeles

GERALD V. MOHATT, EdD
College of Human & Rural Development
University of Alaska, Fairbanks

JOSEPH D. BLOOM, MD
Department of Psychiatry
Oregon Health Sciences University

WILLIAM H. SACK, MD
Department of Psychiatry
Oregon Health Sciences University

LEN BRUCE, PhD
Department of Psychology
Washington State University

GORDON NELIGH, MD
Department of Psychiatry
University of Colorado Health Sciences Center

DONALD W. BECHTOLD, MD
Department of Psychiatry
University of Colorado Health Sciences Center

C. JOSEPH PINE, PhD
Psychiatric Services
Sepulveda Veterans Administration Medical Center

DIANE J. WILLIS, PhD
Child Study Center
Oklahoma Health Sciences Center

ROBERT HACKENBERG, PhD
Department of Anthropology
University of Colorado

GRACE POWLESS SAGE, PhD
Multicultural Center for Counseling
& Community Development
University of Colorado

JERROLD E. LEVY, PhD
Department of Anthropology
University of Arizona

JOSEPH E. TRIMBLE, PhD
Department of Psychology
Western Washington University

PAT SILK-WALKER, RN MS
Department of Psychosocial Nursing
University of Washington

BEATRICE MEDICINE, PhD
Department of Anthropology
California State University, Northridge

JOSEPH WESTERMEYER, MD
Department of Psychiatry
University of Minnesota

RICHARD SCHULZ, PhD
Cathedral of Learning
University of Pittsburgh

NORMAN G. DINGES, PhD
Department of Psychiatry
Oregon Health Sciences University

J. DAVID KINZIE, MD
Department of Psychiatry
Oregon Health Sciences University

KEN PEPION
Native American Studies Program
University of Montana

BOBBY WRIGHT, PhD
Indian Studies Program
Montana State University

JAMES H. SHORE, MD
Department of Psychiatry
University of Colorado Health Sciences Center

ANNA E. BARON, PhD
Department of Psychiatry
University of Colorado Health Sciences Center

RON PETERS, BA
Greater Vancouver Community
Mental Health Services

CANDACE M. FLEMING, PhD
Department of Psychiatry
University of Colorado Health Sciences Center

SANDRA K. JOOS, PhD
Veterans Administration Hospital
Portland, Oregon

JAMES BOEHLIN, MD
Department of Psychiatry
Oregon Health Sciences University

Subscription rates are \$35 (US currency) per volume—including 3 issues per year plus an annual monograph. M: checks payable to: UCHSC/National Center/Journal. Mail to National Center for American Indian and Alaska Native Mental Health Research, Campus Mail Box C249, 4200 East Ninth Avenue, Denver, Colorado 80262, At Journal Manager.

ISSN 0893-5394

© 1988 The National Center for American Indian and Alaska Native Mental Health Research
Denver, Colorado

All Rights Reserved

American Indian and Alaska Native Mental Health Research

The Journal of the National Center
Volume 2, Number 1

Editorial	1
-----------	---

Medical and Psychological Effects of the Threat of Compulsory Relocation for an American Indian Tribe	3
<i>Michael J. O'Sullivan, PhD, and Paul J. Handal, PhD</i>	

The Primary Cost of Drug Abuse: What Indian Youth Pay for Drugs	21
<i>Geraldine Loretto, MA, Fred Beauvais, PhD, and Eugene Oetting, PhD</i>	

Mental Health and Alcohol Abuse Indicators in the Albuquerque Area of Indian Health Service: An Exploratory Chart Review	33
<i>Philip A. May, PhD</i>	

Special Commentary	47
--------------------	----

This issue marks the beginning of the second volume of *American Indian and Alaska Native Mental Health Research* and continues our effort to highlight many of the pressing concerns of the time. The first article, "Medical and Psychological Effects of the Threat of Compulsory Relocation for an American Indian Tribe," by O'Sullivan and Handal, provides empirical evidence for the trauma of a community's anticipation of forced relocation due to a dam. Employing a well-known screening scale and local human service data, the authors demonstrate that Fort McDowell residents experienced high rates of psychological distress and medical care utilization as a consequence of this impending move. These rates proved to be significantly greater than those of a culturally similar Indian community which was not subject to like relocation pressures. The proposed construction of this dam ranked among the most stressful and upsetting events in the lives of these community members and threatened to deliver a critical blow to the tribe's collective consciousness. Of course, relocation, particularly of an involuntary nature, is a current theme in a number of Indian and Native communities. Consider the Navajo-Hopi land dispute, the relocation of several Pueblo villages to permit mineral exploitation, and the abandonment of a Plateau housing development due to the hazardous waste contamination of ground water supply.

The second article, "The Primary Cost of Drug Abuse: What Indian Youth Pay for Drugs," by Loretto, Beauvais, and Oetting, underscores the out-of-pocket expense of drug use/abuse by this special population. Drawing from their extensive longitudinal studies of drug use, the authors selected one reservation that they deemed representative of other rural Indian communities. One thousand and ninety-four local youth were surveyed in 1984 to ascertain just how much they spend on alcohol and other drugs over a year. Step by step, Loretto and colleagues indicate the nature of their assumptions and subsequently conservative calculations in arriving at these cost estimates. The results are staggering, totaling almost \$8.3 million annually. The most money is spent on marijuana (\$4,497,629), next on alcohol (\$2,865,139), then on other drugs (\$507,227), and the least on cocaine (\$428,400). As the authors point out, the "costs" of these drugs would be far greater if one incorporated the full range of consequences: property damage, loss of productivity, and impaired physical and mental health.

In one sense, the third article in this issue, "Mental Health and Alcohol Abuse Indicators in the Albuquerque Area of Indian Health Service: An Exploratory Chart Review," by May, follows naturally from this last observation by the previous contribution. Specifically, May's analyses of a randomly selected, albeit small sample of medical charts from several IHS service units suggest that 21% of all individuals using these facilities over a ten-year period come at least once for an

alcohol or mental health problem. These problems, in turn, account for 1.8 visits to the medical services and 3.9 visits to the mental health staff. This article, however, is instructive in several other ways as well. For example, the author has shown the utility of tracking an individual case over time within and across different service data systems. IHS' automated information systems historically have been visit-oriented rather than patient-centered, which precludes the types of analyses conducted by May. These systems also tend to be program specific and are seldom linked, thereby frustrating attempts to identify multiple service users. Consequently, we are offered a thoughtful approach to examining service records which may be useful not only for epidemiological purposes, but cost-benefit studies of treatment and prevention as well.

Spero M. Manson, PhD
Editor-In-Chief

MEDICAL AND PSYCHOLOGICAL EFFECTS OF THE THREAT OF COMPULSORY RELOCATION FOR AN AMERICAN INDIAN TRIBE

MICHAEL J. O'SULLIVAN, PhD, AND PAUL J. HANDAL, PhD

ABSTRACT. The psychological and medical impact of the threat of compulsory relocation on an American Indian reservation community due to the proposed construction of a dam were assessed using the Langner 22-Item Screening Scale, Rotter Internal-External Control Scale, and aggregate medical facility utilization statistics. Participants' feelings about compulsory relocation as well as their estimation of its potential effects were assessed through a number of specific questions employing a Likert-type rating scale. The same data were collected from another culturally similar reservation community. An ancillary study calibrated the Langner scale for the population under study. As opposed to the comparison group, the people threatened with relocation experienced significantly more severe psychological distress and made significantly more use of medical services. The community perceived the effects of the dam to be as distressing as the death of loved ones. Certain variables significantly discriminated successful adjustment in the face of this distress.

Much of the research on relocation has occurred within the past 20 years and has generally demonstrated that relocation, whether voluntary or compulsory, functions as a significant stressor and disrupts social support networks (Bodley, 1982; Coelho & Ahmed, 1980; Finsterbusch, 1980; Kantor, 1969; Kiste, 1974; Scudder, 1973, 1979). Compared to voluntary relocation, effects of compulsory relocation have been reported as significantly more negative in terms of the subsequent social support disruption and psychological distress (Butler, McAllister, & Kaiser, 1973; Scudder, 1973; Steinglass, De-Nour, & Shye, 1985). The poor, elderly, long-time residents, minority groups, and community-oriented cultural groups have been defined as high-risk populations in which the psychological effects of compulsory relocation are particularly negative in terms of psychological adjustment and social networks (Finsterbusch, 1980; Scudder, 1973, 1979; Watson, 1980).

Additional effects of compulsory relocation include increased morbidity and mortality rates (Finsterbusch, 1980; Fried, 1963; Kowalski, 1978; Scudder, 1973, 1979; Thomas, 1979; Watson, 1980) and increased utilization of medical facilities (Scudder, 1979; Topper & Johnson, 1980). Following involuntary relocation, rural tribal communities have experienced cultural identity crises, resistance to innovation, and increased dependency upon the national government responsible for the relocation (Colson, 1971; Kiste, 1972; Scudder, 1973, 1979).

AMERICAN INDIAN AND ALASKA NATIVE MENTAL HEALTH RESEARCH
VOLUME 2(1), pp. 3-19

Instead of presenting a consistently bleak picture, previous studies of psychological distress following involuntary relocation have differed in their conclusions regarding the level of distress populations experience (Heller, 1982; Steinglass et al., 1985). Relocations having more profound and enduring effects seem to be those that affect entire communities and are human-made rather than natural occurrences (Steinglass et al., 1985). Even the threat of such relocations has been associated with severe levels of psychological distress and dysfunction (Steinglass et al., 1985; Topper & Johnson, 1980).

Since 1968, the American Indian Yavapai community at Fort McDowell, near Phoenix, Arizona, had been threatened with compulsory relocation due to the proposed construction of the Orme Dam. This threat intensified in September of 1968 when the United States Congress passed, and President Johnson signed into law, authorization for the proposed dam and for the relocation of the Yavapai community from the Fort McDowell Reservation.

The members of a culturally similar American Indian community (hereafter referred to as the Comparison Reservation) had experienced no such threat of relocation.

Most studies investigating the psychological impact of compulsory relocation both for communities and individuals have by necessity examined the parameters of coping and adjustment after the relocation has occurred (Steinglass et al., 1985). The present study was designed to assess the psychological and medical impact of the threat of relocation upon the Fort McDowell community as a function of the source of that threat: the dam. The psychological effects were estimated by the Langner 22-Item Screening Scale (Langner, 1962), and aggregate community medical data were used to estimate the medical effects. An ancillary study calibrated the Langner scale for the populations under study. In addition, the community's feelings about the dam, their estimation of its potential effects if it were constructed, and their locus of control orientation were assessed.

It was hypothesized that both the Langner scale and the aggregate medical statistics would reveal more psychological distress at Fort McDowell than in the other culturally similar reservation community. It was further hypothesized that the Fort McDowell community would estimate the effects of the dam's construction as more severe and would have a more external locus of control orientation than would the comparison group.

Method

Subjects

Calibration study. A sample of convenience consisting of 32 full-blooded American Indian adults with known psychiatric diagnoses (ranging from transient situational disorder to schizophrenia) served as the calibration sample. The sample was drawn from the Indian Health Service (IHS) mental health facilities in the metropolitan Phoenix area and surrounding reservations. Eight were males who ranged in age from 18 to 61 years ($M = 28.65$), and 24 were females from 18 to 71 years of age ($M = 35.46$). Fourteen subjects lived on a reservation, while 18 recently had moved from a reservation to the city.

Reservation comparison study. Serving as a comparison or nonequivalent control to the Fort McDowell community was another culturally similar American Indian reservation located in Arizona. The populations on these two reservations share a very similar cultural identity and heritage; they have experienced the same history in their contact with Anglo-American society—including the experience of past major relocations; their degree of acculturation seems parallel; and the number of adults residing on each reservation was nearly identical (Fort McDowell, 174, and Comparison Reservation, 162) as were their age and gender distributions (O'Sullivan, 1984). However, the residents of the Comparison Reservation would experience no direct detrimental effects from the proposed dam.

Lists of adults aged 18 years and older actually residing on each reservation at the time of the study were obtained from the respective tribal offices. For each reservation, a stratified random sample with full probability sampling within each stratification (age and gender) was drawn from those lists. One-third of each sample fell into each of three age groups (18 to 29 years, 30 to 50 years, over 50 years), and within each age group there generally was the same number of males and females.

At Fort McDowell 45% ($n = 79$), and at the Comparison Reservation 46% ($n = 75$) of the total adult population living on the respective reservations were interviewed. The ages of the Fort McDowell male participants ranged from 18 to 99 years ($M = 43.46$), and females ranged from 18 to 81 years ($M = 41.48$). The Comparison male participants ranged in age from 18 to 76 ($M = 38.60$), and the female range was from 18 to 78 ($M = 42.05$). More than 90% of the participants from both reservations fell into Hollingshead and Redlich's (1958) Classes IV and V (the two lowest social classes as determined by current occupation and education levels).

Instrumentation

Langner 22-Item Screening Scale. Examining the effects on the mental health of a population is one way of assessing the psychological and/or behavioral effects of an event or situation experienced by that population (e.g., Dohrenwend, Dohrenwend, Fabrikant, Kasl, & Warheit, 1980). Consequently the Langner scale (Langner, 1962) was employed as a direct measure of the relative level of psychological distress in the two communities. This scale has been widely used as an epidemiological measure of psychological disorder in community surveys and has good reliability and validity as a measure of psychological distress, especially as a rough index of the social phenomenon of group mental health (Dohrenwend, Dohrenwend, Gould, et al., 1980; Dooley & Catalano, 1979; Langner, 1962; Manis, Brawer, Hunt, & Kercher, 1963).

