

# **The Relationships of Historical Loss, Acculturation, and Alcohol Expectancies with Alcohol Use Among American Indian and Alaska Native People**

Melanie J. Cain, PhD, Carrie Winterowd, PhD, and Aisha Farra, MS

*Abstract: The primary purpose of this study was to 1) explore the relationship among the following variables: thoughts and feelings associated with historical loss, levels of acculturation, alcohol expectancies, and alcohol use among American Indian and Alaska Native (AI/AN) people, as well as to 2) explore predictive relationships among historical loss thoughts and feelings, alcohol expectancies, and alcohol use for AI/AN people within this sample. A convenience (community, non-clinical) sample of 188 AI/AN people completed an online survey, including questions related to alcohol use, alcohol expectancies, thoughts and feelings of historical loss, and acculturation experiences. Results indicated that gender and feelings of historical loss were the significant individual predictors of alcohol use and alcohol expectancies in a sample of AI/AN people. In addition, specific types of alcohol expectancies, when considered together, explained 24% of the variance in alcohol use experiences. Gender differences were noted in that AI/AN men were more likely than AI/AN women to engage in hazardous drinking and expected more feelings of social and physical pleasure as well as power and aggression as a result of drinking alcohol. Areas for further research were highlighted, with an emphasis on further research exploring the correlates and predictors of alcohol use and alcohol expectancies for community, non-clinical samples of AI/AN people, to further understand alcohol use motivation among AI/AN people.*

## INTRODUCTION

### **Alcohol Use Among American Indian and Alaska Native People**

Alcohol use is prevalent in the United States, with 213.2 million adults within the U.S. population reporting drinking alcohol at one point in time during their lives, while 1.4 million American Indians and Alaska Natives (AI/AN) reported drinking alcohol at some point in their lives (Substance Abuse and Mental Health Services Administration, 2021). Although alcohol use is viewed widely as an acceptable social behavior to relax or socialize, norms for social drinking among AI/AN people were not established until after European settlers introduced the practice to Native peoples. During trade agreements, alcohol was often used as a tool for unfair negotiating practices or traded as a valued resource (Beauvais, 1998a). This intentional distribution of alcohol for early settler gain has been described as an early form of chemical warfare, particularly as most Native peoples had very little prior experience with the substance (Mail & Johnson, 1993).

Rates and patterns of alcohol use vary amongst tribes, regions, and age groups. AI/AN people have the highest rates of alcohol abuse and dependence in comparison to other racial groups in the U.S. wherein 7.2% of AI/AN people aged 26 and older report an alcohol use disorder compared to 5.1% of the overall U.S. population (McCance-Katz, 2019). Skewes and Lewis (2016) point out data from the Alaska Native Tribal Health Consortium indicates the rate of alcohol-related deaths among AN people is 16.1 times higher than it is for Whites in the U.S. population. Furthermore, 14.1% of untimely deaths among AN people are due to alcohol (Skewes & Lewis, 2016).

These heavy drinking patterns have devastating consequences, as AI/AN people are seven times more likely to die from accidents and alcohol-related deaths, including deaths involving heart and liver conditions (Indian Health Service, 2019; Mail, 2002). When exploring causes of death in New Mexico, AI/AN people were more likely to have higher alcohol-related deaths than other racial groups (New Mexico Department of Health, 2022).

There are varied patterns and reasons for use among AI/AN people, for example, using alcohol in recreational ways or to cope with anxiety (Beauvais, 1998b; Ferguson, 1968; May, 1995), and AI/AN people under the age of 30 are the most likely to report problems with alcohol use (Beals et al., 2005; May & Gossage, 2001). Whitesell et al. (2012) point out that the AI/ANs who do drink alcohol tend to drink more during alcohol use episodes, which may imply binge use. Some AI/AN people experience a bi-modal drinking pattern of either alcohol abstinence or alcohol

abuse (Gray & Nye, 2001; May, 1995). In two recent studies, AI/AN men reported consuming more alcohol than women (McKinley et al., 2019; McKinley et al., 2021).

Reasons for alcohol use among AI/ANs include self-medicating for untreated mental illness (Ehlers et al., 2020); the influence of peers and perceptions of others' use, especially among adolescents (Larimer et al., 2020); or lower levels of family cohesion (Schick et al., 2022). Ehlers et al. (2019) discovered two distinct phenotypes of alcohol use, diagnosis, clinical trajectory of alcohol use, and associated symptoms among Mexican American and American Indian (MA/AI) participants, which were 1) feeling anxiety or depressive symptoms when attempting to decrease alcohol use, which 23% of the MA/AI acknowledged, and 2) experiencing incapacitating feelings of depression for 24 hours or more during alcohol use, which 24% of MA/AI acknowledged. Larimer et al. (2020) studied the rates of alcohol use among tribally enrolled students within tribal colleges and found students expected more alcohol use amongst their peers, which influenced their own increased alcohol use and lower chances for abstaining. Schick et al. (2022) explored rates of depression, parenting style, and level of alcohol use among AI/AN adolescents and found that a relationship between depression and alcohol use (more specifically an increase in depressive symptoms) was associated with less family warmth and more alcohol use. Although this study explored adolescent usage, it is important to note that, without intervention, adolescents may carry this pattern of use into adulthood.

There is evidence that AI/AN people tend to stop drinking alcohol later in life once familial or tribal responsibilities take precedence, otherwise known as “aging out” of alcohol use (Mail & Johnson, 1993). The goals of serving as an elder, carrying wisdom, and passing cultural knowledge down to younger generations are inconsistent with alcohol use (Lewis, 2021). Among rural AN elders, there were high rates of abstinence and sobriety in one community-based participatory research study (Skewes & Lewis, 2016). It should also be noted that AI/AN people have the highest rates of abstinence (Cunningham, 2016). The variation in use amongst age groups and region warrants further research and understanding regarding patterns and motivation of alcohol use and abstinence for AI/AN individuals and their communities.

### **Alcohol Expectancies Among AI/AN People**

Alcohol expectancies refer to the beliefs people hold about alcohol's expected influence on thoughts, feelings, and behaviors (Brown et al., 1980; Brown et al., 1987; Leigh & Stacy, 1991). Alcohol expectancies generally precede early alcohol use and are further strengthened

with the continued use of alcohol. The development of positive alcohol expectancies in adolescence can lead to continued and increased alcohol use as one progresses into adulthood (Patrick et al., 2010). This may explain the relationship between early alcohol use and continued use in adulthood for AI/AN people. Alcohol expectancies are divided into both positive and negative expectancies. Positive expectancies refer to the general positive feelings people expect from alcohol use, which includes feelings of sociability, decreased tension, increased sexual feelings, and feelings of power and aggression. Negative alcohol expectancies refer to the negative effects people expect to receive from alcohol use, such as impairment and lack of concern for self and others.

Several researchers have explored the relationship between alcohol expectancies and alcohol use among AI/AN people (Gonzalez & Skewes, 2016; Looby et al., 2017; Lysne, 2003; Mitchell & Beals, 2006; Spillane et al., 2012). Alcohol expectancies have been associated with heavy alcohol use for AI/AN people due to the negative consequences associated with use (Lysne, 2003) as well as the “firewater myth” that AI/AN people are more biologically susceptible to alcohol use (Gonzalez & Skewes, 2016). In a study of AI/AN youth, alcohol outcome expectancies were more likely to result in changes for alcohol use, including increased or decreased usage (depending on the type of expectancy; Mitchell & Beals, 2006). Dieterich et al. (2013) found that perceptions of drinking benefits to oneself were positively related to alcohol use, getting drunk, and binge drinking among adolescent AI and White students. In another study, alcohol beliefs of AI/AN people were significantly and positively related to alcohol use and alcohol expectancies in their sample of AI/AN people (Fish et al., 2017).

Looby et al. (2017) examined differences in alcohol use between AI/AN and Caucasian college students as a function of positive and negative expectancies. The AI/AN participants in their study reported drinking significantly less alcohol over the prior six months, and they held significantly weaker positive expectancies regarding drinking compared to their counterparts; thus, identifying that positive alcohol expectancies can differ based on race and that expectancies can differentially influence drinking. This finding is notable given that, in one study, AI/AN people endorsed more positive alcohol expectancies (i.e., global positive change, social and physical pleasure, and social assertiveness) than other racial groups (Daisy, 1990). In another study, the expectancy for overall positive feelings from alcohol use was a significant predictor of alcohol use among AI men (Garcia-Andrade et al., 1996).

### **Historical Loss Experiences of AI/AN People**

Alcohol use may be a learned coping style and the relationship between alcohol use and psychological distress (e.g., depression and anxiety) is apparent for AI/AN people (Beals et al., 2005; Gilder et al., 2004; McKinley et al., 2019; Whitbeck et al., 2006). Among AI/AN peoples, alcohol use and alcohol expectancies may be related to and/or the result of one's thoughts and feelings associated with historical losses of culture and traumatic experiences resulting from colonization. It is natural for AI/AN people and communities to have thoughts, feelings, reactions, and responses to the rippling effects of the history of colonization across the generations; prejudice; discrimination; violation of one's civil rights; removal from one's tribe, home, family, and land; being segregated into boarding schools involving significant personal and cultural trauma; and other detrimental effects such as loss of language, identity, traditional ways and practices, and so forth.

Understandably, many AI/AN people are still trying to make meaning of what has happened to them, their people, their tribal communities, and their cultural traditions and ways over the centuries (Brave Heart, 2003; Brave Heart & LeBruyn, 1998; Whitbeck, Chen, et al., 2004). Furthermore, researchers are defining ways to understand how historical trauma manifests within institutions as a means for identifying appropriate interventions (Hartmann et al., 2019). AI/AN people are theorized to have suffered from intergenerational unresolved grief known as "the soul wound" (Duran & Duran, 1995), which is cumulative over time and continues to be transmitted across generations today (Brave Heart, 2003; Brave Heart & DeBruyn, 1998; Duran & Duran, 1995; Duran et al., 1998; Walker, 2005).

In summary, the losses associated with traditional cultural ways of living has created grief and post-colonial trauma for AI/AN people, which may be related to and/or contribute to their alcohol use. There is some evidence of the relationship between historical loss experiences (i.e., thoughts and emotions) related to AI/AN culture and communities (e.g., one's identification with AI/AN culture; Cromer et al., 2018) and alcohol use issues among AI/AN people (Ehlers et al., 2013; Henry, 2019; Weichelt et al., 2012; Whitbeck & Chen, et al., 2004). In one qualitative study involving 25 participants, Skewes and Blume (2019) discussed how historical trauma and racial discrimination were identified as risk factors for alcohol use and substance use disorders. However, in one study, thoughts associated with historical loss were not significantly related to alcohol use in AI/AN people (Aloma, 2016).

In summary, given the scant research in this area as well as the mixed findings to date, more research is needed to better understand how thoughts and feelings associated with historical losses and trauma might be related to alcohol use and alcohol expectancies of AI/AN people, which is one of the purposes of the present study. Of interest, no researchers have explored historical loss experiences in relation to alcohol expectancies for AI/AN people, which we believe is a unique contribution of our manuscript and to AI/AN research on this topic.

### **Acculturation Issues for AI/AN People**

Another cultural factor which may be related to alcohol use among AI/AN people is acculturation, which refers to “the degree to which the individual accepts and adheres to both majority and tribal cultural values” (Choney et al., 1995, p. 76). Higher levels of acculturation represent one’s adoption of more mainstream Western world views, values, and behaviors, whereas lower levels of acculturation represent one’s adoption of more traditional AI/AN world views, values, and behaviors. There is some research evidence that acculturation is related to historical loss experiences of AI/AN people. In a sample of 59 participants, Cromer et al (2018) found that the more one identified with AI/AN culture, the more he/she/they thought about historical losses, and the more one was identified with White culture, the less he/she/they thought about historical losses.

Acculturation has been associated with several variables including preference for mainstream or culturally adapted Alcohol Anonymous meetings (Tonigan et al., 2020), alcohol beliefs and alcohol use (Fish et al., 2017), identity development and wellness (Garrett, 2009), alcohol consumption, smoking, and increased risk-taking behaviors (Abraido-Lanza et al., 2005; Hawkins et al., 2004; Herring, 1994; Lysne, 2003). Research findings regarding the relationship between acculturation and substance use have been mixed. Some researchers have found that acculturation itself is not related to alcohol use among AI/AN people (Bates et al., 1997; Martell, 2022; Oetting & Beauvais, 1990-1991; Weisner et al., 1984), whereas other researchers have found that, among AI/AN people, being more acculturated into mainstream society (i.e., less traditional) puts them more at risk for alcohol problems than those who are more traditional. While some researchers found that identification and involvement with White culture serves as a protective factor against substance abuse, primarily among AI/AN adolescents (Hawkins et al., 2004; Mail, 1995), emerging research supports more traditional AI/AN identity and involvement as a protective factor against alcohol use problems for AI/AN people (e.g., Spillane et al., 2015). Enculturation, otherwise known as traditional cultural involvement, has been viewed as a strengths-based approach to alcohol cessation

(Wardman & Quantz, 2005; Whitbeck et al., 2006). Brown et al. (2016) interviewed youth, parents, providers, and community members in 10 focus groups to learn about the relationship of cultural identity and alcohol and drug use. The themes that emerged related to alcohol and drug use included acculturative stress, historical trauma, intergenerational stressors, and disconnection from culture. In addition, cultural ways and cultural identity were protective factors related to alcohol and drug use. Wolsko et al, (2007) found that among 480 Yup'ik participants, those living more of a Kass'aq (White) way of life (greater acculturation) reported experiencing greater psychosocial stress, less happiness, and greater use of drugs and alcohol to cope with stress. Participants who reported identifying more with a traditional Yup'ik way of life reported greater happiness, more frequent use of religion and spirituality to cope with stress, and less frequent use of drugs and alcohol to cope with stress. Stress and negative health outcomes are associated with the process of acculturation, and health and healing with the process of enculturation.

### **The Current Study**

The primary purpose of this study was to explore the relationships of historical loss and acculturation in relation to alcohol expectancies and alcohol use as well as the relationship of alcohol expectancies and alcohol use among AI/AN people. The research questions for this study were: 1) What is the linear relationship of historical loss and acculturation with alcohol use among AI/AN people, 2) What is the linear relationship of alcohol expectancies with alcohol use among AI/AN people, and 3) What is the linear relationship of historical loss and acculturation with alcohol expectancies among AI/AN people? It was hypothesized that thoughts and feelings of historical loss and acculturation (i.e., being more assimilated) would be significant predictors of alcohol use and alcohol expectancies among AI/AN people and that alcohol expectancies would be significant predictors of alcohol use among AI/AN people.

## **METHOD**

### **Procedures**

Institutional Review Board (IRB) approval from the university was obtained prior to conducting this on-line study. Self-identified AI/AN participants were recruited via e-mail, using snowball methods. Snowball methods have been used in other AI/AN studies (e.g., Martin et al.,

2017), which have been effective with hard-to-reach AI/AN people, especially those in geographically isolated areas or among those AI/AN communities not typically involved in research studies (Sadler et al., 2010).

Participants read an on-line informed consent page outlining purposes of the study and potential risk and benefits of the study, the voluntary nature of their participation, and the opportunity to enter in an on-line drawing to win a Pendleton blanket upon completion of the on-line survey.

### **Participants**

The final sample for this study were 188 self-identified AI/AN people, most of whom were women (69%); one participant identified as two-spirit. The ages of the participants ranged from 18 to 72 years of age, with an average age of 40.7 years of age ( $SD = 12.18$ ). Participants were asked to choose all residences applicable throughout their lives: 77% lived in a predominantly urban area, 63% lived on a reservation or tribal area, and 57% lived in a rural area. The education level among participants varied greatly. The majority were college-educated with approximately 37% of this sample having a minimum of a bachelor's degree or attended some type of vocational training, and 28% having attended or completed graduate school. Approximately 8% of the participants served in the Armed Forces at some time in their lives; a small percentage served in a combat zone.

The participants in this study were members of a variety of different tribes and nations within the United States. In most cases, participants identified with more than one nation or tribal affiliation. Participants reported their tribal/nation affiliations (representing a total of 99 tribes/nations); however, specific tribal/nation affiliations were not reported in this manuscript out of respect for the confidentiality and anonymity of the AI/AN participants and their communities in this study.

### **Measures**

Participants completed an on-line survey, including a demographic page, the Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993), the Alcohol Effects Questionnaire (AEQ; Brown et al., 1987), the Historical Loss Scale and Historical Loss Associated Symptoms Questionnaire (Whitbeck, Adams, et al., 2004), and the Native American Acculturation Scale (NAAS; Garrett & Pichette, 2000).



### ***Alcohol Use Disorders Identification Test (AUDIT)***

The AUDIT is a 10-item questionnaire. The three sections of this measure assess alcohol consumption, drinking behaviors, adverse reactions to alcohol use, and alcohol-related problems. Participants responded to each item using a 5-point Likert scale (0 = never, 1 = monthly or less than monthly, 2 = 2-4 times a month, 3 = 2-3 times a week, and 4 = 4 or more times a week). The total score of the AUDIT has a possible score range of 0 to 40, with higher scores indicating more alcohol use and alcohol-related difficulties. Scores from 8-14 suggest hazardous or harmful alcohol use; a score of 15 or more suggests alcohol dependence (Saunders et al., 1993). The total score was used in the main analyses of this study. In this sample, the internal consistency reliability estimate for the AUDIT total score was .83.

During scale development, the validity of the AUDIT was obtained with external reference groups of self-identified alcoholics and non-drinkers (Saunders et al., 1993). The AUDIT is a valid measure of alcohol use with AI/AN samples (e.g., Leonardson et al., 2005; Schermer et al., 2003; Westermeyer, 2001) and is recommended as a tool for social workers to use when implementing the National Institute of Alcohol Abuse and Alcoholism (NIAAA) brief intervention and screening with AI/AN people (Patterson Silver Wolf et al., 2014).

### ***Alcohol Effects Questionnaire (AEQ)***

The AEQ is a 40-item questionnaire designed to assess personal beliefs about both positive expectations (i.e., reinforcing effects of alcohol) and negative expectations (i.e., undesirable effects of alcohol including impairment and irresponsibility) from alcohol use, using a true/false format. The eight subscales (5 items each) of the AEQ are: *Global Positive* (POS; expectation for alcohol use to provide positive global changes in a variety of experiences), *Social and Physical Pleasure* (SPP; expectation for alcohol use to provide enhanced social and physical pleasures), *Sexual Enhancement* (SEX; expectation for alcohol use to provide improved sexual experiences and enhanced sexual arousal), *Power and Aggression* (AGG; expectation for alcohol use to provide feelings of arousal and aggression), *Social Expressiveness* (SOC; expectation for alcohol use to provide positive and social assertive personality changes), *Relaxation and Tension Reduction* (REL; expectation for alcohol to provide a sense of relaxation and tension reduction), *Cognitive and Physical Impairment* (IMP; expectation for alcohol to affect thought and motor difficulties), and *Careless Unconcern* (CU; expectancy for alcohol to decrease inhibitions, which may place individuals in risky settings). Higher scores for each subscale indicate higher expectations regarding that specific anticipated outcome

(benefit or risk) of alcohol use; lower scores for each subscale indicate fewer expectations regarding that specific anticipated outcome (benefit or risk) of alcohol use.

The AEQ has been developed and normed with both college students and those seeking treatment in an alcohol rehabilitation center. Internal consistency reliability coefficients for the AEQ for this sample were as follows: .58 for POS, .74 for SPP, .79 for SEX, .77 for AGG, .77 for SOC, .65 for REL, .73 for IMP, and .77 for CU. All AEQ subscales except POS and REL (given Cronbach alphas below .70) were used for the analyses of this study.

### ***Historical Loss Scale (HLS) and Historical Loss Associated Symptoms Scale (HLASS)***

Thoughts and feelings related to historical loss were measured by the HLS and HLASS, respectively. Both scales consist of 12 items each. For the HLS, participants respond to each item regarding how often they thought about specific AI/AN historical losses, using a 6-point Likert scale (1 = several times a day, 2 = daily, 3 = weekly, 4 = monthly, 5 = yearly or at special times, and 6 = never). Examples of historical loss thoughts includes thinking about the loss of land, language, and spiritual practices. Higher scores indicate less frequent thoughts associated with AI/AN historical losses; lower scores indicate more frequent thoughts about AI/AN historical losses.

For the HLASS, participants respond to each item in terms of how often they felt specific emotions when thinking about AI/AN historical losses, using 5-point Likert scale (1 = never, 2 = seldom, 3 = sometimes, 4 = often, and 5 = always). Examples of historical loss feelings include sadness/depression, anxiety, anger, discomfort, and distrust. Higher scores indicate more emotional experiences associated with AI/AN historical losses.

Internal consistency reliability coefficients for the HLS and the HLASS were .95 and .93 for the HLS and the HLASS, respectively, for this sample of AI/AN people. The total scores for HLS and HLASS were used in the analyses for this study.

### ***Native American Acculturation Scale (NAAS)***

The NAAS is a 20-item measure of acculturation which assesses cognitive, behavioral, and attitudinal bicultural development along a continuum, ranging from traditional AI/AN to assimilated mainstream cultural orientations. Items addressed include tribal/nation language (5 items), identity (2 items), friendships (3 items), behaviors (4 items), generational/geographical background (5 items), and attitudes (1 item). An acculturation score (average) is calculated by dividing the total score by 20. Average acculturation scores can range from 1, indicating a low

level of acculturation into the White culture (conversely enculturation into AI/AN culture), to a maximum score of 5, indicating a high level of acculturation into the mainstream U.S. culture (less enculturation into AI/AN culture), with a score of 3 indicating a bicultural orientation. The NAAS was a reliable measure of acculturation for this AI/AN sample (Cronbach alpha = .84).

### **Procedures for Missing Data**

The researchers received a total of 196 on-line survey responses (196 original participants). It should be noted that eight participants were excluded from the analyses of the study due to significant missing data, resulting in the final sample of 188 participants. It should be noted that if a participant's survey data was missing less than 10% of the items on a particular measure, the mean score of that item for the total sample was entered for that missing data point.

## **RESULTS**

### **Descriptive Statistics**

The means, standard deviations, and actual score ranges for the main study variables are reported in Table 1. On average, the participants in this study reported mild levels of alcohol use issues (otherwise known as low-risk alcohol consumption), yet they also reported some mild to moderate alcohol expectancies. These participants did, on average, report moderate levels of emotional experiences related to the historical losses of AI/AN people and culture, and a mild level of frequency with regard to thoughts about those historical losses. Acculturation levels were, on average, in the bicultural orientation range, indicating some identification with traditional AI/AN ways as well as some identification with mainstream ways.

### **Correlates of Alcohol Use and Alcohol Expectancies Among AI/AN Participants**

Alcohol use among AI/AN participants was significantly and positively related to alcohol expectancies of social and physical pleasure ( $r = .37, p < .05$ ), power and aggression ( $r = .36, p < .05$ ), careless unconcern ( $r = .28, p < .05$ ), social expressiveness ( $r = .24, p < .05$ ), and sexual enhancement ( $r = .23, p < .05$ ), as well as feelings of historical loss in AI/AN culture and communities ( $r = .28, p < .05$ ). See Appendix Table A1. Thus, AI/AN people who reported more

alcohol use and its effects tended to experience more feelings associated with the historical loss of AI/AN people and expected alcohol use to have certain physical and emotional benefits.

Alcohol expectancies among the AI/AN people in this study were significantly and positively related to thoughts and feelings associated with the historical loss of AI/AN culture and communities. In particular, feelings of historical loss were significantly and positively correlated with alcohol expectancies of social expressiveness ( $r = .33, p < .05$ ), sexual enhancement ( $r = .33, p < .05$ ), power and aggression ( $r = .32, p < .05$ ), careless unconcern ( $r = .25, p < .05$ ), and cognitive impairment ( $r = .15, p < .05$ ). The more AI/AN people experienced feelings of historical loss, the more likely they were to expect positive and negative aspects of using alcohol; AI/AN people with fewer feelings of historical loss were less likely to expect positive and negative aspects of using alcohol.

The only significant relationship between thoughts associated with the historical loss of AI/AN culture and communities and alcohol expectancies was for sexual enhancement ( $r = -.21, p < .005$ ). Thus, the more AI/AN people thought about the historical losses of AI/AN people, the less likely they were to expect positive benefits of sexual enhancement from alcohol use.

**Table 1**  
**Descriptive Statistics for Main Study Variables**

<b>Variables</b>	<b>Mean</b>	<b>SD</b>	<b>Range</b>
<b>Alcohol Use Disorders Identification Test</b>			
Total Score	6.18	5.59	0-27
<b>Alcohol Effects Questionnaire Subscales</b>			
Social and Physical Pleasure	2.79	1.65	0 – 5
Sexual Enhancement	1.73	1.70	0 – 5
Power and Aggression	2.52	1.97	0 – 5
Social Expressiveness	2.91	1.72	0 – 5
Cognitive and Physical Impairment	3.27	1.64	0 – 5
Careless Unconcern	2.57	1.46	0 – 4
<b>Historical Loss Scales</b>			
Historical Loss Thoughts	36.59	12.95	17 – 84
Historical Loss Feelings	42.96	14.30	12 – 72
<b>Native American Acculturation Scale</b>			
Average Score	3.00	.52	1.70 – 4.40

It should be noted that participants' thoughts and feelings of historical loss for AI/AN culture and communities were significantly and inversely related to one another ( $r = -.44, p < .01$ ). More frequently, thoughts about historical losses of AI/AN people were associated with experiencing less affective symptoms related to those historical losses; conversely, less frequency thoughts about historical loss were associated with more affective symptoms related to historical losses of AI/AN culture and communities.

Acculturation levels were significantly and positively related to thoughts regarding historical loss ( $r = .24, p < .05$ ), but not with feelings of historical loss. AI/AN people who were more acculturated into the dominant culture reported more thoughts about the historical losses of AI/AN people; conversely, being more traditional as an AI/AN person was associated with fewer thoughts about the historical losses of AI/AN culture and communities.

### **Significant Predictors of Alcohol Use and Alcohol Expectancies for AI/AN Participants**

Gender differences were noted regarding alcohol use,  $t(180) = -4.33, p < .01$ , and alcohol expectancies, including social and physical pleasure,  $t(181) = -2.47, p < .05$ ; power and aggression,  $t(182) = -2.98, p < .05$ ; and careless unconcern,  $t(181) = -2.12, p < .05$ . However, there were no gender differences in thoughts or feelings related to the historical loss of AI/AN culture and communities,  $t(186) = 1.34, p > .05$  and  $t(186) = -1.34, p > .05$ , respectively, nor acculturation,  $t(186) = -1.15, p > .05$ .

Given the gender differences in alcohol use and alcohol expectancies, in the multiple regression analyses to follow, gender was entered into the regression first (block 1), followed by the predictor variables of interest (block 2).

A multiple regression analysis was conducted with gender, feelings and thoughts of historical loss, and acculturation as predictor variables and alcohol use as the criterion variable. Gender significantly accounted for 9.1% of the variance in alcohol use; thoughts and feelings related to historical loss and acculturation significantly accounted for an additional 7.7% of the variance in alcohol use levels for the AI/AN participants in this sample. Examination of the beta weights revealed that gender ( $\beta = .284, t = 4.09, p < .001$ ) and feelings of historical loss ( $\beta = .308, t = 4.04, p < .001$ ) were the significant individual predictors of alcohol use in this sample.

Another multiple regression analysis was conducted with gender and the alcohol expectancies subscale scores as predictor variables and alcohol use as the criterion variable. Gender significantly accounted for 8.4% of the variance in alcohol use; alcohol expectancies were

significant predictors of alcohol use, explaining an additional 18.1% of the variance. Examination of the beta weights revealed that gender ( $\beta = .210$ ,  $t = 2.914$ ,  $p < .01$ ) and the alcohol expectancies of social and physical pleasure ( $\beta = .264$ ,  $t = 3.44$ ,  $p < .001$ ) and power and aggression ( $\beta = .220$ ,  $t = 2.50$ ,  $p < .05$ ) were the significant individual predictors of alcohol use.

Last, a multiple regression was conducted with gender, thoughts and feelings of historical loss, and acculturation as predictor variables and the global positive alcohol expectancy subscale score as the criterion variables. Gender significantly accounted for 3.2% of the variance and thoughts and feelings of historical loss and acculturation significantly accounted for an additional 12.9% of the variance in global positive alcohol expectancies. Examination of the beta weights revealed that feelings of historical loss was the only significant individual predictor of global positive expectancies. Results indicated that participants' feelings of historical loss were the only significant predictor of participants' global positive expectancies related to alcohol use ( $\beta = .373$ ,  $t = 4.94$ ,  $p < .001$ ).

After the primary analyses were conducted, a follow-up interest of exploration was the impact of hazardous versus non-hazardous drinking on alcohol expectancies as well as historical loss thoughts and feelings among AI/AN women and men. One post-hoc MANOVA analysis was conducted to explore gender differences, types of alcohol use differences (hazardous versus non-hazardous drinking), and any interaction effects between gender and type of alcohol use on alcohol expectancies. Hazardous drinking was defined as having a total AUDIT score of 8 or more for men and 7 or more for women, in accordance with possible alcohol dependence (see Babor et al., 2001) or putting oneself at risk for adverse health consequences (Reid et al., 1999). In the current sample, approximately 50% of men and 25% of the women reported hazardous drinking.

A 2 X 2 MANOVA (Gender: Men and Women) X (Drinking Group: Hazardous and Non-Hazardous Drinking) was conducted for the alcohol expectancies subscales (6 subscales). There was no significant interaction effect,  $F(6, 166) = 1.33$ ,  $p > .05$ . However, there were significant main effects for gender,  $F(6, 166) = 3.65$ ,  $p < .05$ , and alcohol drinking group,  $F(6, 166) = 5.41$ ,  $p < .05$ . Follow-up univariate analyses revealed significant gender differences for all of the alcohol expectancy subscales including: social/physical pleasure,  $F(1, 171) = .97$ ,  $p < .01$ ; sexual enhancement,  $F(1, 171) = .87$ ,  $p < .01$ ; power and aggression,  $F(1, 171) = .99$ ,  $p < .01$ ; social expressiveness,  $F(1, 171) = .70$ ,  $p < .05$ ; cognitive and physical impairment,  $F(1, 171) = .55$ ,  $p < .05$ , and careless unconcern,  $F(1, 171) = .90$ ,  $p < .01$ . AI/AN men were more likely to report more alcohol expectancies in those areas than AI/AN women. In addition, follow-up univariate analyses

revealed significant drinking group differences for the alcohol expectancies of social and physical pleasure,  $F(1, 171) = .62, p < .05$ , and power and aggression,  $F(1, 171) = .60, p < .05$ . Hazardous drinkers were more likely to expect alcohol to positively influence their social and physical pleasure as well as their feelings of power and aggression.

## **DISCUSSION**

AI/AN participants who used alcohol more often tended to report more positive benefits from alcohol use, but also expected negative effects from their alcohol use as well. These negative effects include impairment and lack of concern for others. In addition, those who reported more feelings of historical loss were more likely to report more alcohol use issues (e.g., drinking more and having health consequences). However, alcohol use issues were not related to thoughts about historical loss or level of acculturation. Other researchers (Aloma, 2016; Gameon & Skewes, 2021) similarly found that historical loss thoughts did not predict alcohol use in an AI/AN sample. Wiechelt et al. (2012) found historical loss thoughts to be related to closer family relationships but not predictive of alcohol use. Gameon and Skewes (2021) found historical loss thoughts to be related to more days of abstinence from alcohol, fewer days of hazardous alcohol use, and fewer days of drug use; historical loss associated feelings were negatively associated with the number of days of abstinence per month. However, Whitbeck, Chen, et al. (2004) found historical loss to be associated with alcohol abuse in women. This variation in research results speaks to the need for further research in this area.

Feelings of historical loss was the most significant predictor of alcohol expectancies among the AI/AN participants in this study. In previous research with AI men, alcohol use levels were related to alcohol expectancies for social and physical pleasure and power and arousal (Garcia-Andrade et al., 1996). In another study, negative alcohol expectancies were predictive of alcohol use among AI/AN people (Lysne, 2003). However, in this present study, both positive and negative alcohol expectancies were predictive of alcohol use among AI/AN people. Negative expectancies refer to negative effects associated with alcohol use and are developed over time, based on problematic use (Spillane, 2012).

In addition to differences in alcohol expectancies, there were gender differences in hazardous alcohol usage. AI/AN men (50%) reported engaging in more hazardous drinking compared to AI/AN women (25%). AI/AN men also expected to achieve more feelings of social

and physical pleasure and feelings of power and aggression from alcohol than did the AI/AN women in this sample, highlighting that AI/AN men and women use alcohol for different reasons. Our findings are similar to those by Garcia-Andrade et al. (1996), in that men were found to expect feelings of power and aggression and social and physical pleasure from alcohol use. Spillane et al. (2012) also found among reservation-dwelling Native people in Canada that men who had a tendency to deal with difficult emotions impulsively were more likely to develop negative expectancies of alcohol use due to impaired functioning.

Overall, regardless of gender, both hazardous and non-hazardous drinkers differed on all six alcohol expectancies. Hazardous alcohol users expected more positive and negative alcohol expectancies than non-hazardous drinkers. Also, feelings of historical loss were associated with more alcohol use issues. These results suggest AI/AN people may drink alcohol to cope with unresolved grief or other emotional distress related to the historical loss of AI/AN people. While it is possible that feelings of historical loss may influence a person's decision to drink alcohol more, it is also possible that when a person drinks alcohol more, they may become more aware of their feelings in general, including depression, anxiety, and/or anger, which may result in focusing on the origin of these feelings and their association with the historical losses of AI/AN people. Further research is needed to explore the nature of this relationship between historical loss feelings and alcohol use among AI/AN people. The findings of this study are preliminary in nature and further research is needed in this area, especially regarding the comorbidity of affective disorders with alcohol use disorders. It is unclear whether those who drink more alcohol are self-medicating for depressive or mood disorders. The use of alcohol to cope with the traumas associated with historical loss support findings of Brave Heart's (1998; 2003) point regarding alcohol use as an ineffective coping strategy for AI/AN people. Ehlers et al. (2013) found among 306 American Indians, 66% of the participants met criteria for a substance dependence disorder and had higher scores on Historical Loss Thoughts and Historical Loss Associated Symptoms, highlighting the comorbidity of substance use.

The avoidance of historical loss thoughts may be one way to cope with the anxiety of how these losses affect AI/AN people today, especially on an individual level. Those who avoid thinking about these losses are more likely to experience a stronger emotional reaction in comparison to those who spend more time purposefully thinking about the personal, tribal/nation, and societal effects of these historical losses. While feelings of historical loss predicted alcohol use and alcohol expectancies among the AI/AN participants of this study, those who thought more



about these losses were less likely to be heavy drinkers based on the findings of this study. This cognitive awareness may serve as a motivating factor to live differently and not contribute to the cycle of alcohol use that has negatively affected some AI/AN people. Ehlers et al. (2013) reports AI/AN people who lived more traditionally Native ways of life experienced higher levels of historical loss thoughts and lower levels of historical loss feelings. Thus, those who may practice their culture are cognizant of historical trauma, yet able to manage emotional distress by engaging in traditional practices.

Even more fascinating, feelings related to historical loss was a significant predictor of all alcohol expectancies, both positive and negative, for this sample of AI/AN people. In particular, those experiencing more emotions related to the historical losses of AI/AN culture and communities was predictive of expecting alcohol to provide relief, including physiological, emotional, and/or social change. In a previous study, feelings of historical loss were related to alcohol abuse problems among AI/AN women, but not for AI/AN men (Whitbeck, Chen, et al., 2004). Future research is needed to explore in more depth how AI/AN people think and feel about the historical losses for AI/AN culture and, in particular, how experiences of historical loss are relevant to alcohol use and other mental health issues of AI/AN people today. Problems with alcohol have been described as a “spiritual” problem of loss and emptiness, which in turn creates the desire to drink alcohol or “spirited” beverages to fill an emotional void (Duran, 2006; Duran & Duran, 1995; Lowery, 1998).

Of interest, acculturation did not play much of a role in understanding the alcohol use or alcohol expectancies of the AI/AN people in this study. This finding is contrary to some previous research findings indicating that acculturation is significantly related to alcohol and alcohol-related concerns among AI/AN people (e.g., beliefs and alcohol use, Fish et al., 2017) and their preferences for recovery groups (e.g., AA meetings; Tonigan et al., 2020). Further research is needed to explore the impact of acculturation and enculturation (e.g., Whitbeck et al., 2004) on alcohol use behaviors and expectancies among AI/AN people.

### **Implications for Counseling and Healing Practices within AI/AN People**

The results of this study suggest the AI/AN people who used alcohol, including those who reported engaging in hazardous drinking, were experiencing some feelings of historical loss, including feelings of unresolved grief, depression, or anxiety. These demonstrated relationships between feelings of historical loss and alcohol use and expectancies provide evidence to support

the acknowledgment and inclusion of interventions addressing the historical losses of AI/AN culture and community, including an awareness of these connections when providing substance abuse and mental health services with AI/AN clients. More attention needs to be given to the memories, thoughts, and feelings of historical loss for AI/AN people given that it has been identified as a correlate and protective factor related to alcohol use and dependence (e.g., Whitbeck et al, 2004; Ehlers et al, 2013), particularly exploring feelings of historical loss.

Brown et al. (2016) found that participating in cultural activities can facilitate wellness and health among AI youth in urban settings. The use of cultural activities, traditional healers, and encouraging tribal connections have been identified preferences among Native focus group participants receiving mental health care in urban mental health settings (Dickerson & Johnson, 2011). Therapists should attempt to understand the role of culture and acculturation in AI/AN clients' lives (Thomason, 2012), including thoughts and feelings of historical loss. To not acknowledge these intergenerational losses experienced by AI/AN people, historically and currently, would be detrimental to the substance abuse and mental health services for and with AI/AN people.

Furthermore, the inverse relationship between thoughts and feelings of historical loss has implications for therapy with AI/AN clients. For example, if AI/AN clients address thoughts about these losses, they may be more likely to explore and process their emotions related to these losses in therapy. This may provide a healthy level of exposure, which reinforces qualities of emotional, cognitive, and cultural resilience. More research is needed in this area, however, to determine if historical loss thoughts and feelings compel one to drink alcohol at hazardous levels or if alcohol use and/or hazardous alcohol use compels one to engage in depressive thinking, such as focusing on thoughts of historical loss, resulting in increased feelings of depression and anxiety.

While it is important not to stereotype and assume all AI/AN clients are dealing with distress over the unique history of AI/AN people, it is important to assess a client's level of alcohol use and expectations of alcohol use within the context of historical and unresolved grief or "soul wound" It would be beneficial to explore a drinker's personal history of alcohol use, reasons for using alcohol or reasons for abstinence, and cultural/tribal beliefs about the use of alcohol. To avoid cultural stereotypes from the colonized world, do not assume that AI/AN people use alcohol problematically. When people use alcohol, it is important to explore what they expect alcohol to do for them (e.g., social engagement, emotional relief, etc.) and how much alcohol use coincides with expectations.

At some point, exploring the cultural meaning of alcohol with an AI/AN person may help to uncover thoughts and feelings about historical loss that they may not be aware of. Exploring

cultural influences on alcohol use, alcohol expectancies, and emotional/mental health is essential to the creation of comprehensive interventions. Other useful interventions include motivational interviewing, which is one model for alcohol use treatment which has been adapted for use within AI/AN communities (Miller & Rollnick, 2002; Venner, Feldstein, & Tafoya, 2006). White Bison Wellbriety, founded by Don Coyhis in 1988, is another Native-based program, which provides guidance on sobriety and addictions prevention (Coyhis & Samonelli, 2008). The Wellbriety movement provides a cultural perspective on healing from substance abuse, which incorporates traditional teachings at the individual, tribal, and community level and is applicable to all age levels (Coyhis & Samonelli, 2008). In addition, Drum Assisted Recovery Therapy for Native Americans (DARTNA) is an evidence-based treatment, utilizing the culturally based practice of drumming, the 12 steps, Wellbriety, and the Medicine Wheel teachings, and is a culturally relevant intervention among AI/AN people residing in urban areas who have reported both mood and spiritual benefits (Dickerson et al, 2014).

Interventions for alcohol misuse are an area for further exploration, especially in relation to level of acculturation and tribal identity. The integration and balance of both Native and Western interventions in substance use treatment is discussed in more depth by Moghaddam and Momper (2011). Moghaddam and Momper (2011) highlight, through interviews, how substance abuse providers in an inpatient treatment center acknowledge patients' level of acculturation among treatment residents when providing mental health care, and some AI/AN people prefer culturally informed, traditional modes of intervention, while others may prefer evidence-based practices. The clinical and support providers described traditional practices and ways influence outcomes of treatment by enhancing coping skills, providing routine, and providing a way for residents to reconnect with their Native identity/ies (Moghaddam & Momper, 2011). This study demonstrates the importance of individualizing treatment and taking the time to establish trust and understand what counseling and recovery interventions work best with AI/AN people.

### **Strengths and Limitations of the Study**

One of the limitations of this study is that the analyses were correlational in nature, thus precluding any causal inferences regarding the nature of the relationships among the main study variables. Second, some AI/AN people who might have been interested in participating in this study could not because they either did not learn about this study due to the convenience sampling method (snowballing) or they did not have access to the Internet. Since the snowball method

involves research participants contacting other participants, this method may not be an accurate assessment of the AI/AN population because the researcher is unable to determine the probability of each population member being selected (Jhangiani et al., 2019). Third, since this study included individuals from approximately 99 tribal/nation affiliations, it may be difficult to generalize these findings to one particular tribe/nation. Fourth, it is unclear if the sample lived predominantly in an urban or reservation/tribal area at the time of research participation. However, the variation in tribal/nation affiliation ( $n = 99$ ) does represent the diversity that exists between and among AI/AN people across the United States. Furthermore, the majority of this participant sample was college educated, and this participant sample may be more aware of healthier coping alternatives, in comparison to a participant sample who was not primarily college educated. However, this research data provides a perspective of AI/AN men and women who are primarily college educated regarding factors related to their alcohol use and expectancies, and this was a relevant community non-clinical sample.

This study illustrated what AI/AN people in communities expect to achieve from drinking alcohol and identified gender differences in alcohol use. It would be beneficial to add a qualitative component to further research, which may allow participants to explain in more depth the contextual factors related to alcohol use and expectancies, personal reasons for alcohol use, and shared thoughts and feelings on historical loss. As Ehlers et al. (2013) indicate, it is unclear if survey respondents reported on the feelings associated with particular historical losses or endorsed feelings which they may already experience, as those listed are of a depressive and anxiety symptom structure. Further analyses of mood or anxiety disorders, current rate of alcohol use, historical loss thoughts and associated symptoms, as well as identification or participation in culturally relevant ways of living may provide more clarity on the particular experience of AI/AN people who use may abuse alcohol. This study provided a foundation for understanding how alcohol expectancies are related to historical loss thoughts and feelings, which is currently not an area of frequent study. While acculturation was not related to alcohol use nor alcohol expectancies, more studies are needed regarding the concept of acculturation and how this may or may not play a role in hazardous alcohol use and/or alcohol expectancies.

## **REFERENCES**

- Abraido-Lanza, A. F., Chao, M. T., & Florez, K. R. (2005). Do healthy behaviors decline with greater acculturation? Implications for the Latino mortality paradox. *Social Science and Medicine*, 61(6), 1243-1255. <https://doi.org/10.1016/j.socscimed.2005.01.016>
- Aloma, A. (2016). *Exploring proximal and distal psychosocial stressors influencing the health outcomes of urban American Indians in the Midwest*. (Doctoral dissertation, The University of Wisconsin-Milwaukee).
- Babor, T. F., Higgins-Biddle, J. C., Saunders, J. B., Monteiro, M. G., & World Health Organization. (2001). AUDIT: The Alcohol Use Disorders Identification Test: Guidelines for use in primary health care (No. WHO/MSD/MSB/01.6 a). World Health Organization.
- Bates, S. C., Beauvais, F., & Trimble, J. E. (1997). American Indian adolescent alcohol involvement and ethnic identification. *Substance Use & Misuse*, 32(14), 2013-2031.
- Beals, J., Manson, S. M., Whitesell, N. R., Spicer, P., Novins, D. K., & Mitchell, C. M. (2005). Prevalence of DSM-IV disorders and attendant help-seeking in 2 American Indian reservation populations. *Archives of General Psychiatry*, 62, 99-108. <https://doi.org/10.1001/archpsyc.62.1.99>
- Beauvais, F. (1998a). American Indians and alcohol. *Alcohol Health and Research World*, 22(4), 253-259. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6761887/>
- Beauvais, F. (1998b). Spotlight on special populations. American Indians and alcohol. *Alcohol Health and Research World*, 22(4), 253-259. <https://pubs.niaaa.nih.gov/publications/arh22-4/253.pdf>
- Brave Heart, M. Y. H., (2003). The historical trauma response among natives and Its relationship with substance abuse: A Lakota illustration. *Journal of Psychoactive Drugs*, 35(1), 7-13. <https://doi.org/10.1080/02791072.2003.10399988>
- Brave Heart, M.Y.H., & DeBruyn, L. M. (1998). The American Indian Holocaust: Healing historical unresolved grief. *American Indian & Alaska Native Mental Health Research*, 8(2), 56-78. <https://doi.org/10.5820/aian.0802.1998.60>
- Brave Heart, M. Y. (2003). The historical trauma response among natives and its relationship with substance abuse: A Lakota illustration. *Journal of Psychoactive Drugs*, 35(1), 7-13. <https://doi.org/10.1080/02791072.2003.10399988>
- Brown, S. A., Goldman, M. S., Inn, A. & Anderson, L. R. (1980). Expectancies of reinforcement from alcohol: Their domain and relation to drinking patterns. *Journal of Consulting and Clinical Psychology*, 48, 419-426. <https://doi.org/10.1037//0022-006x.48.4.419>

- Brown, S.A., Christiansen, B.A., & Goldman, B.A. (1987). The Alcohol Expectancy Questionnaire: An instrument for the assessment of adolescent and adult alcohol expectancies. *Journal of Studies on Alcohol*, 48, 483-491. <https://doi.org/10.15288/jsa.1987.48.483>
- Brown, R. A., Dickerson, D. L., & D'Amico, E. J. (2016). Cultural identity among urban American Indian/Alaska Native youth: Implications for alcohol and drug use. *Prevention Science*, 17, 852-861.
- Choney, S. K., Berryhill-Paapke, E., & Robbins, R. R. (1995). The acculturation of American Indians: Developing frameworks for research and practice. In J. G. Ponterotto, J. M. Casas, L. A. Suzuki, & C. M. Alexander (Eds.), *Handbook of multicultural counseling* (pp. 73–92). Sage Publications, Inc.
- Coyhis, D. (1999). *The wellbriety journey: Nine talks by Don Coyhis*.
- Coyhis, D., & Simonelli, R. (2008). The Native American healing experience. *Substance Use & Misuse*, 43(12-13), 1927-1949.
- Cromer, L. D., Gray, M. E., Vasquez, L., & Freyd, J. J. (2018). The relationship of acculturation to historical loss awareness, institutional betrayal, and the intergenerational transmission of trauma in the American Indian experience. *Journal of Cross-Cultural Psychology*, 49(1), 99-114. <https://doi.org/10.1177/0022022117738749>
- Cunningham, J. K., Solomon, T. A., & Muramoto, M. L. (2016). Alcohol use among Native Americans compared to whites: Examining the veracity of the 'Native American elevated alcohol consumption' belief. *Drug and Alcohol Dependence*, 160, 65–75. <https://doi.org/10.1016/j.drugalcdep.2015.12.015>
- Daisy, F. S. (1990). Ethnic differences in alcohol outcome expectancies and drinking patterns. *Dissertation Abstracts International*, 51(1-B), 424.
- Dickerson, D. L., & Johnson, C. L. (2011) Design of a behavioral health program for urban American Indian/Alaska Native youth: A community informed approach. *Journal of Psychoactive Drugs*, 43(4), 337-342, <https://doi.org/10.1080/02791072.2011.629152>
- Dickerson, D. L., Venner, K. L., Duran, B., Annon, J. J., Hale, B., & Funmaker, G. (2014). Drum-Assisted Recovery Therapy for Native Americans (DARTNA): Results from a pretest and focus groups. *American Indian and Alaska Native Mental Health Research*, 21(1), 35–58. <https://doi.org/10.5820/aian.2101.2014.35>
- Dieterich, S. E., Stanley, L. R., Swaim, R. C., & Beauvais, F. (2013). Outcome expectancies, descriptive norms, and alcohol use: American Indian and white adolescents. *The Journal of Primary Prevention*, 34, 209-219. <https://psycnet.apa.org/doi/10.1007/s10935-013-0311-6>

- Duran, E. (2006). *Healing the soul wound: Counseling with American Indians and other Native people*. Teachers College Press.
- Duran, E., & Duran, B. (1995). *American Indian postcolonial psychology*. State University of New York Press.
- Duran, E., Duran, B., Brave Heart, M. Y. H., & Horse-Davis, S. Y. (1998). Healing the American Indian soul wound. In Y. Danieli (Ed.), *International handbook of multigenerational legacies of trauma* (pp. 341-354). Springer.
- Ehlers, C. L., Gizer, I. R., Gilder, D. A., Ellingson, J. M., & Yehuda, R. (2013). Measuring historical trauma in an American Indian community sample: Contributions of substance dependence, affective disorder, conduct disorder and PTSD. *Drug and Alcohol Dependence, 133*(1), 180-187. <https://doi.org/10.1016/j.drugalcdep.2013.05.011>
- Ehlers, C. L., Gilder, D. A., Gizer, I. R., & Wilhelmsen, K. C. (2019). Indexing the 'dark side of addiction': Substance-induced affective symptoms and alcohol use disorders. *Addiction, 114*(1), 139–149. <https://doi.org/10.1111/add.14431>
- Ehlers, C. L., Wills, D. N., Karriker-Jaffe, K. J., Gilder, D. A., Phillips, E., & Bernert, R. A. (2020). Delta event-related oscillations are related to a history of extreme binge drinking in adolescence and lifetime suicide risk. *Behavioral Sciences, 10*(10), 154. <https://doi.org/10.3390/bs10100154>
- Ferguson, F. (1968). Navaho drinking: Some tentative hypotheses. *Human Organization, 27*(2), 159-167. <https://www.jstor.org/stable/44124489>
- Fish, J., Osberg, T. M., & Syed, M. (2017). “This is the way we were raised”: Alcohol beliefs and acculturation in relation to alcohol consumption among Native Americans. *Journal of Ethnicity in Substance Abuse, 16*(2), 219-245. <https://doi.org/10.1080/15332640.2015.1133362>
- Gameon, J. A., & Skewes, M. C. (2021). Historical trauma and substance use among American Indian people with current substance use problems. *Psychology of Addictive Behaviors, 35*(3), 295–309. <https://doi.org/10.1037/adb0000729>
- Garcia-Andrade, C., Wall, T. L., & Ehlers, C. L. (1996). Alcohol expectancies in a Native American population. *Alcoholism: Clinical and Experimental Research, 20*(8), 1438-1442. <https://doi.org/10.1111/j.1530-0277.1996.tb01146.x>
- Garrett, M. T., & Pichette, E. F. (2000). Red as an apple: American Indian acculturation and counseling with or without reservation. *Journal of Counseling & Development, 78*, 3-13. <https://doi.org/10.1002/j.1556-6676.2000.tb02554.x>

- Garrett, M. T. (2009). Acculturation and wellness of Native American adolescents in the United States of North America. *Revista Perspectivas Sociales / Social Perspectives*, 11(1), 41-67. [https://www.researchgate.net/publication/277273194\\_Acculturation\\_and\\_Wellness\\_of\\_Native\\_American\\_Adolescents\\_in\\_the\\_United\\_States\\_of\\_North\\_America](https://www.researchgate.net/publication/277273194_Acculturation_and_Wellness_of_Native_American_Adolescents_in_the_United_States_of_North_America)
- Gilder, D. A., Wall, T. L., & Ehlers, C. L. (2004). Comorbidity of select anxiety and affective Disorders with alcohol dependence in Southwest California American Indians. *Alcoholism: Clinical and Experimental Research*, 28(12), 1805-1813. <https://doi.org/10.1097/01.alc.0000148116.27875.b0>
- Gonzalez, V. M., & Skewes, M. C. (2016). Association of the firewater myth with drinking behavior among American Indian and Alaska Native college students. *Psychology of Addictive Behaviors*, 30(8), 838. <https://doi.org/10.1037%2Fadb0000226>
- Gray, N., & Nye, P. (2001). American Indian and Alaska Native substance abuse: Co-morbidity and cultural issues. *American Indian & Alaska Native Mental Health Research*, 10(2), 67-84. <https://doi.org/10.5820/aian.1002.2001.67>
- Hartmann, W. E., Wendt, D. C., Burrage, R. L., Pomerville, A., & Gone, J. P. (2019). American Indian historical trauma: Anticolonial prescriptions for healing, resilience, and survivance. *American Psychologist*, 74(1), 6. <https://doi.org/10.1037/amp0000326>
- Hawkins, E. H., Cummins, L. H., & Marlatt, G. A. (2004). Preventing substance abuse in American Indian and Alaska native youth: Promising strategies for healthier communities. *Psychological Bulletin*, 130(2), 304–323. <https://doi.org/10.1037/0033-2909.130.2.304>
- Henry, K. A. (2019). *An American Indian war on drugs: Community, culture, care, survivance*. [Unpublished doctoral dissertation]. Michigan State University. Anthropology.
- Herring, R. D. (1994). Substance use among American Indian American Indian youth: A selected review of causality. *Journal of Counseling & Development*, 72, 578-584. <https://doi.org/10.1002/j.1556-6676.1994.tb01685.x>
- Indian Health Service. (2019). Indian health disparities. Fact Sheet. [https://www.ihs.gov/sites/newsroom/themes/responsive2017/display\\_objects/documents/factsheets/Disparities.pdf](https://www.ihs.gov/sites/newsroom/themes/responsive2017/display_objects/documents/factsheets/Disparities.pdf)
- Jhangiani, R. S., Chiang, I. C. A., Cuttler, C., & Leighton, D. C. (2019). *Research methods in psychology*. Kwantlen Polytechnic University.
- Larimer, M. E., Parker, M., Lostutter, T., Rhew, I., Eakins, D., Lynch, A., Walter, T., Egashira, L., Kipp, B. J., & Duran, B. (2020). Perceived descriptive norms for alcohol use among tribal college students: Relation to self-reported alcohol use, consequences, and risk for alcohol use disorder. *Addictive Behaviors*, 102, 106158. <https://doi.org/10.1016/j.addbeh.2019.106158>



- Leigh, B. C., & Stacy, A. W. (1991). On the scope of alcohol expectancy research: Remaining issues of measurement and meaning. *Psychological Bulletin*, *110*(1), 147-154. <https://doi.org/10.1037/0033-2909.110.1.147>
- Leonardson, G. R., Kemper, E., Ness F. K., Koplín, B. A., Daniels, M. C., & Leonardson, G. A. (2005). Validity and reliability of the audit and CAGE-AID in Northern Plains American Indians. *Psychological Reports*, *97*(1), 161-166. <https://doi.org/10.2466/pr0.97.1.161-166>
- Lewis, J. P. (2021). What can a recovery model for Alaska Natives teach us about substance use and older adults? *Generations*, *44*(4), 1-8. <https://generations.asaging.org/recovery-modelalaska-nativessubstance-useelders>
- Looby, A., Luger, E. J., & Guartos, C. S. (2017). Positive expectancies mediate the link between race and alcohol use in a sample of Native American and Caucasian college students. *Addictive Behaviors*, *73*, 53-56. <https://doi.org/10.1016/j.addbeh.2017.04.019>
- Lowery, C. T. (1998). American Indian perspectives on addiction and recovery. *Health & Social Work*, *23*(2), 127-135. <https://doi.org/10.1093/hsw/23.2.127>
- Lysne, M. (2003). Ethnic identity and acculturation processes in urban Native Americans: Relationships to alcohol expectancies and alcohol use. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, *64*(2-B), 968.
- Mail, P. D., & Johnson, S. (1993). Boozing, sniffing, and toking: An overview of the past, present, and future of substance use by American Indian. *American Indian & Alaska Native Mental Health Research*, *5*(2), 1-33. <https://doi.org/10.5820/aian.0502.1993.1>
- Mail, P. D. (1995). Early modeling of drinking behavior by American Indian elementary school children playing drunk. *International Journal of the Addictions*, *30*(9), 1187-1197. <https://doi.org/10.3109/10826089509055836>
- Mail, P. D. (Ed.). (2002). *Alcohol use among American Indians and Alaska Natives: Multiple perspectives on a complex problem (Vol. 2, No. 4231)*. U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism.
- Martell, L. R. (2022). Examining cultural identification and substance use among American Indian and Caucasian adults (Doctoral dissertation, The University of North Dakota).
- Martin, D., Yurkovich, E., & Anderson, K. (2016). American Indians' family health concern on a Northern Plains Reservation: "Diabetes runs rampant here." *Public Health Nursing*, *33*(1), 73-81. <https://doi.org/10.1111/phn.12225>
- May, P. A. (1995). A multiple-level, comprehensive approach to the prevention of fetal alcohol syndrome (FAS) and other alcohol-related birth defects (ARBD). *International Journal of the Addictions*, *30*(12), 1549-1602. <https://doi.org/10.3109/10826089509104417>

- May, P., & Gossage, J. (2001). New data on the epidemiology of adult drinking and substance use among American Indian on the northern states: Male and female data on prevalence, patterns, and consequences. *American Indian & Alaska Native Mental Health Research*, 10(2), 1-26. <https://doi.org/10.5820/aian.1002.2001.1>
- McCance-Katz, E. (2020). The National Survey on Drug Use and Health: 2019. Substance Abuse and Mental Health Services Administration U.S. Department of Health and Human Services. [https://www.samhsa.gov/data/sites/default/files/reports/rpt29392/Assistant-Secretary-nsduh2019\\_presentation/Assistant-Secretary-nsduh2019\\_presentation.pdf](https://www.samhsa.gov/data/sites/default/files/reports/rpt29392/Assistant-Secretary-nsduh2019_presentation/Assistant-Secretary-nsduh2019_presentation.pdf)
- McKinley, C. E., Figley, C. R., Woodward, S. M., Liddell, J. L., Billiot, S., Comby, N., & Sanders, S. (2019). Community-engaged and culturally relevant research to develop behavioral health interventions with American Indians and Alaska Natives. *American Indian & Alaska Native Mental Health Research*, 26(3), 79–103. <https://doi.org/10.5820/aian.2603.2019.79>
- McKinley, C. E., Roh, S., & Lee, Y. S. (2021). American Indian alcohol use from a sex-specific wellness approach: Exploring its associated physical, behavioral, and mental risk and protective factors. *Journal of Evidence-Based Social Work*, 18(1), 32–48. <https://doi.org/10.1080/26408066.2020.1799648ws>
- Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*. Guilford Press.
- Mitchell, C. M., Beals, J., & Pathways of Choice Team (2006). The development of alcohol use and outcome expectancies among American Indian young adults: A growth mixture model. *Addictive Behaviors*, 31(1), 1–14. <https://doi.org/10.1016/j.addbeh.2005.04.006>
- Moghaddam, J. F., & Momper, S. L. (2011). Integrating spiritual and Western treatment modalities in a Native American substance user center: Provider perspectives. *Substance Use & Misuse*, 46(11), 1431–1437. <https://doi.org/10.3109/10826084.2011.592441>
- New Mexico Department of Health. (2021). New Mexico Department of Health Substance Abuse Epidemiology Section, New Mexico Substance Use Epidemiology Profile 1–208.
- Oetting, E. R., & Beauvais, F. (1990-1991). Orthogonal cultural identification theory: The cultural identification of minority adolescents. *International Journal of the Addictions*, 25(5), 655-685. <https://doi.org/10.3109/10826089109077265>
- Patrick, M. E., Wray-Lake, L., Finlay, A. K., & Maggs, J. L. (2010). The long arm of expectancies: Adolescent alcohol expectancies predict adult alcohol use. *Alcohol & Alcoholism*, 45(1), 17-24. <https://doi.org/10.1093%2Fcalc%2Fagp066>
- Patterson Silver Wolf (Adelv Unegv Waya), D. A., Duran, B., Dulmus, C. N., & Manning, A. R. (2014). Alcohol screening and brief intervention as standard practice: Working with the American Indian/Native Alaskan populations. *Journal of Human Behavior in the Social Environment*, 24(3), 399–407. <https://doi.org/10.1080/10911359.2014.875340>

- Reid, M. C., Fiellin, D. A., & O'Connor, P. G. (1999). Hazardous and harmful alcohol consumption in primary care. *Archives of Internal Medicine*, *159*(15), 1681–1689. <https://doi.org/10.1001/archinte.159.15.1681>
- Rohsenow, D. J. (1983). Drinking habits and expectancies about alcohol's effects for self versus others. *Journal of Consulting and Clinical Psychology*, *51*(5), 752–756. <https://doi.org/10.1037/0022-006X.51.5.752>
- Sadler, G. R., Lee, H. C., Lim, R. S., & Fullerton, J. (2010). Recruitment of hard-to-reach population subgroups via adaptations of the snowball sampling strategy. *Nursing & Health Sciences*, *12*(3), 369–374. <https://doi.org/10.1111/j.1442-2018.2010.00541.x>
- Saunders, J. B., Aasland, O. G., Babor, T. F., De La Fuente, J. R., & Grant, M. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO Collaborative project on early detection of persons with harmful alcohol consumption – II. *Addiction*, *88*, 791-804. <https://doi.org/10.1111/j.1360-0443.1993.tb02093.x>
- Schermer, C. R., Bloomfield, L. A., Lu, S. W., & Demarest G. B. (2003). Trauma patient willingness to participate in alcohol screening and intervention. *Journal of Trauma*, *54*(4), 701-706. <https://doi.org/10.1097/01.TA.0000056158.25478.50>
- Schick, M. R., Nalven, T., Thomas, E. D., Weiss, N. H., & Spillane, N. S. (2022). Depression and alcohol use in American Indian adolescents: The influence of family factors. *Alcoholism: Clinical and Experimental Research*, *46*, 141– 151. <https://doi.org/10.1111/acer.14748>
- Skewes, M. C., & Lewis, J. P. (2016). Sobriety and alcohol use among rural Alaska Native elders. *International Journal of Circumpolar Health*, *75*(1), 30476. <https://doi.org/10.3402/ijch.v75.30476>
- Skewes, M. C., & Blume, A. W. (2019). Understanding the link between racial trauma and substance use among American Indians. *American Psychologist*, *74*(1), 88. <https://psycnet.apa.org/https://doi.org/10.1037/amp0000331>
- Spillane, N. S., Cyders, M. A., & Maurelli, K. (2012). Negative urgency, problem drinking and negative alcohol expectancies among members from one First Nation: A moderated-mediation model. *Addictive Behaviors*, *37*(11), 1285–1288. <https://doi.org/10.1016/j.addbeh.2012.06.007>
- Spillane, N. S., Greenfield, B., Venner, K., & Kahler, C. W. (2015). Alcohol use among reserve-dwelling adult First Nation members: Use, problems, and intention to change drinking behavior. *Addictive Behaviors*, *41*, 232-237. <https://doi.org/10.1016/j.addbeh.2014.10.015>

- Substance Abuse and Mental Health Services Administration (SAMHSA). (2021). 2021 National Survey on Drug Use and Health. Table 2.25A—Alcohol use in lifetime: Among people aged 12 or older; by age group and demographic characteristics, numbers in thousands, 2021. <https://www.samhsa.gov/data/sites/default/files/reports/rpt39441/NSDUHDetailedTabs2021/NSDUHDetailedTabs2021/NSDUHDetailedTabsSect2pe2021.htm#tab2.25a>
- Thomason, T. (2012). Recommendations for counseling Native Americans: Results of a survey. *Journal of Indigenous Research*, 1(2), 4. <https://doi.org/10.26077/4yjb-4134>
- Tonigan, J. S., Venner, K., & Hirchak, K. A. (2020). Urban American Indian adult participation and outcomes in culturally adapted and mainstream alcoholics anonymous meetings. *Alcoholism Treatment Quarterly*, 38(1), 50–67. <https://doi.org/10.1080/07347324.2019.1616512>
- Venner, K. L., & Feldstein, S. W., & Tafoya, N. (2006). Native American Motivational Interviewing, Weaving Native American and Western practices: A manual for counselors in Native American communities. <https://ncrtm.ed.gov/sites/default/files/library/3505/Native%20American%20Motivational%20Interviewing%20-%20Weaving%20Native%20American%20and%20Western%20Practices.pdf>
- Walker, K. (2005). *An exploration of the transmission of historical trauma in urban Native Americans*. [Unpublished doctoral dissertation]. San Francisco Bay: Alliant International University.
- Wardman, D., & Quantz, D. (2005). An exploratory study of binge drinking in the Aboriginal population. *American Indian & Alaska Native Mental Health Research*, 12, 49-61. <https://doi.org/10.5820/aian.1201.2005.49>
- Weisner, T. S., Weibel-Orlando, J. C., & Long, J. (1984). "Serious drinking," "white man's drinking" and "teetotaling": Drinking levels and styles in an urban American Indian population. *Journal of Studies on Alcohol*, 45(3), 237-250. <https://doi.org/10.15288/jsa.1984.45.237>
- Wellbriety movement. (n.d.). <https://www.wellbriety.com/wellbrietymovement.html>
- Westermeyer, J. (2001). Alcoholism and co-morbid psychiatric disorders among American Indian. *American Indian & Alaska Native Mental Health Research*, 10(2), 27-51. <https://doi.org/10.5820/aian.1002.2001.27>
- Whitbeck, L. B., Adams, G. W., Hoyt, D. R., & Chen, X. (2004). Conceptualization and measuring historical trauma among American Indian people. *American Journal of Community Psychology*, 33(3/4), 119-130. <https://doi.org/10.1023/B:AJCP.0000027000.77357.31>
- Whitbeck, L. B., Chen, X., Hoyt, D. R., & Adams, G. W. (2004). Discrimination, historical loss and enculturation: Culturally specific risk and resiliency factors for alcohol abuse among American Indians. *Journal of Studies on Alcohol*, 65(4), 409-418. <https://doi.org/10.15288/jsa.2004.65.409>

- Whitbeck, L. B., Hoyt, D., Johnson, K., & Chen, X. (2006). Mental disorders among parents/caretakers of American Indian early adolescents in the Northern Midwest. *Social Psychiatry and Psychiatric Epidemiology*, *41*, 632-640. <https://doi.org/10.1007/s00127-006-0070-2>
- Whitesell, N. R., Beals, J., Crow, C. B., Mitchell, C. M., & Novins, D. K. (2012). Epidemiology and etiology of substance use among American Indians and Alaska Natives: Risk, protection, and implications for prevention. *The American Journal of Drug and Alcohol Abuse*, *38*(5), 376-382. <https://doi.org/10.3109/00952990.2012.694527>
- Wiechelt, S. A., Gryczynski, J., Johnson, J. L., & Caldwell, D. (2012). Historical trauma among urban American Indians: Impact on substance abuse and family cohesion. *Journal of Loss and Trauma*, *17*(4), 319-336. <https://doi.org/10.1080/15325024.2011.616837>
- Winterowd, C., Miville, M., Schultz, L., Sheader-Wood, J., & Willmon, S., & Warner, L. (2005). *Anger, acculturation, post-colonial stress, and hope among American Indian peoples*. Poster session presented at the annual meeting of the American Psychological Association, San Francisco, CA.
- Winterowd, C., Montgomery, D., Stumblingbear, G., Harless, D., & Hicks, K. (2008). Development of the American Indian Enculturation Scale to assist counseling practice. *American Indian & Alaska Native Mental Health Research*, *15*(2), 1-14. <https://doi.org/10.5820/aian.1502.2008.1>
- Winterowd, C., Williams, D., Cain, M., Bland, K., Miville, M., & Dorton, J. (2004, November). *Resilient core beliefs of American Indian People*. Poster session presented at the Association for the Advancement of Behavior Therapy, New Orleans, LA.
- Wolsko, C., Lardon, C., Mohatt, G. V., & Orr, E. (2007). Stress, coping, and well-being among the Yupik of the Yukon-Kuskokwim Delta: The role of enculturation and acculturation. *International Journal of Circumpolar Health*, *66*(1), 51-61.

### **CONFLICT OF INTEREST**

The authors declare that they have no conflicts of interest.

### **AUTHOR INFORMATION**

Melanie Cain, PhD, is a Clinical Psychologist with Conscious Culture Psychology clinic in the state of California. Carrie Winterowd, PhD, is Professor of Counseling and Counseling Psychology at Oklahoma State University and is a Health Service Psychologist in the state of Oklahoma. Aisha Farra, MS, is a doctoral student in Counseling Psychology at the University of

Massachusetts Boston. All correspondence concerning this manuscript should be sent to Dr. Cain at [cainmelanie05@gmail.com](mailto:cainmelanie05@gmail.com).

APPENDIX

**Table A1**  
**Correlation Matrix of the Main Study Variables Including Alcohol Use, Alcohol Expectancies, Thoughts Related to Historical Loss, Feelings Related to Historical Loss, and Acculturation Levels**

	Alcohol Use	Social & Physical Pleasure	Sexual	Aggression	Social	Impairment	Careless Unconcern	Historical Loss Thoughts	Historical Loss Feelings	Acculturation
AUDIT	-									
SPP	.37**	-								
SEX	.23**	.31**	-							
AGG	.36**	.23**	.36**	-						
SOC	.24**	.42**	.50**	.51**	-					
IMP	.15*	.21**	.23**	.42**	.34**	-				
CU	.28**	.16*	.32**	.60**	.46**	.60**	-			
HL-T	-.03	-.09	-.21**	-.19*	-.11	-.02	-.10	-		
HL-F	.28**	.19*	.33**	.32**	.33**	.15*	.25**	-.44**	-	
NAAS	-.02	.03	.14*	-.12	.08*	.02	.03	.24**	-.13	-

Alcohol Use (*Alcohol Use Disorders Identification Test [AUDIT]; Saunders et al., 1993*)

Alcohol Expectancies (SPP = Social and Physical Pleasure, SEX = Sexual, AGG = Aggression, SOC = Social, IMP = Impairment, CU = Careless Unconcern; *Alcohol Effects Questionnaire [AEQ]; Rohsenow, 1980*)

Historical Loss Thoughts = HL-T, Historical Loss Feelings = HL-F (*Historical Loss Scale [HLS] and Historical Loss Associated Symptoms Scale [HLASS]; Whitbeck, Adams, et al., 2004*)

Acculturation (NAAS = *Native American Acculturation Scale; Garrett & Pichette, 2000*)

\*  $p < .05$

\*\*  $p < .01$