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EXAMINING ALCOHOL EXPECTANCY DIFFERENCES BETWEEN NATIVE AMERICAN AND CAUCASIAN COLLEGE STUDENTS

by

Elizabeth Luger
Bachelor of Science, University of North Dakota, 2010

A Thesis

Submitted to the Graduate Faculty

of the

University of North Dakota

in partial fulfillment of the requirements

for the degree of

Master of Arts

Grand Forks, ND
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2015

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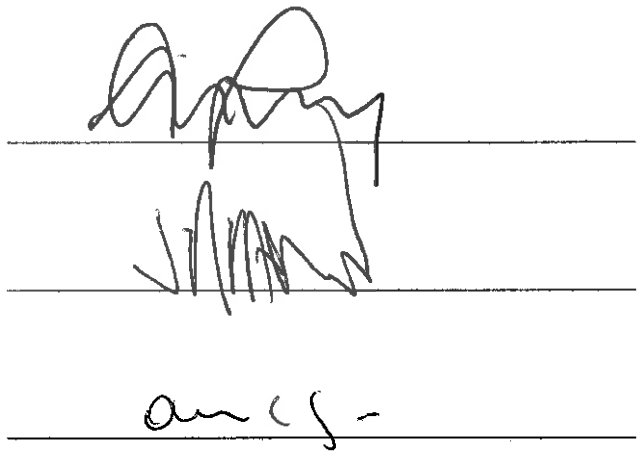
This thesis, submitted by Elizabeth Luger in partial fulfillment of the requirements for the Degree of Master of Arts from the University of North Dakota, has been read by the Faculty Advisory Committee under whom the work has been done and is hereby approved.



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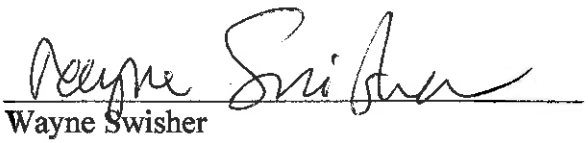

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ABSTRACT

Native American (NA) alcohol use is problematic and concerning. Many of the factors related to general alcohol use are already understood. However, the majority of this research been conducted using samples primarily consisting of Caucasian (CA) subjects. One factor that is significantly related to and predicts alcohol use among CAs is alcohol expectancy effects, which are beliefs one holds about the expected consequences, positive or negative, of using alcohol. Whether or not these findings are applicable toward understanding alcohol use in NA populations is questionable. Data were collected from 51 NA and 51 CA college students on alcohol use, alcohol expectancies, problems associated with alcohol use, and childhood experiences surrounding alcohol use to determine whether expectancy effects and culture-specific experiences may explain differences in alcohol use between the two groups. It was hypothesized that NAs would report more drinking, more problematic use associated with drinking, stronger positive alcohol expectancies, and more negative childhood experiences surrounding alcohol than CAs. It was also hypothesized that ethnic differences in alcohol use would be explained by differences in expectancy effects, and that early childhood experiences are the mediating factor between ethnicity and expectancies. In terms of past month drinking and past six month binge drinking, results showed that CAs drank significantly more than NAs, though NAs experienced significantly more negative childhood experiences surrounding alcohol than CAs. This suggests that alcohol use in NA students may not be as prevalent or problematic as alcohol use in the general NA population. The mediational hypotheses were not supported, suggesting that expectancy effects may not operate in the same way for NAs as for CAs, that

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perhaps expectancies are not the major link to alcohol use for NAs, and also that childhood experiences are not the major link for positive alcohol expectancy formation in NAs.

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CHAPTER I

INTRODUCTION

Native Americans (NA) have drinking behaviors that are different from those of Caucasians (CA). It is important to understand the psychological mechanisms behind problematic NA alcohol consumption in order to dismantle it. The problem with examining these mechanisms is that most alcohol-related research has primarily been done on CAs. Due to the many differences that exist between NAs and CAs in general, most current alcohol-related research may not apply to NAs. Therefore, the current lack of understanding surrounding alcohol use among NAs needs to be addressed. Specifically, a clearer understanding of why NAs choose to drink alcohol should be examined via the psychological construct known as expectancy effects.

Estimations of Alcohol Use, Alcohol Dependence, and Binge Drinking Among Native Americans

A comprehensive study on the epidemiology of Native American (NA) drinking has yet to be done (Caetano, Clark, & Tam, 1998; Moran, 2002). Therefore, estimating NA levels of alcohol use as a whole is extremely convoluted. For instance, the external validity of many studies done up until this point is often met with criticism because they only include one or two NA tribes or locations (Akins, Mosher, Rotolo, & Griffin, 2003; Beauvais & La Bouff, 1985). Existing literature tends to show that in terms of overall prevalence rates, more CAs drink any amount of alcohol, but of the NAs who drink, they tend to drink larger quantities. The National Institute on Alcohol Abuse and Alcoholism (NIAAA; 2006) reported that between 2001-2002, approximately 47.8% of NA adults aged 18 and above were current drinkers (i.e., drank alcohol

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in the past 30 days), whereas 59.8% of CA adults were current drinkers. Despite higher rates of alcohol use reported by CAs, NAs tend to consume alcohol in more problematic ways (NIAAA, 2006; Spillane 2007).

A report by Gabriel et al. (1999) examined the prevalence of alcohol dependence in a Southwestern tribe. They estimated the lifetime prevalence of alcohol dependence to be as high as 70.4% for the men of this group and 29.6% for the women of this group. These rates were reportedly almost identical to rates found in a Northwestern NA community (Leung, Kinzie, Boehnlein, & Shore, 1993). In comparison, Helzer, Burnam, and McEvoy (1991) found the lifetime prevalence of alcohol dependence for the general United States population to be between 12.2% and 15.1% for men ages 18-64 and between 2.2% and 3.5% for women of the same age bracket. These rates of general U.S. population alcohol dependence are substantially lower than those typically reported among NAs.

Not only have overall alcohol use rates and alcohol dependence been found to be high in NA populations, but so have binge drinking rates. Robin, Long, Rasmussen, Abaugh, and Goldman (1998) assessed NA participants from three inter-related pedigrees in a Southwest tribe for binge drinking behavior and alcohol dependence. They found that overall alcohol dependence was common, with a rate of 83.4% in men and 50.5% in women. They found the binge drinking rate to be 62.9% in men and 24.9% in women. This study also pointed out that, not surprisingly, alcohol dependence occurs in a high rate of binge drinkers, and found that over 97% of male binge drinkers and over 91% of female binge drinkers qualified for alcohol dependence. Alcohol dependence on its own was still found to be relatively frequent among non-binge drinkers, at 26% among male and 55% among female non-binge drinkers. Assessing rates of drinking for specific NA tribes, much less for all NAs in the United States as a whole, has indeed proven to

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be challenging. However, research on specific NA populations subsumed within the larger NA demographic plays an important role towards a better understanding of alcohol use disorders and other alcohol-related problems among NAs.

In an attempt to collect more valid data, Spicer et al. (2003) examined the prevalence of alcohol dependence in two culturally distinct tribes. These tribes were differentiated by their geographic locations: Northern Plains (NP) and Southwest (SW). They found that men in both the NP and SW groups had lifetime rates of alcohol dependence that were 50% higher than the national population. This study also found that NA women in the NP sample had alcohol dependence rates that were twice as high as the rates of the national sample. SW women, however, had drinking rates that were very similar to the national sample. Overall though, rates of alcohol dependence in these tribes were higher than the US averages. The researchers state that this finding warrants further attention, but they also recommend caution be taken when examining studies that report alcohol rates of NAs that do not rely on stringent sampling methods. While alcohol prevalence rates may differ depending on the specific NA population or tribe examined, they seem to be at least equal to national rates, and are often even higher.

Differences between CA and NA drinking rates have been found not only in adults, but in adolescents as well. Concerns about NA youth drinking are longstanding and have been examined for decades. A 1985 Senate Select Committee on Indian Affairs found that over 80% of NA adolescents living on reservations and over 50% of NA adolescents living off reservations used alcohol at least moderately, compared with just 23% of non-NA, urban-dwelling youth (LaFromboise, 1988).

More recently, Wallace et al. (2003) found that Native American youth in grades 8, 10, and 12 reported the highest levels of drinking when compared to a variety of other ethnic groups,

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including Asian Americans, Mexican Americans, Puerto Ricans, other Latino/a Americans, African Americans, and Caucasians. On a national level, 52% of 8th grade girls, 72% of 10th grade girls, and 81% of 12th grade girls have used alcohol at least once in their lifetime. These rates are contrasted with those of NA girls of the same grades, where 65.2%, 75.5%, and 87.1%, respectively, reported having used alcohol at least once in their lifetime. While levels between NAs and CAs are not substantially different for 10th and 12th grade girls, the gap does widen when comparing NA and CA 8th grade girls. This suggests that alcohol use is starting earlier in NAs than it is in CAs. In a more proximal measure, Wallace et al. (2003) also asked youth how much alcohol they had consumed on drinking days in the last 30 days. NA boys and girls in 8th, 9th, and 10th grades reported drinking more than CA boys and girls in the same grades. NA and CA boys in 8th, 9th, and 10th grades differed in their reported drinking at 2.4 versus 1.1, 3.9 versus 2.5, and 7.4 versus 5.7 drinks per drinking occasion, respectively. In addition, NA and CA girls in 8th, 9th, and 10th grades differed in their reported drinking at 1.2 versus 0.5, 2.8 versus 1.0, and 4.7 versus 1.8 drinks per drinking occasion, respectively. Thus, it is clear that substantial alcohol use is not limited to NA adults, but also appears to begin very early in life for some NA adolescents.

Native American Drinking Patterns

Among the subset of the NA population that does drink, the type of drinking behavior they exhibit tends to be different than that of their CA counterparts. For NAs, it is more typical to find drinking behavior that is closer to either abstinence or binge drinking, as opposed to moderate levels of drinking. In other words, on a continuum of drinking alcohol, where one end is complete abstinence and another end is binge drinking, NAs tend to fall on either end of the spectrum at one of the extremes, as opposed to somewhere in the middle, where moderate

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drinking would be. May and Gossage (2001) found that NA drinkers will often exhibit a pattern of going many days without alcohol, and then drinking very high levels of alcohol on the days that it is consumed. This type of all-or-nothing drinking is less typical among other ethnicities. According to a report from the Centers for Disease Control and Prevention (CDC, 2014), approximately 16% of the adult population in the U.S. engaged in binge drinking in 2008. A 2013 report from the CDC reported that when compared to other ethnic groups, NA adults had some of the highest binge drinking rates, including binge drinking episodes per individual, and NAs also reported the largest number of drinks consumed per binge drinking episode (CDC, 2013). Interestingly, when comparing several racial/ethnic groups, including CAs, NAs, African Americans and Asian/Pacific Islanders, Kanny, Liu, Brewer, and Lu (2013) found the prevalence of binge drinking to be highest in CAs. However, the intensity of binge drinking was highest among NAs, at 8.4 drinks per binge drinking occasion. These rates suggest that when NA people drink, there is a high prevalence of extreme excessive drinking, more so than what tends to occur in other racial/ethnic groups.

Strikingly, in tandem with high rates of binge drinking among NAs, several studies have found high rates of total abstinence from alcohol in this population. Gililand, Becker, Samet, and Key (1995) compared abstinence rates among NAs, CAs, and Hispanics and found the highest abstinence rates to be in the NA group. Sixty-two percent of NA males and 81.5% of NA females reported no alcohol use in the last month. This was contrasted with abstinence rates for CAs, which were 42.4% for males and 58.6% for females, and for Hispanics, which were 42.1% for males and 63.6% for females. O'Connell, Novins, Beals, Spicer, and the AI-SUPERPFP Team (2005) examined lifetime abstinence rates in three NA groups: Northern Plains, Southwest, and urban-dwelling NAs. Among men, they found that 24.9% of NP, 31.9% of SW, and 14.8%

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of urban NAs reported lifetime abstinence from alcohol. Abstinence rates were higher for women of these groups, at 33% of NP, 61.5% of SW and 40.5% of urban NAs. These are compared to the overall U.S. population's abstinence rate of approximately 21% (CDC, 2014). The high rates of binge drinking, paired with the high rates of abstinence in NAs, suggest that aberrant drinking styles are common in this population. It appears that NAs have not necessarily been found to drink more frequently than CAs, but rather have been found to consume larger quantities per drinking occasion. Therefore the most important factor in determining problematic outcomes seems not to be the frequency of drinking, but rather the quantity of drinking. This pattern of drinking more per occasion is typically associated with and leads to more negative consequences.

Consequences of Problematic Alcohol Consumption for Native Americans

In addition to their high rates of alcohol consumption, NAs suffer from disproportionally higher rates of negative consequences attributed to alcohol use when compared to other ethnicities (Frank, Moore, & Ames, 2000; Gililand et al., 1995; May & Gossage, 2001; Moncher, Holden, & Trimble, 1990). NA people who drink tend to experience higher rates of alcohol-related mortality than CAs (Spillane et al., 2007). Spillane and colleagues (2007) reported an age-adjusted alcoholism death rate for the period of 1994-1996 in the U.S. general population to be 6.7 per 100,000, while the death rate attributed to alcohol in NAs was seven times higher, at 48.7 per 100,000. In addition, Spillane et al. (2007) reported that the cirrhosis and chronic liver disease rate among NAs was 4.9 times higher than the general U.S population for the year of 1995.

Between the years of 1980-1998, May and colleagues (2002) studied NA suicides in New Mexico, a state with a relatively large NA population including multiple tribes, and looked at how many of these deaths were preceded by alcohol use. They found that alcohol was present in

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69% of all NA suicides during their 18-year investigation, though rates ranged from 62.1% to 84.4% depending on the specific tribe. Even the lowest rate of 62.1% is notably higher than the rate of alcohol present in suicides overall in New Mexico during the same time period, which was 44.3%. They also found that in over 90% of the NAs who committed suicide in New Mexico, their blood alcohol content levels were substantially above the legal limit of 0.08, at an average of 0.199 for NA males and an average of 0.180 for NA females.

NAs have also been shown to have more legal problems in conjunction with alcohol use than CAs (Bachman, 1992; Grobsmith, 1994; May & Gossage, 2001), including higher rates of driving under the influence (Grossman, Sugarman, Fox, & Moran, 1997; May & Gossage 2001) and child neglect and abuse (DeBruyn, Lujan, & May, 1992; Lujan, DeBruyn, May, & Bird, 1989; May & Gossage, 2001). Additionally, the unemployment rate is also high for NAs. In 2011, the unemployment rate of NAs was reported to be 14.6%, which is twice as high as that of the unemployment rate for CAs, which was reported to be 7.2% (Bureau of Labor Statistics, 2012). Another problematic consequence of drinking alcohol that has been documented to be more prevalent in NA populations than CA populations is fetal alcohol syndrome (FAS). May, McCloskey, and Gossage's (2002) meta-analysis found that FAS prevalence rates in NA children were found to range from 1.0 to 120.0 per 1,000 live births. When they closely examined five studies that examined specific tribal populations, they found the average occurrence of FAS to be 7.86 per 1,000 live births. These rates are contrasted with those of the general U.S. population, where studies have estimated the national rate to be between only 0.5 - 2.0 cases per 1,000 births (CDC, 2014).

As discussed earlier, this discrepancy in negative consequences is likely a secondary result of how NA behavior surrounding alcohol consumption, with a common abstinence-binge

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drinking pattern, is different from that of CAs. As is evident, NAs as a whole experience a disproportionate amount of negative consequences due to problematic drinking. In an attempt to mitigate these negative consequences, it is necessary to better understand the reasons why problematic alcohol consumption among NAs occurs.

Etiology of Problematic Alcohol Use

Understanding the reasons for the high rates of alcohol use in NA populations, which are often associated with negative outcomes and therefore poor quality of life, requires more than knowing that these differences exist, but rather the reasons behind *why* they exist. An abundance of literature points to factors such as genetics, environmental influences, and personality as important possible causal factors for alcohol use disorders (Sher, Grekin, & Williams, 2005). However, most of this research has focused largely on CA alcohol use, and fails to tease out cultural factors that may influence the development of problematic alcohol use in NAs. Particularly important cultural factors likely to influence NA alcohol use are standard life reinforcers, historical trauma, and expectancy effects.

Standard Life Reinforcers

In their extensive work on alcohol risk factors for NAs living on reservations, Spillane and colleagues (2007) use and explain the concept of "standard life reinforcers," or SLRs. They define SLRs as, "a basic set of rewarding circumstances individuals pursue in most cultures, such as housing, economic security, work opportunity, family closeness, and knowledge" (p. 23). It has been shown in CA samples that SLRs become significantly reduced when problem drinking occurs (Sisson & Azrin, 1989). SLRs are considered protective factors against substance abuse because the risk of losing any of these reinforcers is high when substance use becomes out of control. Since SLRs are often less accessible to NAs than CAs, they are less likely to serve as

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protective factors for NAs. For example, as of 2011, the unemployment rate of NAs was approximately twice as high as that of CAs (Bureau of Labor Statistics, 2012). Accordingly, if one is not employed, likely due to a lack of opportunity on reservations, that person will not experience the positive reinforcement associated with economic security. In other words, NAs may often feel as though they have nothing to lose, and therefore are thought to be less inhibited when it comes to using alcohol than CAs.

Historical Trauma

Current psychological impairments in NA populations, including problems surrounding problematic substance use, cannot be discussed without taking the unique history of America's Indigenous people into consideration. A variety of factors, including forced placement in boarding schools, genocide, ethnic cleansing, and subsequent loss of traditions, all have led to enduring states of psychological distress (Whitbeck, Adams, Hoyt, & Chen, 2004). Research has shown that a possible contributor to current NA alcohol consumption revolves around this notion of what is often termed 'historical trauma.' Evans-Campbell (2008) described historical trauma as a collective experience of trauma, spanning multiple generations, on the part of one group of people where the inflictors of said trauma are a separate group of people with a distinct identity. Ehlers, Gizer, Gilder, Ellingson, and Yehuda (2013) conducted a study in which they attempted to find out the extent to which substance dependence, mood disorders, conduct disorder, and PTSD influenced the frequency of thoughts of historical trauma. Sixty-six percent of the NA participants in the study reported a diagnosis of substance dependence at some point in their lifetime. Individuals who endorsed a diagnosis of substance dependence reported significantly higher levels of the extent to which they experienced historical loss and associated negative

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feelings. These results indicate that historical trauma is an important influence to consider when attempting to understand the high rates of alcohol use disorders in NA populations.

Expectancy Effects

Yet another possible explanation for why NA people drink revolves around the theoretical framework of expectancy effects. Expectancies are beliefs about the expected effects of a particular construct (Kuntsche, Knibbe, Gmel, & Engels, 2005). The theory behind expectancies can be conceptualized by thinking about principles of behaviorism, specifically rewards and punishments. People tend to engage in behavior for which they expect a reward (i.e., positive reinforcement) and tend not to engage in behavior for which they expect a punishment (i.e., positive punishment). People can have expectancies about a variety of different things, including behaviors, cognitions, emotions, or any combination of the three (Kuntsche et al., 2005).

Alcohol expectancies refer to consequence-oriented beliefs about alcohol use (Rotter, 1975), which ultimately influence drinking. Expectancies are conceptualized along two separate dimensions: positive and negative (Goldman, Brown, Christinsen, & Smith, 1991). Thus, it is possible for individuals to hold both positive and negative expectancies about alcohol. For example, someone could hold a positive alcohol expectancy that alcohol use will create a feeling of relaxation, while simultaneously holding a negative expectancy that it will lead to a hangover. These alcohol expectancies are directly related to alcohol use in the sense that positive expectancies (i.e., expected rewards) lead to alcohol use, whereas negative expectancies (i.e., expected punishments) lead to abstinence (Kuntsche et al., 2005). Literature on alcohol expectancies has revealed that positive expectancies are associated with and predict frequency of

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alcohol use (Christianson, Smith, Roehling, & Goldman, 1989; Garcia-Andrade, Wall, & Ehlers, 1996; Kuntsche et al., 2005; Spillane et al., 2007).

Garcia-Andrade et al. (1996) explain that alcohol expectancies are thought to mediate the effects of alcohol and also, in the case of positive expectancies, serve as risk factors that reinforce alcohol use. On the other hand, negative expectancies serve as protective factors and are thought to be causally related to abstinence or the decision to stop a drinking episode once it has begun (Fromme, Stroot, & Kaplan, 1993). Measures have been developed and empirically validated to assess alcohol expectancies. Two of these measures include the Alcohol Expectancy Questionnaire (AEQ; Brown, Christiansen, & Goldman, 1987) and the Comprehensive Effects of Alcohol (CEOA; Fromme et al., 1993) questionnaire. These measures assess positive expectancy factors such as sociability, tension reduction, liquid courage, and enhanced sexual experiences, as well as negative expectancy factors such as cognitive and behavioral impairment, risk and aggression, and self-perception (Fromme et al., 1993).

Alcohol expectancies are developed in early childhood through observation or vicarious learning (Brown, Creamer, & Stetson, 1987). This means that alcohol expectancies are developed even before any direct experiences with alcohol have occurred. In a New Zealand study, Fergusson, Lynskey, and Horwood (1994) found that parental alcohol use and age of first alcohol use were correlated with problematic teenage and adult alcohol consumption. They found that if children had first consumed alcohol before the age of six, they were 1.9 to 2.4 times more likely to report problematic drinking (i.e., frequent or heavy) by the time they were 15 years old, compared to children who reported no alcohol consumption prior to age 13. Out of 734 15-year old respondents who were asked to retrospectively recall the age at which they first consumed alcohol, 60 (8.17%) reported that it was between the ages of 1-5 years, 492 (67.03%)

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reported that it was between the ages of 6-10 years, 117 (15.94%) reported that it was between the ages of 11-12 years, and 65 (8.86%) reported that it was at the age of 13 or later. Although this was not a NA specific study, it helps to convey the point that factors such as observation of parental drinking and young age at first consumption, both of which also occur in NA populations, are important factors to consider when predicting problematic alcohol use later in life.

There are no studies that examine the ways in which alcohol expectancies are related to culture for NAs. However, research on the relationship between alcohol expectancies and culture has been conducted using other racial and ethnic groups. For example, when studying the differences between expectancies held by CAs and Asians, O'Hare (1995) found that while Asian participants showed stronger positive expectancies on the factor of tension reduction, they actually reported using less alcohol than the CA participants. This research also suggests that alcohol expectancies, as largely explored in CAs, may not function the same across various ethnic groups. Because expectancies are developed in early childhood and are influenced by factors such as the consequences of others around them who drink, there lies a potential for expectancies to be related to culture. Culture will be a critical component to consider when comparing NA and CA alcohol expectancy development.

While substantial research has examined alcohol expectancies for CAs, studies that look at alcohol expectancies in NAs are few and far between. There have been some studies that have directly or indirectly studied alcohol expectancies in NA samples. Conner and Conner (1992) studied a group of NA teenagers at a powwow. They found that those who engaged in heavy drinking were more likely to report the beliefs that if they drank alcohol they would have more enjoyable sexual experiences and feel less anxious in interpersonal situations. A limitation of this

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study is that while it did examine the expected benefits of alcohol use on sexual behavior, it did not assess alcohol use as directly related to alcohol expectancies.

Garcia-Andrade et al. (1996) directly examined alcohol expectancies in a sample of non-alcoholic male Mission Indians using the short form of the AEQ. They were the first and only group to publish an article specifically examining alcohol expectancies in a NA population. In their landmark study, they found that drinking history was related to alcohol expectancies. Specifically, NA men who reported greater alcohol consumption over the past six months held stronger positive expectancies for global positive changes and arousal/power than NA males who reported drinking less over the past six months. While it appears that expectancies may be related to alcohol use, it is still unknown whether they relate to alcohol use in the same way for NA as they do for CAs. The Garcia-Andrade et al. (1996) study has been a valuable pointer for better understanding how alcohol expectancies work in NAs; however, because only NAs were examined, it is not possible to apply the vast amount of information that is known about alcohol expectancies in CAs to NAs because the two groups have not yet been directly compared with each other.

To date, no research has directly compared alcohol expectancy differences between NAs and CAs. Thus, it is not clear whether alcohol expectancies function in the same way for NAs as they do for CAs. This needs to be explored through research. It is important to gain a better understanding of expectancies since they are thought to be a causal factor in problematic alcohol use. It is also critical to explore the development of alcohol expectancies in NAs because these expectancies can potentially be altered (Fromme et al., 1993). This means that it may be possible to mitigate the problematic alcohol consumption trajectory that many NAs are currently on so that overall NA health may improve for future generations.

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Additional Considerations Related to Alcohol Use

There are a couple of additional factors that are important to consider when examining alcohol use in general. These additional considerations include cultural affiliation and gender differences.

Cultural Affiliation of Native American College Students

Native American identity is a complicated topic. There are various different ways to find and classify people who identify as NA. For example, a legal definition of being NA asserts that one must prove tribal enrollment, which varies across tribes. Commonly, such as in all four tribes in North Dakota, the United States Government requires proof of 25% "blood quantum" to claim enrollment (Spruhan, 2006). Alternatively, one might claim NA identity if he or she were adopted into a NA family and have been taught the customs and practices of their adopted family's NA culture. It is valuable to further investigate NA samples and examine the extent to which participants identify themselves as being connected to NA culture, since culture is thought to be a factor that plays into decisions regarding drinking.

Optimum functioning among NAs, including a higher levels of self-actualization and better psychological adjustment, is achieved when an NA individual identifies as being bicultural, meaning culturally competent in the dominant society as well as in their original culture (Dinges, Yazzie, & Tollefson, 1994; Lafromboise, Coleman, & Gerton, 1993). Experts on cultural identification suggest that rather than conceptualizing two cultures as being on opposite ends of a continuum, dimensions of cultural identification may be thought of as independent of one another (Oetting & Beauvais, 1990). That is, one can simultaneously strongly identify with two cultures, or one or the other, or neither. In this respect, it is possible for an NA individual to identify as bicultural, as described above; as assimilated, meaning the NA individual identifies

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strongly with only European American culture; as traditional, meaning the NA individual identifies strongly with only NA culture, or marginal, meaning they are culturally incompetent and do not identify as a conceiving a cultural identity in either culture (Allen & French, 1994). Just as NAs identifying as bicultural tend to thrive in dominant society settings such as college, NAs identifying as marginal tend to struggle psychologically, including in college, and subsequently are vulnerable for utilizing more unhealthy forms of coping, such as inappropriate alcohol use (Dinges, Yazzie, & Tollefson, 1974; LaFromboise & Rowe, 1983; Schinke et al., 1993). It is useful to examine the level of cultural affiliation in NA populations in order to gain a better understanding of how this factor may or may not influence NA alcohol use.

Gender

Not surprisingly, differences in alcohol use variables between genders in NA college students have not been thoroughly examined. However, differences in drinking between college-aged men and women in general have been widely studied and have yielded mixed results. Iwamoto, Cheng, Lee, Takamatsu, and Gordon (2011) and Slutske (2005) argue that drinking among college-aged men is more concerning than drinking among college-aged women because they feel the need to "man-up" when it comes to drinking, and have more problems associated with drinking. Some studies have found that men reported more heavy drinking days than women (Seo & Li, 2009), more risky sexual behavior (Wells, Kelly, Golub, Grov, & Parson, 2010), and twice the amount of alcohol-use disorder rates (Grant et al., 2004) compared to college-aged women.

Other studies suggest women are more vulnerable, including being at higher risk for sexual assault (Young, Morales, McCabe, Boyd, & D'Arcy, 2005) and physiologically processing alcohol at slower rates than men, even when controlling for weight (NIAAA, 2002;

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Perkins, 2000). Either way, parallel to examining differences between aspects of alcohol use and expectancies between cultures, gender is clearly another important aspect to consider when looking at college samples and drinking behavior.

Current Study

It has been demonstrated that NAs tend to drink more alcohol per occasion than CAs and that NAs experience more negative consequences associated with alcohol use. There has been a growing body of research that examines etiological factors behind alcohol use. Most of this research, however, involves samples that consist largely of CA participants. As a result of this, it is difficult to generalize these findings to NAs because there are cultural influences that affect the way people drink alcohol, including standard life reinforcers, historical trauma, and expectancies. With the exception of a minute amount of research, these cultural factors have not been examined in relation to NAs. Out of the above factors, expectancy factors are the only factors that have the potential to be altered, which is why this study examined this specific construct.

The current study compared and contrasted alcohol expectancies in NAs and CAs within the framework of early childhood experiences and examined if these early childhood experiences may have affected each group's respective alcohol expectancy formulation. In order to gain a better understanding of these ideas, a multifaceted approach was taken. This study had five aims. The first aim was to examine whether or not there are differences between NA and CA alcohol use. It was hypothesized that NAs will report larger quantities of drinking alcohol in the last six months than CAs.

The second aim of the study was to examine whether or not there were differences between problems experienced as a result of drinking in NA and CA groups. It was hypothesized

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that the NA group would report more negative consequences as a result of drinking in the last 6 months than CAs.

The third aim of the study was to examine differences in alcohol expectancies between NAs and CAs. It was hypothesized that the NA group would report stronger cumulative positive expectancies than the CA group. Garcia-Andrade et al.'s (1996) study on alcohol expectancies in NAs only examined positive expectancies using the AEQ. There is currently no literature that directly examines negative alcohol expectancies in any NA population and therefore this study will not include a specific a priori hypothesis regarding negative expectancies. However, exploratory analysis was conducted to examine negative alcohol expectancies in the NA and CA samples.

The fourth aim was to examine the degree to which NAs and CAs reported having been exposed to alcohol in their early childhood (i.e., prior to the age of 12). It was hypothesized that NAs would report more early exposure to alcohol and related consequences than CAs.

The fifth aim of the study was to examine whether ethnic differences in alcohol use can be explained by differences in expectancy effects, and whether expectancy development is impacted by early exposure to alcohol. Thus, it was hypothesized that positive expectancies mediate the relationship between ethnicity and past six month alcohol use, and furthermore, that early childhood exposure to alcohol differentially affects the formation of alcohol expectancies and is the mediating factor between ethnicity and alcohol expectancy development.

It is important to know whether and how expectancies differ between the two groups and why this is the case. If a better understanding of the early experiences that affect alcohol expectancy development is attained, attempts can be made to alter them. It would then be possible to propose culturally relevant preventative measures targeting expectancies with the

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ultimate goal being to reduce the amount of problematic drinking and associated negative outcomes in NA communities. Furthermore, a better understanding of how alcohol use disorders are developed in NAs presents an opportunity for a better understanding of how to treat these disorders once they have already been formed.

Additionally, level of cultural affiliation (i.e. bicultural, assimilated, traditional or marginal) within the NA sample was examined in order to highlight any possible connections between alcohol use and how NA participants identified themselves culturally. It was hypothesized that a majority of the NA participants would report being bicultural. Gender comparisons between the two groups on alcohol use, problems experienced as a result of drinking alcohol, positive and negative expectancies and early childhood experiences were also made. No a priori hypotheses regarding gender differences were made. However, given the importance of examining ethnicity and gender with regard to alcohol use, comparing genders was seen as necessary in order to gain a better understanding of how various demographic groups (i.e., men vs. women and NA vs. CA) differ on the same variables.

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CHAPTER II

METHOD

Participants

Participants were 102 college students enrolled at the University of North Dakota (UND). They were eligible to participate in this study if they identified their primary ethnicity as either Native American or Caucasian and were at least 18 years of age. Fifty-one NA students and 51 CA students participated in this study. There were 18 NA men and 33 NA women, as well as 13 CA men and 38 CA women who participated in the study.

For recruitment, the study was made available through SONA Systems, an online research participation system for undergraduate students enrolled in psychology courses. Additionally, with instructor approval, announcements were made in certain American Indian studies classes asking for participants. For compensation, students recruited through SONA were given 0.5 credits for participating in this study, which is equivalent to a half-hour of research participation. Participants recruited through American Indian Studies courses received $5.00. In an effort to get as many participants as possible, students were also recruited at the American Indian Student Services (AISS) Center during events where a lot of people were anticipated to be present. Students recruited at AISS were compensated with $5.00 for participating in the study. All participants completed the study via pen and paper with a qualified administrator at a designated time and location on campus.

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Institutional Review Board (IRB) approval was obtained from UND's IRB prior to the collection of any data.

Procedure

First, participants signed an informed consent agreement. Next, they were told that they would fill out a series of 6 questionnaires, which would take approximately 20-30 minutes total to complete. They were then asked if they had any questions before they began. Students participating in the study completed the questionnaires in the following order: a demographics questionnaire, an alcohol use questionnaire, the Rutger's Alcohol Problem Index- 23 Item version, the Comprehensive Effects of Alcohol questionnaire, the Early Exposure to Alcohol questionnaire, and the American Indian Bicultural Inventory. Finally, the participants were compensated accordingly and asked if they had any final questions regarding the study.

Measures

Demographics

Participants were asked to provide data on their age, sex, the city and state from which they reside, and if they had ever lived on a Native American reservation. If they answered yes to having lived on a reservation, they were asked to provide the name of the reservation. This was to help ensure that responders were being honest about their ethnicity. They were also asked what year in college they were in, including graduate school. They were asked to denote all ethnicities that make up their ethno/racial background. Lastly, they were asked to select which ethnicity they primarily identify with, either Native American or Caucasian. It was anticipated that some participants would identify as both Native American and Caucasian, though participants were instructed to select the one ethnicity that they *primarily* identified with.

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Alcohol Use

A brief survey regarding alcohol use was given that assessed for quantity of use, frequency of use, and binge drinking. Respondents were asked if they had ever used alcohol, and if so, the approximate age they were when they first drank alcohol. They were asked if they had consumed alcohol in the last month. If so, they answered three subsequent questions, including: the average amount of days that they drank per week (frequency), the average amount of drinks consumed per drinking occasion in the last month (quantity), and approximately how many days in the last month they drank 5 or more drinks (if male) or 4 or more drinks (if female) in one sitting in the last month (i.e., binge drinking). Past month drinking was determined by calculating the product of the typical quantity of drinks consumed per week and the typical frequency of alcohol consumption per week in the last month. Participants were also asked if they had consumed alcohol in the last six months. If yes, they answered three subsequent questions, including: the average amount of days that they drank per month (i.e., 0-30) in the last six months (frequency), the average amount of drinks consumed per drinking occasion in the last six months (quantity), and approximately how many days per month they drank 5 or more drinks (if male) or 4 or more drinks (if female) in one sitting in the last six months (i.e., binge drinking). Past six month drinking was determined by calculating the product of the typical quantity of drinks consumed per month and the typical frequency of alcohol consumption per month in the last six months. Lastly, they were asked if they have any family members whom they subjectively believe has or has ever had a problem with alcohol use, and they were asked to note how that family member was related to them.

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Rutgers Alcohol Problem Index- 23 Item Version

Participants completed the Rutgers Alcohol Problem Index (RAPI), 23-item version, which was created to assess problem drinking in adolescents and young adults (White & Labouvie, 1989). Respondents were asked to endorse to what extent they have experienced the consequences specified, (e.g., "Not able to do your homework or study for a test"), within the past six months on a 4-point Likert scale (i.e., none, 1-2 times, 3-5 times, more than 5 times). The RAPI-23 has been demonstrated to have an internal consistency coefficient of $\alpha = .921$. (Cohn, Hagman, Graff, & Noel, 2011). Cronbach's alpha from the current sample was .992 for the RAPI.

Comprehensive Effects of Alcohol

Participants completed the Comprehensive Effects of Alcohol questionnaire (CEOA), which is a 38-item self report questionnaire that assesses respondents' expected beliefs, both positive and negative, about alcohol consumption (Fromme et al., 1993). Each item is a possible alcohol-related outcome (e.g., "I would act sociable"), and respondents were asked to endorse the extent to which they agree or disagree with expecting that outcome would happen while drinking on a 4-point Likert scale (i.e., disagree, somewhat disagree, somewhat agree, and agree). There are seven factors that comprise the CEOA: four positive (i.e., sociability, tension reduction, liquid courage, and sexuality), and three negative (i.e., cognitive and behavioral impairment, risk and aggression, and self-perception; Fromme et al., 1993). This measure is relatively easy to take and time-efficient at only 38 items, it has been normed on college samples, the reliability and validity have been extensively demonstrated, and unlike some other measures that examine alcohol expectancies, the CEOA measures negative expectancies along with positive expectancies, allowing for further examination of the negative expectancy construct (Fromme et

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al., 1993). All of these considerations made the CEOA preferable to other measures of alcohol expectancies. Cronbach's alpha from the current sample was .937 for the positive expectancy scale and .901 for the negative expectancy scale.

Early Exposure to Alcohol

Participants completed the Early Exposure to Alcohol questionnaire, which was created for this study with the intention of understanding what experiences formulated their early expectancies surrounding alcohol. It was deemed appropriate to ask about early experiences from the age of 12 and below because the early childhood years, often prior to any actual use, are when alcohol expectancies are known to be formed (Brown, Creamer, & Stetson, 1987). There are 12 items on this questionnaire and they were answered on a 5-point Likert scale, based on the frequency they were able to endorse having had a certain experience (i.e., never, rarely, sometimes, often, always). Cronbach's alpha from the current sample was .881 for this questionnaire.

American Indian Biculturalism Inventory – Northern Plains

Participants completed a survey assessing behaviors related to cultural practices, beliefs, and acculturation. The American Indian Biculturalism Inventory (AIBI) is a 24-item self-administered survey used to assess social behaviors related to beliefs, worldviews, attitudes, and acculturation of American Indians (Baker, 2009). Items on the AIBI are answered on a 4-point Likert scale, with ranges depending on the question being asked (i.e., no comfort, some comfort, moderate comfort, complete comfort; or don't identify, somewhat identify, moderately identify, greatly identify, etc.). The AIBI contains two subscales, the first of which measures American Indian cultural identification (AICI) and the second of which measures European American cultural identification (EACI). Administering the AIBI allowed for the examination of the extent

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to which NA participants identified with their Native American heritage as well as European American culture.

Data Analysis

Five preliminary sets of analyses prior to two mediational analyses were run. The first analysis addressed the first aim of the study and was an independent samples t-test to compare the levels of alcohol use between the NA and CA participants. The second analysis addressed the second aim of the study and was another independent samples t-test to compare problems associated with drinking between the NA and CA samples.

The third analysis included summing the positive expectancy factors and the negative expectancy factors to create two overall composite scores. Here again, two independent samples t-tests were conducted to compare group differences between the NA and CA groups in 1) positive alcohol expectancies and 2) negative alcohol expectancies.

The fourth analysis involved summing the scores on the Early Exposure to Alcohol Questionnaire to create an overall composite score that was used to examine similarities or differences in early childhood exposure experiences between NA and CA groups. An independent samples t-test was conducted to compare these composite scores. Two of the thirteen questions were reverse-coded (i.e., a higher score would indicate experiences conducive with not drinking alcohol) and therefore were recoded.

The first mediational analysis was used to test the hypothesis that positive alcohol expectancies are the link between ethnicity and past month alcohol use. A *mediator* is defined as a variable that explains the relationship between a predictor and an outcome (Baron & Kenny, 1986; Holmbeck, 1997; James & Brett, 1984). Mediational analysis was used again to test the hypothesis that early childhood exposure to alcohol is the mediating factor between ethnicity and

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positive expectancies. Two sets of multiple regressions were conducted in three steps each: 1) 1.a. past month alcohol use was regressed on ethnicity, 1.b. positive expectancies were regressed on ethnicity, and 1.c. past month alcohol use was regressed on ethnicity and positive expectancies, and 2) 2.a. positive expectancies were regressed on ethnicity, 2.b. early childhood experiences was regressed on ethnicity, and 2.c. positive expectancies were regressed on ethnicity and early childhood experiences. Sobel's (1982) test of significance was used to determine the significance of the mediated effect, where the product of the coefficients of the mediated paths were divided by their standard error to produce a z-score.

Cultural competence/affiliation for each NA participant was determined by analyzing the AIBI. Scores from the AIBI load onto two subscales: the AICI and the EACI. The mean score for the AICI scale is 40, so if a participant scored 40 or higher on this scale, they identify with American Indian culture. The mean score for the EACI scale is 24, so if a participant scored 24 or higher they identify with European American culture (Allen & French, 1994). Participants were categorized into one of four categories: *traditional*, if they scored 40 or above on the AICI and below 24 on the EACI; *bicultural*, if they scored 40 or above on the AICI and 24 or above on the EACI; *assimilated*, if they scored lower than 40 on the AICI and 24 or above on the EACI; or *marginal*, if they scored below 40 on the AICI and below 24 the EACI.

Prior to examining differences between NA and CA participants on level of alcohol use, problems associated with alcohol use, positive and negative expectancy factors and scores on the Early Exposure to Alcohol questionnaire, gender differences between participants were also examined via independent samples t-tests for these same variables.

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Power Analysis

According to Fritz and MacKinnon (2007), with medium effects sizes, a sample of 90 is recommended for mediational analysis. However, a power analysis for the t-tests using G-Power with a medium effect size, alpha=.05, and power=.80, yielded a recommendation of 51 participants per sample group. Thus, a total sample size of 102 participants was obtained.

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CHAPTER III

RESULTS

Results from the independent samples t-tests showed that the average age for the NA group (M = 25.25, SD = 8.02) was significantly higher than the average age for the CA group (M = 20.9, SD = 6.76; t(97.23) = 2.94, p = .004). Within the NA students who participated in the study, 22.0% were freshmen, 12.0% were sophomores, 18.0% were juniors, 26.0% were seniors, and 22.0% were graduate students. Within the CA students who participated in the study, 43.1% were freshmen, 17.6% were sophomores, 27.5% were juniors, 9.8% were seniors and 2.0% were graduate students. A Chi-square test for independence indicated a significant association between ethnicity and year in college(χ^2 (4, n = 101) = 17.23, p =.002), such that NA participants were more likely to report higher education levels than CA participants. NA participants reported a significantly higher subjective report of the number of family members (M = 3.27, SD = 2.37) whom they believed to have a problem with alcohol than the CA participants (M = 1.10, SD = 71); t(91.07) = 5.31, p < .001). A Chi-square test for independence indicated no significant association between gender and ethnicity (χ^2 (1, n = 102) = .76, p =.385).

Results also indicated no significant differences between men (M = 4.16, SD = 5.56) and women (M = 4.47, SD = 5.67) on past month drinking (t(97) = -0.25, p = .801); between men (M = 1.33, SD = 2.41) and women (M = 1.08, SD = 2.01) on binge drinking in the last month(t(100) = -0.25. p = .591); between men (M = 19.30, SD = 20.97) and women (M = 1.08, SD = 2.01) on past six month drinking(t(98) = 0.92, p = .360); between men (M = 2.10,

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SD = 2.17) and women (*M* = 1.40, *SD* = 1.68) on past six month binge drinking (*t*(44.24) = 1.57, *p* = .123); between men (*M* = 4.20, *SD* = 6.67) and women (*M* = 4.08, *SD* = 7.16) on RAPI scores *(t*(100) = 0.08, *p* = .939); between men (*M* = 32.79, *SD* = 13.11) and women (*M* = 30.23, *SD* = 13.05) on CEOA positive expectancy scores (*t*(100) = 0.90, *p* = .368); or between men (*M* = 12.43, *SD* = 9.69) and women (*M* = 11.06, *SD* = 8.95) on early childhood experience scores (*t*(100) = 0.69, *p* = .491).

In examining the breakdown of cultural competence/affiliation as measured by the American Indian Biculturalism Inventory (AIBI), it was found that of the 51 NA students surveyed, 23.5% were bicultural (n=12), 52.9% were traditional (n=27), 17.6% were assimilated (n=9), and .06% were marginal (n=3).

Results from the independent samples t-tests conducted found that there were statistically significant differences between NAs and CAs on three variables. One significant difference was for past month drinking, where CAs reported drinking significantly more alcohol than NAs in the past month. The second significant difference was found in frequency of past six month binge drinking, where CAs reported a significantly higher frequency of binge drinking in the past six months than NAs did. The third significant difference was found in early childhood experiences surrounding alcohol, where NAs reported significantly more childhood experiences surrounding alcohol than CAs. No significant differences for past month binge drinking, past six month drinking, RAPI scores, and CEOA positive and negative expectancy scores were found (see Table 1).

Mediational analyses were conducted to test whether positive expectancies mediate the relationship between ethnicity and past month alcohol use. The original mediational hypothesis

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Table 1. Differences in Alcohol-Related Variables Between Caucasians and Native Americans.

Measure	Native American M	Native American SD	Caucasian M	Caucasian SD	*t*	P
Past month drinking	2.68	4.07	6.04	6.41	-3.12	.003*
Past month binge drinking	0.89	2.18	1.42	2.06	-1.26	.210
Past 6 month drinking	12.98	19.42	20.14	18.28	-1.90	.061
Past 6 month binge drinking	1.18	1.69	2.04	1.93	-2.40	.018*
RAPI	3.73	6.63	4.51	7.38	-0.57	.574
Positive Expectancies	28.75	14.13	33.21	11.60	-1.74	.084
Early Experiences	14.53	10.76	8.39	5.83	3.51	.001*

Note. Past month drinking equals the product of the average quantity of drinks consumed per week in the last month and the average frequency of alcohol consumption per week in the last month. Past six month drinking equals the product of the average quantity of drinks consumed per month and the average frequency of alcohol consumption per month in the last six months.
* $p < .05$

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included a test of past-6 month alcohol use, but since that variable was not found to be significantly different between ethnic groups while past month alcohol use was, past month alcohol use was used instead. One path in the model was significant: ethnicity significantly predicted past month alcohol use. However, ethnicity did not significantly predict positive expectancies. When ethnicity and positive expectancies were simultaneously entered into the equation, both were significant predictors of past month alcohol use, with the unstandardized regression coefficient for ethnicity reducing in size. Although the unstandardized regression coefficient for ethnicity reduced in size, Sobel's (1982) test of significance of the mediated effect did not support the hypothesis ($z = 1.54$ $p > .05$). Table 2 includes the regression coefficients and p-values for each path in the mediational model.

Mediational analyses were conducted again to test whether early childhood experiences mediate the relationship between ethnicity and positive expectancies. Ethnicity did not significantly predict positive expectancies; however it did significantly predict childhood experiences. When ethnicity and childhood experiences were simultaneously entered into the equation, neither were significant predictors of past month alcohol use, though the unstandardized regression coefficient for ethnicity reduced in size. However, Sobel's (1982) test of significance of the mediated effect found that this reduction in size was not large enough to support the mediational hypothesis ($z = 0.63$ $p > .05$). Table 3 includes the regression coefficient and p-values for each path in this mediational model.

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Table 2. Testing the Mediating Effect of Positive Expectancies on the Relationship Between Ethnicity and Alcohol Use.

Testing steps in mediation model	*B*	*SE*	β	*p*
Testing Step 1 (Path c)				
Outcome: past month alcohol use	3.35	1.08	0.30	.003*
Predictor: ethnicity				
Testing Step 2 (Path a)				
Outcome: positive expectancies	4.46	2.56	0.17	.084
Predictor: ethnicity				
Testing Step 3 (Paths b and c`)				
Outcome: past month alcohol	0.15	0.04	0.34	.001*
Mediator: positive expectancies (Path B)	2.57	1.04	0.23	.015*
Predictor: ethnicity				

*p < .05

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Table 3. Testing the Mediating Effect of Childhood Experiences on the Relationship Between Ethnicity and Positive Expectancies.

Testing steps in mediation model	*B*	*SE B*	β	*p*
Testing Step 1 (Path c)				
Outcome: positive expectancies	4.46	2.56	0.17	.084
Predictor: ethnicity				
Testing Step 2 (Path a)				
Outcome: childhood experiences	-6.14	1.71	-.34	.001*
Predictor: ethnicity				
Testing Step 3 (Paths b and c`)				
Outcome: positive expectancies	-.010	.150	-.067	.523
Mediator: childhood experiences	3.88	2.73	.149	.158*
Predictor: ethnicity				

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CHAPTER IV

DISCUSSION

With regard to the first aim of the study, the independent samples t-test for past six month alcohol use was not associated with a statistically significant effect, though results did trend toward significance in the opposite direction of the hypotheses, which was originally that NAs would drink more than CAs over the past six months. To test the hypothesis that NAs would report higher levels of past-month drinking, an independent samples t-test found a statistically significant effect in the opposite direction of the hypothesis. Thus, CA participants reported a significantly higher level of alcohol use in the last month compared to NA participants. One possible explanation for the finding that there were differences in past month use but not in past six month use could be that it was more difficult for participants to accurately recall past six month drinking quantity and frequency. The inability to remember would introduce more error to the variable, therefore making it less accurate than data for past month drinking.

Addressing the second aim of the study, there were no statistically significant differences between NAs and CAs on reported problems experienced as a result of drinking alcohol. NAs did not report more problems associated with alcohol on the RAPI, likely because they did not drink significantly more than CAs. However, CAs did not report significantly more problems than NAs either, even though they did drink more. Despite significant differences in past month alcohol use between the two ethnicities, results from both ethnicities indicate a similar, relatively low number of perceived problems as a result of alcohol use over the past six months. It is

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possible that the culture surrounding CA college student drinking, where binge-drinking is generally viewed as more of a normative behavior (Iwamoto et al., 2011), reduces the amount of perceived problems CA college students think they experience as a result of drinking. Also, though differences between past month drinking were found to be statistically significant, past six month drinking was not – this is pertinent to outcomes on the RAPI because this study asked respondents to report on their problems over the past six months, not over only the past month. Significant difference between the ethnic groups may have been found on the RAPI if participants would have been asked to think about problems they had experienced with alcohol only over the last month.

The third hypothesis for the study was that NAs would hold stronger cumulative positive expectancies than CAs. There was a trend toward significance in differences between positive expectancies between ethnic groups, but in the opposite direction. CAs tended to hold stronger positive expectancies than NAs. It makes sense that CAs reported marginally higher cumulative positive expectancies because this group was found to have higher levels of drinking over the past month. This is consistent with previous literature stating that stronger positive expectancies predict alcohol use (Christianson, Smith, Roehling, & Goldman, 1989; Garcia-Andrade, Wall, & Ehlers, 1996; Kuntsche et al., 2005; Spillane et al., 2007). No formal hypotheses were made about negative expectancy comparisons between NA and CA groups and results indicated there were no significant differences between groups. So, despite drinking less than their CA counterparts over the past month, NA negative expectancies were not stronger. It is also possible that expectancies don't operate across various ethnicities in the same way as they do in CA samples. O'Hare (1995) has presented some research to support this idea, as he found that despite Asian Americans having had higher positive expectancies, they still drank less when

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compared to CAs, suggesting a difference between cultures in the psychological construct of alcohol expectancies.

The current study was the first to directly compare NA and CA alcohol expectancies. Garcia-Andrade et al. (1996) found that positive expectancies predicted alcohol use in NA men, but the authors only examined expectancies for NAs and did not compare them to any other ethnic group. Data from the current study directly compared NA and CA alcohol expectancies and found no significant differences between the two ethnic groups, indicating that both groups tended to hold similar expectancies. Though there were no significant differences between alcohol expectancies in the current study, there were significant differences in amount of alcohol consumed between groups, indicating that expectancies may not be predicting alcohol in the same way for both groups. Results from the current study might be different from Garcia-Andrade et al.'s (1996) study because that sample included only men, whereas this study surveyed mostly women. In addition, the current study used the Comprehensive Effects of Alcohol Questionnaire (CEOA) to assess expectancy effects, whereas Garcia-Andrade et al.'s (1996) study used a different measure of alcohol expectancies – short form of the Alcohol Expectancy Questionnaire (AEQ). The CEOA and the short form of the AEQ assess different alcohol expectancy factors. The four positive and three negative expectancy subscales within the CEOA include sociability (positive), tension reduction (positive), liquid courage (positive), sexuality (positive), cognitive and behavioral impairment (negative), risks and aggression (negative), and self-perception (negative) (Fromme, et. al, 1993). The short form of the AEQ measures six positive and no negative alcohol expectancy subscales including global positive changes, enhanced sexual performance, physical social pleasure, increased social assertiveness, relaxation and tension reduction, and arousal and power (Brown et al., 1980). Given this

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difference in factors measured, had the current study used the short form of the AEQ instead of the CEOA, results consistent with Garcia-Andrade et al. (1996) may have been found.

Addressing the fourth aim, results showed statistically significant differences between the NA and CA groups on early childhood experiences surrounding alcohol as measured by scores from the Early Childhood Exposure to Alcohol questionnaire. This difference supported the hypothesis that NAs would report more early exposure to negative alcohol-related events than CAs. These results provide further evidence to support the notion that behavior surrounding appropriate alcohol use differs between NA communities and non-NA communities. Possibly because of factors such as those associated with low socioeconomic status, NA children become exposed to these behaviors and negative events, such as being a passenger in a vehicle where someone was driving intoxicated, more often.

Regarding the first part of the fifth aim, to examine whether positive expectancies mediate the relationship between ethnicity and alcohol, results from meditational analyses unfortunately did not support this hypothesis. Path c, where past month alcohol use was regressed on primary ethnicity, was found to be significant. Path a, where positive expectancies were regressed on ethnicity, was not found to be significant. Paths b and c`, where past month alcohol was simultaneously regressed on positive expectancies and ethnicity, were found to be significant. However, the test of significance of the mediated effect was not found to be significant, indicating that positive alcohol expectancies do not mediate the relationship between ethnicity and alcohol use. Known differences between NA and CA alcohol use and associated problems are widely documented, yet attempts at understanding why this is the case via positive expectancies and childhood experiences as mediators of alcohol use were not supported in this study. Perhaps alcohol expectancies and early childhood exposure are not influential mediating

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factors and focus should be shifted to other possible causal determinants. Instead, other factors, such as standard life reinforcers and historical trauma, may better explain the discrepancy between NA and CA alcohol use than differences in alcohol expectancies. Regarding standard life reinforcers, the idea is that NAs, particularly those living in NA communities, have fewer of these reinforcers than CAs because of factors such as economic disparities and social marginalization. A possibility is that the standard life reinforcer, or lack thereof, may override their expectancies. Even if one holds negative alcohol expectancies, that person may decide to drink anyway, because standard life reinforcers, which also serve as protective factors against problematic alcohol consumption, are not present (Sisson & Azrin, 1989). In this way, it is possible that the presence of standard life reinforcers may play a more pivotal role in mediating the link between ethnicity and drinking than positive expectancies do. It is possible that for NAs, remembering events from their childhood that occurred as a result of problematic drinking behavior may have served as a protective factor and may have deterred NAs in the current study from engaging in those same types of behaviors as adults. NA adolescents have been shown to possess resiliency factors protecting them against substance abuse (Waller, Okamoto, Miles, & Hurdle, 2003). Resiliency factors may be at work in NA college students, which were not examined in the current study.

To address the second part of the fifth aim, it was hypothesized that that early childhood exposure to alcohol is the mediating factor between ethnicity and alcohol expectancy development. Path c, where positive expectancies were regressed on childhood experiences, was not found to be significant. Path a, where childhood experiences was regressed on ethnicity, was found to be significant. Paths b and c', where positive expectancies were simultaneously regressed on childhood experiences and ethnicity, were not found to be significant. The test of

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significance of the mediated effect was not shown to be significant, indicating that childhood experiences are not a mediating factor between ethnicity and positive expectancies. Here again, the original hypothesis was not supported. It is possible that having negative experiences surrounding alcohol as a child may actually serve as protective factors against problematic alcohol use as adults.

In sum, results of the multiple regressions established connections between some of the variables examined in both meditational analyses (i.e. ethnicity, early childhood experiences, positive expectancies, and alcohol use), suggesting these factors are not completely unrelated. However, though a number of paths within both meditational analyses trended toward significance and a number of them also actually met statistical significance, when tests of significance to determine if the decrease between the beta weights for the predictors and the outcomes were employed in both analyses, significance of the mediated effects could not be found. Thus, the current study's hypotheses regarding 1) positive expectancies as a mediating factor between ethnicity and alcohol use as well as 2) childhood experiences as a mediating factor between ethnicity and positive expectancies could not be supported.

There are numerous limitations regarding the current study. Several limitations involved sample demographics. First, is possible that results of this study, which sampled only college students, are inaccurately indicating higher drinking rates among CAs than what would be found if a more representative CA sample had been obtained. College students tend to exhibit drinking behavior that is different from the general population, including higher rates of binge drinking and other problematic alcohol use (NIAA, 2002). Recently, the American College Health Association, National College Health Assessment Survey (2014) reported that at the University of North Dakota, over the years, just over half of the student population at UND has reported

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binge drinking. Also, consistently since 2000, approximately 33.8% of UND students who do drink alcohol report that over just the last two weeks they had 5 or more drinks of alcohol in a sitting, indicating high levels of past-two-week binge drinking among over a third of UND students. This does not take into account that for women, only 4 or more drinks is considered binge drinking, so this statistic is lower than the true percentage of past-two-week binge drinkers, since at least some of the women who qualify for binge drinking have been unaccounted for. College students in general and UND students in particular drink more than the general population. Therefore, results may not have been consistent with the hypotheses because the college-aged sample from UND may have compromised generalizability to their respective NA and CA ethnic populations.

A second demographic limitation involves gender, in that the sample was predominantly female, with men (n = 31) accounting for a much smaller proportion of the total sample than women (n = 71) in the study. College women may differ in important ways regarding alcohol use, including associated problems and expectancies, from the general population. Again, generalizability is limited because the majority of respondents were women and men were not equally represented.

A third demographic limitation is that the mean age of CA participants was 20.94, approximately 4 years younger than the mean age of the NA participants, which was 25.25, a statistically significant difference. Perhaps CAs were more likely to drink due to their closer proximity to the legal drinking age, making drinking more novel to this group than for the NA participants. Relatedly, the majority of NAs sampled were in their senior year of college, versus the majority of CA students who were in their freshmen year of college, and this finding was also statistically significant. Students toward the end of their college career may be more serious

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about obtaining good grades and abstaining from activities, such as partying and drinking, which might compromise their educational performance. Had the ethnic groups been more similar in age, results may have depicted a more accurate comparison between the two ethnic groups.

A fourth demographic limitation involves cultural identification. In examining the breakdown of cultural competence/affiliation as measured by the American Indian Biculturalism Inventory (AIBI), it was found that results were different than what was expected to come out of a sample of NA college students at a predominantly CA institution. It was expected that most NA students in this sample would be bicultural. On the contrary, of the 51 NA students surveyed, only 23.5% were bicultural (n=12), 52.9% were traditional (n=27), 17.6% were assimilated (n=9), and .06% were marginal (n=3). In the current study, participants categorized themselves into the ethnic/racial background they saw most fit. Given that NAs attending UND are immersed in CA culture, these results are not consistent with the fact that a majority of respondents should be identifying themselves as bicultural. Rather it was found that only 23.5% of the NA student sampled loaded onto the bicultural subscale and that the majority of students loaded onto the traditional scale. This presents some potential concerns about the reliability and validity of the AIBI's ability to measure NA cultural affiliation. Another possibility is that perhaps NA respondents were trying to portray themselves in such a light where they were asserting how much "Indian" they are while attempting to deny cultural affiliation with European American ways, resulting in invalid results. Further exploration into this is beyond the scope of this study.

Perhaps the inaccuracy of sample data lies not in the NA group but in the current study's CA group. It is possible that CA college students are a particularly unique population, drinking more than most other groups, including NAs. If so, this might have skewed the present results because the CA sample in the current study, which was comprised of all college students, would

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not be a CA sample suitable for generalization. Furthermore, an assimilated NA student theoretically will not have been exposed to some of the same constructs hypothesized in the current study. So ethnically speaking, if the AIBI is accurately measuring NA cultural affiliation, any NA who did not identify themselves as traditional and possibly even those who identified as bicultural, likely had more similarities on the variables assessed with the CA sample than the NA sample. This means that a large variance of the "NA" sample could actually be more similar to the "CA" sample, which would have the potential to dramatically alter the results of the current study. This may explain why differences weren't found between these two groups on some alcohol use variables, problems experiences, or expectancy scores because the groups may have been too similar ethnically, which was one of this study's main predictor variables.

Another limitation is that the CA sample was largely recruited from psychology classes and the NA sample was more varied, as NA participants were recruited by being at the American Indian Student Services Center. Because of this, CA students may have been less motivated to attend to the materials of the study if they felt they had to participate for classes or in order to receive extra credit, whereas the NA students, aware of the negative impact alcohol has on their communities, may have been more intrinsically motivated to participate in this research.

Alternatively, the results could be yielding an accurate reflection of population data. Despite there not being significant differences between the two ethnic groups in all but three of the preliminary analyses, and that results do not support either of the mediational hypotheses, the current study shines some light on a previously uninvestigated construct. Data from this study suggests that NA college students, at least at UND, show lower rates of past month drinking and past six month binge drinking, and that NAs have a higher rate of negative experiences surrounding alcohol as children. Data from this study also reveals that NAs and CAs do not

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differ from each other on other alcohol variables, including reported problems and expectancy effects. Altogether, data suggest that many ethnic differences among college student drinking variables may not exist. This is the first study of its kind to compare NA and CA expectancy effects directly with one another. This study is a start at understanding more about how alcohol expectancies operate in comparison to CA alcohol expectancies, which have been more thoroughly examined despite an arguably greater need for understanding this construct in NA populations. Examining expectancies is important among current and at-risk individuals, because alcohol expectancies can be altered. In a preventative or treatment effort, it is possible to change people's expectancies about alcohol from being less positive to being more negative and thereby protecting them from developing or continuing to engage in problematic use.

Optimal conditions for future studies would include ensuring demographic variables were more even between groups. Efforts to balance gender, age, and year in college could be made in order to optimize equal comparisons across groups. Based on the results of the current study, it appears as though NA college students may not engage in heavy or problematic drinking behavior. Further investigation into the protective factors behind non-problematic NA drinking among college students is warranted. Sampling from NA college students has the potential to further the understanding of *healthy* NA drinking, as opposed to focusing on unhealthy NA drinking. It was found that NA college students in general do not differ significantly from college students on most alcohol variables, and when they did, it was surprisingly in the opposite direction of the hypotheses, where CAs drank significantly more in the past month. This indicates the current study found a subset of the NA population – NA college students – that may engage in non-problematic alcohol use. NA college students may be a valuable population to study in terms of seeking to understand healthy alcohol use in NA populations. Further research

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to understand the psychological constructs behind NA behavior surrounding non-problematic alcohol consumption can be attempted, and if found, efforts can be made to alter these constructs in the NA populations who do engage in unhealthy drinking behavior. Furthermore, sampling from a NA community would reduce the cultural complications of studying NA students in a college setting. NA college students may differ considerably from their larger ethnic population in terms of drinking less and therefore experiencing fewer problems. Thus, greater generalizability could be attained by obtaining a sample of adults living in an NA community, since less variability with regard to cultural affiliation would be expected. It could prove valuable to exclude assimilated NA participants from future analyses because they culturally are more similar to CA individuals than NA individuals. Collecting data from community samples – both NA and CA - would likely result in better representations of the two respective ethnic populations than using a college sample from a university located in a predominantly CA community alone. Furthermore, efforts could be made to examine a particular tribal group (e.g.,. Lakota) or tribal region (e.g., Northern Plains) so that data is specific to that tribal group instead of categorizing all NA people, regardless of stated tribal affiliation, into one group. This would be easier accomplished if a community sample was gathered rather than from a college setting, where finding a large volume of American Indian students is difficult due to a low percentage of the population attending college.

Problematic alcohol use and associated consequences in NA populations are known and have been documented in research. Three main reasons intrinsically tied to culture – historical trauma, standard life reinforcers, and expectancies – were introduced as explanations for differences documented between NAs and CAs in problematic alcohol use. Of these three explanations, expectancies are the only one that can be altered. Despite not supporting the

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proposed hypotheses, results serve as new and promising pointers for future work with alcohol use in NA populations. Novel approaches to decreasing the gap between NA and CA populations on harmful alcohol use and associated problems via treatment and preventative efforts are closer to becoming possible through knowledge gathered in this study.

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APPENDIX

Demographics Questionnaire

1. Age: _____

2. Circle your sex:

Male Female

3. City & state where you are from: _____

4. Circle YES or NO if you have ever lived on a Native American reservation?

YES NO

4. a) If YES, which one? _____

5. Circle your current year in college:

Freshman Sophomore Junior Senior Graduate

6. Circle all ethnicities that make up your ethnic/racial background:

Caucasian

Native American

African American

Latino/a

Asian

Other

7. Circle the *one* ethnicity with which you *primarily* identify:

Native American

Caucasian

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Alcohol Use Questionnaire

1. Have you ever used alcohol? (circle YES or NO) YES NO

If yes,

1. a) At about what age did you first use alcohol? _____

2. Have you used alcohol within the last month? (circle YES or NO) YES NO

If YES,

2. a) On average, how many days did you drink per week in the last month? _____

2. b) On average, on the days you drank in the last month, how many drinks did you consume? _____

2. c) On approximately how many days in the last month did you drink 5 or more drinks in one sitting (if male) or 4 or more drinks in one sitting (if female)? _____

3. Have you used alcohol in the last 6 months? (circle YES or NO) YES NO

3. a) On average, how many days did you drink per month in the last 6 months (i.e., 0-30 days)?_____

b. On average, on the days you drank in the last 6 months, how many drinks did you consume?_____

3. c) During the last 6 months, how frequently did you have 5 or more drinks (if male) or 4 or more drinks (if female) in one sitting (i.e. within a few hours)? (circle an option below)

a. Never

b. Once or twice

c. Once every few months

d. Once a month

e. A couple times per month

f. Once a week

g. A few times per week

h. Daily/near daily

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4. Do you have at least one family member that you consider to have a problem with drinking alcohol, either currently or in the past (circle YES or NO)? YES NO

4. a) If YES, how many of your family members to you consider to have a problem?

_____

4. b) Please list how this person/these people are related to you (e.g., mother, brother, etc.)

_____

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Rutgers Alcohol Problem Index

Different things happen to people while they are drinking ALCOHOL or because of their ALCOHOL drinking. Several of these things are listed below. Indicate how many times each of these things happened to you WITHIN THE LAST SIX MONTHS.

Use the following code:

0 = None

1 = 1-2 times

2 = 3-5 times

3 = More than 5 times

HOW MANY TIMES HAS THIS HAPPENED TO YOU WHILE YOU WERE DRINKING OR BECAUSE OF YOUR DRINKING DURING THE LAST SIX MONTHS?

0 1 2 3 Not able to do your homework or study for a test

0 1 2 3 Got into fights with other people (friends, relatives, strangers)

0 1 2 3 Missed out on other things because you spent too much money on alcohol

0 1 2 3 Went to work or school high or drunk

0 1 2 3 Caused shame or embarrassment to someone

0 1 2 3 Neglected your responsibilities

0 1 2 3 Relatives avoided you

0 1 2 3 Felt that you needed more alcohol than you used to in order to get the same effect

0 1 2 3 Tried to control your drinking (tried to drink only at certain times of the day or in certain places, that is, tried to change your pattern of drinking)

0 1 2 3 Had withdrawal symptoms, that is, felt sick because you stopped or cut down on drinking

0 1 2 3 Noticed a change in your personality

0 1 2 3 Felt that you had a problem with alcohol

0 1 2 3 Missed a day (or part of a day) of school or work

0 1 2 3 Wanted to stop drinking but couldn't

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0 1 2 3 Suddenly found yourself in a place that you could not remember getting to

0 1 2 3 Passed out or fainted suddenly

0 1 2 3 Had a fight, argument or bad feeling with a friend

0 1 2 3 Had a fight, argument or bad feeling with a family member

0 1 2 3 Kept drinking when you promised yourself not to

0 1 2 3 Felt you were going crazy

0 1 2 3 Had a bad time

0 1 2 3 Felt physically or psychologically dependent on alcohol

0 1 2 3 Was told by a friend, neighbor or relative to stop or cut down drinking

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Comprehensive Effects of Alcohol

Below are different beliefs and experiences that people may have when they use alcohol. Please indicate the extent to which you believe each of these statements or expect that you would experience each of these symptoms when using alcohol.

	Disagree	Somewhat Disagree	Somewhat Agree	Agree
1. I would act sociable				
2. I would feel calm				
3. I would feel courageous				
4. I would be a better lover				
5. I would be clumsy				
6. I would take risks				
7. I would feel moody				
8. It would be easier to talk to people				
9. I would feel peaceful				
10. I would feel brave and daring				
11. I would enjoy sex more				
12. I would feel dizzy				
13. I would act aggressively				
14. I would feel guilty				
15. I would be friendly				
16. My body would be relaxed				
17. I would feel unafraid				
18. I would feel sexy				
19. My head would feel fuzzy				

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	Disagree	Somewhat Disagree	Somewhat Agree	Agree
20. I would be loud, boisterous, or noisy				
21. I would feel self-critical				
22. I would be talkative				
23. I would feel powerful				
24. It would be easier for me to act out my fantasies				
25. My responses would be slow				
26. I would act tough				
27. My problems would seem worse				
28. I would be outgoing				
29. I would feel creative				
30. I would have difficulty thinking				
31. I would feel dominant				
32. I would be humorous				
33. My writing would be impaired				
34. It would be easier to express feelings				
35. I would feel shaky the next day				
36. I would feel energetic				
37. My senses would be dulled				
38. I would neglect my obligations				

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Early Childhood Exposure to Alcohol Questionnaire

We would like to gain a better understanding of early experiences people have had surrounding alcohol. The following questions ask about your exposure to alcohol growing up. Recalling from **when you were a child 12 years of age or *younger*,** please answer all of the questions to the best of your ability**.** Rate the frequency to which you did or did not have these experiences on a scale of 0 to 4, where 0= Never, 1= Rarely, 2= Sometimes, 3= Often, 4= Always. Circle your answers.

1. Recalling from when you were a child 12 years of age or *younger*, how often did you see a parent or other person living in your home drink alcohol?

0= Never 1=Rarely 2= Sometimes 3= Often 4= Always

2. Recalling from when you were a child 12 years of age or *younger*, how often did you witness a parent or other person living in your home become intoxicated from alcohol?

0= Never 1=Rarely 2= Sometimes 3= Often 4= Always

3. Recalling from when you were a child 12 years of age or *younger*, how often did you witness someone in your home pass out as a result of drinking too much alcohol?

0= Never 1=Rarely 2= Sometimes 3= Often 4= Always

4. Recalling from when you were a child 12 years of age or *younger*, how often did you notice a parent or other person living in your home experience withdrawal symptoms (such as become sick or have tremors) when cutting back or going without alcohol for a period of time?

0= Never 1=Rarely 2= Sometimes 3= Often 4= Always

5. Recalling from when you were a child 12 years of age or *younger*, how often did you notice at least one person living in your home experience difficulty with the law as a result of drinking alcohol (e.g. getting cited for a DUI or a minor in consumption)?

0= Never 1=Rarely 2= Sometimes 3= Often 4= Always

6. Recalling from when you were a child 12 years of age or *younger*, how often did a parent or other person in your home talk to you about the negative effects of alcohol use?

0= Never 1=Rarely 2= Sometimes 3= Often 4= Always

7. Recalling from when you were a child 12 years of age or *younger*, how often did a parent or other adult living in your home monitor you to make sure you did not drink alcohol?

0= Never 1=Rarely 2= Sometimes 3= Often 4= Always

8. Recalling from when you were a child 12 years of age or *younger*, how often did a parent or other adult living in your home allow you to drink alcohol at home?

0= Never 1=Rarely 2= Sometimes 3= Often 4= Always

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9. Recalling from when you were a child 12 years of age or *younger*, how often did you drink alcohol as a result, at least in part, of it being easy to access in your home or community?

0= Never 1=Rarely 2= Sometimes 3= Often 4= Always

10. Recalling from when you were a child 12 years of age or *younger*, how often did you witness someone in your home have problems getting along with others as a result of drinking alcohol?

0= Never 1=Rarely 2= Sometimes 3= Often 4= Always

11. Recalling from when you were a child 12 years of age or *younger*, how often were you neglected (where a parent or guardian failed to provide adequate physical or emotional care for you) while or because your parent or other person in your home was drinking alcohol?

0= Never 1=Rarely 2= Sometimes 3= Often 4= Always

12. Recalling from when you were a child 12 years of age or *younger*, how often were you a passenger in a vehicle where the driver was drinking alcohol or intoxicated from alcohol?

0= Never 1=Rarely 2= Sometimes 3= Often 4= Always

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American Indian Bicultural Inventory

These questions ask you to describe your attitudes, feelings, and participation in American Indian and White cultures. Items may apply completely, some, or not at all, so please read each question carefully and answer as accurately as you can. Then mark the number above the answer that best fits how you feel or what you do, as in the example below.

Example: What is your degree of comfort with paper and pencil questionnaires?

1. ___	2. ___	3._X__	4. ___
No			Complete
comfort			comfort

In this example, the person felt moderate but not complete comfort with paper and pencil questionnaires, so filled in 3.

In the case of attitudes and feelings, your first impression is usually correct. We are interested in how much your daily thoughts, feelings and actions are influenced by American Indian and White cultures, keeping in mind that no two people have the same background.

1. In general, how comfortable are you around White people?

1. ___	2. ___	3. ___	4. ___
No			Complete
comfort			comfort

2. How comfortable are you in encouraging your children to learn and practice American Indian ways?

1. ___	2. ___	3. ___	4. ___
No			Complete
comfort			comfort

3. How strongly do you identify with American Indian culture?

1. ___	2. ___	3. ___	4. ___
No			Greatly
Identification			Identify

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4. How strongly do you identify with White culture?

1. ___	2. ___	3. ___	4. ___
No Identification			Greatly Identify

5. How often do you think in an American Indian language?

1. ___	2. ___	3. ___	4. ___
I rarely or never think in an Indian language			Very often or always think in an Indian language

6. How confident are you in White/Western (doctors in hospitals) medicine?

1. ___	2. ___	3. ___	4. ___
I do not use White medical doctors			Have complete faith in White medical doctors

7. How confident are you in traditional Native/American Indian medicine and ceremonies?

1. ___	2. ___	3. ___	4. ___
No confidence In Native medicine			Have very strong faith in Native medicine

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8. How much is your way of thinking of "Family" American Indian (cousins same as brothers and sisters, aunts/uncles as parents, everyone is related)?

1. ___	2. ___	3. ___	4. ___
My idea of "Family" is mostly "White", relatives/friends are what they are			My idea of "Family" is very strongly Indian – we are all relatives

9. How often do you attend traditional American Indian ceremonies (i.e Sweat lodge, Pipe Ceremonies, Sundance, Shaky Tent, Vision Quest)?

1. ___	2. ___	3. ___	4. ___
I never attend Indian ceremonies			I attend Indian ceremonies frequently

10. How often do you attend more White, Christian religious ceremonies (Christenings, Baptisms, Church services)?

1. ___	2. ___	3. ___	4. ___
I never attend Christian ceremonies			I attend Christian ceremonies frequently

11. How often do you participate in Indian dancing (Grass, Fancy, Jingle-Dress, Round, etc.)?

1. ___	2. ___	3. ___	4. ___
I never participate in Indian dances			I participate in Indian dances frequently

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12. To how many social organizations do you belong where most of the members are American Indian?

1. ___	2. ___	3. ___	4. ___
I belong to no Indian organizations			Most of the organizations I belong to are Indian organizations

13. How often do you attend White celebrations (i.e. White ethnic festivals, parades, etc)?

1. ___	2. ___	3. ___	4. ___
I never attend White celebrations			I attend White celebrations frequently

14. How often do you attend Indian celebrations (i.e. Pow-Wows, Wacipis, Hand-games)?

1. ___	2. ___	3. ___	4. ___
I never attend Indian celebrations			I attend Indian celebrations frequently

15. How many of your family speak an American Indian language?

1. ___	2. ___	3. ___	4. ___
None of my family speak Indian			Most of my family speak Indian

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16. How much do you speak an American Indian language?

1. ___	2. ___	3. ___	4. ___
I rarely or never speak Indian			I often or always speak Indian

17. To what extent do members of your family have Indian first or last names (like "Wambli" or "Kills-in-Water")?

1. ___	2. ___	3. ___	4. ___
None have Indian last names			All have Indian last names

18. How often do you talk about White news and culture in your daily conversation?

1. ___	2. ___	3. ___	4. ___
I never engage in topics of conversation about Whites and their culture			I engage in topics of conversation about Whites and their culture frequently

19. How often do you talk about Indian topics, news and culture in your daily conversations?

1. ___	2. ___	3. ___	4. ___
I never discuss Indian news or cultural issues			I discuss Indian news or cultural issues daily

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20. How much do you believe in any Indian Creation Stories (how Earth/People/Animals were made?)

1. ___	2. ___	3. ___	4. ___
I don't believe in any of those stories			I very strongly believe in those stories

21. How much do you believe in any non-Indian Creation Stories (Adam/Eve, Garden of Eden, etc?)

1. ___	2. ___	3. ___	4. ___
I don't believe In any of those stories			I very strongly believe in those stories

22. In general, how much do you believe *"Success"* best means when an **individual** wins or achieves something?

1. ___	2. ___	3. ___	4. ___
I totally believe success is best achieved by individuals			I totally believe success is best achieved by groups (i.e.families teams, tribes, etc.)

23. In general, how much do you believe *"Success"* best means when a **Group** (i.e. families teams, tribes, etc.) wins or achieves something?

1. ___	2. ___	3. ___	4. ___
I totally believe success is best achieved by individuals			I totally believe success is best achieved by Groups

24. How important is your European or White American heritage and history to you?

1. ___	2. ___	3. ___	4. ___
Not at all Important			Very important

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