Dohrenwend and his associates maintain that the Langner scale measures a construct that Frank (1973) calls demoralization (Dohrenwend, Oskenberg, Shrout, Dohrenwend, & Cook, 1979). Evans and associates (Evans, Jacobs, Dooley, & Catalano, 1987) reported the Langner to correlate well ($r = .76$) with the demoralization scale of the Psychiatric Epidemiological Research Inventory. Demoralization seems to be a function of factors both in the environment and in the person which interact such that the person feels unable to adapt. This construct has proven useful in assessing the impact of relocation (Steinglass et al., 1985).

In consultation with the Yavapai interviewers, the response categories of the scale were slightly modified making them more conducive to the time-frame of the populations under investigation. For example, items with a response category of "often," "sometimes," and "never" were changed to "often" or "rarely." No changes in scoring were necessary.

Medical statistics. The well-documented concordance of physical illness and psychological disturbance justifies the assumption that a community's aggregate medical utilization rates will reflect the community's relative level of psychological well-being or distress (Cooper, 1964; Dohrenwend & Dohrenwend, 1969; Dohrenwend & Dohrenwend, 1974; Koranyi, 1972; Rahe, McKean, & Arthur, 1967; Rosen & Wiens, 1979; Tessler, Mechanic, & Dimond, 1976). Such aggregate medical statistics for both Fort McDowell and the Comparison Reservation were obtained from the IHS, and were employed as a measure of the psychological distress in the respective communities. Since 1972, these statistics had been available on an annual basis only, and were considered to be a fairly complete and accurate accounting of each reservation's medical facility utilization for any given

year. No statistical records were available for medical service utilization for either community prior to 1972. To avoid the problems of diagnostic biases and inconsistencies (Koranyi, 1972), this investigation employed the grand totals of all medical utilization rates (inpatient and outpatient) regardless of specific diagnoses and/or services rendered.

Rotter Internal-External Control Scale. External control expectancies could be exacerbated if people expected the unwanted dam to have a substantial negative impact. Therefore the Rotter I-E Scale (Rotter, 1966) was employed as a measure of the locus of control orientation in the two communities. An external locus of control orientation correlated with abnormal psychological functioning in general (Lefcourt, 1976) and with negative affect in particular (Melges & Weisz, 1971), both of which correlate with the demoralization construct.

This scale has been used frequently with American Indian populations (Trimble & Richardson, 1982) and has demonstrated acceptable reliability and validity (Harrow & Ferrante, 1969; Joe, 1971; Mackey, 1979; Rotter, 1966; Zerega, Tseng, & Greever, 1976). In addition to the overall I-E score, in this investigation scores also were obtained for the personal control and social systems control factors reported by Mirels (1970) and Viney (1974). Trimble and Richardson (1982), in their factor analytic study of the I-E scale with American Indians, reported similar dimensions of personal and ideological control. In each case, higher scores represented greater externality.

Structured interviews. The Langner and Rotter scales were included in a structured interview which also contained demographic questions. A final component consisted of 12 life-stress rating items and 12 questions. Participants were asked to rate their personal feelings about the dam issue and then to estimate the effect the dam would have on the tribe and themselves if built. The same metric scale was used for both the life-stress items and the dam questions—a 7-point Likert-type scale. The dam items had an internal consistency reliability coefficient of .91, and the life-stress items served to increase the validity of the ratings on the subsequent dam questions by providing a context for the subject's ratings (Dohrenwend, Dohrenwend, Fabrikant, et al., 1980).

For those who spoke only Yavapai or Apache, the measures used in the interview were back-translated into those languages.

Procedure

Permission to conduct the study was first obtained from the tribal councils of both reservations, and all individuals participated voluntarily with the assurance of anonymity. To avoid possible biasing of responses, care was taken never to mention

relocation and/or the dam when seeking consent from either tribal councils or individual participants. Each person was interviewed privately and was paid \$10 for participating in the study.

Those structured interviews needing to be conducted in Yavapai were back-translated and done by one person on each reservation and those in Apache by another person. All interviewers in both locations were trained prior to the field work. The data for the calibration study were collected through the mental health professionals employed by either the IHS or the individual tribes. The data were collected ten to six months prior to the definitive decision regarding the construction of the dam.

Results

Calibration Study

The mean score on the Langner scale for the 32 American Indian psychiatric patients was 10.6. While the means for males and females were nearly the same, the 14 reservation residents' mean ($M = 9.5$) was lower than that of the urban residents ($M = 11.4$). Based on the mean of the reservation residents, a cutting point of 10 or more on the Langner was used in this study since only residents on the reservation were sampled at both Fort McDowell and the Comparison Reservation.

In retrospect it can be seen that it would have been best to have included within the calibration sample non-psychiatric persons as well as those with psychiatric disorders. As a result of this methodological omission, the validity of using a cutoff of 10 to differentiate between psychiatric and non-psychiatric populations was not estimated.

Comparison Study

In order to determine if a significant amount of bias developed during the weeks of data collection at Fort McDowell, a discriminant analysis was computed with the first 40 and the final 39 people interviewed who were serving as the criterion groups. It was predicted that if the results were distorted by biased responses, then the latter half of the sample would try to look more distressed and give more negative responses to the dam items. However, there were no statistically significant differences in the responses of the two groups.

On the Langner scale, the means and standard deviations for Fort McDowell ($M = 5.81$, $SD = 4.71$) and the Comparison Reservation ($M = 5.21$, $SD = 4.26$) were quite similar; however, the proportion of the respective populations evidencing severe psychological distress as defined by a score of 10 or more on the Langner

were significantly different, $\chi^2(1, N = 154) = 6.70$, $p < .01$. While 11% of the adults at the Comparison Reservation demonstrated psychological distress equivalent to the Indian psychiatric patients, twice as many (or 22%) of those at Fort McDowell were identified as that distressed.

The annual (1972-1980) total medical utilization data for both reservations were submitted to a 2×9 chi-square analysis and were found to differ significantly, $\chi^2(8, N = 24,226) = 799.64$, $p < .0001$. Fort McDowell consistently utilized medical services significantly more than did the Comparison Reservation. In the first year (1972) that computer utilization data were available, which was four years after the threatened relocation (1968), Fort McDowell utilized medical services at a 2 to 1 ratio in contrast to the Comparison Reservation. Unfortunately, computerized medical utilization data were not available prior to the threat of relocation in 1968.

However, there had been no report or history of differential medical utilization rates or differential availability of medical services between the two reservations; and as noted, the two reservations did not differ in terms of age or sex distributions. For the 1980 statistical year which ended just prior to the final decision by the federal government concerning the construction of the dam, the Fort McDowell's rate of medical utilization was 6 to 1 compared to the Comparison Reservation.

Fort McDowell had significantly more residents in severe psychological distress and, as a community, utilized medical services significantly more than their counterparts on a similar reservation. In order to determine the focus of the threat that could account for these differences, the ratings on the 12 dam items as well as the scores on the Langner scale and three scores derived from the Rotter scale were analyzed in a factorial multivariate analysis of variance (MANOVA) with reservation (two levels), gender (two levels), and age (three levels) as the factors. Scores on the Langner were included in this analysis to confirm the similarity of psychological distress apparent in the mean scores of the two groups, and the three I-E scale scores were included in order to test the hypothesis of greater externality in the Fort McDowell residents.

Unfortunately, there were substantial data on the dam items missing from the older residents of the Comparison Reservation. In order to execute the MANOVA, the responses given by older residents of the Comparison Reservation were used to determine item means. These means were then used as the item responses where missing data existed. Unfortunately, using item means as item responses reduces variability and can lead to a Type I error, particularly when comparing older male or female residents with other groups. The results of the MANOVA analysis, utilizing the Wilks Lambda Criterion, revealed a significant three-way interaction of reservation by gender by age, $F(32, 254) = 1.861$, $p < .005$.

There were no significant main effects or interactions for either the Langner or the Rotter scales. There were ten significant interactions on the dam items which revealed that generally the Fort McDowell residents rated the effects of the dam as significantly more severe than did the people at the Comparison Reservation. This overall conclusion was supported by analyses that disregarded older male and female residents of both reservations. That is, main effects analyses of the dam responses for younger (18 to 29 years) and middle-aged (30 to 50 years) males and females revealed that the residents of Fort McDowell rated the dam as having a significantly worse effect on themselves and their tribe than their counterparts at the Comparison Reservation. These results do not indicate a Type I error for the MANOVA *F* due to use of item means. However, since no comparisons using older Comparison Reservation residents could be done validly due to the missing data and the use of mean item scores, further specific analyses between older, middle-aged, and younger male and female residents of the two reservations would yield an incomplete and distorted picture. Therefore they are not presented in detail.

Table 1
Mean Ratings on Life-Stress and Dam Items for the Fort McDowell Community

	<u>N</u>	<u>M</u>	<u>SD</u>
<u>Stress of Life-Events:</u>			
Death of spouse	14	6.14	1.61
Death of close friend	64	5.22	2.00
Death of a close family member	63	5.17	2.13
Major personal injury or illness	45	4.33	2.08
Major change in health of family member	56	4.30	2.05
Children leaving the reservation	36	3.86	2.23
Trouble with law or jail term	46	3.83	2.45
Divorce or marital separation	36	3.67	2.52
Trouble with in-laws	53	3.43	2.25
Outstanding personal achievement	57	2.14	1.82
Getting married	57	1.86	1.53
Christmas season	79	1.85	1.40
<u>Severity of Effects of the Dam on:</u>			
Your tribe as a people and culture	79	5.67	1.93
Having a land the tribe can call home	79	5.63	2.11
Survival of the tribe	79	5.49	2.09
Tribal government	78	5.47	1.81
Upsetting to you	79	5.29	2.26
All Indian people and tribes	79	5.27	2.10
Your culture identity as a member of this tribe	78	5.14	2.17
Overall on you personally	79	4.54	2.24
Contact with friends and neighbors	79	4.18	2.23
Your employment opportunities	79	3.97	2.47
Your ability to practice your religion	79	3.65	2.57
Your educational opportunities	78	3.51	2.31

Note. Maximum rating for each item = 7.0.

In Table 1 the mean ratings given by the Fort McDowell sample to both the life-stress and dam items are rank ordered. The people rated the various life-event items in the generally seen direction, and there were no major surprises when their mean scores on such items were rank ordered (Dohrenwend, Krasnoff, Askenasy, & Dohrenwend, 1978; Masuda & Holmes, 1978). As is evident from Table 1, the people rated 3 of the 12 life events over 5.0 (of a possible 7.0), and all of these events involved a death. Of import is the fact that they rated 7 of the 12 dam items with a mean over 5.0.

Clearly, the vast majority of the adults at Fort McDowell perceived the construction of the dam as more upsetting to them and as having more deleterious effects on their tribe as a people and culture, their ability to have a land that the tribe can call home, the survival of the tribe, the tribal government, and on all Indian people and tribes than the most distressing life events they had ever experienced—namely, the death of a close friend and/or close family member. They rated the severity of the dam's effect on their cultural identity as members of the tribe ($M = 5.14$) to be almost identical to the psychological distress of losing a close member of the family in death ($M = 5.17$). Furthermore, the weakest rating they gave to any dam item (its effect on one's educational opportunities, $M = 3.51$) was nevertheless very similar to their rating of the distress caused by divorce or marital separation ($M = 3.67$). While the possibility of the dam was very upsetting to the people personally, the adults at Fort McDowell thought that the construction of the dam would have its most severe effects on the more tribal dimension of their lives rather than on the more personal or individual level.

Since only respondents who had experienced a particular life event rated that event, it was questionable whether the group data provided a reliable comparison between the expected strain of relocation and the perceived strain of other life events. Therefore, the data were analyzed to determine if individuals who had experienced a particular life event (e.g., death of spouse) rated the dam items differently than the group as a whole. It was found that with each life event, the respondents who had experienced that event rated the dam items according to the same general pattern as the group as a whole. In every case—including those respondents who had experienced the death of loved ones—the perceived deleterious effects of the dam to the tribe as well as the perceived degree of personal upset were rated as more severe than those life events they had experienced.

Based on their individual scores on the Langner scale, the Fort McDowell participants were separated into three groups representing three levels of psychological distress. Those with scores less than 4 comprised the least distressed group ($n = 27$); those with scores of 10 or more were considered as the most

distressed ($n = 17$); and persons with scores ranging from 4 to 9 formed a third group representing those who were experiencing an intermediate level of psychological distress ($n = 35$).

A score of less than 4 was used to represent satisfactory psychological adjustment because Langner (1962), in a general population, found that scores of 4 or more significantly differentiated psychiatric patients from nonpatients (who scored 3 or less), and identified 84% of those who were incapacitated. Using the standard cutoff of 4, Martin, Sutker, Leon, and Hales (1968) found the scale to be effective in estimating the prevalence of emotional disturbance in a heterogeneous sample of American Indians not residing on a reservation. Engelsmann and colleagues (Engelsmann, Murphy, Prince, Leduc, & Demers, 1972) also found that Langner scores did not seem to be confounded by ethnic cultural differences.

The mean Langner score for our sample ($M = 5.81$) was higher than that reported for the general population ($M = 2.83$; Langner, 1962); therefore scores below Langner's cutoff of 4 appeared to be a conservative estimate of satisfactory psychological adjustment. Scores of 10 or more were thought to reflect the most distressed group because the calibration data indicated that scores of 10 or above were associated with identified American Indian psychiatric patients. With these three levels of distress serving as criterion groups, a multiple discriminant function analysis was computed using the demographic data and the three scores on the Rotter I-E scale as variables. The resulting discriminant function yielded a significant Wilks lambda of .4586, $\chi^2(22, N = 154) = 54.57, p < .001$. There were six significant predictors: the total number of years of formal education, $F(2, 75) = 6.316, p < .01$; personal locus of control, $F(2, 75) = 4.303, p < .05$; type of job one possessed, $F(2, 75) = 4.545, p < .05$; gender, $F(2, 75) = 4.188, p < .05$; and the number of children under 18 years of age living at home, $F(2, 75) = 3.473, p < .05$.

Predicting the least amount of psychological distress as measured by the Langner scale were being male and employed, having a higher status job, more education, a more internal locus of personal control, and having more children living in the home. On these variables the direction of the prediction was consistent; for example, the least distressed group had a more internal locus of personal control, while the most distressed group was more external and the intermediary group was "in between" in terms of personal locus of control. The only exception to this rule was employment, with the intermediary group having a slightly greater tendency to be employed than did those showing the least distress.

Discussion

The data from both the psychiatric screening scale and the aggregate medical statistics indicated a rather high level of psychological distress at Fort McDowell. Since there are significantly higher rates of both severe demoralization and medical service utilization at Fort McDowell than at the Comparison Reservation, it was possible that some specific environmental stressor(s) was accounting for the higher distress at Fort McDowell. The dam responses appeared to define the construction of this dam as a powerful stressor in the lives of this community. They experienced it to be as distressing as the death of a loved one, and they perceived the proposed dam as causing the death of the tribe and culture. The association of this socio-political stressor with the death of such an essential dimension of their lives most likely generated exacerbated levels of demoralization and medical utilization.

As compared with national norms, both the Fort McDowell and the Comparison Reservation Indian communities had high levels of normative psychological distress, but an internal locus of control orientation. Fort McDowell's mean score on the Langner ($M = 5.81$) surpassed the means of seven other studies reviewed by Lasry (1975) in his multicultural comparison of the Langner scale. Additionally, the Langner means reported in the present study were nearly twice as large as those found in three studies establishing mean Langner scores for the U.S. population: $M = 2.18$ (Dohrenwend & Dohrenwend, 1969); $M = 2.83$ (Langner, 1962); $M = 3.25$ (Manis et al., 1963).

Psychiatric epidemiological studies among American Indians and Alaska Natives demonstrate that the prevalence rates of these groups consistently far exceed those of the general American populace (Dohrenwend, Dohrenwend, Gould, et al., 1980; Manson & Shore, 1981; Martin et al., 1968; Roy, Choudhuri, & Irvine, 1970; Sampath, 1974; Shore, Kinzie, Hampson, & Pattison, 1973). The Langner scores reported here support the exacerbated level of psychological distress reported in American Indian communities.

While American Indians show elevated levels of psychological disorders, this does not seem to be a function primarily of poor self-concept and feelings of no control over their personal lives (Mackey, 1979; McClary, 1979; Peterson, 1980). Nor is it principally a function of an Indian tendency to express psychological distress somatically (Roy et al., 1970; Sampath, 1974; Shore et al., 1973). The psychiatric prevalence rates of American Indians currently residing on reservations most likely reflect the pathogenic impact of the dominant political and socioeconomic structures under which these people live (Report of the Special Population Subpanel on Mental Health of American Indians & Alaskan Natives, 1978).

The significantly higher medical utilization at Fort McDowell, coupled with their significantly higher rate of severe psychological distress, indicated a relationship between psychological distress and medical utilization which previously has been reported (Tessler et al., 1976). It appears that at Fort McDowell the psychological distress produced more physical illness, leading the community to initiate physician utilization. American Indians in general underutilize available mental health services (Dinges, Trimble, Manson, & Pasquale, 1981; Sue, Allen, & Conaway, 1978). Like the majority of the American population, it seems that Indians experiencing psychological dysfunction turned for assistance not to mental health professionals, but to general medical practitioners (Regier, Goldberg, & Taube, 1978).

Their mean score on the Langner identified the Fort McDowell community as a population at high risk for psychological dysfunction (Dohrenwend & Dohrenwend, 1969; Dohrenwend, Dohrenwend, Gould et al., 1980; Manson & Shore, 1981). This would make the severe distress of compulsory relocation even more deleterious (Lasry, 1975). Such psychological hazards have been observed to begin with the initial rumors of the possible resettlement. Expectations of impending hardship and loss cause the proposed relocation to be perceived as psychologically very threatening (Finsterbusch, 1980; Scudder, 1973).

The Fort McDowell responses to the dam items suggested that the threat of compulsory relocation had a negative impact on the community. The adults there rated the possibility of the dam's construction as the most upsetting event they had experienced. At stake was the survival of their tribe as a people and a culture. Collectively the people at Fort McDowell rated the effects of the dam on the tribe more severely than its effects on themselves individually. The rank ordering presented in Table 1 reveals that except for the item regarding the personal upset over the dam, all the items dealing with effects of the dam on the tribal dimensions of their lives received higher mean scores (≥ 5.14) than did the items concerned with the dam's impact on their personal lives (≤ 4.54). The same was true for the people at the Comparison Reservation. When the items involving the tribal dimension of their lives were considered collectively, the mean score at Fort McDowell ($M = 5.45$) was very similar to that at the Comparison Reservation ($M = 5.29$). However, the effects of the dam on the individual personally had a collective mean score at Fort McDowell ($M = 4.20$) higher than that at the Comparison Reservation ($M = 3.06$).

For nearly all American Indian and Alaska Native tribes, their homeland is of immense significance psychologically—touching many dimensions of their lives as well as their cultural identity as a people (Report of the Special Populations

Subpanel on Mental Health of American Indians and Alaskan Natives, 1978; Sutton, 1975). The Fort McDowell community's ratings on the dam items confirmed the profound psychological significance of this land for their cultural and tribal identity. For the Yavapai, the land at Fort McDowell is quite sacred as well as being their homeland (O'Sullivan, 1984). The loss of their land certainly would qualify as a "fateful loss event" leading directly to severe demoralization, and contributing to the development of psychopathology where it previously did not exist (Dohrenwend, 1979). The profound meaning and importance of the land for the Navajo greatly compounded the difficulties and negative impacts of their compulsory relocation (Scudder, 1979).

Compulsory relocation most often disrupts social support networks (Butler et al., 1973; Colson, 1971; Finsterbusch, 1980; Kiste, 1974; Scudder, 1973). Such disruptions correlate highly with increases in psychological dysfunction (Beels, 1981; Dean & Lin, 1977; Slater & Depue, 1981). The people at Fort McDowell expected the construction of the dam to interfere seriously with their contact with friends and neighbors. While social networks on the reservation had not yet been disrupted, the strength and negativity of that outcome expectancy most likely contributed to the heightened level of demoralization found among the people on the reservation (Bandura, 1977; Beck, Rush, Shaw, & Emery, 1979; Frank, 1973).

So too, with the people's negative expectancy regarding employment opportunities should the dam be built. The high rate of unemployment on the reservation undoubtedly contributed to the community's high normative level of distress. For the males especially, the expectation that employment opportunities would further deteriorate if the threatened relocation occurred probably exacerbated that distress.

What highlights the Fort McDowell data was its consistency across all ages and both sexes. Except for the one significant difference between sexes regarding the effects of the dam on employment opportunities, there were no significant differences between males and females nor among the various age groups on their scores on the Langner or Rotter nor on their ratings for the dam items. Since the ratings of the stressfulness of the various life events reflected the ratings rendered by most people across ages and ethnic groups, their mean scores on the dam items would seem to be an accurate representation of just how psychologically distressing the possibility of the dam and relocation were, and how severe their effects would be.

Stress researchers disagree about whether the level of psychosocial distress preceding a stressful event as forced relocation predicts the extent of negative sequelae after the event (Steinglass et al., 1985). Some argue that early distress helps develop adaptive coping strategies which may facilitate one's adjustment to crisis (Antonovsky, 1980). Others maintain that prior distress predisposes to and

predicts long-term psychological dysfunction (Warheit, 1979). The data presented in this study cannot facilitate the resolution of this debate.

However, bolstering social support networks, enhancing self-image, and promoting active coping can facilitate the prevention of long-term psychopathology in a community threatened with human-made involuntary relocations (Steinglass et al., 1985). The data presented above regarding the positive impact of personal locus of control, employment, and education also have preventive implications. Prevention as well as treatment efforts will profit from research identifying the specific coping styles and skills that help people deal effectively with compulsory relocation. Empowerment facilitates the efforts of people to gain control over their own lives and collective destiny. It may be the most effective intervention for a community faced with an unwanted move.

Loyola Marymount University
Department of Psychology
Loyola Boulevard at West 80th Street
Los Angeles, California 90045

Note

This article is based on a doctoral dissertation submitted by the first author to Saint Louis University.

References

- Antonovsky, A. (1980). *Health, stress and coping*. San Francisco, CA: Jossey-Bass.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York, NY: Guilford Press.
- Beels, C. C. (1981). Social support and schizophrenia. *Schizophrenia Bulletin*, 7, 58-72.
- Bodley, J. H. (1982). *Victims of progress* (2nd ed.). Palo Alto, CA: Mayfield Publishing.
- Butler, E. W., McAllister, R. J., & Kaiser, E. J. (1973). The effects of voluntary and involuntary residential mobility on females and males. *Journal of Marriage and the Family*, 35, 219-227.
- Coelho, G. V., & Ahmed, P. I. (Eds.). (1980). *Uprooting and development: Dilemmas of coping with modernization*. New York, NY: Plenum Press.
- Colson, E. (1971). *The social consequences of resettlement: The impact of the Kariba resettlement upon the Gwembe Tonga*. Manchester: University of Manchester Press.
- Cooper, B. (1964). The epidemiological approach to psychosomatic medicine. *Journal of Psychosomatic Research*, 8, 9-15.

- Dean, A., & Lin, N. (1977). The stress-buffering role of social support. *The Journal of Nervous and Mental Disease*, 165, 403-417.
- Dinges, N. G., Trimble, J. E., Manson, S. M., & Pasquale, F. L. (1981). Counseling and psychotherapy with American Indians and Alaskan Natives. In A. J. Marsella & P. B. Pedersen (Eds.), *Cross-cultural counseling and psychotherapy*. New York, NY: Pergamon Press.
- Dohrenwend, B. P. (1979). Stressful life events and psychopathology: Some issues of theory and method. In J. E. Barrett (Ed.), *Stress and mental disorder*. New York, NY: Raven Press.
- Dohrenwend, B. P., & Dohrenwend, B. S. (1969). *Social status and psychological disorder: A causal inquiry*. New York, NY: Wiley.
- Dohrenwend, B. P., Dohrenwend, B. S., Fabrikant, J. I., Kasl, S. V., & Warheit, G. J. (1980). Report of the Public Health and Safety Task Force on Behavioral Effects. In *Staff reports to the President's Commission on the accident at Three Mile Island* (Superintendent of Documents Stock No. 052-003-00732-1). Washington, DC: U.S. Government Printing Office.
- Dohrenwend, B. P., Dohrenwend, B. S., Gould, M. S., Link, B., Neugeberger, R., & Wunsch-Hitzig, R. (1980). *Mental illness in the United States: Epidemiological estimates*. New York, NY: Praeger Publishers.
- Dohrenwend, B. P., Oskenberg, L., Shrout, P. E., Dohrenwend, B. S., & Cook, D. (1979, May). What brief psychiatric screening scales measure. Part I: Jerome Frank's concept of demoralization. In S. Sudman (Ed.), *Proceedings of the Third Biennial Conference on Health Survey Research Methods*. Washington, DC: National Center for Health Statistics and National Center for Health Services Statistics.
- Dohrenwend, B. S., & Dohrenwend, B. P. (Eds.) (1974). *Stressful life events: Their nature and effects*. New York, NY: Wiley.
- Dohrenwend, B. S., Krasnoff, L., Askenasy, A. R., & Dohrenwend, B. P. (1978). Exemplification of a method for scaling life events: The PERI Life Events Scale. *Journal of Health and Social Behavior*, 19, 205-229.
- Dooley, D., & Catalano, R. (1979). Economic, life, and disorder changes: Time-series analyses. *American Journal of Community Psychology*, 7, 381-396.
- Engelsmann, F., Murphy, H. B. M., Prince, R., Leduc, M., & Demers, H. (1972). Variations in responses to a symptom checklist by age, sex, income, residence and ethnicity. *Social Psychiatry*, 7, 150-156.
- Evans, G. W., Jacobs, S. V., Dooley, D., & Catalano, R. (1987). The interaction of stressful life events and chronic strains on community mental health. *American Journal of Community Psychology*, 15, 23-34.
- Finsterbusch, K. (1980). *Understanding social impacts: Assessing the effects of public projects*. Beverly Hills, CA: Sage Publications.
- Frank, J. D. (1973). *Persuasion and healing*. Baltimore, MD: John Hopkins University Press.
- Fried, M. (1963). Grieving for a lost home. In L. J. Duhl (Ed.), *The urban condition*. New York, NY: Basic Books.
- Harrow, M., & Ferrante, A. (1969). Locus of control in psychiatric patients. *Journal of Consulting and Clinical Psychology*, 33, 582-589.
- Heller, T. (1982). The effects of involuntary residential relocation: A review. *American Journal of Community Psychology*, 10, 471-492.
- Hollingshead, A. B., & Redlich, F. C. (1958). *Social class and mental illness*. New York, NY: Wiley.
- Joe, V. C. (1971). Review of the internal-external control construct as a personality variable. *Psychological Reports*, 28, 619-640.
- Kantor, M. (1969). Internal migration and mental illness. In S. G. Plog & R. B. Edgerton (Eds.), *Changing perspectives in mental illness*. New York, NY: Holt, Rinehart and Winston.
- Kiste, R. (1972). Relocation and technological change in Micronesia. In H. R. Bernard & P. Pelto (Eds.), *Technology and social change*. New York, NY: Macmillan.

