

## RELIGIOUS AND SPIRITUAL PRACTICES AMONG HOMELESS URBAN AMERICAN INDIANS AND ALASKA NATIVES WITH SEVERE ALCOHOL PROBLEMS

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*Abstract: Engagement in religious and spiritual practices may be protective for homeless individuals with alcohol-related problems. However, little is known in this regard for urban-dwelling American Indians and Alaska Natives (AI/ANs) who have disproportionately high rates of homelessness and co-occurring alcohol use problems. Using secondary data from a nonrandomized controlled study testing a Housing First intervention, AI/AN participants (n = 52) and non-AI/AN participants (n = 82) were compared on demographic variables, alcohol use problems, religious affiliations, and religious/spiritual practices (importance, frequency, and type). AI/ANs who engaged in Native-specific independent spiritual practices had significantly lower alcohol use frequency in comparison to AI/ANs who did not.*

### INTRODUCTION

A long legacy of European American colonization has had a devastating impact on American Indian and Alaska Native (AI/AN) communities, resulting in significant poverty, intergenerational trauma, and pronounced health disparities (Davis, Roscigno, & Wilson, 2016; Gone & Calf Looking, 2011). Health disparities include disproportionately high rates of psychiatric problems, especially posttraumatic stress disorder, anxiety disorders, suicidal behavior, and substance use disorders (Brave Heart et al., 2016; Gone & Trimble, 2012). In terms of alcohol use disorders, research has consistently shown higher prevalence for AI/ANs (with variance among tribal or reservation groups) in comparison to the general U.S. population (e.g., Castor et al., 2006; Kunitz & Levy, 2000; Spicer et al., 2003). In a recent heterogeneous national sample of AI/AN adults, the lifetime prevalence of alcohol dependence was 26.3% for men and 14.5% for women, compared to 19.0% for men and 8.9% for women in the general

adult U.S. population (Brave Heart et al., 2016). Further, alcohol-related deaths among AI/ANs occur at 7 to 8 times the rate of such deaths in the general population (Gone & Trimble, 2012; Young & Joe, 2009). These problems are exacerbated by limited treatment access, availability, and utilization, combined with a virtual absence of evidence-based interventions designed by and evaluated for AI/ANs in particular (Gone & Calf Looking, 2011).

### **Homelessness, Alcohol Use, and Alcohol-Related Problems Among AI/ANs**

Homelessness is also disproportionately common among AI/ANs. Although AI/ANs comprise only 1.2% of the U.S. population (U.S. Census Bureau, 2015), they make up an estimated 2.7% of the overall U.S. homeless population and 3.9% of the unsheltered U.S. homeless population (U.S. Department of Housing and Urban Development, 2015). (These statistics do not include those who report identifying with more than one racial category.) AI/ANs also have high rates of overcrowding and doubling up in housing, which are risk factors for homelessness (Webster, 2015; Whitbeck, Crawford, & Hartshorn, 2011). In fact, the percentage of AI/AN households with overcrowding and inadequate facilities (e.g., plumbing, kitchen amenities) increased by 10% from 1999 to 2009 (U.S. Government Accountability Office, 2010).

As is the case in the general homeless population (Koegel & Burnam, 1988; Thompson, Wall, Greenstein, Grant, & Hasin, 2013), homelessness among AI/ANs is frequently associated with financial, family, physical health, mental health, and substance use problems (Whitbeck et al., 2011). In particular, studies have indicated that homeless AI/ANs have much higher rates of alcohol consumption and alcohol-related problems than the general population (Kasprow & Rosenheck, 1998; Kramer & Barker, 1996; Lobo & Vaughan, 2003). Although research is mixed concerning whether homeless AI/ANs consume alcohol at greater quantities or frequencies than other homeless individuals, their experience of alcohol problems is generally more severe compared to homeless non-AI/ANs (Gamst et al., 2006; Kahn et al., 1992; Kasprow & Rosenheck, 1998; Travis, 1991; Westerfelt & Yellow Bird, 1999).

### **The Urban AI/AN Experience of Alcohol-Related Problems and Homelessness**

AI/AN homelessness is not restricted to reservations. Approximately 70% of AI/ANs live in urban areas due to various factors, including forced relocation (e.g., the Indian Relocation Act

of 1956) and increased opportunities for employment (Castor et al., 2006; Davis et al., 2016; Jackson, 2002; Wendt & Gone, 2012). Although urbanization has benefited some AI/ANs, many have struggled to maintain adequate long-term employment and affordable housing. Urbanization has thus resulted in poverty that is on par with that on reservations and is considerably higher than in the general urban population (Davis et al., 2016; Dickerson & Johnson, 2010).

Compared to their counterparts on reservations, urban AI/ANs have less familial and other social support, fewer opportunities to engage in traditional cultural and spiritual practices, and less access to culturally appropriate health care services (Castor et al., 2006; Evans-Campbell, Lindhorst, Huang, & Walters, 2006; Jackson, 2002; Lobo, 2001). Perhaps as a result of these factors, urban AI/ANs experience a greater prevalence of homelessness than do non-AI/ANs living in cities (Westerfelt & Yellow Bird, 1999; Whitbeck et al., 2011). Considering their population share, the prevalence of homelessness among AI/ANs in major U.S. cities is disproportionately high. In fact, it is up to 5-10 times higher in several cities along the West Coast (Kramer & Barker, 1996; Lobo & Vaughan, 2003; Sugarman & Grossman, 1996; Whitbeck et al., 2011). Given the extent of the health, economic, and social problems in this marginalized population, it is imperative to better understand and address homelessness for urban AI/ANs.

### **AI/AN Spirituality**

Because of the relatively high prevalence of alcohol use and alcohol-related problems among urban homeless AI/ANs, it is important to identify factors that may protect against alcohol problems in this community. There is growing evidence that enculturation—the extent of engagement with one’s own cultural identity and participation in traditional practices—is negatively correlated with alcohol consumption and alcohol problems among AI/ANs. In other words, individuals who are more engaged in their own cultural identity and cultural practices tend to consume less alcohol and experience reduced alcohol-related problems (Fleming & Ledogar, 2008; Garrouette et al., 2009; Iwasaki & Byrd, 2010; Torres Stone, Whitbeck, Chen, Johnson, & Olson, 2006). Traditionally, AI/AN enculturation has been inseparable from spiritual beliefs and practices, reflecting cosmologies in which the spiritual is intertwined with all aspects of daily life (Greenfield et al., 2015; Kulis, Hodge, Ayers, Brown, & Marsiglia, 2012). Specific

beliefs and practices vary considerably between and within tribes and include traditional Native spiritual traditions, Christianity, and syncretic combinations of Indigenous and Christian traditions (e.g., the Native American Church; Garrouette et al., 2009; Kulis et al., 2012). Common pan-tribal spiritual practices include prayer, sweat lodges, drumming, dancing, smudging ceremonies, pipe ceremonies, and traditional medicine. Through these practices individuals and groups express gratitude; receive purification and healing; and maintain harmony with the cosmos and nature, among kinship and community relations, and between one's mind, body, and spirit (Portman & Garrett, 2006; Rybak & Decker-Fitts, 2009).

Although research is limited, several studies have shown a negative correlation between alcohol use/problems and AI/AN engagement in religious/spiritual practices (including traditional Native spirituality, Christianity, and syncretic combinations; Beebe et al., 2008; Kulis et al., 2012; Torres Stone et al., 2006; Yu & Stiffman, 2007). These results are consistent with growing evidence that spirituality is protective against negative substance use outcomes for individuals in general (Miller, 2013; Pardini, Plante, Sherman, & Stump, 2000). Taken together, these research findings suggest that spiritual practices might likewise be protective for homeless urban AI/ANs with alcohol use problems. There is, however, no previous research on spirituality in this population.

## **METHODS**

### **Study Overview**

This study is a secondary analysis of baseline data from a larger nonrandomized controlled study testing a Housing First intervention for chronically homeless adults with severe alcohol use problems (Larimer et al., 2009). Over one third of the sample (39%) identified as AI/AN, and the dataset included several items about alcohol use and religious/spiritual affiliations and practices. These data points are the focus of the current analysis.

We first compared AI/AN participants with non-AI/AN participants on demographic variables, alcohol use problems, and religious affiliation over time. We then compared the two groups on importance, frequency, and type of religious/spiritual practices in which they engaged. Finally, given the lack of research in this area, we explored patterns in AI/AN participants'

independent religious and spiritual practices, including the relationship between Native-specific practices and alcohol use and problems.

### **Participants**

In this secondary study, we used baseline data from participants ( $n = 134$ ) who were part of a larger, longitudinal parent study testing the effectiveness of low-barrier Housing First for chronically homeless individuals with severe alcohol problems in a large city in the U.S. Pacific Northwest. Participants were recruited between November 2005 and March 2007 from a) a rank-ordered list of individuals who in 2004 had incurred the highest costs in the area for publicly funded service use (e.g., emergency services, hospitalization, and incarceration) and b) a list of eligible individuals recommended by community providers familiar with the area's homeless population. (For more information about recruitment and engagement of the sample, see Collins et al., 2012; Larimer et al., 2009). The sample for the present study was broken into AI/AN and non-AI/AN subgroups.

### **Measures**

The original study was approved by the institutional review boards at the University of Washington and the county's substance use treatment division. After obtaining written consent from participants, interviewers verbally administered the questions and measures described below as part of a larger survey battery (see Larimer et al., 2009). Interviewers were trainees in social science disciplines; they attended a training session prior to conducting interviews and were supervised by the original study's research coordinator and investigators (including licensed clinical psychologists).

#### **Demographic Information**

Demographic variables, including gender, age, marital status, number of children, education level, parent/guardian type (who primarily raised the participant), and race/ethnicity were assessed using coded participant responses to open-ended questions in baseline interviews (Larimer et al., 2009). For race/ethnicity, interviewers asked, "What is your ethnic background?" and coded responses as Hispanic or Latino, AI/AN, Asian, Native Hawaiian/Other Pacific Islander, Black or African American, White/Caucasian, more than one Race, or other; for the

latter two responses, interviewers reported participants' open-ended responses. Age was coded as number of years; number of children included biological and adopted children. Marital status was coded as legally married, remarried, consider self to be married (but not legally married), widowed, separated, divorced, or never married. Education level was coded as 7th grade or less, 8th-11th grade (one for each), GED, high school graduate, vocational school, some college, college graduate, some graduate school, or advanced degree. For parent status, interviewers asked, "With whom were you primarily raised?" and coded responses as both parents (biological or adoptive), mother only, father only, mother and step-father or live-in boyfriend, father and step-mother or live-in girlfriend, another relative, a non-relative, or none of the above.

### **Alcohol Use and Alcohol-Related Problems**

Frequencies of baseline alcohol consumption and intoxication in the past 30 days were assessed using items from the Addiction Severity Index (ASI). The ASI is a widely used measure that has been found to be reliable and valid in multiple contexts, including for populations with alcohol use problems (McLellan et al., 1992). Alcohol quantity on typical and peak drinking occasions (in terms of number of standard drinks per day) during the past 30 days was assessed using the Alcohol Use Quantity Form, modified from the Timeline Follow-Back (TLFB) for this population (Larimer et al., 2009; Sobell & Sobell, 1992). The TLFB is a widely used measure that is reliable and valid for assessment of self-reported alcohol consumption (Sobell & Sobell, 1992).

Alcohol-related problems were measured with the 15-item Short-Inventory of Problems (SIP-2R; Blanchard, Morgenstern, Morgan, Lobouvie, & Bux, 2003). The SIP-2R uses a 4-point, Likert-type scale to assess the frequency of alcohol-related problems experienced in the past 3 months (0 = *never* to 3 = *daily or almost daily experience*). SIP-2R summary scores range from 0-45; these scores have been shown to be reliable and valid indicators of alcohol-related problems with substance-using individuals (Kenna et al., 2005).

### **Religious Affiliation**

Interviewers asked participants to identify their religious affiliation(s), both during their upbringing and at the current time. Interviewers coded a participant's responses in one or more of the following categories: None, Protestant, Catholic, Baptist, Mormon, Jewish, Islamic, Buddhist, Hindu, Native American Church, religious/spiritual but non-denominational, agnostic, atheist, other Christian denomination, other non-Christian denomination, and unknown.

Responses coded as “other Christian denomination” and “other non-Christian denomination” were accompanied by qualitative text entries indicating participants’ specific affiliations (e.g., “Russian Orthodox” or “tribal”).

### **Frequency and Importance of Religious/Spiritual Practices**

Participants were asked how often they attended religious/spiritual services and how often they did something on their own (i.e., independent practice) that they considered to be spiritual or religious. Both items were assessed on a 6-point Likert-type scale (1 = *once a week or more*; 2 = *a few times a month*; 3 = *once a month*; 4 = *three or more times a year*; 5 = *once or twice a year*; 6 = *never*). Participants also were asked to indicate the importance of religion/spirituality in their life on a 7-point, Likert-type scale (1 = *not at all important* to 7 = *the most important thing*) as well as whether they would attend religious/spiritual services more frequently if they could (yes/no). Participants who said they had engaged in independent spiritual or religious practices ( $n = 112$ ) were asked an open-ended question to identify these practices.

### **Data Management**

We created an AI/AN identity variable, which included individuals who identified as AI/AN or as multiracial with AI/AN race or a Native tribal affiliation specified. Due to the small number of participants coded for certain responses, we combined several demographic response codes. For religious affiliation, we recategorized certain responses as follows. First, among the “other Christian denomination” category, any Protestant denominations indicated by the qualitative text entries (e.g., “Methodist”) were recategorized as “Protestant.” Second, we created a new religious affiliation category, “tribal,” to include any religious affiliation that was specific to an AI/AN tribe. In the “other non-Christian denomination” category, any tribal-specific religious affiliations indicated by the qualitative text entries were recategorized into the “tribal” category. For analytic purposes, we categorized all religious affiliation categories into one of four superordinate categories: a) Christian (Catholic, Baptist, Protestant, Mormon, other Christian denomination), b) non-Christian (religious/spiritual but non-denominational, Buddhist, Jewish, Muslim, other non-Christian denomination), c) Native American (Native American Church, tribal), and d) none (none, agnostic, atheist).

For independent religious/spiritual practices, the first author (in preparation for this secondary analysis) reviewed participants’ brief, open-ended responses (typically between one

word and a short phrase) and created a codebook with definitions for eight categories (see Results section for categories). The first author and a coauthor (KS) independently coded each response, resulting in identical coding for 94.8% of participant responses; 99.2% agreement was achieved after a brief discussion between the coders, and 100.0% agreement was reached after brief consultation with another coauthor (DD). In addition, a coauthor who identifies as American Indian (LN) independently coded for one of the eight categories (Native-specific rituals/practices; see below) among AI/AN participant responses, resulting in 100% agreement with the other two coders. Some participants were coded for more than one category (13% in two categories; 3% in three).

### **Data Analysis Plan**

We first compared AI/ANs with non-AI/ANs on demographic variables, alcohol use and problems, religious affiliation, and frequency/importance of religious/spiritual practices. Because most outcome variables were non-normally distributed and overdispersed, we used nonparametric inferential analyses. Specifically, Mann-Whitney U Test was used for all comparisons using continuous dependent variables, including continuous demographic variables, all alcohol use and problems comparisons, and continuous variables of frequency/importance of religious/spiritual practices. Fisher's Exact Test [*FET*] was used for all comparisons using categorical dependent variables, including categorical demographic variables, historical and current religious affiliation (for each superordinate category), and the categorical item assessing the importance of religious/spiritual practices. Fisher's Exact Test was also used to assess differences in religious affiliation change, in terms of participants having a current religious affiliation in a different superordinate category than the one in which they were raised.

For the alcohol use and problems comparisons, we also conducted quantile regression analyses in order to control for any statistically significant differences in demographic variables. This procedure is a regression in which the outcome is a percentile of the distribution, rather than the mean (see Koenker, 2005). Quantile regression at the median percentile allows for a measure of central tendency that is more informative than the mean when a distribution is non-normally distributed (see Hao & Naiman, 2007). For these analyses, this percentile was set at .50 (the median) using the *qreg* function in STATA. (For examples of alcohol and AI/AN research using quantile regression, see Kerr, Greenfield, & Midanik, 2006; Ritenbaugh et al., 2003).

Finally, we used Mann-Whitney U Test to explore differences in alcohol use/problems between AI/AN participants who reported using Native-specific religious/spiritual practices (based on the qualitative coding described above) and those who did not. As part of this exploration, we conducted post hoc analyses to rule out confounding factors. Specifically, we analyzed whether there were any significant demographic differences between these two groups (using Mann-Whitney U Test for continuous variables and Fisher’s Exact Test for categorical variables), and we conducted Mann-Whitney U Test analyses for each of the independent religious/spiritual practices among AI/AN participants, in terms of their relationship with alcohol use/problems. For all statistical tests, alpha level for statistical significance was set at  $p < .05$ . Statistical analyses were conducted using STATA software (version 13).

## RESULTS

### Demographics

Demographic descriptions are shown in Table 1 for both AI/AN ( $n = 52$ ) and non-AI/AN ( $n = 82$ ) participants. The two groups showed statistically significant differences in education level and parent/guardian type (who primarily raised the participant). Compared to non-AI/ANs, significantly more AI/ANs had less than a high school education rather than had attended college. In addition, significantly more AI/ANs were raised by a nonrelative rather than by one or both parents, compared to non-AI/ANs. No statistically significant differences were detected for gender, age, marital status, or number of children (see Table 1).

**Table 1**  
**Participant Characteristics**

Demographic Variable	AI/AN ( $n = 52$ )	non-AI/AN ( $n = 82$ )	<i>Z</i>	<i>p</i>
	% or <i>M (SD)</i>	% or <i>M (SD)</i>		
Gender (male)	92%	95%		.71
Age (yrs.)	46.9 (9.7)	49.0 (10.0)	-0.87	.38
Marital status				.71
Married	4%	4%		
Widowed/divorced/separated	40%	48%		
Never married	56%	48%		

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**Table 1 Continued**  
**Participant Characteristics**

Demographic Variable	AI/AN ( <i>n</i> = 52)	non-AI/AN ( <i>n</i> = 82)	<i>Z</i>	<i>p</i>
	% or <i>M</i> ( <i>SD</i> )	% or <i>M</i> ( <i>SD</i> )		
No. of children	1.3 (1.6)	1.0 (1.4)	1.24	.22
Parent/guardian type (primarily raised by)				<.001 <sup>a</sup>
Both parents (biological or adoptive)	28%	63%		
One parent	28%	24%		
Another relative	18%	10%		
Non-relative	26%	3%		
Education (highest level)				.01 <sup>b</sup>
At least some college	25%	46%		
High school graduate / GED	30%	31%		
< High school graduate / GED	46%	23%		
Race/ethnicity				
American Indian/Alaska Native (AI/AN)	76.9	--		
White/Caucasian	--	63.4		
Black or African American	--	15.6		
Hispanic/Latino	--	9.7		
Asian/Pacific Islander/Native Hawaiian	--	4.9		
> 1 race/ethnicity	23.1	2.4		
Other	--	3.7		

*Note:* Participants in a study comparing the effects of a Housing First intervention with a wait-list control condition among U.S. chronically homeless individuals with severe alcohol problems. The AI/AN group consists of those who identified their race/ethnicity as American Indian/Alaska Native (AI/AN), either alone or in combination with another race/ethnicity. Demographic information was collected during baseline interviews and coded by interviewers. Only one choice per category was coded. Differences between groups were analyzed using Mann-Whitney U Test (continuous variables) and Fisher's Exact Test (categorical variables). Missing data due to nonresponse: Marital status (*n* = 1); No. of children (*n* = 4); Parent/guardian type (*n* = 4); Education (*n* = 1).

<sup>a</sup> Post hoc pairwise comparisons (Fisher's Exact Test) were statistically significant for "both parents" and "non-relative" (*p* < .001) and "one parent" and "non-relative" (*p* = .005), with Bonferroni correction for 6 comparisons ( $\alpha$  = .008).

<sup>b</sup> Post hoc pairwise comparison (Fisher's Exact Test) was statistically significant for "at least some college" and "< high school graduate / GED" (*p* < .001), with Bonferroni correction for 3 comparisons ( $\alpha$  = .017).

## Alcohol Use and Problems

Baseline alcohol use and severity variables are shown in Table 2. Both AIANs and non-AIANs had equal days of alcohol consumption (*Mdn* = 30.0) and intoxication (*Mdn* = 26.5) in the month prior to baseline, indicative of the heavy alcohol use of this population. AIANs had higher typical (*Mdn* = 23.3) and peak amounts of use (*Mdn* = 42.7), in comparison to non-AIANs (*Mdn* = 20.3 and *Mdn* = 25.9, respectively); however, only the difference in peak amount was

statistically significant. AIANs also had a higher but statistically insignificant SIP score ( $Mdn = 1.70$ )—indicating higher alcohol use problems—than did non-AIANs ( $Mdn = 1.47$ ). Because there were statistically significant differences between AI/ANs and non-AI/ANs in education level and parent/guardian type (see above), we conducted quantile regression analyses with education level and parent/guardian type as covariates. In these analyses, AI/AN identity was not a statistically significant predictor of any of the alcohol use and problem variables, including peak amount ( $p > .12$ ).

**Table 2**  
**Baseline Alcohol Use and Alcohol-Related Problems**

Alcohol Use/Problems	<i>M</i>	<i>SD</i>	95% <i>CI</i>	<i>Mdn</i>	<i>IQR</i>	<i>Z</i>	<i>p</i>
Days consumed (past 30 days) <sup>a</sup>							
AI/AN (n=45)	22.27	11.33	[18.86, 25.67]	30.00	13.00-30.00	-0.55	0.58
non-AI/AN (n=77)	24.06	9.62	[21.88, 26.25]	30.00	20.00-30.00		
Days intoxicated (past 30 days) <sup>a</sup>							
AI/AN (n=46)	19.33	12.17	[15.71, 22.94]	26.50	7.00-30.00	-0.19	0.85
non-AI/AN (n=74)	19.62	12.17	[16.80, 22.44]	26.50	7.00-30.00		
Typical amount (past 30 days) <sup>b</sup>							
AI/AN (n=47)	28.58	23.81	[21.59, 35.57]	23.33	14.26-32.90	1.27	0.20
non-AI/AN (n=77)	23.22	19.71	[18.75, 27.69]	20.29	10.56-31.10		
Peak amount (past 30 days) <sup>b</sup>							
AI/AN (n=44)	51.97	50.51	[36.62, 67.33]	42.67	22.25-62.21	2.12	0.03*
non-AI/AN (n=69)	32.74	25.61	[26.60, 38.90]	25.92	13.82-46.66		
Alcohol-related problems (SIP-2R) (past 90 days) <sup>c</sup>							
AI/AN (n=50)	1.76	0.78	[1.54, 1.98]	1.70	1.20-2.40	1.68	0.09
non-AI/AN (n=81)	1.49	0.85	[1.30, 1.68]	1.47	0.93-2.13		

Note: Differences between American Indian/Alaska Native (AI/AN) group ( $n = 52$ ) and non-AI/AN group ( $n = 82$ ) analyzed using Mann-Whitney U tests. Responses from some participants are missing due to nonresponse.

<sup>a</sup> Assessed using items from the Addiction Severity Index (ASI).

<sup>b</sup> Alcohol quantity on typical and peak drinking occasions assessed using the Alcohol Use Quantity Form, modified from the Timeline Follow-Back (TLFB).

<sup>c</sup> Measured by Short-Inventory of Problems (SIP-2R), a 15-item 0-3 Likert-type scale for assessment of alcohol-related problems (0 = never; 3 = daily or almost daily).

\* Statistically significant difference ( $p < .05$ ); there were no statistically significant differences, however, in quantile regression analyses that controlled for education level and parent/guardian type.

## Religious Affiliation

Descriptive statistics for historical and current religious affiliations are shown in Table 3, along with superordinate category differences between AI/ANs and non-AI/ANs. AI/ANs were significantly less likely to be currently affiliated with Christianity than were non-AI/ANs (36.7% vs. 59.5%). In addition, AI/ANs were significantly more likely than non-AI/ANs to report a Native American religious affiliation, both historically and currently. There were no other significant differences between the two groups.

Compared to non-AI/ANs (27.6%), a greater proportion of AI/ANs (41.3%) had changed their religious affiliation since their childhood (based on superordinate categories). This comparison, however, was not statistically significant (*FET*  $p = 0.16$ ). Based on a post hoc analysis that was limited to participants who were raised Christian, significantly fewer AI/ANs (48.9%) than non-AI/ANs (77.1%) reported affiliating with Christianity at the time of the study (*FET*  $p < .05$ ).

**Table 3**  
**Religious Affiliation Over Time**

Religious Affiliation	Raised Affiliation (Pct.)			Current Affiliation (Pct.)		
	AI/AN	non-AI/AN	<i>p</i>	AI/AN	non-AI/AN	<i>p</i>
<b>Christian</b>	<b>75.0</b>	<b>77.2</b>	<b>.83</b>	<b>36.7</b>	<b>59.5</b>	<b>.02</b>
Catholic	37.5	27.8		12.2	21.5	
Baptist	2.1	22.8		2.0	16.5	
Protestant	16.7	12.7		8.2	10.1	
Mormon	2.1	0.0		0.0	1.3	
Other	12.5	10.1		14.3	10.1	
> 1 of above	4.2	3.8		0.0	0.0	
<b>Non-Christian</b>	<b>4.2</b>	<b>7.6</b>	<b>.71</b>	<b>20.4</b>	<b>17.7</b>	<b>.82</b>
Non-denominational	4.2	3.8		16.3	15.2	
Buddhist	0.0	1.3		0.0	1.3	
Jewish	0.0	1.3		0.0	1.3	
Muslim	0.0	1.3		0.0	0.0	
Other	0.0	0.0		4.1	0.0	
<b>Native American</b>	<b>10.4</b>	<b>1.3</b>	<b>.03</b>	<b>18.4</b>	<b>1.3</b>	<b>&lt;.01</b>
Native American Church	6.3	1.3		16.3	1.3	
Tribal	4.2	0.0		2.0	0.0	

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**Table 3 Continued**  
**Religious Affiliation Over Time**

Religious Affiliation	Raised Affiliation (Pct.)			Current Affiliation (Pct.)		
	AI/AN	non-AI/AN	<i>p</i>	AI/AN	non-AI/AN	<i>p</i>
<b>None</b>	<b>8.3</b>	<b>11.4</b>	<b>.77</b>	<b>20.4</b>	<b>16.5</b>	<b>.64</b>
None	8.3	8.9		18.4	13.9	
Agnostic	0.0	0.0		0.0	1.3	
Atheist	0.0	2.5		0.0	1.3	
> 1 of above	0.0	0.0		2.0	0.0	
<b>Other</b>	<b>2.1</b>	<b>2.5</b>		<b>4.1</b>	<b>5.1</b>	
Multiple (>1 category)	0.0	2.5		0.0	3.8	
Unknown (by respondent)	2.1	0.0		4.1	1.3	

Note: Religious affiliations (for one’s upbringing and at the time of the study) for American Indian/Alaska Native (AI/AN) participants (*n* = 52) and non-AI/AN participants (*n* = 82), as organized within superordinate categories (bolded). Participants who had affiliations across two or more superordinate categories (per time period) were categorized as “Multiple.” Differences between AI/AN and non-AI/AN participants were analyzed using Fisher’s Exact Test.

**Frequency and Importance of Religious/Spiritual Practices**

There were no statistically significant differences between AI/ANs and non-AI/ANs in the frequency and importance of religious and spiritual practices (*p* > .28). On average, both groups indicated that religion/spirituality was moderately important (AI/AN: *M* = 5.22, non-AI/AN: *M* = 5.23), attended religious/spiritual services about three times per year (AI/AN: *M* = 3.98, non-AI/AN: *M* = 4.33), and engaged in independent religious/spiritual practices a few times per month (AI/AN: *M* = 2.16, non-AI/AN: *M* = 2.36). In addition, most participants said they would attend services more frequently if they could (AI/AN: 63%, non-AI/AN: 59%).

Qualitative coding resulted in eight categories of independent spiritual practice: prayer, helping others, Native-specific rituals/practices, reading, arts, meditation, visiting a church, and other. Most practices were coded as prayer for both AI/AN and non-AI/AN participants (see Table 4 for frequencies in each category). Of particular interest—given our focus on AI/AN participants—was the “Native-specific rituals/practices” category, which was defined as any practice, ritual, or event that is of unique AI/AN heritage, is of special importance to AI/AN peoples, or refers to any kind of social gathering of AI/AN peoples. Seven participants (6 AI/ANs and 1 non-AI/AN) reported practices that were coded for this category. Responses for the 6 AI/AN participants were as follows: “blessed Four directions/elements,” “attending a

powwow,” “sing my powwow songs,” “get Natives together,” “swat [sweat] lodge” [sic], and a deidentified Native-specific “retreat.” Based on post hoc analyses, there were no statistically significant demographic differences between the 6 AI/AN participants who reported these practices and the 44 AI/AN participants who did not ( $p > .35$ ).

**Table 4**  
**Independent Religious/Spiritual Practices**

Reported Practice	AI/AN		non-AI/AN	
	<i>n</i>	%	<i>n</i>	%
Prayer	29	58%	44	56%
Helping others	1	2%	7	9%
Native-specific rituals/practices	6	12%	1	1%
Reading	2	4%	7	9%
Arts	3	6%	3	4%
Meditation	2	4%	4	5%
Visiting a church	2	4%	3	4%
Other	8	16%	9	11%

*Note:* Eight categories of independent religious/spiritual practices, with percentages of American Indian/Alaska Native (AI/AN) and non-AI/AN participants who reported practices in each category (among the 112 participants who said they have done independent practices). Participants’ open-ended responses were categorized based on qualitative coding process, with 100% agreement between two coders. Some participants were coded for one more than category (13% in two categories; 3% in three).

### Relationship Between Native-Specific Rituals/Practices and Alcohol Use/Problems

As shown in Table 5, AI/ANs who engaged in independent Native-specific religious or spiritual practices reported significantly lower drinking frequency ( $Mdn = 5.00$ ) and quantity on a typical day ( $Mdn = 8.81$ ) compared to AI/ANs who did not engage in these practices ( $Mdn = 30.00$  and  $Mdn = 25.44$ , respectively). Results also indicated a marginally significant difference in days of intoxication, with fewer days of intoxication among those engaged in Native-specific practices ( $Mdn = 5.00$  vs.  $Mdn = 29.50$ ). These analyses were replicated for each of the other (non-Native-specific) independent religious/spiritual practices and did not result in statistically significant differences in alcohol use/problems ( $p > .08$ ).

**Table 5**  
**Relationship Between Native-Specific Independent Religious/Spiritual Practices and Baseline Alcohol Use/Severity (American Indian/Alaska Native Participants)**

Alcohol Use/Problems	<i>M</i>	<i>SD</i>	95% <i>CI</i>	<i>Mdn</i>	<i>IQR</i>	<i>Z</i>	<i>p</i>
Days consumed (past 30 days) <sup>a</sup>						-2.61	0.009**
Native practice ( <i>n</i> = 6)	10.00	12.31	[-2.92, 22.92]	5.00	0.00-20.00		
No Native practice ( <i>n</i> = 39)	24.15	10.06	[20.89, 27.42]	30.00	23.00-30.00		
Days intoxicated (past 30 days) <sup>a</sup>						-1.96	0.050
Native practice ( <i>n</i> = 6)	10.00	12.31	[-2.92, 22.92]	5.00	0.00-20.00		
No Native practice ( <i>n</i> = 40)	20.73	11.66	[16.99, 24.46]	29.50	8.50-30.00		
Typical amount (past 30 days) <sup>b</sup>						-2.40	0.017*
Native practice ( <i>n</i> = 6)	10.34	10.49	[-0.67, 21.36]	8.81	0.00-21.12		
No Native practice ( <i>n</i> = 41)	31.25	24.11	[23.64, 38.86]	25.44	15.55-41.60		
Peak amount (past 30 days) <sup>b</sup>						-1.30	0.193
Native practice ( <i>n</i> = 6)	30.51	36.18	[-7.45, 68.41]	19.74	0.00-50.30		
No Native practice ( <i>n</i> = 38)	55.36	51.98	[38.28, 72.45]	44.53	23.36-62.21		
Alcohol-related problems (SIP-2R) (past 90 days) <sup>c</sup>						-1.02	0.310
Native practice ( <i>n</i> = 6)	1.53	0.70	[0.79, 2.27]	1.53	0.93-2.07		
No Native practice ( <i>n</i> = 44)	1.80	0.79	[1.56, 2.04]	1.70	1.30-2.53		

Note: Baseline alcohol use and severity among American Indian/Alaska Native (AI/AN) participants, sorted by those who reported an independent Native-specific religious/spiritual practice (*n*=6) and those who did not (*n*=44). Responses from some participants for certain outcomes are missing due to nonresponse. Differences between groups analyzed using Mann-Whitney U tests.

<sup>a</sup> Assessed using items from the Addiction Severity Index (ASI).

<sup>b</sup> Alcohol quantity on typical and peak drinking occasions assessed using the Alcohol Use Quantity Form, modified from the Timeline Follow-Back (TLFB).

<sup>c</sup> Measured by Short-Inventory of Problems (SIP-2R), a 15-item 0-3 Likert-type scale for assessment of alcohol-related problems (0 = never; 3 = daily or almost daily).

\* *p* < .05

\*\* *p* < .01

## DISCUSSION

This study describes religious and spiritual affiliation and practices in a sample of homeless urban AI/ANs with severe alcohol problems.

### AI/ANs Reported Higher Peak Alcohol Quantity than Non-AI/ANs

Findings indicated that AI/ANs consumed a higher quantity of alcohol on peak drinking occasions than did non-AI/ANs. This difference was not significant, however, in analyses that controlled for parent/guardian type and education level. The groups did not differ on other

drinking indices, including drinking frequency, amount consumed on their typical drinking day, and alcohol-related problems. Previous studies have had mixed results in comparisons of alcohol use and related problems between homeless AI/ANs and homeless non-AI/ANs, with some studies indicating a higher prevalence of alcohol use and alcohol-related problems among AI/ANs (Kahn et al., 1992; Kaspro & Rosenheck, 1998; Travis, 1991; Westerfelt & Yellow Bird, 1999) and one study showing no difference among racial/ethnic groups in their alcohol consumption (Gamst et al., 2006). The current study adds to this literature in showing group differences in alcohol use may be present for some measures but not for others. In addition, differences may be partially attributable to other demographic variables (e.g., parent/guardian type and education level); this explanation is consistent with recent population-level epidemiological research in which a higher prevalence of alcohol use disorders among AI/ANs was significantly attenuated when adjusting for sociodemographic characteristics (Brave Heart et al., 2016). Nonetheless, these results should not be misconstrued to support a reduction in Native-specific programming or funding for alcohol use problems; if anything, they support the importance of addressing alcohol use problems holistically and in light of longstanding socioeconomic disparities stemming from a legacy of colonialism.

### **AI/ANs and Non-AI/ANs Differed in Some Ways on Religion and Spirituality**

AI/ANs who were raised Christian were less likely to have a Christian religious affiliation at the time of the study than were non-AI/ANs who were raised Christian. This change occurred alongside a greater number of AI/ANs with a Native American religious affiliation at the time of the study, in comparison to being raised with such an affiliation. These results are consistent with literature describing that some urban AI/ANs—whose families have less access to traditional Native religious and spiritual practices than do reservation-dwelling AI/ANs—seek out these practices as adults (Jackson, 2002; Lobo, 2001).

No significant differences between AI/ANs and non-AI/ANs were found for self-reported importance of religion and spirituality or frequency of attending services. Participants' responses, however, may have been shaped by the manner in which the questions were delivered. For example, AI/AN participants might not have assumed that questions about “religious or spiritual services,” which may have connoted attending church or synagogue services, were inclusive of Native religious ceremonies or spiritual events (see Greenfield et al., 2015). Most

measures of religiosity and spirituality, including the one used in the current study, have not been validated for use with AI/ANs, and culturally-adapted assessment of these constructs for AI/ANs has been indicated (Greenfield et al., 2015).

### **Engagement in Native-Specific Religious/Spiritual Practice is Associated with Less Alcohol Use**

A relatively small number of participants ( $n = 6$ ) reported engaging in independent Native-specific religious and spiritual practices. Those who did, however, reported substantially less alcohol use in the prior month, including medians of 25 fewer days of alcohol use, 16.6 fewer days of intoxication, 16.6 fewer standard drinks on a typical drinking day, and 24.8 fewer standard drinks on their peak drinking day. Of these results, the differences in days of use and typical quantity were statistically significant, and the difference in days of intoxication was marginally significant. This group did not differ from other AI/AN participants on demographic variables or in other independent religious/spiritual practices. These findings thus suggest that traditional spirituality may be a protective factor for urban, homeless AI/ANs with severe alcohol use problems, which is consistent with previous research findings (e.g., Kulis et al., 2012; Torres Stone et al., 2006). We also note that these results held even given the likely ceiling effects for such a severely affected population in which we would expect more uniformly high alcohol use and thus relatively low variability.

### **Limitations**

There are several limitations to this secondary, exploratory study. First, the parent study was not designed to focus on AI/AN issues in particular, and, as a result, Native-specific religious/spiritual practices were not directly assessed. Instead, report of these practices required participants to volunteer this information in response to a general question about independent religious/spiritual practices. It is possible, then, that these practices may be underreported. At the same time, it is possible that those who reported these practices in response to an open-ended question may represent a subgroup of AI/ANs who are especially inclined toward Native-specific religion and spirituality. Second, because these data are cross-sectional and the groups were not randomized, we are unable to infer temporality and causality, respectively. Thus, other, unknown factors may explain current findings. For example, AI/ANs with less alcohol use may be more

likely to engage in traditional spiritual practices or vice versa. Engagement in spiritual practices could be a proxy for greater cultural and social engagement more generally. Finally, the correlation between alcohol use/problems and the frequency and duration of independent religious/spiritual practices is unknown, as information about the latter was not collected in the original study.

### **CONCLUSIONS AND FUTURE DIRECTIONS**

In this secondary study of chronically homeless people with severe alcohol problems, AI/ANs reported consuming significantly more alcohol on their peak drinking occasions, having fewer affiliations with Christianity, having more affiliations with the Native American Church, and engaging in more Native-specific independent religious/spiritual practices than did non-AI/ANs. Further, AI/ANs who engaged in Native-specific religious/spiritual practices had significantly lower alcohol use frequency than AI/ANs who did not. Although this latter finding is based on a small number of participants and should be interpreted with caution, the magnitude of these differences—among individuals who had incurred the highest cost of public health services—suggests that future research and clinical innovations in this area may yield clinically significant public health benefits.

Future studies should examine the relationship of Native spiritual practices and alcohol use longitudinally within a larger sample of homeless AI/ANs, using culturally appropriate measures for AI/AN religious and spiritual practices to better understand the preliminary findings highlighted in this study. To this end, researchers should partner with providers who serve homeless AI/ANs to generate evidence-based interventions for this population and should encourage the use of culturally appropriate and well-validated measures in clinical practice. Further, prior research has indicated that many urban AI/ANs are interested in Native religious and spiritual practices but are unable to access them (Clifasefi, Collins, Torres, Grazioli, & Mackelprang, 2016; Hartmann & Gone, 2012). Considering that religious and spiritual practices have a protective effect in the general population (Greenfield et al., 2015), we recommend that researchers and providers assess the importance and potential clinical significance of Native practices and, when appropriate, help to connect AI/ANs with opportunities to engage in them.

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