

A DESCRIPTION OF ALCOHOL/DRUG USE AND FAMILY HISTORY OF ALCOHOLISM AMONG URBAN AMERICAN INDIANS

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Abstract: The patterns of alcohol consumption, family history of alcoholism, and lifetime and current diagnoses of substance dependence were determined in a sample of American Indians (n = 105) living in Denver. Subjects were recruited through flyers, posters, and advertisements placed in local newspapers, the Denver Indian Center, and Denver Indian Health and Family Services. Subjects were interviewed regarding their education, employment, past and present drug and alcohol use (including frequency/quantity, beverage type, and pattern of intake) and family history of alcoholism. The drug and alcohol sections of the Diagnostic Interview Schedule were administered in order to determine lifetime and current prevalence of substance dependence. Although there are limits to the generalizability of these data due to the use of a non-random sampling method, the results indicate that approximately half of the sample (50.5%) were abstinent or irregular drinkers with moderate intake (3.3 drinks/occasion). Binge drinkers (3.8%) consumed large amounts of alcohol per occasion, with a mean of 21.6 drinks. Also, 45.5% of the sample were regular drinkers (at least once/wk) with a mean of 11 standard drinks/occasion. The rate of current alcohol dependence (33.3%) and other drug dependence (18.1%) was relatively high with cocaine and cannabis the primary drugs of abuse. The most striking aspect of the sample was the very high rate of family history of alcoholism (60.6% with at least one alcoholic parent) and only 11.1% with no primary or secondary alcoholic family members.

There is a great deal of diversity among American Indians living in urban areas in terms of cultural identity, preservation of traditions, living

circumstances and health status (Walker et al., 1996). Although more than 50% of the American Indian population currently lives within large urban areas there is very little known about their general health or problems with alcohol and drugs of abuse. In 1992, a large scale review of available information on the health of urban aboriginal natives was conducted by the Northern Health Research Unit, at the University of Manitoba (McClure, Boulanger, Kaufert, & Forsythe, 1992). The dominant theme in much of the literature reviewed was the negative impact of acculturation and adaptation to urban life on the health of the aboriginal community. However, there were very few sources of reliable statistics on the rates or causes of morbidity and mortality, or patterns of health services utilization among urban aboriginals.

Since accurate prevalence data are not available, the degree of alcohol/drug problems within any American Indian community is typically based on indirect estimates of mortality from various causes that are known to be alcohol or drug-related. American Indians appear to have higher rates of alcoholism and alcohol-related problems than any other minority in the U.S. (Rhoades, Hammond, Welty, Handler, & Amler, 1987). American Indian alcohol-related deaths occur at more than four times the age-adjusted rate of the general population due to increased incidence of liver disease and cirrhosis (Rhoades et al., 1987). From figures collected by the Indian Health Service (1995) it is apparent that alcoholism or substance "abuse" per se are not the only serious problems. Alcohol and substance "use" carry high risks for mortality—particularly due to accidents, suicides, and homicides. This high rate of mortality may relate to the pattern of consumption in certain American Indian communities—i.e., the tendency to sporadic, high dose binge drinking. In addition, drinking by American Indians appears to be typified by blackouts, as well as a high degree of violence and physical fights when intoxicated (Manson, Shore, Baron, Ackerson, & Neligh, 1992).

The best data we have on substance abuse among American Indians in Denver comes from the Alcohol and Drug Abuse Division (ADAD) at the Colorado Department of Health (1992). Substance abuse problems within specific areas of Colorado were ascertained by utilizing a variety of indices including survey data, mortality figures, emergency room and medical examiner's mentions, and arrests for driving under the influence. According to the 1990 census, American Indians comprised 0.9% of the population within the urban areas of Denver and Boulder. This population had a median age of 26.9 years and was divided equally between males and females. It is interesting to note that according to the ADAD statistics, the percentage of American Indian non-drinkers (49.8%) was higher than the state-wide level of abstinence (32.6%). However, the number of "dysfunctional" alcohol users—defined as severe disruption of lifestyle including loss of job, family dysfunction or criminal involvement—was higher in Colorado's American Indian population (5.5%) than the overall state average (3.7%). While American Indians in the Denver/Boulder area comprised 0.9% of the

population, they were notably over-represented in publicly-funded treatment facilities (5.2%) as well in the justice system with tendency towards multiple prior arrests for both DUI (driving under the influence) and non-DUI offenses.

