The Epidemiology of Alcohol Abuse Among American Indians: The Mythical and Real Properties*

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Because of the drunken Indian stereotype and other myths often associated with American Indians, it is important to critically examine the detailed evidence that best defines the epidemiology of alcohol abuse among Indians and particular tribal communities. Public health understandings and programs must be based not on myth but on fact. In this paper, twelve major myths, statements, and questions about the nature of the alcohol abuse problem are reviewed. An analysis of current mortality data and an understanding of the extant literature will reveal that many current myths are either false or, at best, half-truths. The literature on American Indians, at one time rather small, has grown to a substantial body of useful documents. In a bibliography of the relevant Indian alcohol literature published before 1977, Mail and McDonald[1] list 969 works. The number published since 1977 is anyone's guess and a task for future research. One would be safe in assuming, however, that the literature has at least doubled in the last fifteen years. Furthermore, it is evident to those of us in this field that the quality of information and data has improved in some areas. With such an extensive and growing body of literature, there is no excuse for one to operate on myth and common knowledge. Although not all questions are answered in the literature, many certainly are. The literature needs to be used more by students, scholars, public health workers, health officials, and tribal groups. A critical reading can advance knowledge greatly.

A series of common myths, questions, and statements regarding alcohol and Indians is presented below. Some of these myths have been presented before.[2] They do not seem to go away, even though more evidence is accumulated that speaks directly to them. The evidence for and against various myths and common beliefs is summarized in a very terse fashion in this paper. References cited, however, contain much more detail for the interested reader to consult.

Is Alcoholism the Number One Health Problem Among American Indians?

That alcoholism is the leading health problem among Indians is probably the most popular and common statement about alcohol and Indians that one hears from laymen and health professionals alike. It is accepted as gospel by many and is seldom questioned or elaborated on in the planning and implementing of alcohol abuse prevention programs. Yet it is a half-truth at best.

In Table 1 (page 42), an analysis of the most recent Indian Health Service[3] data from 1986 to 1988 indicates that 17.0% to 19.0% of all Indian deaths are probably alcohol-related.[4] Similar patterns and data are common in other years as well.[5] These data are quite complete in scope, for they include an estimate of the percentage of alcohol-related deaths from motor vehicle and other accidents, suicide, homicide, and alcoholism/alcohol dependence. Therefore, it is true that alcohol is involved in a very high percentage of Indian deaths, substantially greater than the general U.S. average of 4.7 percent. But the term alcoholism can be very misleading. Alcoholism generally denotes only alcohol-dependent or chronic drinking behaviors, which are only part of the problem. In Table 1, the data are broken down to compare deaths from behaviors that are generally the result of alcohol-abusive drinking patterns (sporadic, binge drinking) with those that result from alcohol-specific/alcohol-dependent drinking styles (chronic, "alcoholic" drinking). In 1986-1988, 2,213 (or 74.9%) of all alcohol-related deaths were from alcohol-abusive causes, while 742 (or 25.1%) were from alcohol-specific/alcohol dependent causes (alcohol dependence syndrome, alcoholic psychosis, and chronic liver disease specified as alcoholic). Therefore, one would be more accurate in stating that alcoholism per se is not the leading cause of death among Indians. More accurately, alcohol abuse and alcoholism combine to be the leading cause of mortality.[6]

Alcohol-induced morbidity (sickness) is also a great problem among Indians. Again, though, alcohol abuse and alcoholism combine to cause the illness. In fact, alcohol-abuse produces more sickness and injury than do alcohol-specific or alcoholic behaviors. This is also true in mainstream U.S. society.

The importance of these distinctions is great. If public health officials and citizens focus solely on chronic alcoholic behaviors and problems in their planning of intervention and prevention, they will miss the majority (three-fourths) of the problem. Complete alcohol abuse prevention and intervention programs must address the full range of alcohol-abusive and chronic alcoholic behaviors.[7]

Do Indians Metabolize Alcohol Differently or More Slowly Than Do People of Other Ethnic Groups?

The most persistent myth about Indians is that they have particular biophysiological reasons for "not being

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Table 1. Estimated alcohol-involved deaths of American Indians in Reservation States, 1986-1988 and the U.S. general population, 1987.

Cause of Death	Total Indian Deaths (N) x	Estimated % Alcohol-Involved =	Indian Alcohol-Involved (N)	Alcohol-Involved U.S. (N)	Alcohol-Involved from nine IHS areas* (N)
Alcohol Abusive Accidents					
Motor Vehicle	1,687	(.65)	1,097	31,389	847
Other	1,278	(.25)	320	11,683	250
Suicide	534	(.75)	401	23,099	302
Homicide	494	(.85)	395	16,962	279
Subtotal	(3,993)		(2,213)	(83,133)	(1,678)
Alcoholic/ Alcohol-Specific†	(742)	(1.00)	(742)	(15,909)	(580)
TOTAL	4,735		2,955	99,042	2,258
Deaths as a percent of total deaths	27.2%		17.0%	4.7%	19.0%

Source: Computed from U.S. Indian Health Service, *Trends in Indian Health* and *Regional Differences in Indian Health.*

* IHS states that data are more complete in nine of their service Areas (Aberdeen, Alaska, Albuquerque, Bemidji, Billings, Nashville, Navajo, Phoenix, and Tucson). The far right column only includes these nine Areas.

† Alcohol-specific deaths include the following causes: alcohol dependence syndrome, alcoholic psychoses, and chronic liver disease and cirrhosis specified as alcoholic.

able to hold their alcohol." In fact, not only do non-Indians believe this, but many Indians also believe that their ethnic group has a biological deficit in metabolizing alcohol. One survey among the Navajo asked if Indians have a biological weakness to alcohol that non-Indians do not, and 63% of the respondents said yes.[8]

This myth has virtually no basis in fact. Only one study ever reported that Indians metabolize alcohol more slowly than non-Indians,[9] but it was criticized as highly flawed in its use of controls and other methods.[10] All of the remaining studies of alcohol metabolism among Indians have found Indians to metabolize alcohol as rapidly as,[11] or more rapidly than,[12] matched controls who were non-Indian. Furthermore, liver biopsies have shown no discernible difference in liver phenotype between Indians and non-Indians.[13]

Therefore, no basis at all for this myth is found in the scientific literature, and it should not be a consideration in current prevention and intervention programs. Major reviews of alcohol metabolism among all ethnic groups usually conclude that alcohol metabolism and alcohol genetics are traits of individuals and that there is more variation within an ethnic group than there is between ethnic groups.[14] Further, when biophysiologic investigators attempt to explain major alcohol-related behaviors, they generally point to sociocultural variables as the major factors.[15]

Are Indian Alcohol-Related Problems Uniquely Indian?

Certainly some alcohol-related behaviors in which Indians participate seem to be unique in their manifestations. Indeed, this was a major theme of the early literature.[16] But what is often overlooked in practical explanations of Indian drinking behavior is that there are many similarities between Indians and other groups. Further, there may also be common explanations for both Indian drinking and that practiced by other groups.

First, the fact that Indians have high rates of alcohol-related death is influenced by demographic traits. The American Indian population is very young in almost every community. The median age of Indians is in the low twenties overall[17] and is commonly much lower on some reservations.[18] In 1988, the U.S. median age was 32.3.[19] Young populations tend to have much higher rates of death from a number of alcohol-related causes (e.g., motor vehicle and other accidents, suicide, and homicide) than do populations that are elderly or middle aged. Because of the demography of many Indian communities, one would expect to find higher rates of these problems than in the more middle-aged U.S. mainstream. Conversely, one would also expect lower rates of death from chronic diseases such as heart disease, stroke, and cancer among Indians.[20]

Second, geography plays a role in alcohol-related sta-

tistics. Because the majority of Indians still live in rural western states, higher death rates are to be expected due to factors such as higher risk environments, distance from care, time lag to care, and reduced availability of services.[21] Alcohol-related injuries may be more common in rural western environments. Also, serious injuries (from events such as motor vehicle crashes) often become deaths because of the distance to, and timing of, care.[22]

Third, social, political, legal, and local policies may create conditions that exacerbate alcohol-related problems and rates. The low socioeconomic status of many Indians shapes their behavioral patterns.[23] Also, because most reservations are still under prohibition,[24] drinking styles and patterns are such that higher rates of alcohol-related arrest, injury, and mortality are more likely to occur.[25] Changes in policy similar to those enacted in other groups and societies might eventually produce very different alcohol consumption characteristics and patterns of alcohol-related problems.[26] In addition, upward changes in social class and education in the future would change drinking and alcohol-related behavior patterns.[27]

Finally, tribal culture or social practices may contain some of the seeds of both problems and solutions. Elevated rates of alcohol-related death from automobile accidents may arise from dangerous cultural practices such as not wearing seat belts and not being licensed and well educated in safety and/or defensive driving.[28] The same can be said of many other subgroups of the U.S. population. Even if a person is driving while intoxicated, he might not become an alcohol-related statistic if he is strapped in by a seatbelt. Unpublished data from New Mexico surveys show a lower use of seat belts among the youth of some tribes as compared with non-Indian youth in the same schools. But some tribes have higher rates of belt use than others.

In summary, the explanations of high rates of alcohol-related problems and their solutions may well be found in demographic, geographic, political, and cultural variables that are not necessarily uniquely Indian. Researchers, planners, and others must not overlook these relatively simple and conventional explanations in either their studies of etiology or their designs of solutions.

Is There A Higher Prevalence of Drinking Among Indians?

It is often said or implied that a vast majority of Indians drink. Frequently, I have asked audiences at a number of reservations, "What percentage of your adult population drinks?" The response for most sites was frequently "90%" or greater. Similar responses about Indians are also common within the mainstream population of the U.S.

The evidence in the published literature is quite different from what most people believe.[29] In fact, there is extreme variation in prevalence of drinking from one tribal group to another. Unfortunately, however, only a handful of extant adult prevalence studies have been published. Nevertheless, from these studies one can conclude that adult prevalence is lower in some tribes than the U.S. general averages; in others, it is about the same as or higher than U.S. averages.[30] Furthermore, drinking prevalence may vary over time in many tribal communities.

Two prevalence studies among the Navajo in 1969 and 1984[31] indicate that, in both periods, fewer Navajo adults drank at all (31% and 52%) than adults in the general population of the U.S. (67%). But these same studies indicate that Navajo drinking prevalence is increasing.

Two similar studies among the Standing Rock Sioux[32] showed that prevalence was decreasing (69% to 58%). In 1960, overall drinking prevalence was about the same as in the general population; twenty years later, it was lower than U.S. averages (67%).

Studies were also carried out among two other tribes. The Southern Ute and the Brokenhead Ojibway of Canada demonstrated drinking prevalence rates (80% and 84%) higher than U.S. averages.[33] The prevalence of adult drinking among Indians, therefore, varies widely from tribe to tribe and over time. Variation over time is also found with Indian youths.[34]

These prevalence studies provided other significant findings as well. Among those who do drink in these tribes, there is a substantially higher prevalence (two to three times) of problem and excessive drinking indicators than among the general U.S. population.[35] Consumption of more than five drinks per situation, as well as experience with delirium tremens (DTs) and blackouts, are much higher in these studies. Therefore, among those Indians who drink, there is a substantial number of problem drinkers who produce a high frequency and variety of problems such as arrests, morbidity, and mortality.

More positive findings are also found in these studies. For example, among Indian males who are in their middle age and older, more have completely quit drinking than among most other groups of U.S. males. Also, in virtually every tribe, a lower proportion of the women drink.[36]

Therefore, the overall prevalence of drinking among Indians is not the most important variable in the epidemiology of drinking. What is more important are the drinking styles, some of which emphasize very problematic behaviors.

Do All Indians Drink in the Same Manner or Style?

Tribal and urban studies have reported various styles of drinking.[37] Most researchers describe two patterns that cause either no or few alcohol-related problems: abstinence and moderated social drinking. But at least two problem drinking patterns are common among subgroups or "peer clusters" in many tribal communities.[38] One is a chronic alcoholic drinking pattern that Frances Ferguson has called "anxiety" drinking.[39] The other is the "recreational" pattern defined by Ferguson and others.

Recreational drinkers are predominantly young (age 15-35) males who are students or relatively new participants in the work world; they drink sporadically for special occasions, at night and on weekends, away from home, and in a celebration or party manner. Some young females also participate in this pattern, but they are less involved and generally for a shorter period of time. This drinking style is not unlike college fraternity drinkers. Indian recreational drinkers are at very high risk for alcohol-related injury, arrest, and death because of the emphasis on high blood alcohol levels for a "blitzed" experience. Many people mature out of this pattern, but a disproportionate number of Indians die young from recreational drinking.

Anxiety drinkers, on the other hand, are more typical of the chronic alcoholic. They are downwardly mobile, unemployed, and socially marginal to both Indian and non-Indian society. They are predominantly male, but some females fit this pattern. They tend to drink chronically, whether alone or with other drinking buddies. Anxiety drinkers are commonly found spending long periods of time in border towns or in skid row areas of many western cities.

These two types of problem drinkers produce the alcohol-abusive and alcohol-specific problems described earlier. The recreational drinkers produce many of the accident and suicide deaths, while the anxiety drinkers produce the alcoholism deaths (e.g., cirrhosis of the liver) and a preponderance of the pedestrian-vehicle collision deaths.[40]

In summary, there are a number of drinking styles among Indians that affect the epidemiological patterns and create a challenge for prevention and treatment. There is no one Indian drinking pattern.

Why Are Indian Rates of Death From Alcohol-Related Causes So High?

Many of the answers to this question have already been presented in previous sections. However, the common, stereotypical answer to this question is that "Indians are like that." Just as it is said that the "Irish drink because they are Irish," it is said that "Indians drink because they are Indian." The simple, logical extension of this, then, is that high rates of drinking produce high rates of alcohol-related death and other problems. But we have seen that the prevalence of drinking alone does not explain the high rates of alcohol-related death among Indians.

Recent IHS data (see Table 2)[41] indicate that Indians die more frequently than the U.S. averages from motor vehicle accidents (2.95 to 3.89 times higher); other accidents (2.99 to 4.05 times higher); suicide (1.53 to 1.95 times higher); homicide (1.97 to 2.34 times higher); and alcoholism (5.45 to 7.63 times higher). These ratios of Indian to U.S. averages reflect rates, not the actual numbers of deaths. There are three elements of explanation for this different experience. One element can be found in the previous sections, which deal with demographic, social, and political considerations discussed in the literature. The second element of explanation is centered on

Table 2. Age-adjusted mortality (rates per 100,000) from alcohol-abusive and alcohol-specific causes for American Indians, 1986-1988 and the U.S. general population, 1987.

Cause of Death	Estimated % Alcohol-Involved	All IHS Areas	All U.S.	Ratio IHS/U.S.	Nine IHS Areas*	Ratio Nine Areas/ U.S.
Alcohol-Abusive						
Accidents						
Motor Vehicle	.65	57.5	19.5	2.95	75.2	3.89
Other	.25	45.5	15.2	2.99	61.5	4.05
Suicide	.75	17.9	11.7	1.53	22.8	1.95
Homicide	.80	16.9	8.6	1.97	20.1	2.34
Subtotal		(137.8)	(55.0)	(2.51)	(179.6)	(3.26)
Alcoholic/ Alcohol-Specific†	1.00	(32.7)	(6.0)	(5.45)	(45.8)	(7.63)
TOTAL		170.5	61.0	2.79	225.4	3.69

Source: Computed from U.S. Indian Health Service, *Trends in Indian Health* and *Regional Differences in Indian Health.*

* IHS states that data are more complete in nine of their service Areas (Aberdeen, Alaska, Albuquerque, Bemidji, Billings, Nashville, Navajo, Phoenix, and Tucson). The far right column only includes these nine Areas.

† Alcohol-specific deaths include the following causes: alcohol dependence syndrome, alcoholic psychoses, and chronic liver disease and cirrhosis specified as alcoholic.

drinking style. The flamboyant drinking styles that are very common in a number of Indian peer clusters (recreational and anxiety drinkers) emphasize abusive drinking and high blood alcohol levels. Further, heavy drinking peer groups among many tribes encourage, or do not discourage, the frequent mixing of alcohol impairment, risky behavior, and risky environments.[42] Driving while intoxicated, sleeping outside in the winter, aggression, and other unsafe practices are examples of this element.

The mixing of (1) high-risk environments, (2) flamboyant drinking styles, and (3) risky post-drinking behavior combine to elevate Indian rates of alcohol-related death far above those of the general U.S. population. This is true as well with arrest, injury, and other problems for which statistics are recorded.

How is the Drunken Indian Stereotype Perpetuated by a Naive and Uncritical Use of Statistics?

Many authors and speakers on the topic of Indian drinking and alcohol-related problems often cite statistics that do not capture an unduplicated count of the individuals involved in abusive drinking. For example, if one looks at alcohol-related arrest rates, there generally is little opportunity for knowing if the data reflect the experience of a few or a large number of individuals. In Gallup, New Mexico, Ferguson[43] found that 115 alcohol-dependent Navajo males accounted for almost twelve hundred arrests in 1.5 years. A careless or uncritical researcher could report this as twelve hundred Navajo with a problem, rather than one hundred with a chronic drinking problem and repeated arrests.

When working on my doctoral dissertation in Montana, I stumbled across a situation and calculated an overall arrest rate that further emphasizes this point. On one small Northern Plains reservation (<3,000 people), the arrest rate was 100,103 per 100,000 from 1970 to 1974.[44] In other words, a literal and naive interpretation would be that every man, woman, and child had been arrested at least once during the five-year period. My, what a criminal place one could imagine with these data! Further, 75% of these arrests were for alcohol-specific crimes on a dry reservation. Could this mean that three-quarters of all the men, women, and children are such problem drinkers that they are arrested? Certainly not. It was a situation where a small proportion of the population (mainly males) spent time in a "revolving door" situation. They drank excessively in nearby border towns and on the reservation and were in and out of jail, time and time again. How absurd the uncritical use of aggregate and duplicative data such as these arrest statistics can be! But such data frequently are presented uncritically in newspapers, lectures, and even academic and agency program papers.

The same can be said of morbidity data. One person with a drinking problem can generate literally dozens of visits to a clinic, inpatient admissions, and emergency incidents. IHS data showing a large number of patient encounters should not be taken to indicate the prevalence of the problem. Counts of individuals, not visits, should be used for epidemiological purposes, and, even then, one is dealing only with treated prevalence. For example, in a chart review study of IHS records in the southwest covering ten years, 21.4% of the individuals who visited six IHS general clinic facilities were seen at least once for a mental health or alcohol abuse problem.[45] This is not a substantially high percentage based on U.S. estimates. The vast majority of inpatient episodes (83%) by these individuals, however, were for alcohol and substance abuse, as were 53% of outpatient visits.[46] On average, each episode of mental health and alcohol-related illness presented by these individuals accounted for 3.9 outpatient and inpatient visits before the problem was fully dealt with or was cured. Therefore, just from looking at visits, one might conclude that the problems were much more extensive. Thus, morbidity data, like arrest data, can be highly duplicative in counting or estimating problems, even when estimating treated prevalence.

One should always ask, then, "Are the prevalence data that are being presented representative of true prevalence or treated/clinic prevalence?" Or, more importantly, "Are they nothing more than workload data?" Too often, arrest, morbidity, social welfare caseload, and other statistics are merely workload, contact, or activity counts. Unduplicated data, such as random surveys of individuals in the population to document adult drinking, are best for estimating prevalence. Further, school-based youth surveys tell us little or nothing about adults. Mortality data are much better for estimating prevalence, because people die only once. Indian epidemiological information has suffered greatly over the years, because data used have not often enough been unduplicated counts that provide valid measures of prevalence. In populations with a substantial concentration of high-risk, heavy drinkers, this has led to inaccuracy and distortion of the true extent of the problem. Measuring the repetitive, high-risk, and problematic behavior of a subculture of problem drinkers within a tribe, and using it uncritically, can stigmatize the whole tribe.

What is the Level of Severity of Drinking Among the Alcohol Abusing Population?

Within the drinking populations of most Indian communities, a substantial number of people drink very heavily. These people are found in both the recreational and anxiety drinker populations.

More than 70% of Indians who die in traffic accidents in New Mexico have been drinking. A University of New Mexico study of all ethnic groups in the state found that American Indian decedents from crashes had very high blood alcohol concentrations (BAC).[47] The average BAC's of those who had been drinking and were killed in vehicu-

lar crashes in New Mexico were Indian .191, Hispanic .189, and Anglo .128. All ethnic groups, therefore, were averaging levels well above the legal intoxication level (.10). Indians killed in alcohol-related crashes had BACs significantly higher than those of the Anglos but not much higher than those of the Hispanics.[48] A full 85.7% of the Indian and 82.5% of the Hispanic victims who had been drinking were above the legal limit. This compared with 55.4% of the Anglos. Thus, the level of drinking among the Indians and Hispanics who drink is very high, probably indicating similar sociocultural patterns of drinking by certain peer clusters among the two groups.

A comparable pattern of blood alcohol levels exists for Indian decedents from suicide. Among those Indians who die from suicide in New Mexico, 69% to 74% (depending on the year studied) are alcohol-involved, with the alcohol level being quite bimodal. In other words, one-fourth of the victims tend to be completely sober, while three-fourths have very high BACs, as above (work in progress).

Research indicates, then, that those who are members of alcohol-abusing peer clusters in many tribes drink in a manner that produces very high blood alcohol levels. Both suicide and motor vehicle accidents are alcohol-related in a majority of cases. These results also support the notion that there is a connection between heavy drinking and risky behavior.

What Is the Relationship Between Child Abuse, Child Neglect, and Alcohol?

The one major study that has examined, in detail, the relationship between child abuse and neglect and alcohol use demonstrates clearly that alcohol often is involved. In northern New Mexico, 85% to 93% of the Indian child neglect cases and 63% of the child abuse cases involve alcohol.[49] Neglect, abuse, and alcohol problems were found to be part of a complex found in a number of multiproblem families where intergenerational transmission of pathology was present.

A subsequent paper from the above study compares the abuse/neglect sample to a matched group of Indian control families. Alcohol use and abuse was found to have been present in 58% of the control homes at one time or another, as compared to 88% in the abuse/neglect target groups.[50] This control study concluded that alcohol seems to be a necessary, but not sufficient, condition for child abuse. This is not unlike the relationship with suicide.

Is Alcohol Abuse Only a Male Problem?

Alcohol abuse, in the form of both alcohol-related and alcohol-specific/dependent behavior, takes its greatest toll among Indian males. IHS data from 1986 to 1988 (see Table 3, page 47) indicate that the number of Indian male deaths from alcohol-related and alcohol-specific causes is much higher (N = 2,705) than for Indian females (N = 951). This is true in every category. Twenty-six percent of male deaths are alcohol involved, whereas 13% of female deaths are. Stated another way, in a typical three-year period, 12.3% of all Indian deaths are related to alcohol use by males, and 4.3% are related to alcohol use by females.

Further, according to the rates in Table 3, male Indians fare far worse than U.S. males in general. For example, in a comparison of Indian and U.S. males ages 25-34, the rate for motor vehicle accident deaths among Indians is 2.8 times higher, for other accidents 2.7 times higher, for suicide 1.9 times higher, and for homicide 1.5 times higher; the alcoholism rate is 6 .8 times higher.[51]

Indian females, however, do not fare much better in comparison with U.S. female rates. In the same age category (25-34 years), Indian female rates are 3.4, 2.7, 1.4, 1.5, and 12.0 times higher than U.S. females.[52] Thus, Indian females have higher rates of alcohol involved death than U.S. females in general, and this is true in most age categories and alcohol-involved causes.

Therefore, although the numbers indicate that alcohol-abusive mortality and alcohol abuse are mainly (in numbers) an Indian male problem, Indian females are also at high risk compared to other U.S. women. This should be kept in mind for alcohol treatment and prevention in Indian Country. Indian women who are in the alcohol abusing categories also have a strong need for attention,[53] especially regarding alcohol-specific causes. The number of female deaths from cirrhosis of the liver (w/alcohol), alcohol dependence, and alcoholic psychosis is one-half the number (46.2%) of Indian male deaths from these causes. Chronic alcohol dependence problems are, therefore, more equally shared among Indian females and males than the other alcohol-related causes of death.

Is Fetal Alcohol Syndrome (FAS) a Major Problem for Indians?

Like many of the problems mentioned above, FAS rates vary greatly from one reservation to the next. Two studies have been carried out on Canadian Indian communities with widespread alcohol abuse, and high rates of FAS have been found.[54] Another study found higher rates of FAS recorded on Indian birth certificates in the U.S. than among any other ethnic group.[55] One other study found both high- and low-risk communities in the same region,[56] with variance based on differing sociocultural and drinking patterns found in the communities. The range of FAS rates in these studies is from a high of 190 per 1,000 children to a low of 1.3 per 1,000 children. However, studies that were based on the largest populations of Indians who were living in relatively stable reservation communities documented rates only slightly higher than the U.S. estimated rate in the 1980s. The overall southwestern Indian rate in 1978-1982 was 4.2 per 1,000, compared to 2.2 for the U.S. overall.[57] Further, the U.S. rate for all races may well be underreported.[58]

Table 3. Estimated alcohol-involved causes of death for U.S. Indians and Alaska Natives (1987-1988)* and the U.S. general population (1987) by age, sex, rates per 100,000, and number.

Cause of Death	Rates																		Number		
	15-24			25-34			35-44			45-54			55-64			65-74			Total Deaths (all ages)	x Est. % alcohol-involved	alcohol-involve (all ages)
	Ind.	U.S.	Ratio	Ind.	U.S.	Ratio	Ind.	U.S.	Ratio	Ind.	U.S.	Ratio	Ind.	U.S.	Ratio	Ind.	U.S.	Ratio			
Male																					
MV accident	97.0	55.5	1.7	104.7	36.8	2.8	86.2	25.6	3.4	65.7	21.8	3.0	52.2	21.7	2.4	65.6	24.6	2.7	1452	(65%)	944
Other accdt	42.5	18.6	2.3	63.5	23.6	2.7	77.1	23.8	3.2	59.9	23.4	2.6	82.3	30.3	2.7	113.0	42.6	2.7	1139	(25%)	285
Suicide	40.7	21.3	1.9	49.6	24.8	2.0	30.3	22.9	1.3	21.7	23.8	0.9	12.2	26.6	0.5	16.7	34.8	0.5	546	(75%)	410
Homicide	32.1	21.9	1.5	44.7	23.3	1.9	38.6	17.1	2.3	19.4	12.1	1.6	13.0	8.8	1.5	12.6	6.2	2.0	521	(80%)	417
Alcoholism†	0.8	0.1	8.0	21.8	3.2	6.8	65.5	12.9	5.1	98.6	24.4	4.0	95.4	33.1	2.9	79.5	27.0	2.9	649	(100%)	649
Total deaths for above causes							4307			2705											
% of all Indian deaths							19.6%			12.3%											
% of all male Indian deaths							42.1%			26.5%											
Female																					
MV accident	30.7	19.7	1.6	39.5	11.5	3.4	32.2	9.3	3.5	27.8	9.2	3.0	18.3	10.2	1.8	17.7	13.7	1.3	577	(65%)	375
Other accdt	8.2	3.5	2.3	13.1	4.8	2.7	16.9	5.2	3.3	13.3	6.4	2.1	22.8	10.6	2.2	43.7	21.1	2.1	358	(25%)	90
Suicide	6.5	4.3	1.5	8.3	5.9	1.4	9.3	7.2	1.3	5.0	8.5	0.6	4.6	7.7	0.6	2.4	7.2	0.3	107	(75%)	80
Homicide	10.2	6.0	1.7	10.4	6.9	1.5	9.3	4.8	1.9	4.4	3.6	1.2	4.6	2.5	1.8	1.2	2.8	0.4	132	(80%)	106
Alcoholism†	1.2	0.1	12.0	16.8	1.4	12.0	25.1	4.2	8.4	57.3	7.6	7.5	50.2	9.4	5.3	20.1	7.3	2.8	300	(100%)	300
Total deaths for above causes							1474			951											
% of all Indian deaths							6.7%			4.3%											
% of all male Indian deaths							20.5%			13.2%											

Source: Computed from U.S. Indian Health Service, *Trends in Indian Health.*

* Includes all Indian and Alaska Natives in all parts of the 32 reservation states served by IHS (total deaths in reservation states 1986-1988 = 21,943.

† Alcoholism deaths include the following causes: alcohol dependence syndrome, alcoholic psychoses, and chronic liver disease and cirrhosis specified as alcoholic.

Bray and Anderson[59] and Chavez *et al*[60] suggest that, among Indians, better surveillance and more complete reporting of FAS occurs. This may be true both in the disrupted Indian communities that were highly alcohol-abusive and therefore were studied by researchers, and also in general birth certificate recording.

Much of the newspaper, popular media, and conference coverage of FAS has been highly dramatic and quite distorted. The figures quoted of "one in three" or "one in four" Indian babies being FAS have no support at all in screening, epidemiologic, or scientific studies. This is even true for the small, most highly alcoholic communities such as the one studied by Robinson et al.[61] Furthermore, the more disrupted communities studied are not representative of Indian communities in general. In the studies done among Indian populations where culture and society are more intact, FAS rates are much lower. It is no more accurate to project an FAS rate from one or two disrupted, alcohol-abusing communities onto all Indians than it would be to project the rate from an urban, skid row census tract to all of the U.S. population.

In general, the scientific literature points out that FAS is an "equal opportunity" birth defect and can affect any ethnic group where there are sufficient levels of maternal drinking. FAS, to a great degree, depends on the quantity, frequency, and timing of maternal drinking. In many tribes, there are more alcohol-abstaining women than in the general U.S. population. This obviously protects a substantial portion of Indian children from FAS and lowers levels of prenatal alcohol damage. In almost every population ever studied, a very small number of women produce all of the FAS children. This is very true in Indian epidemiologic studies of other problems as well.

FAS prevention, however, has been cited as an extremely promising area for American Indians.[62] In fact, it is apparent that Indians today are very aware of FAS as a problem, and a large number of established FAS initiatives and prevention programs are underway in Indian communities.

Can Prevention Programs Designed For One Tribe Be Adjusted and Applied to Others?

In spite of the unique social and cultural nature of each tribe, prevention and intervention programs designed for one tribe can be used in others. It has often been implied that each tribal community is so distinctive that programs have limited or no applicability across tribal settings. But a detailed knowledge of the particular history, culture, and current epidemiological features of alcohol abuse in a community will allow for fine tuning and adaptation to other, somewhat similar tribes and communities.[63]

Knowing the demographic and epidemiologic features (age; sex ratio; cultural, social, and economic indicators; mortality; morbidity; fertility; and gender-specific drinking patterns) of a community will facilitate the design and implementation of successful programs of prevention and treatment. The problem with some efforts in the past was that local data were not utilized or available, and relevant studies were not always done. Further, when epidemiological understandings are very general or poor and programs are based on myth, failure is more likely. Facts such as those presented in this paper are the building blocks of prevention and intervention. Improvement in the alcohol-abuse dilemma of Indian communities will require a detailed and specific understanding of the characteristics and epidemiology of the population. Indian health professionals have a responsibility to seek out such data and apply them carefully and sensitively.

Conclusion

Many of the myths and common understandings about alcohol use among American Indians are gross oversimplifications. As Benjamin Franklin once stated, "Half the truth is often a great lie."[64] If they are to succeed, programs of prevention and intervention must not be built on common mythical understandings but on empirical fact. Unfortunately, facts and detailed truths are not sought or believed frequently enough.

"The truth is sometimes a poor competitor in the market place of ideas – complicated, unsatisfying, full of dilemmas, [and] always vulnerable to misinterpretation and abuse."[65] As this paper has demonstrated, the truth about Indian drinking is indeed complicated and quite different from the myths. But the insights and explanations that emerge from seeking the facts are those that will help create meaningful improvement.

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