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

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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% (±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, MacMillian & 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.

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 (Echohawk & 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 5) 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		Episodes Per Patient
					N	%	
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 (±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% (±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

	Episodes (%)[a]	
Incident	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% (±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 Mental Health Chart	Medical Chart	Percentage of Visits Noted In Medical Charts
Service Unit A							
14	$x = 33.1$	M = 21.4	Pueblo = 50.0	Self	Case 1=16	3	19
	Range = 14 to 65	F = 78.6	Navajo = 14.3	Self	Case 2=5	1	20
			Apache = 14.3	Medical	Case 3=2	1	50
			Other = 21.4	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)[a]
Service Unit B							
16	$x = 31.2$	M = 62.5	Pueblo = 87.5	Self	Case 1=2	19	950
	Range = 14 to 68	F = 37.5	Ute = 6.3	Medical	Case 2=3	4	133
			Other = 6.3	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)[a]

[a] 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			
Psychological testing				50.0
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 testing[5] (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	100.0	Total patient diagnoses
	(N=30)	(N=3,257)	
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 (±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.

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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.

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