- Kiste, R. (1974). *The Bikinians: A study in forced migration*. Menlo Park, CA: Cummings Publishing.
- Koranyi, E. K. (1972). Physical health and illness in a psychiatric outpatient department population. *Canadian Psychiatric Association Journal*, 17, 109-116.
- Kowalski, N. C. (1978). Fire at a home for the aged: A study of short-term mortality following dislocation of elderly residents. *Journal of Gerontology*, 33, 601-602.
- Langner, T. S. (1962). A twenty-two item screening score of psychiatric symptoms indicating impairment. *Journal of Health and Human Behavior*, 3, 269-276.
- Lasry, J. C. (1975). Multi-cultural comparisons of a mental health scale. In J. W. Berry & W. J. Lonner (Eds.), *Applied cross-cultural psychology: Selected papers from the Second International Conference of the International Association for Cross-Cultural Psychology*. Amsterdam, Holland: Swets and Zeitlinger.
- Lefcourt, H. M. (1976). *Locus of control: Current trends in theory and research*. Hillsdale, NJ: Lawrence Erlbaum.
- Mackey, D. H. (1979). A study of the locus of control construct with implications for counseling American Indian college students. *Dissertation Abstracts International*, 40, 1284A (University Microfilms No. 7919040).
- Manis, J. G., Brawer, M. J., Hunt, C. L., & Kercher, L. C. (1963). Validating a mental health scale. *American Sociological Review*, 28, 108-116.
- Manson, S. M., & Shore, J. H. (1981). Psychiatric epidemiological research among American Indians and Alaskan Natives: Methodological issues. *White Cloud Journal*, 2, 48-56.
- Martin, H. W., Sutker, S. S., Leon, R. L., & Hales, W. M. (1968). Mental health of eastern Oklahoma Indians: An exploration. *Human Organization*, 27, 308-315.
- Masuda, M., & Holmes, T. H. (1978). Life events: Perceptions and frequencies. *Psychosomatic Medicine*, 40, 236-261.
- McClary, G. D. (1979). The association of self concept and academic achievement in urban Native American secondary school students. *Dissertation Abstracts International*, 39, 5820A (University Microfilms No. 7907008).
- Melges, F. T., & Weisz, A. E. (1971). The personal future and suicidal ideation. *Journal of Nervous and Mental Disease*, 153, 244-250.
- Mirels, H. L. (1970). Dimensions of internal versus external control. *Journal of Consulting and Clinical Psychology*, 34, 226-228.
- O'Sullivan, M. J. (1984). The psychological impact of the threat of relocation on the Fort McDowell Indian community. (Doctoral dissertation, Saint Louis University, 1983). *Dissertation Abstracts International*, 44, 2255B.
- Peterson, J. C. (1980). Native culturization: Its typical influence on attitudes and behaviors of urban American Indians. *Dissertation Abstracts International*, 40, 4255A (University Microfilms No. 8000086).
- Rahe, R. H., McKean, J. D., & Arthur, R. J. (1967). Longitudinal study of life-change and illness patterns. *Journal of Psychosomatic Research*, 10, 355-366.
- Regier, D. A., Goldberg, I. D., & Taube, C. A. (1978). The de facto U.S. mental health services system. *Archives of General Psychiatry*, 35, 685-693.
- Report of the Special Populations Subpanel on Mental Health of American Indians and Alaska Natives. (1978). In *Task Panel reports submitted to the President's commission on Mental health, Volume III: Appendix* (Superintendent of Documents Stock No. 040-000-00392-4). Washington, DC: U.S. Government Printing Office.
- Rosen, J. C., & Wiengs, A. N. (1979). Changes in medical problems and use of medical services following psychological intervention. *American Psychologist*, 34, 420-431.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80 (1, Whole No. 609).
- Roy, C., Choudhuri, A., & Irvine, D. (1970). The prevalence of mental disorders among Saskatchewan Indians. *Journal of Cross-Cultural Psychology*, 1, 383-392.

- Sampath, H. M. (1974). Prevalence of psychiatric disorders in a Southern Buffin Island Eskimo settlement. *Canadian Psychiatric Association Journal*, 19, 363-367.
- Scudder, T. (1973). The human ecology of big projects: River basin development and resettlement. *Annual Review of Anthropology*, 2, 45-61.
- Scudder, T. (1979). *Expected impact of compulsory relocation on Navajos with special emphasis on relocation from the Former Joint Use Area required by Public Law 93-531*. Report submitted to the Navajo Nation by the Institute for Development Anthropology.
- Shore, J. H., Kinzie, J. D., Hampson, J. L., & Pattison, E. M. (1973). Psychiatric epidemiology of an Indian village. *Psychiatry*, 36, 70-81.
- Slater, J., & Depue, R. A. (1981). The contribution of environmental events and social support to serious suicide attempts in primary depressive disorder. *Journal of Abnormal Psychology*, 90, 275-285.
- Steinglass, P., De-Nour, A. K., & Shye, S. (1985). Factors influencing psychological adjustment to forced geographical relocation: The Israeli withdrawal from the Sinai. *American Journal of Orthopsychiatry*, 55, 513-529.
- Sue, S., Allen, D. G., & Conaway, L. (1978). The responsiveness and equality of mental health care to chicanos and Native Americans. *American Journal of Community Psychology*, 6, 137-146.
- Sutton, I. (1975). *Indian land tenure: An annotated bibliography*. New York, NY: Clearwater Press.
- Tessler, R., Mechanic, D., & Dimond, M. (1976). The effect of psychological distress on physician utilization: A prospective study. *Journal of Health and Social Behavior*, 17, 353-364.
- Thomas, E. G. (1979). Morbidity patterns among recently relocated elderly. In American Nurses Association, *Clinical and scientific sessions, 1979*. Kansas City, MO: American Nurses Association.
- Topper, M. D., & Johnson, L. (1980). Effects of forced relocation on Navajo mental patients from the Former Navajo-Hopi Joint Use Area. *White Cloud Journal*, 2, 3-7.
- Trimble, J. E., & Richardson, S. S. (1982). Locus of control measures among American Indians: Cluster structure analytic characteristics. *Journal of Cross-Cultural Psychology*, 13, 228-238.
- Viney, L. L. (1974). Multidimensionality of perceived locus of control: Two replications. *Journal of Consulting and Clinical Psychology*, 42, 463-464.
- Warheit, G. (1979). Life events, coping, stress and depressive symptomatology. *American Journal of Psychiatry*, 136, 502-507.
- Watson, W. H. (1980). *Stress and old age: A case study of Black aging and transplantation shock*. New Brunswick: Transaction Books.
- Zerega, W. D., Jr., Tseng, M. S., & Greever, K. B. (1976). Stability and concurrent validity of the Rotter Internal-External Locus of Control Scale. *Educational Psychological Measurement*, 36, 473-475.

THE PRIMARY COST OF DRUG ABUSE: WHAT INDIAN YOUTH PAY FOR DRUGS

GERALDINE LORETTO, MA, FRED BEAUVAIS, PhD, AND EUGENE OETTING, PhD

ABSTRACT. Based on responses to a 1984 survey on a large Indian reservation, conservative estimates are made of the total dollars spent by Indian youths (grades 7 through 12) across the country on drugs and alcohol. The total figure estimated for one year is \$8.3 million. These are only out-of-pocket expenditures and do not include other costs associated with substance abuse such as medical care, loss in productivity, accidents, or emotional and social consequences.

There have been significant increases in the use of drugs and alcohol among young people across the country over the last 20 to 25 years. Within the last 10 years, reliable surveys have measured the actual amount of use and have kept track of how drug use has been changing. In general, drug and alcohol use have increased steadily in this time, although very recently large national surveys have shown a slight decrease in the levels of adolescent drug and alcohol use (Johnston, O'Malley, & Bachman, 1986; Miller et al., 1983). Despite these decreases, use rates remain high and the lives of many young people are being adversely affected.

We have been conducting research for more than 12 years on the patterns of drug use among Indian youth (Beauvais & Oetting, 1987; Beauvais, Oetting, & Edwards, 1985; Oetting & Beauvais, 1985; Oetting, Beauvais, Edwards, Velarde, & Goldstein, 1982; Oetting & Goldstein, 1979). We have found trends very similar to national trends, although reservation Indian youth use drugs more heavily than other American youth. There are some signs that drug and alcohol use among Indian adolescents may also be leveling off; however, the rates are still very high.

Much has been written about the emotional and physical dangers, and other consequences of drug use. This article presents one more piece of information that indicates the size of the drug and alcohol problem and the effect it has on Indian communities. From a retrospective study, we have derived estimates of the amount of money Indian young people are spending to buy drugs and alcohol.

The importance of these figures are two-fold. First, when money is spent for drugs and alcohol, it is not available to the individual or family for other purchases. A young person may be using food or clothing money for non-essential drugs and alcohol. Second, there are adverse effects on the overall reservation economies. Drugs and alcohol are usually supplied from off-reservation sources, and the dollars spent on them can be a serious drain on reservation resources.

AMERICAN INDIAN AND ALASKA NATIVE MENTAL HEALTH RESEARCH
VOLUME 2(1), pp. 21-32

The data presented by no means represent the total cost of drug and alcohol use among American Indians. There are many other associated costs, such as increased medical costs for treatment of drug and alcohol problems (including medical care for accidents), loss of work productivity, legal and enforcement costs, etc. In fact, the out-of-pocket dollars are probably only a small part of the total economic impact of drug and alcohol use. Another limitation of the data is that our figures are restricted to the money spent on drugs and alcohol among school-aged young people only; if the data included drug and alcohol use among adults as well, the costs would no doubt be much higher.

Method

The general approach in this study was as follows. One reservation was selected as representative in the amount of alcohol and drugs used by its adolescents. The tribe is one we have studied at three separate times over the last 6 years. Each time that we surveyed this tribe we also surveyed a sample of five to seven other tribes (different tribes each year). The results for this specific tribe were near the average of the sample of tribes every time.¹ While tribes do differ on a variety of dimensions, we have found that in a given year drug and alcohol use rates tend to be quite similar from one reservation to the next regardless of socioeconomic or cultural factors. This tribe is, therefore, probably reasonably representative of most reservations in the United States.

The survey questionnaire used in this study has been developed and refined over the past 12 years and has been administered to over 35,000 Indian youth. The scales used to measure drug abuse demonstrate very high reliability (Oetting, Beauvais, Edwards, & Waters, 1984). The internal consistency of these scales, and their orderly relationship to other problem behaviors provide evidence for validity (Oetting et al., 1984; Oetting & Beauvais, 1983). In addition, in the long term, the drug use rates derived from the survey show a high degree of correspondence to the trends found in other widely used surveys (Beauvais et al., 1985; Johnston, O'Malley, & Bachman, 1987).

A total of 1,094 young people (grades 7 through 12) were surveyed on one large reservation in 1984 to determine what they spent on drugs and alcohol in one year's time. Then, census data was used to project the amount spent by all Indian youth who live on reservations across the country.

Our goal was to arrive at an estimate of the total dollars spent each year by reservation youth on drugs and alcohol. In doing this, we had to make a number of assumptions and in certain cases rely on estimates. At every point we tried to be conservative in arriving at the dollar figures; that is, where there is some doubt about actual use rates or costs, we have used the lowest estimate. We did this to improve the credibility of our numbers. We did not want to create numbers that are exaggerated just to make a point. We wanted to produce solid information that could be trusted and used to make informed decisions about intervention efforts. In every instance, we tried to be explicit as to how our figures were determined.

Results

The data presented have some specific limitations:

1. The calculations are based on use rates for those young people who are enrolled in school. Young people who have dropped out of school probably have higher rates of drug and alcohol use and thus spend more money (Beauvais & Oetting, 1986; Kandel, 1975).
2. The total estimates arrived at do not include money spent by Indian people younger than or older than those in our survey. The estimates reported here only cover the amount that youth in 7th through 12th grades spend for drugs and alcohol.
3. Specific prices paid for alcohol, marijuana, and cocaine were available from people familiar with the youth drug scene; as a result, reasonable cost estimates for these drugs were possible. The variability in cost for “uppers,” “downers,” lysergic acid diethylamide (LSD), etc., makes estimates for these drugs more difficult; when doubt occurred, we used conservative estimates.

Expenditures for Alcohol

Alcohol is the most widely used drug among all groups of young people in the U.S. (Johnston, O'Malley, & Bachman, 1987). On the reservation where this study was done, 82% of all of the 7th through 12th graders have used alcohol at least once in their lives. As will be seen, a large number of students reported using alcohol on a regular basis.

The survey asked how much alcohol each young person had consumed in the past month. Three types of alcoholic beverages were included—beer, wine, and “hard liquor.” Questions were asked about the number of times the students had been drunk and the number of times they drank but did not get drunk. Using these categories, we determined the number of drinking occasions and the probable amount consumed at each occasion.

The following figures were used in the calculations for amount of alcohol consumed and the cost of the alcohol.

1. One "drink" constitutes: 12 oz can of beer, or 1.0 oz shot of 86 proof liquor, or 4 oz glass of non-fortified wine (2 oz glass of fortified wine).

2. To get "drunk," a 140 lb person drinking for two hours must consume 5.5 drinks (i.e., any combination of the above amounts) for their blood alcohol content (BAC) to reach 0.1% (Cox, Jacobs, LeBlanc, & Marshman, 1987). Some uncertainty is introduced here. The 0.1% BAC is the usual legal definition of being drunk, but some young people may report being drunk while having consumed less than 5.5 drinks. On the other hand, many drinking sessions last longer than 2 hours, and more than 5.5 drinks may be consumed. These two factors should tend to average out to a conservative estimate of 5.5 drinks per drinking session to get drunk.

3. With regard to alcohol expenditures, we assumed the following. One six-pack of beer (6 drinks) cost an average of \$2.40. One pint of fortified wine (16 oz or 8 drinks) cost an average of \$2. (Fortified wine is most accessible to underage drinker.) One pint of liquor (16 oz or 16 drinks) costs an average of \$3.60. (The cost of alcohol will obviously vary and may be higher than those used here, especially if it is purchased by underage youth or through a "bootlegger.")

It was not possible to tell from the survey items what type of alcoholic beverage was used at each drinking session. We were able to determine, however, the percentage of times each type of beverage was consumed: during 50% of the drinking occasions the students used beer, 46% of the time they used "hard liquor," and 4% of the time they consumed wine. These proportions will be used when cost figures are computed.

Costs for alcohol while drunk. Students were asked how many times they had been drunk in the last month. Out of the 1,090 7th through 12th graders surveyed, 300 (28%) said they had been drunk at least once in the last month. Quite a few of these students had been drunk more than once, so the total number of drunk occasions reported during the month prior to the survey totalled 890 times. (Some students reported having been drunk as many as 10 times in the previous month.) If the average number of drinks it takes to get drunk (BAC of 0.1%) is 5.5, then the total number of drinks for all of these occasions is 5.5×890 , or 4,895. These findings are summarized in Table 1.

As Table 1 shows, the total cost "per month" for those who got drunk on all three types of alcoholic beverage was \$1,536. This amounts to \$18,420 spent to get drunk per year by 7th through 12th graders on this "typical" reservation.

Table 1
Costs for Alcohol While Drunk

Type of alcohol	Percentage used	Number of drinks while drunk	Drinks per month	Unit cost	Cost/month
Beer	50.0	4.895	2,447.5 = 480 6-packs	\$2.40 ^a	\$ 979
Wine	4.0	4.895	195.8 = 24.5 pints ^b	2.00	49
Hard Liquor	46.0	4.895	142 = 140.7 pints ^c	\$3.60 ^d	<u>507</u>
Monthly Total					1,536
Yearly Total					\$18,420

^a Typical price of "cheaper" brands of beer usually used by reservation youth.

^b Based on 2 oz per drink and 16 oz per pint.

^c Based on 1 oz per drink and 16 oz per pint.

^d Price based on asking subjects what they actually drank and actually checking the price of the most commonly used brand.

Costs for alcohol while drinking but not getting drunk. There were 3,100 occasions when 265 students in this group drank in the previous month but during which they did not report getting drunk. We used a conservative figure of one drink per occasion to figure these costs. See Table 2 for results.

Table 2
Costs for Alcohol While Drinking But Not Getting Drunk

Type of alcohol	Percentage used	Number of drinks while not drunk	Drinks per month	Unit cost	Cost/month
Beer	50.0	3,100	1,550 = 280 6-packs	\$2.40 ^a	\$ 620
Wine	4.0	3,100	124 = 16 pints ^b	2.00	32
Hard Liquor	46.0	3,100	142 = 89 pints ^c	\$3.60 ^d	<u>321</u>
Monthly Total					973
Yearly Total					\$11,676

^a Typical price of "cheaper" brands of beer usually used by reservation youth.

^b Based on 2 oz per drink and 16 oz per pint.

^c Based on 1 oz per drink and 16 oz per pint.

^d Price based on asking subjects what they actually drank and actually checking the price of the most commonly used brand.

As Table 2 shows, the total cost per month for those who drank but did not get drunk in the past month was \$973, or \$11,676 per year.

Total alcohol cost per year. If the two categories of drinking (Tables 1 and 2) are combined, the 7th through 12th graders surveyed on one reservation spent \$30,096 during 1983 (the year prior to the survey) for alcohol alone.

Expenditures for Marijuana

Within the last 20 years, marijuana has become the second most widely used drug among adolescents in the U.S. (Johnston, O'Malley, & Bachman, 1987). In some places it is used almost as frequently as alcohol. On the reservation where the data for this report was collected, 71% of all adolescents have had some experience with marijuana.

Questions on the survey asked the number of times students had used marijuana in the past month. Based on the resulting self-reports, we were able to compute the total monthly and yearly expenditures for marijuana.

The following assumptions were used.

1. Each occasion involved the use of one "joint," or marijuana cigarette. Several people may share a joint, but when that happens, several joints are usually used, averaging about one per person.

2. We estimated conservatively that each marijuana cigarette cost about \$1. An actual cost is difficult to determine since marijuana is sold in varying quantities.

Reports from the field indicated that the price of one "joint" in 1984 may have varied from \$1 to \$5. The latter price is unusually high, but when the local supply was limited the price may have reached this level. A cost of less than \$1 was also relatively rare unless very large amounts were being processed. Some youth raise their own marijuana, but they are generally older or are dropouts and typically sold to others at the \$1 to \$5 rate.

A total of 510 students reported various occasions of use within the previous month. The number of students who reported using marijuana is included in Table 3.

As Table 3 shows, the total number of times marijuana was used in a month was 3,937. If each occasion represents one joint and each joint costs an average of \$1, the total monthly expenditure among these 1,090 adolescents is \$3,937. The yearly total cost is thus \$47,244.

Table 3
Incidence of Marijuana Use

Average times used in past month		Number of students using at each level		Total occasions/ cost per level
1.5 times	x	206	=	\$ 309
6.0 times	x	140	=	840
14.0 times	x	82	=	1,148
20.0 times	x	82	=	<u>1,640</u>
Monthly Total				3,937
Yearly Total				\$47,244

Expenditures for Cocaine

Cocaine has been used by small groups of people for the last 100 years. Recently, however, use has become much more widespread and many different types of people have become users. The most recent expansion has been to adolescents of all social and economic classes (Johnston, O'Malley, & Bachman, 1987). Many people believe that the high cost of cocaine will prevent its use among economically disadvantaged youth, such as Indian young people living on reservations. However, while costs may provide some limit on cocaine usage, we have not found any reservation where it is not available, and we always find a surprisingly high level of use (Beauvais, Oetting, & Edwards, 1985). On the reservation where our survey was conducted, about 10% of 7th through 12th grade students had used cocaine at least once.

Computing the amount paid for cocaine is much more difficult than for alcohol and marijuana. The primary reason is that, at least for most adolescents, the pattern of use is highly variable. Alcohol and marijuana are generally used at regular rates. The light user uses them at parties once or twice a month, others may use them several times a week, or daily. Cocaine, on the other hand, is used more sporadically, and the amount used on each occasion differs depending on how much is available. Another difference in use pattern is that cocaine is rarely "saved up." The amount that is purchased is all used on one occasion; several doses may be used over the course of a day or evening; and/or the cocaine is commonly shared with anyone present who wants to use it. In order to arrive at a reasonable estimate of the cost of cocaine use among American Indian youth, the following assumptions were used.

1. On each occasion of use, each person inhales two "lines" of cocaine. This again is a conservative estimate since many cocaine users will sniff four or more lines per occasion of use.
2. A line of cocaine consists of 25 milligrams (Fischman, 1984).

3. One gram of cocaine (1,000 milligrams) costs \$100 on the average. Since there are 40 lines in a gram of cocaine, each line costs \$2.50 (\$100 divided by 40). In our estimate, every occasion of use (2 lines per occasion) would then cost the user \$5. (Crack use is new, but rough estimates suggest a similar cost structure. Less crack may be smoked at one time, but repeating the use immediately is more frequent.)

Among the 1,090 students surveyed, we found a total of 75 occasions of cocaine use in the month prior to the survey. Some students used cocaine more than one occasion, so the total number of students involved in cocaine that month was actually 67.

If each occasion costs \$5, the total cost of cocaine use in this population per month is \$375 (75 occasions x \$5 per occasion). The yearly total is thus \$4,500.

Expenditures for Other Drugs

In figuring the costs of cocaine, we used a number of assumptions that are difficult to clearly justify. The rates of use and costs per occasion were estimates, although they are probably conservative. The problem of getting reliable numbers for rates of use and costs becomes even more difficult for other drugs used by young people.

The survey contained questions about the number of times students used stimulants, sedatives, psychedelics (e.g., LSD), and phencyclidine (PCP). The total number of occasions of use in the past month was computed for the students surveyed. A total of 888 occasions of use were found, with many students reporting multiple occasions of use in the one-month period. Actual cost figures for this diverse group of drugs are difficult to determine. We used a conservative estimate per occasion of \$.50.

These figures probably underestimate the possible costs of many drugs. A capsule of a barbiturate, for example, may sell for anywhere from \$.50 to \$1.50. Typical cost of an amphetamine capsule is from \$.50 to \$1. Although these costs may be somewhat low, increasing them slightly would not alter the total figures greatly, since total alcohol and marijuana costs are much higher than costs of other drugs. The lower costs used here help keep the results conservative.

For this group, then, a total of \$444 (880 occasions x \$.50) was spent on "other" drugs in one month. This yields an annual expenditure of \$5,328 for this category for this one reservation.

Expenditures for Indian Young People Nationally

The data reported here were collected from one reservation. Based on our 12 years of survey work among Indian youth we believe that the expenditures reported are about average for reservations across the country (Beauvais, Oetting, & Edwards, 1985). The 1980 census reported that there were 103,309 Indian young people from rural areas across the country old enough to be enrolled in the 7th through 12th grades. This includes all reservation youth plus a small percent who live in rural areas but not on reservations. We used this number as our basis for computing costs spent by all rural Indian youth. (Only 88.5% of the 103,309 adolescents were actually enrolled in school. The remaining 11.5% were composed mostly of dropouts, but may have included a few adolescents not enrolled for medical or personal reasons. The 11.5%, being primarily dropouts, probably use drugs at higher rates than other Indian youth; however, we conservatively estimated use as comparable to that of enrolled students.)

The 1,090 adolescents in our survey represented 1.05% or 1/95.2 of all Indian young people. When we extended the expenditures from our survey to the total national 7th through 12 grade Indian population (103,309) for alcohol, marijuana, cocaine, and other drugs, we found that almost \$8.3 million was spent in one year alone. Calculations are included in Table 4.

Table 4

National Costs of Drug and Alcohol Use

Alcohol	\$30,096	x	95.2	=	\$2,865,139
Marijuana	47,244	x	95.2	=	4,497,629
Cocaine	4,500	x	95.2	=	428,400
Other Drugs	5,328	x	95.2	=	<u>507,227</u>
Yearly Total					\$8,298,395

If the \$8.3 million figure is divided by the number of young people living on reservations, we find that each spends an average of \$80 per year on drugs and alcohol. This is an average. We know, of course, that not all young people spend this amount. Some do not spend any money on drugs or alcohol, and some spend much more.

Discussion

An indirect method, a self-reported survey questionnaire, was used to assess expenditures for drugs and alcohol. The survey includes questions that identify exaggerators and measures that isolate unreliable or inconsistent respondents; these are removed from the sample before analyses. Internal consistency reliabilities for drug use scales range from the high 80s to the 90s (Oetting, Beauvais, Edwards, & Waters, 1984).

Accuracy of these estimates depends on three factors: (a) whether the estimates of drug use are reliable; (b) whether results from one tribe can be generalized to all reservation youth; and (c) whether cost estimates are accurate. Reliability studies of the survey used show that the rates of drug use are likely to be very accurate for this specific reservation. While drug use rates for reservation youth have varied over time, this reservation has been near average every time it was studied. Costs are, therefore, likely to be reasonably representative of reservation youth in general. The estimates of cost are quite precise for alcohol and marijuana on the reservation, and necessarily less precise for other drugs; however, in every case an effort was made to keep cost estimates conservative. There is reason to believe that our estimate—that Indian youth spend more than \$8 million dollars each year for alcohol and drugs—is reasonably accurate.

This figure is in some respects startling, for it is an enormous amount of money that is being diverted toward non-productive and in many cases counter-productive ends. It is a particular burden for those reservations where the economy is already depressed. An immediate question that comes to mind is, "Where do these adolescents get the money they spend on drugs and alcohol?" Unfortunately, we have no good answers to this question; it must await future research.

One important finding reflected in the figures is the amount of money being spent on marijuana alone. Marijuana expenditures are about double those found for alcohol, and they are a little over half of what is spent for all drugs combined. Marijuana is not only a common drug of abuse among Indian adolescents, but is an extremely important factor in the economics of drug abuse on reservations.

The total dollar figure presented here is most likely only a fraction of what is actually being spent by Indian people of all ages on drugs and alcohol. We know from previous research that many children younger than 7th graders are using drugs and alcohol (Oetting et al., 1982). The amount they spend is undoubtedly much smaller than what we found for older youth, yet in the aggregate it could be significant.

The more important figure would be the amount spent by all Indian people over the age of 18. We have no rates of use for this older population, but it is undoubtedly very high (Young, 1988). The drug and alcohol use we find during the school years does not stop immediately when students graduate. We have no valid basis for projecting expenditures beyond the high school years. Would the total amount spent be double, triple, or be even higher? Clearly this is an important area for future research.

As was mentioned in the introduction to this article, the amount paid for drugs is only one aspect of the economic consequences of drug and alcohol abuse. Health costs (both mental and physical), property damage, job loss, and loss of productivity undoubtedly have even higher dollar amount attached to them. Furthermore, it would be a mistake to reduce the problems associated with drug and alcohol use to simply dollars and cents. Chemical abuse leads to a tremendous degree of human misery that cannot be counted just in terms of money. Broken relationships, the loss of self esteem, and the loss of hope in the future are but a few examples of the tremendous burden brought on by the abuse of drugs and alcohol.

Finally, we would point out that the amount of money being spent on treatment of drug and alcohol abuse among Indian people is extremely limited. The resources that are available to counter this problem pale in comparison to the economic and other social costs exacted from Indian communities. The money authorized under the Omnibus Drug Bill will provide some help, but interest in this initiative must be sustained over time. We wonder what savings, purely in economic terms, would accrue from an investment of modest and continuing amounts of money in drug and alcohol abuse prevention. Perhaps more importantly, how would such prevention efforts affect the overall quality of life for Indian youth who have become involved with drugs and alcohol?

Colorado State University
Western Behavioral Studies
Department of Psychology
Fort Collins, Colorado 80523

Acknowledgement

The authors would like to acknowledge the support provided by the National Institute on Drug Abuse for this research (Grant No. DA03371).

Note

1. We have an agreement with all of the tribes we work with that we will never identify them in any of our publications; therefore, we cannot divulge the name or location of this tribe.

References

- Beauvais, F., & Oetting, E. R. (1987). High rate of drug use among Native American youth. *National Institute on Drug Abuse, NIDA Notes*, 2(2), 14.
- Beauvais, F., & Oetting, E. R. (1986). Drug use in an alternative school. *Journal of Drug Education*, 16, 43-50.
- Beauvais, F., Oetting, E. R., & Edwards, R. W. (1985). Trends in drug use of Indian adolescents living on reservations: 1975-1983. *American Journal of Drug and Alcohol Abuse*, 11 (3 & 4), 209-230.
- Cox, T., Jacobs, M., LeBlanc, A., & Marshman, J. (1987). *Drugs and drug abuse: A reference text* (2nd ed). Toronto, Ontario: Addiction Research Foundation.
- Fischman, M. (1984). The behavioral pharmacology of cocaine in humans. In J. Grabowski (Ed.), *Cocaine: Pharmacology, effects and treatment of abuse*. Rockville, MD: National Institute on Drug Abuse.
- Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1987). *National trends in drug use and related factors among American high school students and young adults, 1975-1986*. Rockville, MD: National Institute on Drug Abuse.
- Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1986). *Drug use and American high school students, college students and other young adults*. (DHHS Publication No. ADM86-1450). Rockville, MD: National Institute on Drug Abuse.
- Kandel, D. (1975). Reaching the hard to reach. *Addictive Disorders*, 1, 465-480.
- Miller, J. D., Cisin, I. H., Gardner-Keaton, H., Harrell, A. V., Wirtz, P. W., Abelson, H. I., & Fishburne, P. M. (1983). *National survey on drug abuse: Main findings 1982*. Rockville, MD: National Institute on Drug Abuse.
- Oetting, E. R., & Beauvais, F. (1985, September). *Epidemiology and correlates of alcohol use among Indian adolescents living on reservations*. Paper presented at Epidemiology of Alcohol Use and Abuse Among U.S. Minorities Conference, Bethesda, MD.
- Oetting, E. R., & Goldstein, G. (1979). *Drug use among Native American adolescents*. In G. Beschner and A. Freidman (Eds.), *Youth drug abuse*. Lexington, MA: Lexington Books.
- Oetting, E. R., Beauvais, F., Edwards, R., Velarde, J., & Goldstein, G. (1982). *Drug use among Native American youth: Summary of findings (1975-1981)*. Fort Collins, CO: Rocky Mountain Behavioral Sciences Institute.
- Oetting, E. R., Beauvais, F., Edwards, R. W., & Waters, M. (1984). *The clinical drug abuse scale, book II, instrument development, reliability, and validity*. Fort Collins, CO: Rocky Mountain Behavioral Sciences Institute.
- Oetting, E. R., & Beauvais, F. (1983). A typology of adolescent drug use: A practical classification system for describing drug use patterns. *Academic Psychology Bulletin*, 5, 55-69.
- Young, T. (1988). Substance use and abuse among Native Americans. *Clinical Psychology Review*, 8, 125-138.

MENTAL HEALTH AND ALCOHOL ABUSE INDICATORS IN THE ALBUQUERQUE AREA OF INDIAN HEALTH SERVICE: AN EXPLORATORY CHART REVIEW

PHILIP A. MAY, PhD

ABSTRACT. Estimating the epidemiological patterns of mental illness among various groups of American Indians has been a continuing problem. Only a few studies of prevalence and treated prevalence are currently available for any tribal groups. Most data which are available are aggregate data which do not provide estimates of the experience of particular individuals with alcohol and mental health problems. In this exploratory, random, chart review study, a profile is presented of individual episodes of alcohol and mental health problems which were presented to the Indian Health Service (IHS) in New Mexico and Southern Colorado. Both medical charts and mental health charts are reviewed to estimate treated or clinic prevalence. The results indicate that 21% ($\pm 9.4\%$) of all individuals using IHS medical facilities in the study area come at least once for an alcohol or mental health episode over a 10-year period. These episodes account for an average utilization of 1.8 visits to medical services and an average of 3.9 visits for mental health staff services. Much of the data gathered in this chart review yield unique insights on the individual's experience of mental and alcohol problems. Further, this study raises questions which call for further use of chart review methodologies or individual-based data systems to estimate the impact of alcohol and mental disorders on the IHS system and for new estimates of treated prevalence.

Establishing the epidemiology of mental disorders in any community has been a difficult, if not elusive, task. From the earliest studies of Faris and Dunham (1939) in Chicago, to the work of the Leightons and their associates (Leighton, 1959; Leighton, Harding, Macklin, MacMillan & Leighton, 1963) in Canada, Srole, Langer, Mitchell, Opler, and Rennie (1962) in New York, and Hollingshead and Redlich (1958) in Connecticut, the task has proven to be most difficult (Dohrenwend & Dohrenwend, 1974). Much of the difficulty centers around conceptual and methodological issues. First and foremost are problems of definition for mental health/mental illness. With the publication of DSM-III, (American Psychiatric Association, 1982) one at least has been provided a standardized (yet imperfect) set of definitions with which to work. Second is the problem of where and how to access data. Some access their data by studying diagnoses given by hospitals and clinics (Faris & Dunham, 1939; Hollingshead & Redlich, 1958), but others have taken a broader view, looking at a variety of social and cultural conditions which may influence both the rates and presentation of mental disorders in a population (Leighton, 1959, 1963). Dunham (1966) reminds researchers that, if possible, the entire social and medical ecology should be considered in the study of mental disorders in any population; within the social, physical, and cultural conditions of a group are found the roots of both health and illness.

AMERICAN INDIAN AND ALASKA NATIVE MENTAL HEALTH RESEARCH
VOLUME 2(1), pp. 33-46

While most researchers have aspired to adhere to the type of study advocated by Dunham (1966), reality has not always allowed such a comprehensive and complete approach. The result is that previous studies (Mazer, 1972; Schulberg & Wechsler, 1967; Westermeyer, 1976a) may be describing two separate groups: (a) people who are high risk for psychiatric or parapsychiatric behavior and events (e.g., alcohol abuse, trauma, crime), and (b) those treated for mental problems in standard mental health settings. According to most authors, these are virtually two different populations. Those in the first population may never receive mental health treatment, and those in treatment may not be high risk or as severely ill as those in the first group. Nevertheless, the researcher in mental health epidemiology must be aware of the consequences of these definitional and methodological problems.

Literature on American Indian mental health is characterized by these same problems. Some survey studies have been done in Indian communities, but the bulk of the literature is based on other methods, typically clinical and convenience samples (Manson & Shore, 1981). Only three community-wide studies have been carried out in Indian communities: Roy, Choudhuri, and Irvine (1970) in Saskatchewan; Shore, Kinzie, Hampson, and Pattison (1973) in the Pacific Northwest; and Sampath (1974) on Baffin Island. The remainder of the mental health epidemiological studies have been carried out by the use of: (a) aggregate data from health and mental health clinic populations (Beiser & Attneave, 1982; Fritz & D'Arby, 1982; Rhoades et al., 1980a, 1980b); (b) samples of school populations (Echobawk & Parsons, 1977; Kleinfeld & Bloom, 1977); (c) questionnaire samples of special populations (Martin, Suther, Leon, & Hales, 1968); (d) special studies of Indian mental health clinics (Kahn & Delk, 1973; Pelz, Mersky, Brant, Patterson, & Heseltine, 1981; Schoenfeld & Miller, 1973); and (e) studies of inpatients at mental hospitals (Fritz, 1976, 1978; Hellon, 1970). There are also a variety of specialized sociomedical studies which have utilized indications such as ulcers, suicide, violence, and other health problems as indicators of mental health problems (Levy & Kunitz, 1974; Maynard & Twiss, 1970; Sievers & Fischer, 1979; Shore & Stone, 1973; Spivey, 1977; Westermeyer, 1976a). Thus, the approaches to estimating mental health problems among Indians and Natives are many (Manson & Shore, 1981; Maynard & Twiss, 1970) and may yield widely varying results which have little comparability to one another. Each approach and data set has its limitations; many pieces of the puzzle remain undefined.

One consistent problem with many studies is that aggregate level data are used to estimate the incidence, prevalence, and nature of mental health problems. Truly, they are reasonable sources of information and, in many cases, the only data one can readily access. But nagging questions persist when aggregate data are used exclusively. The most obvious solution is to undertake a community-wide epidemiological study, but few have the time, energy, access, money, and other resources to do so. In lieu of such an undertaking, it might be wise to use inexpensive

methodologies which allow for different types of investigation to estimate both (a) the magnitude of the problem, and (b) the extent of accuracy in some aggregate data.

The study presented here is just such a study. It is inexpensive and simple, with only limited implications. It has, however, a somewhat novel methodology with great potential for other applications. It is a chart review of two different systems: the medical charts of the Indian Health Service (IHS) and the charts of the IHS Mental Health Branch. It presents a methodology which attempts to estimate, in a different way, the true nature of the mental illness burden on the IHS system and to explore the exact nature of the relationship between an individual Indian's problems of mental health and alcohol abuse and the IHS and mental health care systems.

Methods

The research in this paper is exploratory. It was designed to test a method which can provide estimates of the extent and type of mental health problems which cannot be obtained from current IHS data systems. Because of certain idiosyncrasies in various IHS data sources, there is no way to trace a person from one data set to the next. Different identifying numbers and different diagnostic categories make it impossible to examine a person's health and mental health problems from health data (inpatient or outpatient) to mental health program data by any automated means. Such tracking, therefore, has to be done through other methods and has seldom, if ever, been done or reported upon by researchers. Further, the IHS automated systems generally focus on workload and gross number of visits, and do not yield useful information on an individual's experience. Particularly, it is virtually impossible to estimate the true number of individuals with particular disorders or the number of system contacts one individual makes for a particular episode of a disorder.

Medical Chart Reviews

To provide an estimate of the extent and type of mental health and alcohol episodes presented to IHS medical personnel, a random sample of medical charts was examined in each of the six service units in the Albuquerque Area of the Indian Health Service.¹ While the inpatient and outpatient data of IHS provide aggregate information regarding the gross number of visits for health and mental reasons, the chart review was a way to more directly examine the experience of particular individuals providing estimates of prevalence and utilization. After each service unit was contacted and permission secured, the total range of chart numbers was obtained from the head of medical records at each service unit. Once the range was defined, particular chart numbers were selected from a table of random numbers. Up to 20 chart numbers were selected and the charts pulled by medical records staff. In a number of cases, charts were "retired" due to death or no recent activity. In these

cases, the next randomly selected chart was utilized. The goal was to examine a minimum of 10 charts in each service unit. In most service units, 15 numbers produced 10 or more charts, but in two cases it took 20 numbers to provide the minimum of 10. Each chart was analyzed by content for any and all DSM-III type visits, plus incidents of alcohol-related trauma in the previous 10 years. The goal was to provide an area-wide estimate of mental illness indicators, not service unit estimates.

Review of the Mental Health Charts

To further define the nature of mental health problems seen within the IHS system, a review of the mental health files was undertaken in the two largest service units of the Albuquerque area. In both the Santa Fe and Albuquerque IHS Hospitals, mental health programs are fully operational, therefore providing the opportunity to examine (a) the nature of problems seen by the mental health programs, (b) the profile of the patients seen, and (c) the interface between the problems seen in the health care settings versus the mental health settings.

The actual sampling of mental health charts began with the mental health program files at each service unit. After gaining permission to access the files from both mental health and medical records personnel, the total number of active and inactive (but not retired) mental health files was determined by hand counts. Using a random number table, chart numbers were selected and pulled by hand. To collect a minimum sample of 5%, 10 active and 6 inactive charts were pulled and analyzed at one service unit; at the other, 10 active and 4 inactive were selected. From the mental health charts, the patients' medical chart numbers were recorded and given to the medical records staff for the pulling of the same patients' medical files. Data were then collected from both charts for each patient.

Since the study was testing a method as much as it was to provide definitive estimates from a large number of cases, the number of charts surveyed in both samples was small.

Results

Data From Medical Charts

A total of 70 charts were reviewed (Table 1). The age and sex varied from one service unit to the next, due to the small number examined. However, the totals indicate that the overall sample is likely to be representative of the Albuquerque Area because 50% were male, and mean age is similar to that of the overall Indian population. In the overall sample, 34% were Pueblo, 27% Navajo, 13% Ute, 11% Apache, and 14% other tribes or non-Indian spouses (N=3).

Table 1
Medical Chart Review at Each Service Unit, by Service Unit, Age, Sex, Tribe, and Experience of the Patient

Service Unit	Age Mean Range	Sex (%)	Tribe	Number of Charts Reviewed	Patient with Mental Health Episodes N	%	Episodes Per Patient
Albuquerque	x = 17.1 Range = 3 to 48	M = 50 F = 50	Navajo = 5 Pueblo = 5	10	3	30.0	2.0
Acoma, Cañoncito, Laguna	x = 30.2 Range = 1 to 53	M = 57 F = 43	Laguna = 3 Navajo = 6 Acoma = 3 Other = 2	14	3	21.4	3.3
Mescalero	x = 21.6 Range = 4 to 58	M = 45 F = 55	Apache = 8 Navajo = 2 Other = 1	11	3	27.3	4.0
Santa Fe	x = 19.1 Range = 1 to 63	M = 55 F = 46	Pueblo = 7 Other = 4	11	1	9.1	2.0
Ute	x = 20.8 Range = 1 to 72	M = 50 F = 50	Ute = 9 Navajo = 2 Other = 2	12	3	25.0	1.7
Zuni	x = 30.6 Range = 1 to 72	M = 42 F = 58	Zuni = 6 Navajo = 4 Other = 2	12	2	16.6	2.5
TOTAL AREA	x = 23.7 Range = 1 to 72	M = 50 F = 50	Pueblo = 24 Navajo = 19 Apache = 8 Ute = 9 Other = 10	70	15	21.4 ($\pm 9.4\%$) ^a	2.7

Note. Episodes are defined as those occurring in the past 10 years (1973 to 1983). Includes alcohol-related trauma from motor vehicle accidents as well as DSM-III diagnostic categories.

