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Jildyz Urbaeva

University at Albany, State University of New York, zurbaeva@albany.edu

Jaime Booth

University of Pittsburgh, jmbooth@pitt.edu

Kai Wei

University of Pittsburgh, kai.wei@pitt.edu

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Reports of the Relation between Cultural Identification, Family Socialization and Adolescent Alcohol Use among
Native American Families

Zhyldyz Urbaeva, Jaime Booth, Kai Wei

Abstract

The enculturation or teaching of Native American traditions to Native American adolescents has been incorporated into substance-use prevention interventions in recent decades; yet, little is known about how enculturation may impact substance use through family socialization. The current study aimed to test the relationship between family identification with Native American culture and alcohol use among Native American families residing on or near a reservation, and determine if this relationship was mediated by family socialization practices. To achieve this aim, data ($n = 2,368$) collected as part of the NIDA-funded *Drug Use among Young American Indians* was used. No direct relationship was found between identification with Native American culture and alcohol use. Native American culture had an indirect effect on substance use through family communication and parental monitoring, such that a higher identification with Native American culture was associated with more communication and less monitoring, which were associated with drinking behavior. Findings reveal that identification with Native American culture may be related to family socialization, a relationship that could be important to address when designing alcohol-use prevention interventions for this population.

Key words: Native American adolescents, parenting, primary socialization theory, alcohol use, reservations

Introduction

Native American adolescents report initiating alcohol use earlier than the national averages for other adolescent populations, with 27.4% of Native American 8th graders reporting drinking at least once, as compared to 13.8% of their non-native counterparts, according to the National Institute on Drug Abuse (NIDA) (Volkow, 2014). Similarly, Native American adolescents report binge drinking in 8th and 10th grades at significantly higher rates than national averages (Volkow, 2014). This early initiation of both drinking and binge drinking may explain the disparities in alcohol use (Grant et al., 2015) and death due to the problematic alcohol use observed among Native American adults (Shield et al., 2013).

Primary socialization theory seeks to explain adolescent substance use; it may also provide crucial insights into the trends of Native American alcohol use. Primary socialization theory posits that socialization within the family, school, and peer environments communicates alcohol-use norms and behaviors to adolescents. It also argues that all of these domains are influenced by culture (Leukefeld & Leukefeld, 1999; Oetting, Donnermeyer, Trimble, & Beauvais, 1998). The level of influence of these primary socializers varies across developmental stages and family structure. Parents are the primary socializer during early childhood and peers have more of an effect in adolescence, especially with families where adolescents have more autonomy (Oetting & Donnermeyer, 1998; Whitbeck, 1999). Although family influences are typically diminished during adolescence, family still plays a strong role in how adolescents interact within the other primary socializing domains. Parents continue to influence by restricting or permitting interactions and by modeling behaviors within the familial context (Whitbeck, 1999). The family can also give positive support by serving as a resource to adolescents as they navigating other domains (Whitbeck, 1999).

Primary socialization theory also posits that cultural contexts are a secondary socializer. Culture affects adolescent alcohol use through the norms and values transmitted within the family, peer, and school domains (Oetting, Deffenbacher, & Donnermeyer, 1998). In addition, this theory argues that within-group variations in adherence to cultural norms and values has led to the observation of inconstant relationship between culture, family socialization and adolescent substance (Oetting, Deffenbacher, & Donnermeyer, 1998). Among minority groups, the concentration of minority individuals within a given geographical region (like those found on reservations) aids in the transmission of cultural norms (Oetting, Deffenbacher, & Donnermeyer, 1998); however, even within these contexts, there may be variations in the levels of cultural identification. Although it is clear that all domains of

primary socialization within family, peer, and school are crucial to understanding Native American adolescent substance use, this study focuses on the relationship between culture and family socialization; more specifically, it aims to examine the role of cultural identification in the relationship between family socialization and alcohol use among Native American adolescents living on or near a reservation.

Family Socialization and Alcohol Use

Research findings on adolescent alcohol use support the role of family socialization posited by primary socialization theory. Although family socialization is a complex process spanning multiple family functions, this paper will focus on family involvement in school, family norms, and parental monitoring. Family involvement in school is consistently associated with reduced substance use (Komro & Toomey, 2002; Scheer, Borden, & Donnermeyer, 2000; Stigler, Perry, Komro, Cudeck, & Williams, 2006). While it could be assumed that this relationship simply reflects a more positive school environment, research findings demonstrate that a school environment that is independent of family involvement does not buffer against substance use (HeavyRunner-Rioux & Hollist, 2010; Moon, Blakey, Boyas, Horton, & Kim, 2014). Although the mechanisms by which parental involvement in schools is related to substance use is unclear, family involvement in schools may reflect an overall engaged and active parenting style, which may impact the parent-child relationship in a positive manner while providing parents the power to influence the school environment.

In addition to family involvement in school, family norms and communications regarding alcohol use are socialization mechanisms that impact adolescent substance use. According to Schinke, Fang, and Cole (2008), adolescents from families with strong norms against substance use are less likely to drink; these findings are consistent across diverse populations (Brody, Ge, Katz, & Arias, 2000; Guo, Hawkins, Hill, & Abbott, 2001; Nash, McQueen, & Bray, 2005) and environmental contexts--urban, rural, and suburban (Scheer, Borden, & Donnermeyer, 2000). These findings are also consistent across parental roles, with a father's disapproval of alcohol use being negatively associated with substance use (Beck, Boyle, & Boekeloo, 2003; Bogenschneider, Wu, Raffaelli, & Tsay, 1998). The communication of these norms is most frequently measured by adolescent perceptions regarding the degree to which their parents discuss the dangers of using substances and the degree to which their parents would be upset if they used substances (Scheer, Borden, & Donnermeyer, 2000). Although these concepts are slightly different, they both convey the idea that norms regarding alcohol use are being communicated by the parents.

Parental monitoring (defined as a parent's knowledge of their child's activities, whereabouts, and friends) is another family socialization mechanism that has been consistently shown to prevent adolescent alcohol use (Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2006; Branstetter & Furman, 2013; Chuang, Ennett, Bauman, & Foshee, 2005; S.C. Duncan, T.E. Duncan, Biglan, & Ary, 1998; Peterson, Hawkins, Abbott, & Catalano, 1994; Ryan, Jorm, & Lubman, 2010); findings that are consistent across racial groups (Getz & Bray, 2005) and genders (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003). Parental monitoring has also been found to be a key mediator between adolescents and other risk factors, such as disadvantaged neighborhoods (Burlaw et al., 2009; Chuang, Ennett, Bauman, & Foshee, 2005). For example, a strong correlation has been found between parental monitoring and adolescent associations with deviant peers. Parental monitoring deters substance use by both discouraging its use and limiting adolescent contact with substance-using peers (Fletcher, Darling, & Steinberg, 1995). Similarly, lower levels of parental monitoring are associated with more adolescent interactions with substance-using peers; greater associations with substance-using peers are also associated with increased resistance to parental efforts in restricting such associations through monitoring (Dishion et al., 2008). As most studies of "parental monitoring" rely on the child reporting of their parents' knowledge regarding their whereabouts, it has been suggested that these measures are actually capturing surveillance, but not the quality of parent-child communication or the relationship (Stattin & Kerr, 2000). Stattin and Kerr (2000) found that tracking and surveillance of adolescents are less effective than the adolescents' disclosure of their activities to parents, and therefore, the quality of the relationship between the parents and the adolescent are an important aspect of effective monitoring. It is possible that adolescents' disclosures are a reflection of their attachment to their parents and their desire to please them, thus maintaining a positive relationship. These differentiations may be gendered. Among adolescent boys, parental monitoring is related to decreased substance use; however this is not the case for girls. Among girls, parental trust was associated with less substance use, a finding that did not exist among boys (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003).

Family Socialization and Alcohol Use among Native American Adolescents

The evidence necessary to accurately define the relationship between family socialization and alcohol use among adolescents in Native American families is inconclusive. In fact, a nationally representative study found no relationship between parental negative views of substance and binge drinking outcomes among Native American adolescents (Chen, Balan, & Price, 2012). According to Spillane and Smith (2007), this lack of relationship between

parental substance-use norms may be explained by intergenerational substance abuse. Among Native Americans, families with a history of intergenerational substance use found it challenging to communicate with adolescents about substance use and its harmful effects (Myhra, Wieling, & Grant, 2015). Despite such challenges, there is some evidence that suggests for Native American families, communication regarding the negative consequences of substance use is related to positive adolescent development (Dalla & Kennedy, 2014). Some research has suggested that parental involvement in Native American adolescent schooling is associated with high school graduation rates, suggesting that such involvement may also play a role in substance use behaviors (Anguiano, 2004); however, no empirical studies have tested this relationship. The negative relationship between parental monitoring and substance use has been replicated in Native American samples (Boyd-Ball, Véronneau, Dishion, & Kavanagh, 2014). Interestingly in their study of Native American adolescence, Boyd-Ball and colleagues found no relationship between parental monitoring and adolescent association with substance-using friends, suggesting that both peers and parents have an independent effect on alcohol use (Boyd-Ball, Véronneau, Dishion, & Kavanagh, 2014). Mixed findings and/or the lack of empirical support for the relationship between family socialization and Native American adolescent drinking behaviors may be due to cultural differences in parenting norms, and are unaccounted for within-group variation in Native American cultural identity (Oetting, Donnermeyer, Trimble, & Beauvais, 1998).

Native American Cultural Identity and Family Socialization

The influence of traditional Native American culture on family socialization may vary based on the familial level of enculturation or the level of identification with traditional practices and norms (Oetting, Donnermeyer, Trimble, & Beauvais, 1998). Despite the wide variation found in parenting norms across tribes, some commonalities have been identified. Traditionally, the bond between parent and child has been considered sacred and has been protected by placing the responsibility for discipline outside the parent-child relationship (Boyd-Ball, Veronneau, Dishion, & Kavanagh, 2014). Typically, the definition of “family” among Native Americans is not limited to the immediate family, a concept that is reflected in the more communal approach to child rearing (Waller, Okamoto, Miles, & Hurdle, 2003). Historically, the system of placing the responsibility for monitoring on the community or with members of the child’s extended family has been an effective way of promoting prosocial norms and behaviors (Edwards & Whiting, 1988). Within traditional norms, parents give their children substantial autonomy, based on the traditional beliefs that one should not interfere with the decisions or choices of other individuals (Waller, Okamoto, Miles, & Hurdle, 2003). It is believed that all people, including children, should be allowed to experience

the natural consequences of their actions (LaFromboise & Low, 1998). This belief in non-interference is based on a respect for each individual's path in life. Despite this autonomy, there is also a strong sense of interdependence and family responsibility which manifest in norms that require individuals to consider the welfare of the group over that of the individual (Waller, Okamoto, Miles, & Hurdle, 2003).

Contemporary Native American families are influenced by traditional family dynamics, as well as a history of oppressive government policies. Traditional parenting/disciplining patterns were altered when colonizing powers carried out policies aimed at disrupting Native American families and communities, and in particular, effective socialization practices (Duran & Duran, 1995). Some of the policies included sending generations of children to boarding schools, placing children in non-Native environments, and outlawing religious practices (Boyd-Ball, Veronneau, Dishion, & Kavanagh, 2014). Once implemented, these policies replaced traditional Native American child-rearing practices with those that focused on the nuclear family and more coercive parenting practices (Boyd-Ball, Veronneau, Dishion, & Kavanagh, 2014). Consequently, the boarding school policies left a generation of Native American parents without culturally-relevant references for child rearing (Lonczak, Fernandez, Austin, Marlatt, & Donovan, 2007). These policies resulted in the acculturation or adaptation of the dominate society's norms and values by many Native Americans, and although the adaptation of the dominate norms and values were a forced concession by the Native Americans, and despite their history of oppression, there remained a wide range of identification levels with traditional rituals and norms (Jervis, 2009). The variations of identification through traditional norms subsequently may explain the differences in family socialization and its relationship to alcohol use among Native American adolescents.

Current Study

Empirical research and the theoretical framework outlined in the introduction of this paper strongly suggest that family socialization, specifically its involvement in schools, norms, and monitoring, combine to decrease an adolescent's alcohol-use behaviors. However, studies with Native American families provide inconsistent evidence about the role of primary socialization in adolescent alcohol use, and neglect to account for the role of culture identification in parenting practices (Whitesell et al., 2014). Cultural differences in family socialization, which may be amplified by living on a reservation, suggest a need to investigate the role of cultural identification within the relationship between family socialization and adolescent alcohol use. Studies limiting samples to Native American families may account for some influence of culture; however, they do not account for variations in cultural

identification, thus potentially missing the impact of cultural identification on parenting. There are significant gaps in empirical literature examining the connection between cultural identification and Native American adolescent alcohol use (Trimble & Beauvais, 2001). To our knowledge, no studies have explicitly examined the relationships between Native American cultural identification and family socialization and whether these relationships influence alcohol use among Native American adolescents.

In addressing this gap, this study tests the hypotheses that there is a direct negative relationship between identification with Native American culture and alcohol use (H1) and that this relationship will be mediated by family socialization: (H2: family involvement in school, H3: family communication about alcohol, H4: parental monitoring). More specifically, we hypothesize that H2: Native American identification will be positively related to family involvement in school, which in turn, will be negatively related to Native American adolescent alcohol use--an association that will account for the relationship between Native American cultural identification and alcohol use. H3: Native American identification will be positively related to family communication of alcohol-use norms, which will be negatively related to alcohol use among Native American adolescents--an association that will account for the relationship between Native American cultural identification and alcohol use. H4: Native American identification will be negatively related to parental monitoring, which in turn, will be negatively related to alcohol use among Native American adolescents--an association that will account for the relationship between Native American cultural identification and alcohol use.

Method

Participants

The data for this study came from the ongoing survey, *Drug Use among Young American Indians*, funded by the National Institute on Drug Abuse of the National Institutes of Health and implemented by a research team at Colorado State University. The data collection has been conducted in three waves since 1993. The survey combines American Drug and Alcohol and Prevention Planning surveys. An annual cross-sectional survey covers eight geographic regions of the country: the Northwest, Northern Plains, Upper Great Lakes, Northeast, Southeast, Southwest, Oklahoma, and the Southern Great Plains. The data has been collected in 34 states in or around reservations. The high quality of data from this survey has enabled publications of epidemiological studies, as well as studies examining behavioral and normative factors involved in substance use among adolescents (Beauvais, Jumper-Thurman, & Burnside, 2008; Dieterich, Swaim, & Beauvais, 2013; Miller, Stanley, & Beauvais, 2012). The

project employs random stratified sampling. Participating schools have been randomly selected from stratified regions from a sampling frame consisting of schools with at least 20% of Native American students living in or around a reservation. The sample frame includes public schools, tribal schools, and schools operated by the Bureau of Indian Education (Tri-Ethnic Center, n.d.).

Students from grades 7 to 12 have participated in the study. The mean age of a Native American adolescent was 14.77 ($SD = 1.70$), ranging between 12 and 21. The percent of males was 51% and 49% of adolescents in the sample were females. Trained staff or teachers administered questionnaires during classroom sessions (Tri-Ethnic Center, n.d.). Parents signed consent letters and were given the option to decline their adolescent's participation in the survey; students were also given the option to decline participation in the survey. Staff provided instructions for filling out questionnaires before the survey administration (Tri-Ethnic Center, n.d.).

To test our hypotheses, we focused on the most recent wave of data, which included the years 2009 to 2013. The overall response rate during this time-frame was 79%. Over the course of four academic years, 2009 to 2013, some schools participated in the survey more than once. To ensure independence of observations, grades that participated in previous rounds were excluded from the current round of the survey; students filled out the questionnaire only once. The age range of respondents in the dataset was 10 to 21 years; for the purposes of this study, we limited the analysis to Native American adolescents, 11- to 16-years-old. The total sample of Native American adolescents was 3,255; the analytic sample of 11- to 16-year-old Native American adolescents included 2,638 responses.

Measures

Behavioral outcomes related to drinking alcohol included: 1) occasional drinking, defined as a self-reported number of times of getting drunk during the last twelve months; 2) recent drinking, defined as a self-reported number of times of getting drunk during the last month; and 3) heavy drinking, defined as a self-reported number of heavy drinking episodes during the last two weeks. Heavy drinking was defined as the number of times a student had five or more drinks during a two-hour period. We describe further the selected measures for predicting drinking outcomes, as well as the control variables.

Native American cultural identification. Native American cultural identification (Oetting, Swaim, & