AMERICAN INDIAN/ALASKA NATIVE ALCOHOL-RELATED INCARCERATION AND TREATMENT

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Abstract: American Indian/Alaska Natives have high rates of alcohol-related arrests and are overrepresented in justice systems. To understand the relationship between alcohol dependence, treatment, and alcohol-related incarceration, this study queried American Indian/Alaska Natives currently in remission from alcohol dependence. Participants reported receiving 0 to 43 treatment experiences. Moreover, participants had a significantly greater number of alcohol-related incarcerations than all other treatments combined. These findings underline the importance of making alcohol treatment available within criminal justice settings.

Introduction

Rates of American Indian/Alaska Native alcohol problems

Across the United States, there is great intertribal variation in drinking styles (Herman-Stahl & Chong, 2002; May, 1996; Westermeyer, Walker, & Benton, 1981). Recent efforts to compare cross-tribal and cross-national variations in drinking patterns have found greater rates of lifetime abstinence among two Indian communities (one Southwestern, one Northern Plains) than in the general U.S. population (Spicer et al., 2003). Across these two Indian samples, both gender and tribal differences emerged, whereby Southwestern women showed the greatest levels of abstinence from alcohol (Beals et al., 2003; Spicer et al., 2003) and the

lowest rates of alcohol dependence (Beals et al., 2003; Beals, Novins, et al., 2005; Mitchell, Beals, Novins, Spicer, & the AI-SUPERPFP Team, 2003; Spicer et al., 2003; Whitesell et al., 2006). However, when compared with a U.S. sample, Indian women did not consistently evidence lower rates. Rather, Northern Plains women displayed the greatest levels of lifetime and past-year alcohol dependence, surpassing both U.S. and Southwestern women (Spicer et al., 2003). Similar to the Northern Plains women, on the cross-cultural comparison, men of both Indian samples displayed greater levels of lifetime and past-year alcohol dependence than U.S. men (Spicer et al., 2003). In addition to the Southwestern and Northern Plains samples, gender disparities have emerged across many different tribes, whereby men have evidenced greater levels of dependence and related problems than women (Herman-Stahl & Chong, 2002; May & Gossage, 2001).

When looking across tribes nationally, patterns of adult drinking appear to include high levels of abstinence (Herman-Stahl & Chong, 2002) which may or may not be accompanied by high levels of heavy drinking and negative consequences (May & Moran, 1995; *Oversight hearing*, 2005; Robin, Long, Rasmussen, Albaugh, & Goldman, 1998). For many tribal communities, drinking may start at a young age (Grobsmith, 1989; May & Moran, 1995), and involve more heavy episodic drinking than is generally found across U.S. national samples (Beals et al., 2003). Specifically, in many Indian communities, drinking may involve consuming larger quantities (Beals et al., 2003; May & Moran, 1995), but with less frequency than U.S. samples (Beals et al., 2003). However, regardless of Indian consumption patterns, societal issues including myths about the "drunken Indian" (Westermeyer, 1974), justice system biases (Stratton, 1973), and difficult socio-economic factors, such as high levels of unemployment, poverty, and social stressors (Beauvais, 1998; Herman-Stahl & Chong, 2002), may hinder American Indian/Alaska Natives' access to and utility of alcohol treatment programs.

History of Societal Response to American Indian/Alaska Native Alcohol Problems and Crime

Scholars recognized the relationship of alcohol use and abuse to crime among American Indians many years ago. Stewart (1964) and Reasons (1972) reviewed the rates and causes of Indian crime on several reservations and in the Uniform Crime Reports and found that 70% to 95% of Indian arrests were for alcohol-specific (e.g., public drunkenness, DWI) or alcohol-related offenses (e.g., crimes such as assault or theft

committed under the influence of alcohol). Levy, Kunitz (1969; 1971) and colleagues (Levy, Kunitz, & Everett, 1969) reported that the majority of homicide, assault, public intoxication, DWI, and other crimes for which the Navajo and other Southwestern Indians were incarcerated at a high rate were alcohol related. Some authors proposed alcohol policy reform as a way of reducing incarceration of Indians by 50% or more (Hagan, 1976; May, 1975; 1976; 1977). However, the facts remain the same even today; American Indians suffer very high rates of incarceration that are precipitated by or associated with alcohol use and abuse.

One of the outstanding weaknesses of the literature of the past is that the impact of arrests and incarceration on individual Indians who drank was seldom presented (May, 1982). Most early literature in this area presented aggregate level statistics on the gross number of Indian arrests and incarcerations (e.g., Stewart, 1964; Reasons, 1972). Yet, the actual number of individuals accounting for the arrests and the impact of recidivism and repeated incarcerations was seldom known or addressed conceptually (May, 1982). However, one study that did present such data was carried out by Ferguson (1968) in Gallup, New Mexico. She reported that 115 Navajo males with problems of alcohol abuse accounted for 1,196 arrests in an 18-month period (10.4 per person) in this one town alone. In tribal communities, alcohol abuse has been found to be concentrated, whereby large segments of the population are abstinent or are free of alcohol abuse, yet high rates of problems such as incarceration are generated by a minority of families and individuals (May & Gossage, 2001).

Historically, American Indian/Alaska Natives struggling with heavy drinking have had frequent contact with federal and tribal justice systems for many decades (Walker, 1981; Westermeyer, 1976). Recent research with a reservation-based sample of American Indians with substance abuse problems indicated that only 45% sought formal or informal treatment (Herman-Stahl & Chong, 2002). Thus, with the dearth of treatment attendance and the high rate of incarceration, it has been posited that many states have attempted to address Indian drinking problems through incarceration rather than alcohol treatment (French, 2004). Yet, regardless of the origin of the discrepancy, compared with other ethnic groups across the United States, American Indian/Alaska Natives have been overrepresented in the justice system for alcohol-related arrests throughout the past three decades (Graves, 1971; James, Hutchinson, Moore, & Smith, 1993; Kunitz et al., 2002; Perry, 2004; Walker, 1981).

What is the Relationship between American Indian/Alaska Native Alcohol Use, Alcohol-Related Incarceration, and Receipt of Alcohol Treatment?

While it is known that American Indian/Alaska Natives who struggle with severe alcohol dependence tend to be arrested (Walker, 1981; Westermeyer, 1976), only preliminary efforts have sought to understand American Indian/Alaska Native experiences of alcohol dependence, effective treatments, and justice interactions (Grobsmith & Dam, 1990). Therefore, through examining the correlates of alcohol-related incarceration and treatment, this study sought to develop a more nuanced understanding of this relationship. The sample consisted of American Indian/Alaska Natives who were in full, sustained remission from alcohol dependence, reporting upon their experiences with incarceration and alcohol treatment. Even though the recovered nature of this highly select sample may provide an underestimate of the incidence of incarcerations for this community, it is important to note that the broader sample may not go on to resolve alcohol dependence. Thus, a sample in remission is ideal, insofar as *only* they can report on the full spectrum of incarceration and treatment that they experienced during the full span of their drinking careers. This not only provides a unique look at the extent of possible experiences for a sample, but the status of this sample in full, sustained remission puts forth the positive message that American Indian/Alaska Natives can (and clearly do) recover from alcohol dependence. Including current drinkers would not only have confounded the statistical comparisons (as they may have continued to amass treatment and incarceration experiences), but it would not have underscored the positive message of recovery that we hope emerges from this paper.

Previous research has indicated that American Indian/Alaska Natives with alcohol dependence have more interactions with the penal system than with treatment settings (French, 2004; Westermeyer, 1976). Thus, it was hypothesized that during their drinking careers, this sample would have experienced more interactions with the penal system (in the form of number of alcohol-related incarcerations) than with treatment settings (in terms of number of times received alcohol-related treatment). In addition, it was hypothesized that participants who reported drinking alone would report a higher number of incarcerations than those who drank mostly or always with others, as drinking alone has been considered a more "deviant" drinking style (Kunitz & Levy, 1994).

Materials and Methods

Definitions of what may constitute alcohol treatment are extensive and sometimes controversial. For example, Alcoholics Anonymous (AA) attendance has fallen both within and outside of the vestiges of treatment (Sobell, Ellingstad, & Sobell, 2000; AA, 2001, respectively). Thus, in an effort to be as comprehensive as possible in including settings where participants may have received treatment for their alcohol problems, hospital detoxification, non-hospital detoxification, residential alcohol treatment, residential psychiatric treatment, and outpatient alcohol treatment meetings were incorporated into the definition of possible treatment settings. However, due to the current controversy around Alcoholics Anonymous/12-step as a treatment, in accordance with the guidelines of the program (AA, 2001), it was not included in these analyses.

This study was a component of a larger study (Venner & Feldstein, 2006) investigating American Indian/Alaska Natives' progression into and out of alcohol dependence. Specifically, in the larger study, Venner and Feldstein (2006) sought to evaluate which elements of alcohol dependence may be common across cultures, and which may be differentially shaped by culture. This was achieved through evaluating a sample of American Indian's development of and remission from alcohol dependence, and comparing the results with other American Indian and mainstream U.S. samples.

For this study, participant selection was based upon two criteria: being in full, sustained remission from alcohol dependence ("resolved") as determined by participant responses on the Structured Clinical Interview for DSM-IV-TR Axis I Disorders (SCID; First, Spitzer, Gibbon, & Williams, 2002) and the ability to report effectively on the receipt of relevant treatment and interactions with the justice system that occurred during their drinking careers.

Participants were recruited through multiple routes, including word-of-mouth, advertisements in the local paper, and fliers requesting "American Indian/Alaska Natives who have overcome drinking problems." Potential participants telephoned the first and second authors to indicate interest. Prior to participation, the first and second authors conducted a half-hour telephone screen, during which confidentiality and relevant limits were discussed. In addition, the SCID (First et al., 2002) was administered to determine past and current alcohol abuse and dependence, as well as past and current substance abuse and dependence. Potential participants who did not meet the inclusion

criteria of alcohol dependence in full, sustained remission and/or who met the exclusion criteria of current alcohol or substance dependence or abuse were determined to be ineligible and were thanked for their time.

Eligible participants were invited to the University of New Mexico's Center on Alcoholism, Substance Abuse, and Addictions (UNM CASAA) to complete the research battery. Participants were compensated $50 (approximately $10 per hour) for their time. If participants traveled 50 to 100 miles roundtrip to participate, they were provided an additional $20 to help with travel expenses; if they traveled over 100 miles, they were given $40.

This study was conducted in compliance with the University of New Mexico's Institutional Review Board, the guidelines of National Institute of Alcohol Abuse and Alcoholism (NIAAA), and under the protection of a confidentiality certificate from the U.S. Department of Health and Human Services (DHHS). These data were collected between March 2003 and February 2005.

Measures

As part of a larger assessment battery, participants completed six measures. Some of the instruments required participants to report information in the present, whereas the retrospective instruments required the participants to reflect back upon their heaviest period of drinking (defined as three months to one year, depending on the measure). Participants were asked to define their heaviest period of drinking as "the time during which you drank the most (quantity), most often (frequency), or had the most problems (negative consequences)."

Participants began by completing the UNM CASAA demographic interview. The first or second author conducted this measure verbally. This measure gathers current information regarding tribal identification, age, current living situation, highest level of education achieved, employment, income, and original language learned.

Next, participants completed the Alcohol-Related Behaviors Survey (ARBS). Venner and Miller (2001) developed this measure and used it with a Navajo sample. This measure has also been used with a multi-tribal sample to determine the sample's progression into alcohol dependence (Venner & Feldstein, 2006). The ARBS is comprised of 55 cards that list a series of drinking experiences, including alcohol abuse and dependence criteria from DSM III-R (American Psychiatric Association, 1987) and events noted within Jellinek's (1952) phases.

Examples include "Loss of tolerance,""Moving away to escape problems," and "Regular morning drinking." Participants were administered the ARBS sequentially using the card-sorting method of Venner & Miller (2001) and Yeager, Piazza, and Yates (1992). Specifically, the first or second author presented the cards one at a time and asked whether the participants had experienced the event during their drinking careers. If endorsed, the participants were asked at what age they *first* experienced the event. The age was then written upon a post-it and the card was then placed underneath. Through this process, each endorsed alcohol-related behavior was placed under a specified age. At the end of the process, participants were invited to move around the cards to reflect the ascending order of onset of their alcohol-related behaviors.

Participants were also administered the Drinker Inventory of Consequences (DrInC-2R; casaa.unm.edu/inst.htm), a 50-item Likert-scaled measure of the symptoms and frequency of alcohol-related consequences. This measure yields information regarding the consequences of alcohol abuse overall and in several areas during the participants' heaviest three months of drinking. Subscales yielded include interpersonal, physical, social, impulsive, intrapersonal, and control.

In addition, participants completed the Alcohol Dependence Scale (ADS; Skinner & Horn, 1984), a 25-item measure of alcohol dependence, including withdrawal symptoms, impaired control, increased tolerance, and blackouts during their designated heaviest year of drinking. This measure is frequently used in clinical and research settings to yield measures of drinking behavior that correspond with DSM diagnoses of alcohol dependence.

Next, participants completed the UNM CASAA self-report measure of previous treatment experiences (Lifetime Treatment History Interview; casaa.unm.edu/inst.htm). This questionnaire was administered verbally and prefaced by, "I'm going to ask you about several different types of experiences that you may have had while you were drinking. As we go through, I would like you to respond by telling me how many times you have experienced each of these due to your use of alcohol. Then we will note the first year during which you experienced each. Let's begin." Example items from this questionnaire include, "How many times were you hospitalized medically because of your drinking or due to something alcohol-related?" "How many times were you incarcerated because of your drinking or due to something alcohol-related?" This 10-item measure yields total number and initial date of participants' experiences with specific forms of alcohol treatment. The treatments listed within this

questionnaire included medical hospitalization, hospital detoxification, non-hospital detoxification, residential alcohol treatment, residential psychiatric treatment, alcohol-related incarcerations, outpatient alcohol treatment, and Alcoholics Anonymous and other 12-step meetings.

Participants also completed a retrospective measure of their drinking patterns over their selected heaviest 60-day drinking period (Form 90 QFV; casaa.unm.edu/inst.htm). The four items on this measure gather information about frequency of drinking (number of days during which they had any alcoholic beverage), quantity (average number of drinks per drinking day), frequency of binge drinking (number of days during which they had five or more drinks), and social drinking (tendency to drink alone, sometimes with others, or generally with others).

Results

Participants

Forty-five (*n* = 26 male, *n* =19 female) adult American Indian/Alaska Native participants, ranging from 31-64 years of age (*M* = 48.2, *SD* = 7.5), had met lifetime DSM-IV criteria for alcohol dependence during their reported heaviest year of drinking and had not met criteria for alcohol abuse or dependence for at least one year (Table 1). Participants were from various continental United States tribes including Southwestern pueblo (40.3%), Southwestern Athapaskan (40.3%), Midwestern/plains (15.2%), and Northwestern (4.2%). At the time of assessment, participants reported an average of two years of post-high school education, earning approximately $28,158 (*SD* = $23,073) annually. At the time of evaluation, 35.6% were married, 42.2% were divorced or separated, 17.8% had never been married, and 4.4% were widowed. At the time of evaluation, participants had attended an average of 737.6 AA or other 12-step meetings (*SD* = 1392.6, *Mdn* = 156.0)

All participants reported at least one year of abstention from alcohol. Across the sample, participants reported severe alcohol dependence during their heaviest period of drinking as determined by the Alcohol-Related Behaviors Scale (ARBS) and Alcohol Dependence Scale (ADS). In addition, this sample's span of alcohol dependence, age at the start of their sobriety, and length of their sobriety (*M* = 10.5 years, *SD* = 7.8 years) are also provided in Table 1.

Table 1
Current Demographics and Drinking History of Sample

	Mean	Standard Deviation	Median	Minimum	Maximum
Current age	48.23	7.5	49.0	31.0	64.0
Current level of education (in years)	13.8	2.3	14.0	9.0	19.0
Current annual income	$28,152.20	$23,073.80	$25,500.00	$700.00	$120,000.00
Past ARBS endorsed (maximum possible = 55)	41.0	8.9	42.0	18.0	55.0
Past ADS total score	27.1	8.9	27.0	9.0	43.0
DrInC total score	38.3	7.4	39.5	13.0	47.0
Years drinking until sobriety	13.2	8.6	13.9	1.0	31.3
Age at start of sobriety	37.8	8.4	38.8	19.0	54.5
Length of sobriety (in years)	10.5	7.8	9.0	1.0	28.0

Note: Drinking history reflects drinking during heaviest three months to one year during drinking history, defined as the time during which they were drinking the most or the most frequently, and as reported by participant.

Alcohol Dependence

The ARBS is an innovative measure of alcohol dependence administered in a card-sort format. Due to its relatively recent history as a research instrument, bivariate correlations were conducted to evaluate the convergence between the ARBS and other measures of alcohol dependence. Specifically, significant correlations emerged between the total number of reported alcohol-related behaviors from the ARBS with the Drinker Inventory of Consequences (DrInC) total score ($r = .63$, $p < .01$), and the Alcohol Dependence Scale (ADS) total score ($r = .74$, $p < .01$), supporting the ability of the ARBS to measure alcohol dependence (Table 2). Furthermore, the lack of perfect correlations between all of the measures indicates the probability of unique contributions by each measure. Thus, to provide the most complete picture of the participants' symptoms of alcohol dependence and related relationships to treatment and incarceration variables, each alcohol dependence measure was retained.

Table 2
Bivariate Correlations between Alcohol Dependence Measures

	ARBS	ADS total	DrInC total	Days ≥ 5 drinks	DDD[a]
ARBS	---	0.74[a]	0.63[a]	0.25	0.07
ADS total		---	0.49[a]	0.15	0.01
DrInC total			---	0.05	0.05
Days ≥ 5 drinks				---	0.39[a]
DDD					---

[a] Correlation is significant at the 0.01 level (2-tailed)
Note: ARBS = Alcohol Related Behaviors Survey; ADS = Alcohol Dependence Scale; DrInC = Drinker Inventory of Consequences; Days ≥ 5 Drinks = Number of days during which the participant drank more than 5 drinks; DDD = Drinks per drinking day

Treatment Experiences

As those with alcohol dependence are likely to seek and/or receive treatment from a broad range of settings, the following were included in the analyses: medical hospitalization, hospital detoxification, non-hospital detoxification, residential alcohol treatment, residential psychiatric treatment, alcohol-related incarcerations, and outpatient alcohol treatment. For this sample, medical hospitalization emerged as the most frequently utilized, followed by residential alcohol treatment, outpatient alcohol treatment, non-hospital detoxification, hospital detoxification, and residential psychiatric treatment (Table 3). Participants in this sample ranged from never having received formal treatment to having received treatment 43 times. Most participants (95.5%, $n = 43$) had received at least one form of treatment during their drinking careers. Moreover, those who received at least one form of treatment received an average of seven types of treatment ($M = 6.9$, $SD = 8.8$, $Mdn = 4.0$).

Table 3
Number of Treatment Experiences and Alcohol-related Incarcerations

	Mean	Standard Deviation	Median	Minimum	Maximum
Medical hospitalization	2.29	2.72	2.00	0.00	15.00
Hospital detoxification	0.64	2.36	0.00	0.00	15.00
Non-hospital detoxification	0.91	3.65	0.00	0.00	23.00
Residential alcohol treatment	1.53	2.77	1.00	0.00	15.00
Residential psychiatric treatment	0.44	1.57	0.00	0.00	10.00
Outpatient alcohol treatment	0.93	1.23	1.00	0.00	5.00
Number of alcohol-related incarcerations	11.76	19.09	4.00	0.00	100.00

Treatment Experiences in Comparison with Incarceration

Ninety-three percent ($n = 41$) of this sample had been incarcerated at least one time for alcohol-related events ($M = 11.8$, $SD = 19.1$). For those participants, their first incarceration occurred between the ages of 8 and 40 ($M = 23.0$ years, $SD = 7.7$, $Mdn = 21.0$). Due to the evident mean difference for times incarcerated compared with times received treatment, independent sample *t*-tests were conducted to examine whether this sample experienced more interactions with the penal system (in the form of number of alcohol-related incarcerations) than with treatment settings (in terms of number of times received alcohol-related treatment) during their drinking careers. Independent sample *t*-tests revealed that this sample experienced more times in incarceration than times in medical hospitalization, hospital detoxification, non-hospital detoxification, residential alcohol treatment, residential psychiatric treatment, and outpatient alcohol treatment (Table 4). Moreover, *t*-tests indicated that this sample endorsed significantly more times incarcerated than in times in all other treatments combined.

Table 4
Paired *t*-tests of Treatment Experiences in Comparison with Incarceration

Times incarcerated compared with:	*t*	degrees of freedom (*df*)	*p*
Medical hospitalization	3.24	44	0.002[b]
Hospital detoxification	3.93	44	0.000[b]
Non-hospital detoxification	3.76	44	0.001[b]
Residential alcohol treatment	3.61	44	0.001[b]
Residential psychiatric treatment	3.99	44	0.000[b]
Outpatient alcohol treatment	3.81	44	0.000[b]
All treatments combined	2.48	44	0.017[a]

[a] Correlation is significant at the 0.05 level (2-tailed)
[b] Correlation is significant at the 0.01 level (2-tailed)

Treatment and Incarceration with Demographic and Drinking Variables

To examine the interaction between male gender and alcohol-related incarceration and treatment variables, an analysis of variance (ANOVA) was conducted. Gender was only significantly correlated with number of medical hospitalizations, $F(1, 43) = 11.6$, $p = .001$. Yet, it was on the cusp of significance with incarceration, $F(1, 43) = 4.0$, $p = .052$. Follow-up with point biserial correlations supported these findings and indicated that women evidenced a significantly higher number of

medical hospitalizations ($r = .46, p = .001$), while men reported a slightly higher number of alcohol-related incarcerations ($r = -.29$ $p = .052$). Gender was not significantly related to level of alcohol dependence, as measured by the ARBS, number of drinking days, drinks per drinking day, number of days of binge drinking, ADS total score, or DrInC total. In addition, gender was not significantly related to any of the other types of alcohol-related treatment, including hospital detoxification, non-hospital detoxification, residential alcohol treatment, residential psychiatric treatment, and outpatient alcohol treatment. In terms of drinking variables, point biserial correlations revealed that severity of alcohol dependence as measured by total number of alcohol-related behaviors from the ARBS ($r = 0.33, p = .035$) and ADS total score ($r = 0.26$, $p = .004$) was significantly correlated with number of alcohol-related incarcerations.

Finally, point biserial correlations were also employed to examine the relationship between social drinking (alone, sometimes alone/sometimes with others, and always with others) and number of alcohol-related incarcerations. While a slight mean difference appeared between number of alcohol-related incarcerations for those who drank alone ($n = 8, M = 14.1, SD = 14.2, Mdn = 5.0$), those who drank sometimes alone and sometimes with others ($n = 17.0, M = 15.7, SD = 23.5, Mdn = 6.0$), and always with others ($n = 20, M = 8.5, SD = 17.2, Mdn = 2.0$), the differences were nonsignficant ($r = -.14, p = .348$).

Discussion

This study set out to address the relationship between American Indian/Alaska Native alcohol use, alcohol-related incarceration, and receipt of alcohol treatment in a sample of recovered drinkers. Considering the relatively small sample size and their highly select status of full, sustained remission, the prevalence of alcohol-related justice encounters and relative infrequency of alcohol-related treatment was striking.

As might be expected, severity of alcohol dependence was significantly correlated with the number of alcohol-related incarcerations. Moreover, this sample experienced more alcohol-related incarcerations than alcohol treatment. In contrast with the findings of Herman-Stahl and Chong (2002), and with the exception of women reporting greater medical hospitalizations, gender was not significantly related to the receipt of treatment. Moreover, neither gender nor social drinking style was significantly correlated with number of alcohol-related incarcerations.

This sample experienced a very high rate of alcohol-related incarceration. However, the rate of alcohol-related arrests for non-Indians (Karberg & James, 2005) and currently alcohol dependent Indians (Minton, 2005) may be significantly greater. Specifically, the rate of arrests found within this sample may be related to an unnamed variable (e.g., fewer years drinking, less deviant drinking, the more social nature of drinking) that may be correlated with this sample's eventual remission from alcohol dependence (Levy & Kunitz, 1974; Kunitz & Levy, 1994). Or perhaps, as recent studies in Alaska have indicated (Seale, Shellenberger, & Spence, 2006; Wood & Gruenewald, 2006) perhaps police and justice system interactions provided a catalyst for some participants in this study to reduce their drinking.

Due to the low number of participants who had never experienced an alcohol-related arrest (n = 3; 6.8%) within this sample, it was unclear whether the level of alcohol dependence significantly affected the rates of incarceration. Post hoc analyses revealed slightly lower levels of alcohol dependence in the non-incarcerated sample, as reported in the ARBS (M = 36.00, M = 41.10), DrInC (M = 36.50, M = 38.36), and ADS (M = 26.50, M = 27.88, respectively).

Interestingly, the most commonly reported form of treatment was medical hospitalization. This is likely to be a "forced" treatment, not requiring the belief that alcohol use is a problem. In addition, there are several possible reasons behind the significant relationship between women and times in medical hospitalization. First, despite efforts to clarify that the number of hospitalizations should be limited to alcohol-related entries, perhaps this value was confounded by hospitalizations for childbirth. Second, this value may be a vestige of women in this sample experiencing greater alcohol-related health complications (Nolen-Hoeksema, 2004). Third, women and men may have experienced equivalent health problems, yet the women of this sample may have felt more comfortable seeking or receiving alcohol-related medical services (Marsh, Cao, and D'Aunno, 2004).

There is currently a debate surrounding whether or not AA and other types of 12-step "count" as treatment. Although AA states a clear position that they are not treatment (AA, 2001), other studies investigating natural recovery from alcohol dependence exclude potential participants who have attended two or more AA meetings (Sobell et al., 2000). While other studies have found mixed results in terms of American Indians' response to AA (Herman-Stahl and Chong, 2002; Seale et al., 2006), within this sample, AA attendance was clearly something that participants in this sample sought or to which they were

directed. The high number of meetings attended suggests that despite demographic factors, other treatment variables, or means of entry, most participants within the sample continued to attend meetings.

The comprehensive forms of treatment in this study were included in order to achieve the best picture of possible places where participants who have resolved alcohol dependence may have received treatment during their drinking careers. With the broad spectrum of treatment possibilities available, another finding was the significant relationship between the receipt of one form of treatment with other forms of treatment. When these data are integrated, it appears that those participants who made efforts to overcome their alcohol problems and/or who received one form of treatment were also likely to receive other forms of treatment. First, perhaps it is through the process of trial and error "treatment shopping" that allowed some in this sample to find the form of treatment that they needed to overcome their alcohol addictions. Second, it is possible that participants' made multiple attempts to seek treatment, depending upon their stage of change within the process of change continuum (Prochaska, DiClemente, & Norcross, 1992). Third, it is possible that these participants were bounced around the treatment system. As treatment providers in certain settings may be few and/or insufficiently trained (Beals, Novins, Spicer, Orton, Mitchell, Baron, Manson, & the AI-SUPERPFP Team, 2004), it is possible that providers were unable to help participants overcome their dependence, and hence, referred the participants to other treatment sources. Fourth, other studies with American Indians with substance-related problems have found varying rates regarding the seeking and receipt of treatment (Beals, Manson, et al., 2005; Beals et al., 2004; Herman-Stahl & Chong, 2002). It is possible that the discrepancy between those who seek or do not seek treatment may be resolved by the cultural fit of available treatments, whereby people are more likely to seek traditional treatments that integrate their values and customs (Seale et al., 2006). For this sample, it is possible that the formal treatments included and/or available to these participants may not have been a good cultural fit. Hence, this sample may have moved from treatment form to form without avail (Grobsmith & Dam, 1990; Stewart, May, & Muneta, 1980). Fifth, it is probable that the participants within this sample were seeking forms of treatment that were not listed within the included questionnaires. Future studies examining treatment would benefit from the inclusion and evaluation of local treatments (Gossage et al., 2003; Gossage, Alexius, Monaghan-Geernaert, & May, 2004) and culturally-based interventions (Mikta, 2002; Seale et al., 2006), such as medicine men or women, curanderos/curanderas, religious ceremonies,

sweats, sings, and the integration of local values into formal treatment. Finally, due to the cross-sectional nature of the study, it is impossible to parse out the impact of any single type of treatment and/or incarceration upon the resolution of alcohol dependence.

Limitations

Several limitations influence the generalizability of these findings. First, this sample was a highly select group of participants who had moved into full, sustained remission from alcohol dependence. Hence, this sample's experience with criminal justice and treatment systems may be quite different from that of other American Indian/Alaska Natives struggling with alcohol dependence. Second, the small sample size resulted in low power. This may have influenced analyses, such as failing to support the relationship between male gender and number of alcohol-related incarcerations, as well as precluding comparisons between the ever and never incarcerated. Third, the sample included was from multiple tribes. The small sample size hampered possible between-tribe comparisons. Hence, caution should be exercised before generalizing these findings to any individual of any particular tribe. Fourth, the majority of the data were collected retrospectively. Thus, it is possible that difficulties in recall or errors in memory could have affected the included data. Fifth, because all of the measures were self-report, it is possible that the time designated as "heaviest drinking period" would not have corresponded with physiological or diagnostic determinations. Moreover, alcohol-related incarcerations were determined through responses to the question "How many times were you incarcerated for anything alcohol-related?" Since the administration of these measures, another questionnaire has been incorporated into the assessment battery that clearly delineates what precisely constitutes an arrest and incarceration, as well as requires designation of the nature of each arrest. In addition, at the time of this data collection, we did not parse out protective custody. Thus, if the participant deemed protective custody as incarceration, that is how it was noted within the data collection. Sixth, because we did not assess for any other forms of past or current psychopathology, any issues stemming from comorbid psychiatric disorders cannot be parsed out. This is relevant because comorbid conditions may influence the course of the progression, consequences, the seeking, and receipt of different forms of treatment, and the resolution of alcohol problems (Robin et al., 1998; Westermeyer, Eames, & Nugent, 1998; Westermeyer & Neider, 1994). Moreover, knowledge

of comorbid conditions appears to be important in understanding and developing appropriate treatment plans with American Indian/Alaska Natives (Westermeyer, 2001).

Conclusion

This study uniquely contributes to the literature by providing preliminary information to elucidate the poorly understood, but frequently recognized relationship between American Indian/Alaska Native alcohol dependence and incarceration. Specifically, this study provides a picture of how a highly select sample of American Indian/Alaska Natives who resolved alcohol dependence interacted with the justice system and other treatment settings during their drinking careers. This sample experienced a range of types and amount of treatment, supporting that while several participants sought and/or received several types of treatments, many were able to resolve their alcohol problems without the assistance of formal treatment settings (Bezdek, Croy, Spicer, & the AI-SUPERPFP Team, 2004; Leung, Kinzie, Boehnlein, & Shore, 1993). Why participants in this sample did not access treatment settings more often remains unknown. Future studies will aim to explore Indians' access to and interest in seeking alcohol treatment from non-justice system treatment settings, as well as the incidence of natural recovery. In addition, due to the findings that emerged from this study regarding American Indian/Alaska Natives' interface with the justice system, future studies will aim to investigate the justice system's effectiveness in providing alcohol treatment for American Indian/Alaska Natives.

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