^a At the 95% confidence level.

Of the charts reviewed, 21.4% ($\pm 9.4\%$ at the 95% confidence level) of the individuals had come to the hospital and/or clinic at least once in the last 10 years for a mental health-related episode. Episode was defined as any visit or series of visits in a relatively continuous period of time which relate to one particular instance or occurrence of a DSM-III defined mental health problem and also alcohol-related problems, including alcohol-related trauma. The presenting individuals, on the average, accounted for 2.7 distinct episodes. Each of these episodes accounted for 1.8 visits documented in the medical charts. Further, 12 of the 43 episodes (27.9%) required an inpatient stay. There was some difference in findings from one service unit to the next, but given the extremely small samples at each, one should not compare service units one to the other. The meaningful data are the area-wide results from Table 1.

In Table 2, the particular type of episodes presented are detailed. Alcohol abuse resulting in hallucinations or withdrawal accounted for 33% of the inpatient and 32% of the outpatient episodes. Alcoholic gastritis and alcohol-related trauma were

also quite common. In all, alcohol problems accounted for 75% of the inpatient episodes and 52% of the outpatient episodes. Other problems seen in outpatient visits were anxiety (16%), adjustment reaction of adolescence (16%), depression, and hypertension. Other inpatient stays were for drug overdose, hysterical conversion reaction, and adjustment reaction of adolescence.

Table 2
Mental Health Episodes in Medical Charts by Type, Total Area

Incident	Episodes (%) ^a	
	Inpatient	Outpatient
Alcohol abuse—withdrawal and/or hallucinations	33	32
Alcohol gastritis or internal medical problems	25	10
Alcohol-related trauma (i.e., fights or accidents)	17	10
Drug overdose	8	0
Hysterical conversion reaction	8	0
Hypertension	0	3
Adjustment reaction of adolescence	8	16
Anxiety/tension	0	16
Depression	0	6
Adolescent antisocial behavior	0	3
Victim of sexual assault	0	3
Totals	99 (N=12)	99 (N=31)

Note. Data include alcohol-related trauma from motor vehicle accidents and fights, as well as DSM-III diagnostic categories.

^a Total number of episodes is not equivalent to total number of clients, as some clients accounted for numerous episodes.

Although the above information may sound very similar to other studies, some new information is gained from these chart reviews. Specifically, the reviews tell us that in a 10-year period, 21% of the service population may be presenting the bulk of the mental health-related problems. Secondly, the data relate how many episodes, not visits, are being presented. On the average these individuals present 2.7 episodes of these problems. These episodes may cause a large number of visits (e.g., in Santa Fe, 3 episodes accounted for 11 visits for diagnosis, testing, and follow-up; in Ute, 3 episodes accounted for 17 visits), but each visit is not a new episode. Third, the type of problems presented confirm, in yet another way, the important relationship of alcohol to the mental health problems of Indians in the Albuquerque area.

Findings From the Mental Health Chart Review

The results of the mental health chart review show that in the two service units, the average age of the patients was quite similar (31 to 33 years) as was the range in ages (Table 3). In Service Unit A more patients were female, while in Service Unit B the opposite was true. In both service units, the majority of patients were

Pueblo (as expected, for Pueblo form the bulk of the service population), but a variety of other tribes were represented. Referrals to the mental health staff came from three basic sources: 32% were self-referrals, 39% were from medical staff, and 29% from agencies and persons outside of IHS.

Also in Table 3, data are given on the correspondence between the health and mental chart systems. The focus here is on how many mental health visits are noted in the medical charts, for the medical chart tends to be the master chart for each patient.³ Ideally, in the two-chart systems there should be one mental health note in the medical chart for each visit to the mental health program and vice versa. In Service Unit A, the correspondence or reliability between the systems ranged from 19% to 165%⁴, and averaged 72%. In Service Unit B, the range was from 0% to 200% with a similar average of 78%. But in Service Unit A, 3 of the 14 patients had no medical charts and in Service Unit B, 4 of the 16 had no medical charts. One reason for no medical charts is that patients were often referred to mental health services from outlying health clinics. When the experience of these no-chart cases is eliminated from the data, the mean correspondence increases in Service Unit A to 90.7%, and 97.2% in Service Unit B. These, however, are overall averages and some gaps remain in reporting on particular cases (e.g., cases 2 and 4 in Service Unit A and cases 1, 4, and 14 in Service Unit B). Some improvement can be made in both chart systems. Nevertheless, for both service units combined, it can be said that the mental health chart information is keyed to or documented in the medical charts in 75.4% ($\pm 15.4\%$) of the visit experience.

The reliability of notation between the two systems varies considerably on the basis of referral source. The greatest correspondence between mental health and medical charts was found when the referral was made to mental health from the medical staff (116%). Self-referrals complied at 59.1%, and the lowest compliance was found in outside agency referrals (36.7%). This pattern is not surprising since the percentages calculated are measures of completeness in the medical charts. However, if improvement is to be made in correspondence between the medical and mental health systems, it can be made mainly from the self-referred and outside-referred uses.

The number of episodes of mental illness and the total number of visits per episode varied greatly with each case. The mental health charts showed that while in Service Unit A there were 16 episodes and 86 visits for an average of 5.4 visits per episode, in Service Unit B, there were 18 episodes and 47 visits documented in the mental health charts for an average of 2.6 visits per episode. One obvious reason for the lower average in Service Unit B is the large number of cases referred for psychological testing and not therapy per se. Overall then, the averages per service unit were 1.13 episodes per chart and 3.9 visits per episode.

Table 3
Summary of Mental Health and Matched Medical Chart Review

Charts Reviewed	Age, Range and Median	Sex (%)	Tribe	Referral	Mental Health Entries In		Percentage of Visits Noted In Medical Charts
					Mental Health Chart	Medical Chart	
Service Unit A							
14	x = 33.1 Range = 14 to 65	M = 21.4 F = 78.6	Pueblo = 50.0 Navajo = 14.3 Apache = 14.3 Other = 21.4	Self	Case 1=16	3	19
				Self	Case 2=5	1	20
				Medical	Case 3=2	1	50
				Medical	Case 4=26	43	165
				Medical	Case 5=1	1	100
				Self	Case 6=9	None	
				Medical	Case 7=10	6	60
				Medical	Case 8=3	1	33
				Medical	Case 9=1	1	100
				Self	Case 10=7	None	
				Self	Case 11=3	None	
				Self	Case 12=1	1	100
				Self	Case 13=4	5	125
				Outside	Case 14=6	5	83
					Total 94	68	72.3 (±23.4)*
Service Unit B							
16	x = 31.2 Range = 14 to 68	M = 62.5 F = 37.5	Pueblo = 87.5 Ute = 6.3 Other = 6.3	Self	Case 1=2	19	950
				Medical	Case 2=3	4	133
				Medical	Case 3=6	6	100
				Medical	Case 4=1	0	0
				Self	Case 5=2	0	0
				Outside	Case 6=1	2	200
				Outside	Case 7=8	1	12
				Outside	Case 8=1	None	
				Outside	Case 9=8	None	
				Outside	Case 10=1	0	0
				Medical	Case 11=1	1	1
				?	Case 12=1	None	
				Outside	Case 13=4	3	75
				?	Case 14=4	0	0
				Medical	Case 15=2	0	0
				Outside	Case 16=1	None	
					Total 46	36	78.2 (±20.2)*

* At the 95% confidence level.

When compared with the previous, independent medical chart review in this paper, there is only a slight difference. The medical chart review yielded an average of 2.7 episodes per client and 1.8 visits per episode for the entire area and 2.0 episodes per chart and 2.3 visits per episode for these service units. Medical recording of mental health episodes tended to be quite short in duration, particularly when referral was made to mental health staff. In the mental health charts, repeat behaviors were more accurately classified as continuations of the previous problem(s), resulting in fewer episodes per patient. Further, the inclusion of alcohol-related trauma from the medical charts reduces comparability. Therefore, the episode data are not directly comparable between the two systems. The visits per episode, however, do show similarity, with the mental health chart data registering more visits per episode and per patient. Nevertheless, comparison of these disparate cases should not be taken too far. It is most accurate to conclude that both the data in the medical charts and the mental health charts point to multiple visits (an average of two to three) per episode of mental disorder.

Table 4
Mental Health Diagnoses in Mental Health Charts at Service Units

Category of Diagnosis	Primary		Secondary	
	Service Unit A %	Service Unit B %	Service Unit A %	Service Unit B %
Marital problems	28.6	18.8	11.1	8.3
Alcohol abuse—self		31.3	11.1	8.3
Alcohol abuse—other			11.1	
Adjustment reaction of adolescent	7.1	6.2		
Depression	21.4	6.2		8.3
Anxiety/stress	21.4			16.7
Parent-Child relations	7.1	6.2		8.3
Neuroses			11.1	
Drug abuse			11.1	
Schizophrenia	7.1			50.0
Psychological testing				
Speech problems		6.2		
Violent behavior		6.2		
Physical complaint			22.2	
Personality disorder	7.1	6.2	22.2	
School behavior problems		6.2		
Total	99.8 (N=14)	99.7 (N=16)	99.9 (N=9)	99.9 (N=12)

In Table 4, the diagnoses found in the sample of mental health charts is documented. In Service Unit A, the leading primary diagnoses were marital problems (28.6%), depression (21.4%), and anxiety (21.4%). In Service Unit B, the leading primary diagnoses were alcohol abuse (31.3%) and marital problems (18.8%). For secondary diagnoses, the variety of problems were greater in both service units. In Service Unit A, the modal secondary problem was personality

disorder (22.2%), while in Service Unit B, the problems are psychological testing⁵ (50%), and anxiety (16.7%). Too much emphasis should not be placed on the difference in diagnoses (e.g., alcohol abuse) between the two service units, for this may reflect clinician or sample bias in such a small sample. A larger study of this kind however, would certainly reduce bias problems if undertaken at multiple sites with multiple clinicians and a larger number of cases.

The value of Table 4 is that it provides information on a case level basis. Comparing chart data with IHS data system information (individual versus aggregate systems), one may be on dangerous ground, for the two systems are not completely compatible methodologically or diagnostically. Nevertheless, one finds that in these service unit charts, the leading diagnostic categories are marital problems, alcohol abuse, depression, anxiety, and parent-child relations. In Table 5, these categories are compared with the most similar categories from the computerized IHS mental health data system. Of the five categories for comparison, two are found to be similar (depression and anxiety), while three are quite different. Also the difference in the data is highlighted by the number of visits per patient. The mental health data system indicates an average of 2.2 visits per patient while the mental health chart review indicates 3.9 visits per episode. This also points to another difference in the two sets of data. The explanations for these various differences could be many, including: (a) chart level data are more accurate for patient diagnosis; (b) the IHS data system may be more useful in measuring activity, particularly on a yearly basis; (c) the diagnostic categories are not readily comparable; (d) the chart sample may be skewed; and/or (e) the current data system needs to be more closely integrated with the charting process. The need for a closer link in the two systems is most obvious regarding diagnostic categories.

Table 5
Comparison of Leading Problem/Diagnostic Categories from Mental Health Charts and the Mental Health Data System: Albuquerque and Santa Fe Service Units Combined

Problem/Diagnosis	Chart Review Study Percentage	IHS Mental Health Data System (1983) Percentage	Problem/Diagnosis
Marital problems	23.3	7.4	Marital conflict
Alcohol abuse	16.6	5.5	Alcohol misuse
Depression	13.3	10.4	Depressed
Anxiety	10.0	8.9	Anxiety
Parent-Child relations	6.7	13.0	Adult-Child
Others	30.1	54.8	Others
Total	100.0 (N=30)	100.0 (N=3,257)	Total patient diagnoses
Visits per episode	3.9	2.2	Visits per patient

Note. From IHS Mental health Data system, Annual Computer Summaries.

Analysis

The results of this study, although exploratory, are novel in that they provide an individually based estimate of mental health episodes and visits presented to the medical and mental health systems of the Indian Health Service. Over the past 10 years, 21.4% of this sample has experienced at least one episode of a mental health or alcohol problem which brought them to an IHS health care setting. On the average, these people had more than two (2.7) episodes of mental health problems during the time period. Since the sample was not stratified by age and the mean age was 23.7, one wonders what the results might have been had only people over 18 or 21 years of age been included. This, it must be remembered, is only an estimate of treated cases and should not be directly compared to national community studies or the community studies of Shore and colleagues (1973), which found 54% of a Northwest Indian community as definitely impaired, or Sampath (1974) in Baffin Island, where 37% had mental disorders.

Alcohol problems, included in this study, were shown to be the most frequent mental health problems documented in the medical charts. They dominate both the inpatient and outpatient episodes in the Albuquerque Area charts. Whether alcohol abuse problems are treated as independent mental health problems or as a covariate or companion of mental illness, they are a major proportion of all mental health episodes at IHS installations. Those involved in alcohol abuse are representative of those which Westermeyer (1976a, 1976b) and others (Shore et al., 1973) refer to as a high-risk parapsychiatric population.

The interface of the mental health and medical chart systems was generally good at the two service units studied. With 74% of the visits, there was documentation in both systems. Self-referrals to mental health services were least likely to be documented in medical charts.

Mental health program cases were most frequently characterized by marital problems, alcohol abuse, depression, and anxiety/stress. Again, these findings of clinic prevalence differ with community studies, hospital studies, and those which sample special populations of Indians. Uniquely, however, they represent actual cases and not aggregate visit prevalence. Therefore, it is not surprising that they differ from data in the IHS mental health reporting system. The data system reports a very different frequency of activity and frequency of problems than yielded by the chart review.

Discussion

The major value of this study is the exploration of a chart review methodology to estimate treated prevalence. As far as future studies of this kind are concerned, they may hold great promise. The methodology of this study is an inexpensive one which

provides useful data. If replicated, however, several improvements could be made. A larger sample of medical charts should be collected to reduce the risk of sample bias. Also, the medical chart study might be more meaningful if it were limited to those over a certain age such as 18 or 21 years. Further, it is very important to undertake several samples such as this in widely divergent tribal populations for the purpose of comparison of intertribal differences. Certainly, one would expect other tribes to reflect different patterns of symptoms and health care utilization than this study which is tribally mixed, but predominantly Pueblo (Jilek-All, Jilek, & Flynn, 1978).

This author is impressed with the need for a data system which would allow one to track an individual through the various components of the IHS treatment system. This would not only aid researchers, but also might improve continuity of care for people with a combination of medical, alcohol, and mental problems.

The major conclusions of this modest effort are three. First, the methodology yields a case-based estimate of the importance of mental health visits to the IHS medical installations. Twenty-one percent ($\pm 9.4\%$) of all sampled individuals in the Albuquerque Area visited an IHS installation with at least one mental health need or problem in a period of 10 years. Depending on the percent of total population using IHS services, and there is reason to believe it is high (Stewart, May, & Muneta, 1980), then this may be a useful estimate of period prevalence for the New Mexico Indian population. Larger samples, however, are needed to confirm or deny this estimate. Second, alcohol abuse and its sequelae account for a great deal of the mental health problems presented to both the medical and mental health branches of the IHS system in the Albuquerque Area. Mortality studies document well the magnitude of fatal, alcohol-related problems (Broudy & May, 1983), but this study and its methods also document the impact of alcohol on the mental health and medical branches of IHS. Third, this study has provided further insight into the need for a more comprehensive understanding of all aspects of the epidemiology of mental illness among Indians of various tribes. More extensive future studies might endeavor to examine much more than the estimate of clinic prevalence presented here, for many questions are left unanswered. A complete study would examine community incidence and prevalence of psychiatric illness, sociomedical indicators of mental problems, and the treated prevalence of these disorders of a particular tribe. No one or two limited data systems, chart reviews, or methods can fully delineate the mental health status of a tribe. More comprehensive approaches are needed, but in the interim, this study may suggest one more approach and add several more findings to the broader understanding of these issues.

Department of Sociology
University of New Mexico
Albuquerque, New Mexico 87131

Acknowledgments

The study from which these data originate was funded by contract #3-200423 of the Indian Health Service, Albuquerque Area Office. My thanks are extended to Pam Rogers, Mike Biernoff, Al Hiat, and others of the Indian Health Service and tribal personnel who facilitated this effort. The opinions expressed in this paper are those of the author and not those of the Indian Health Service.

Notes

1. The Albuquerque area of IHS serves 19 Pueblo reservations, 2 Apache reservations, and 3 small Navajo reservations (Alamo, Cañoncito, and Ramah) all of which are in New Mexico. Also, the area serves 2 Ute reservations in southern Colorado and most tribally enrolled Indians living off-reservation in the New Mexico and southern Colorado area.
2. In a few instances names were used for numbers not available. This was done to be sure that all patients with medical charts were accessed in both systems.
3. One could calculate correspondence the reverse way as well (e.g., medical visits per mental health visit), and get a different figure which would indicate completeness of medical not mental health recording.
4. A percentage higher than 100% indicated more entries in the medical charts than in the mental health charts.
5. Actually this is an activity, but is classified as a modal secondary problem by this author for completeness of data.

References

- American Psychiatric Association (1982). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: American Psychiatric Association.
- Beiser, M., & Atneave, C. J. (1982). Mental disorders among Native American children: Rates and risk periods for entering treatment. *American Journal of Psychiatry*, 139(2), 193-198.
- Broudy, D. W., & May, P. A. (1983). Demographic and epidemiological transition among the Navajo. *Social Biology*, 30(1), 1-16.
- Dohrenwend, B. P., & Dohrenwend, B. S. (1974). Social and cultural influences on psychopathology. *Annual Review of Psychology*, 25, 417-452.
- Dunham, H. W. (1966). Epidemiology of psychiatric disorders as a contribution to medical ecology. *Archives of General Psychiatry*, 14(1), 1-19.
- Echohawk, M., & Parsons, O. (1977). Leadership vs. behavioral problems and belief in personal control among Indian youth. *The Journal of Social Psychiatry*, 102, 47-54.
- Faris, R. E., & Dunham, H. W. (1939). *Mental disorders in urban areas*. Chicago, IL: University of Chicago Press.
- Fritz, W. B. (1976). Psychiatric disorders among natives and non-natives in Saskatchewan. *Canadian Psychiatric Association Journal*, 21(1), 1-8.
- Fritz, W. B. (1978). Indian people and community psychiatry in Saskatchewan. *Psychiatry Association Journal*, 23(1), 1-8.
- Fritz, B., & D'Arcy, C. (1982). Comparisons: Indian and non-Indian use of psychiatric services. *Canadian Journal of Psychiatry*, 27, 194-203.
- Hellon, C. P. (1970). Mental illness and acculturation in the Canadian Aboriginal. *Canadian Psychiatric Association Journal*, 15(2), 135-139.
- Hollingshead, A. B., & Redlich, F. B. (1958). *Social class and mental illness*. New York, NY: Wiley.
- Jilek-All, L., Jilek, W., & Flynn, F. (1978). Sex role, culture, and psychopathology: A comparative of three ethnic groups in Western Canada. *Journal of Psychological Anthropology*, 1(4), 473-488.
- Kahn, M. W., & Delk, J. L. (1973). Developing a community mental health clinic on an Indian reservation. *International Journal of Social Psychiatry*, 19(3), 299-307.

- Kleinfeld, J., & Bloom, J. (1977). Boarding schools: Effects on the mental health of Eskimo adolescents. *American Journal of Psychiatry*, 134(4), 411-417.
- Leighton, A. H. (1959). *My name is Legion*. New York, NY: Basic Books.
- Leighton, A. H., Leighton, D. C., Harding, J. S., MacKelin, D. B., & MacMillan, A. M. (1963). *The character of danger, Sterling County study*, Vol. 3. New York, NY: Basic Books.
- Levy, J., & Kunitz, S. J. (1974). *Indian drinking*. New York, NY: Wiley Interscience.
- Manson, S. M., & Shore, J. H. (1981). Psychiatric epidemiology research among American Indians and Alaska Natives: Methodological issues. *White Cloud Journal*, 2(3), 48-56.
- Martin, H. W., Suther, S., Leon, R., & Hales, W. M. (1968). Mental health of Eastern Oklahoma Indians: An exploration. *Human Organizations*, 27(4), 308-315.
- Maynard, E., & Twiss, G. (1970). *That these people may live*. Washington, DC: US Government Printing Office.
- Mazer, M. (1972). Two ways of expressing psychological disorder: The experience of a demarcated population. *American Journal of Psychiatry*, 128(8), 933-938.
- Pelz, M., Mersky, H., Brant, C., Patterson, P. G. R., & Heseltine, G. F. D. (1980). Clinical data from a psychiatric service to a group of Native people. *Canadian Journal of Psychiatry*, 26(5), 345-348.
- Rhoades, E. R., Marshall, M., Attneave, C., Echohawk, M., Bjork, J., & Beiser, M. (1980a). Mental health problems of American Indians seen in outpatient facilities of the Indian Health Service, 1975. *Public Health Reports*, 95(4), 329-335.
- Rhoades, E. R., Marshall, M., Attneave, C., Echohawk, M., Bjork, J., & Beiser, M. (1980b). Impact of mental disorders upon elderly American Indians as reflected in visits to ambulatory care facilities. *Journal of the American Geriatrics Society*, 28(1), 38-39.
- Roy, C., Choudhuri, A., & Irvine, I. (1970). The prevalence of mental disorders among Saskatchewan Indians. *Journal of Cross-Cultural Psychology*, 1(4), 383-392.
- Sampath, H. M. (1974). Prevalence of psychiatric disorders in a Southern Baffin Island Eskimo settlement. *Canadian Psychiatric Association Journal*, 19, 363-367.
- Schoenfeld, L. S., & Miller, S. I. (1973). The Navajo Indian: A descriptive study of the psychiatric population. *International Journal of Social Psychiatry*, 19(1-2), 31-37.
- Schulberg, H. C., & Wechsler, H. (1967). The uses and misuses of data in assessing mental health needs. *Community Mental Health Journal*, 3(4), 389-395.
- Shore, J. H., Kinzie, D. J., Hampson, D. L., & Pattison, E. M. (1973). Psychiatric epidemiology of an Indian village. *Psychiatry*, 36(2), 70-81.
- Shore, J. H., & Stone, D. (1973). Duodenal ulcer among Northwest Coastal Indian women. *American Journal of Psychiatry*, 130(7), 774-777.
- Sievers, M. L., & Fischer, J. R. (1979). Increasing rate of acute myocardial infarction in Southwestern Indians. *Arizona Medicine*, 36(10), 739-742.
- Spivey, G. H. (1977). The health of American Indian children in multiproblem families. *Social Science and Medicine*, 11, 357-359.
- Srole, L., Langer, T. S., Mitchell, S. T., Opler, M. K., & Rennie, T. A. C. (1962). *Mental health in the Metropolis: The midtown Manhattan study*, (Vol. 1). New York, NY: McGraw-Hill.
- Stewart, T. J., May, P. A., & Muneta, A. (1980). A Navaho Health Consumer Survey. *Medical Care*, 18(12), 1183-1195.
- Westermeyer, J. (1976a). Use of a social indicator system to assess alcoholism among Indian people in Minnesota. *American Journal of Drug and Alcohol Abuse*, 3(3), 447-456.
- Westermeyer, J. (1976b). Erosion of Indian mental health in cities. *Minnesota Medicine*, 59(6), 431-433.

From the Office for Substance Abuse Prevention

On July 28 and 29, 1988, the Minority Substance Abuse Prevention Project (MSAPP), Office for Substance Abuse Prevention (OSAP) met in Washington, DC for the purpose of drafting a training manual. The National Center has invited Grace Powless Sage, who attended the meeting in July, to offer her commentary on that meeting—Journal Manager

The Office of Substance Abuse Prevention was created by the Anti-Drug Abuse Act to provide a cornerstone of the Federal demand reduction strategy. OSAP's primary goal is alcohol and drug abuse prevention among young Americans. Research indicates that attitudes and practices toward alcohol and drugs are formed during the pre-teen and adolescent years. Almost no use of cigarettes, alcohol, or illicit drugs is initiated after age 25. Therefore, the most successful efforts to prevent alcohol abuse and other substance abuse problems must begin early.

OSAP places a special emphasis on high-risk youth—those young people who meet one or more of the following criteria: (a) abused and/or neglected youngsters; (b) homeless or runaway youths; (c) gateway drug (marijuana, alcohol, tobacco) users; (d) young people who are physically or mentally handicapped; (e) pregnant teens; (f) school drop-outs; (g) children of alcoholics and other substance abusers; (h) latch-key children; and (i) young people who are economically disadvantaged. OSAP has a strong commitment to youth who experience cultural and ethnic differences. High-risk youth usually have multiple risk factors, and cultural and ethnic differences magnify those risk factors exponentially.

High-risk youth are the most difficult of young people to reach and help. Recent surveys indicate that some illicit drug use by young people is declining. While that is very encouraging, we know less about high-risk youth, except that they tend to be heavier users. High-risk youth are seldom among the populations that are normally surveyed. Commonly used information gathering techniques fail to capture information about this elusive group. Because of the complexity of alcohol and substance abuse problems, there are no single, simple solutions. Instead, a variety of prevention and early intervention programs are needed. To attain efficacy, these approaches must be sensitive to cultural and ethnic norms, values, and patterns, as well as the integration of these programs across community institutions. OSAP seeks to assist communities in helping themselves through effective prevention and early intervention efforts.

Therefore, MSAPP and OSAP are developing this training guide/manual for work with community-based programs. These programs help identify and test existing and new prevention concepts for high-risk youth. The training guide was drafted with procedures and criteria to evaluate four areas:

1. How high-risk youths and their families are recruited and retained in the various programs;
2. What mechanisms are used to generate community support for alcohol/drug prevention programs among cultural/ethnic groups;
3. What adaptations are necessary to make conventional prevention approaches accessible and culturally acceptable to the diverse populations served by this and other grant programs; and
4. What new and innovative prevention and early intervention approaches and strategies can be identified from the practices of the grantees.

While MSAPP and OSAP are involved in the drafting of a relevant and useful training guide, it has become abundantly clear that what is a necessary link is the trainers who will use this training guide. They are important in providing a connection between the training guide and the application and mobilization of the training information. What we are seeking is people who are interested in becoming trainers. We feel those individuals must possess three valuable qualities: (a) they must be highly motivated presenters who can enable the audience (front-line service providers) to become involved and motivated as well; (b) they must help their audience to become actively involved in the training experience through highly participatory exercises; and (c) they must be trained (through education or experience) in the field of alcohol/substance abuse information so they can provide practical information to the audience as well as training guide modules.

Anyone interested in becoming involved at this level should send a resume, vita or other related materials to:

Grace Powless Sage, PhD
c/o National Center for American Indian and Alaska Native
Mental Health Research
Campus Mail Box C249
University of Colorado Health Sciences Center
4200 East Ninth Avenue
Denver, Colorado 80262

These are volunteer positions with applications being accepted through December, 1988.