The data presented in the present paper are intended to provide a more thorough description of alcoholism and alcohol-related problems among a sample of American Indians (n = 105) living in Denver. These data were collected as part of a larger research program being conducted in the Alcohol Research Center at the University of Colorado. This program, aimed at further understanding of the development of alcoholism among American Indians, is focused on the characteristics of drinking patterns in relation to the family history of alcoholism, as well as self-reported and objectively measured responses to alcohol. Therefore, the present paper represents the first in a series of reports that will explore the characteristics of alcohol/drug abuse as well as alcohol metabolism and responsivity to alcohol among American Indians (see also Gill, Eagle Elk, Liu, & Deitrich, in press; Gill, Lucas, Menez, & Deitrich, 1997).

Subjects/Procedure

Subjects

Subjects were recruited through advertisements placed in local newspapers and newsletters as well as through notices placed at local colleges, drop-in centers, and American Indian service organizations (e.g., Denver Indian Center). Subjects were also recruited directly while attending events (e.g., American Indian Health Fairs) and clinics. The primary site for recruitment was Denver Indian Health and Family Services (DIHFS). The number of organizations targeted for advertising, and the geographical area covered were as large as possible in order to attract a representative urban American Indian sample into the study. Advertisements targeted individuals at least 21 years of age. Compensation ranging from \$20-50 was provided for participation. Potential subjects were briefed concerning the procedures prior to the session by telephone. All participants were asked to sign an informed consent form that explained all procedures to be used, the rationale of the experiment, and the confidentiality of his/her data.

Procedure

Interviews were conducted at the DIHFS or at the Alcohol Research Center and University Hospital in the University of Colorado Health Sciences Center. Following briefing and signing of informed consent, a 30cc blood sample was taken by a nurse in vacutainer tubes containing EDTA. The results of tests performed on the blood samples are reported elsewhere

(see Gill et al., in press). Following the blood sampling each subject was extensively interviewed regarding education, employment, past and present drug and alcohol use (including frequency/quantity, beverage type and pattern of intake using a time-line follow back procedure) and family history of alcoholism. The drug and alcohol sections of the Diagnostic Interview Schedule (DIS) for DSM-III-R were administered by a trained interviewer. The family history section of the interview asked the subjects to rate family members (parents, grandparents, siblings) on three criteria: (a) drinking frequency and type of drinker [i.e., Abstainer, Irregular Drinker, Social Drinker-Light to Moderate, Social Drinker-Heavy without problems, or Problem Drinker]; (b) whether or not the family member had ever experienced major problems due to drinking such as loss of a job, broken marriages, accidents; and (c) whether or not they had ever received treatment for alcoholism. The rating of probable alcoholism for any family member was based on positive scores for two out of three criteria.

Results

The demographic characteristics of the sample are shown in Table 1. This convenience sample assembled via advertisements and word of mouth was distributed approximately evenly among males and females, was predominantly single (59%), and largely unemployed (only 32.2% stated they were currently students, professionals, or semi-skilled laborers). The sample was predominantly Sioux (54.3%) with the Navajo (19%) making up the next largest tribal affiliation.

A description of alcohol/drug related behaviors is presented in Table 2. It should be noted that approximately half of the sample (50.5%) were abstinent or irregular drinkers. Moderate drinking in the irregular drinkers is reflected in the low mean number of drinks/occasion (3.3 ± 0.69). The binge drinkers, representing 3.8% of the sample, consumed particularly large amounts of alcohol per occasion, with a mean of 21.6 ± 1.6 drinks. The rate of current alcohol dependence (33.3%) and other drug dependence (18.1%) was relatively high overall. It is interesting to note that when subjects were asked to rate their degree of problems with alcohol (on a scale of Abstainer, Irregular Drinker, Social Drinker-Light to Moderate, Social Drinker-Heavy without problems, or Problem Drinker), a full 28% identified themselves as problem drinkers. This is very close to the actual rate of alcohol dependence (33%) found with the DIS interview.

The characteristics of the sample diagnosed with current alcohol dependence according to DSM-III-R criteria are shown in Table 3. These individuals were largely single (74.3%), with lower educational achievement (31.4% elementary school only), fewer months of full-time employment, and considerably greater involvement with the legal system (76.5% had at least one drunken driving conviction), compared to the non-abusers of alcohol. Table 4 displays the individual symptom frequencies from the DIS in those

Table 1
Demographic Characteristics (N = 105)

Gender	54.3% Male 45.7% Female
Marital	59.0% Single 22.0% Married/common-law 19.0% Separated/divorced
Living	25.7% Spouse/kids 21.9% Friends 17.1% Other (shelters) 10.5% Parents
Education	70.4% High school graduates 18.1% Elementary only 11.4% College graduates
Jobs	20.0% Semi-skilled laborer 9.5% Students 5.7% Professionals
Quantum	77.1% 4/4 19.0% 1/2 to 4/4 3.8% < 1/2
Tribe	54.3% Sioux 19.0% Navajo 5.7% Cheyenne 20.9% Other

individuals with and without a diagnosis of alcohol dependence. Blackouts were a very common occurrence in both groups (60.6% of those without and 100% of those with a diagnosis of alcohol dependence). Other significant characteristics of those with a diagnosis of alcohol dependence were drinking heavily at least once/week (97.1%), binge drinking (94.3%), as well as being arrested (80.0%), driving (74.3%), and engaging in physical fights (91.4%) while drinking. A large proportion of the sample reported at least one of several symptoms of physical dependence (82.4%) and 60.0% reported morning drinking to relieve withdrawal symptoms.

In terms of drug use, 83.8% of the entire sample had tried at least one psychoactive drug to get high over the course of their lifetime. Marijuana was the most frequently used substance (68.6% of the sample) followed by amphetamines (37.1%) and cocaine (23.8%). The use of opiates was very low in this sample with 3.8% having ever tried heroin, and 14.3% other

Table 2
 Characteristics Related to Alcohol/Drug Intake

Drinking Frequency	3.8% daily 41.9% 2-6 days/wk 36.2% irregular 3.8% binge
Drinks/Occasion	11.2 ± 0.91 (regular drinkers > = 1 day/week) 21.6 ± 1.60 (binge drinkers) 3.3 ± 0.69 (irregular drinkers)
Family History of Alcoholism	60.6% father or mother 28.3% other 1° or 2° relatives 11.1% none
Alcohol Dependence	40.0% none 33.3% current 26.7% lifetime
Other Drug Dependence	63.8% none 18.1% current 17.1% lifetime

opiates (i.e., pain killers). As shown in Table 5, current drug dependence (other than alcohol) was found in 18.1% of the sample according to DSM-III-R criteria. These individuals were slightly younger (28.3 years) than non-abusers (34.9 years) and 63.2% of them also received a diagnosis of alcohol dependence.

Discussion

More than 20 years ago Westermeyer (1976) described the typical environment for American Indian people living in large American cities. He stressed that there were overwhelming social and environmental issues such as child abuse, marital breakdown, alcoholism and drug abuse as well as a high degree of delinquency, school drop-out, and unplanned pregnancies. However, epidemiological data relating to these issues is lacking. The information required to make comparisons between the health and well-being of American Indians living inside cities versus those living on reservations is not available.

Large scale epidemiological studies have not been conducted in this population, partially due to the difficulty of random sampling in a transient minority population that is spread-out over the urban environment. With this

Table 3
Characteristics by Diagnosis of Alcohol Dependence

Alcohol Dependence	None (40%)	Current (33.3%)	Lifetime (26.7%)
Age	32.5 ± 1.3	32.0 ± 1.24	35.4 ± 2.1
Never Married	47.0%	74.3%*	57.0%
Elementary Education Only	9.5%	31.4%*	14.3%
# Months Full-Time Job (past year)	7.1 ± 0.73	4.4 ± 0.66**	6.8 ± 0.98
# Convictions (lifetime)	0.14 ± 0.5	1.72 ± 0.5**	1.28 ± 0.3
Jail Time (days)	2.27 ± 2.2	254.9 ± 106**	82.0 ± 64
% With Drunken Driving Conviction	17.9%	76.5%*	67.8%
Age First Drunk	17.1 ± 0.63	13.0 ± 0.68**	12.6 ± 0.71
Days Drinking/Month	3.9 ± 0.78	13.9 ± 1.53**	6.2 ± 1.3
Standard Drinks/Occasion	4.6 ± 0.91	12.3 ± 1.2**	6.2 ± 1.3
Any Binge Drinking (lifetime)	33.3%	94.3%*	67.9%
Any Detox (lifetime)	4.8%	60.0%*	35.7%
Current Substance Abuse	4.8%	34.3%*	18.5%
Treatment for Substance Dependence (lifetime)	7.3%	58.8%*	48.1%

* Significantly different from non-abusers by Chi-Square analysis, $p < 0.05$.

** Significantly different from non-abusers by t-test with Bonferroni correction, $p < 0.05$.

in mind it is important to note the limits to interpretation and generalizability of the results presented in this paper. The non-random sampling technique precludes any firm conclusions concerning the rates of alcohol and drug dependence. However, it should be noted that the percentage of abstinent or irregular drinkers (50.5%) surveyed in the present study is very close to that found in previous studies of urban American Indians (ADAD, 1992). This same caveat must be applied to very high rates of family history of

Table 4
Individual Symptom Frequencies Among Those With and Without an
Alcohol Dependence Diagnosis

Symptoms from DIS Interview	Proportion of Sample Who Without Alcohol Dep.	Endorsed Item (Rank) With Alcohol Dep.
Blackouts	60.6	100.0 (1)
Drinking once/week heavily	37.5	97.1 (2)
Binge Drinking	33.3	94.3 (3)
Family objected to drinking	30.0	91.4 (4)
Physical fights while drinking	30.0	91.4 (5)
Job troubles	10.0	82.9 (6)
Any physical dependence symptoms	16.7	82.4 (7)
Wanted to stop drinking but couldn't	22.5	80.0 (8)
Arrested while drinking	22.5	80.0 (9)
Trouble while driving	17.5	74.3 (10)
Friends objected to drinking	22.0	74.3
Drinking every day for 2 weeks heavily	4.9	71.4
Attempts to control drinking - rules	22.0	68.6
Morning drinking	5.0	60.0
Lost job	0.0	57.1
Told physician about drinking problem	14.6	54.3
Continued to drink despite health problems	6.1	45.7
Couldn't work without drinking	3.0	45.7
Health problems from drinking	6.1	20.0

alcoholism detected in this study. In 60.6% of the sample either one or both parents were considered to be alcoholic, with only 11.1% having no primary or secondary alcoholic family members. Weisner, Weibel-Orlando, and Long (1984) previously demonstrated that heavy drinkers in an urban American Indian population were more likely to have had heavy drinkers in the family of origin. However, in the present study there was no relationship between family history of alcoholism and an increased likelihood of current or lifetime diagnosis of alcohol dependence. Regardless of current drinking status, a full 46.7% of the sample had alcoholic fathers, and 24% had alcoholic mothers. Responses to the DIS symptoms (Table 4) provide several interesting insights into the pattern of alcohol abuse and dependence in the portion of the sample consuming alcohol regularly. Blackouts, binges and physical fights were very common symptoms of alcohol dependence in this population. These same symptoms are those most frequently described in clinical studies of American Indian alcoholics (Westermeyer & Neider, 1984; Westermeyer & Peake, 1983). Similar data were reported by Manson et al. (1992) in a sample of American Indians from three geographically distinct

Table 5
Characteristics by Diagnosis of Drug Dependence

Drug Dependence	None (63.8%)	Current (18.1%)	Lifetime (17.1%)
Age	34.9 ± 1.3	28.3 ± 1.2**	31.6 ± 1.2
% With Current Alcohol Dependence	17.9%	63.2%*	61.1%
# Drugs Abused	0	1.54 ± 0.31**	1.8 ± 0.30

MOST FREQUENTLY ABUSED SUBSTANCES: CANNABIS, COCAINE

* Significantly different from non-abusers by Chi-Square analysis, $p < 0.05$.

** Significantly different from non-abusers by t-test with Bonferroni correction, $p < 0.05$.

areas of the U.S. Of particular note is the very high prevalence of symptoms of physical dependence (82.4%), as well as the inability to stop drinking (80.0%) despite attempts to quit or set rules (68.6%). This high incidence of morning drinking (60%) and other symptoms of physical dependence (e.g., shakes) is consistent with the large amounts of alcohol consumed per occasion as shown in Table 2.

There have been no exhaustive studies on the prevalence of alcoholism or "heavy" binge alcohol use in various tribal groups (Lex, 1987). In general, studies which do exist point to marked heterogeneity with clear differences between the sexes, as well as between tribes with regard to drinking patterns and the degree of alcohol-related mortality (Christian, Dufour, & Bertolucci, 1989; Heath, 1985; Weibel-Orlando, 1985). As noted in Table 1, the majority of the present sample were Sioux. Although tribal differences were not analyzed in the present study, there is research which suggests that the Sioux may be more prone to problems with alcohol than many other tribal groups. Most recently, Barker and Kramer (1996) examined the patterns of alcohol consumption in urban American Indians living in Los Angeles. The data was obtained from a convenience sample constructed around the administration of a community health survey (282 subjects). The results indicated that Sioux Natives living in the Los Angeles area consumed the highest amounts of alcohol compared to any other American Indian group. The tendency towards heavy alcohol consumption among the Sioux is also noticeable in data on regional alcohol-related mortality, alcohol abuse, and alcohol-induced cirrhosis collected by the Indian Health Service (IHS) during the period 1980 to 1987. The IHS estimates that there are large regional differences in the rates of alcohol-related disorder among its twelve

administrative districts. In the district of Aberdeen (predominantly Sioux), the death rate from alcohol-related causes is ten times higher than areas of Oklahoma where tribes such as the Cherokee and Seminole predominate (Hisnanick, 1992). In a well-documented study Stratton, Zeiner, and Paredes (1978) examined alcoholism and alcohol-related mortality among different tribal groups in Oklahoma. The Cherokee displayed a very low rate of alcohol-related deaths (6/100,000 population) and arrests compared to the Cheyenne-Arapaho (296/100,000). Their analysis of the history and current social organization of the two tribes supported the view that traditional cultural values, tribal institutions, social organization, and the presence or absence of strong community sanctions are important to an understanding of current drinking practices. Studies of cultural values and social organization among widely dispersed urban American Indian populations are non-existent. Given the large scale movement of American Indian populations into cities, the factors which promote as well as protect from the development of alcoholism in this new urban environment is worthy of analysis.

It is important to note that not all American Indians drink and not all who drink do so excessively. There has been a tendency to overgeneralize based on the drinking patterns observed in some American Indian groups (May & Smith, 1988). Negative stereotyping of drinking among American Indians has been perpetuated in the research literature and in the popular press. In the present study a large proportion of the sample were abstinent or irregular drinkers consuming moderate amounts per drinking occasion. A distorted and negative view of American Indian drinking is also evident among American Indians themselves. For example, the majority of Navajo respondents in a survey conducted by May and Smith (1988) stated that they believe that American Indians have a physiological or biological weakness for alcohol compared to other races. Similarly, Sage and Burns (1993) found the idea that heredity plays a significant role in American Indian alcohol use to be very prevalent. While there has been some research on alcohol metabolism among different ethnic groups (e.g., Segal & Duffy, 1992), it is important to note that research to date has not in fact found any firm evidence that American Indians are different in terms of their physiological responses to alcohol or their rate of alcohol metabolism. This subject will be the topic of other papers emanating from the research program at the University of Colorado (Gill et al., in press; Gill et al., 1997).

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Author Note

Acknowledgements: This work was supported by NIAAA grants AA03527, AA00093, AA09301, and 5M01 RR00051.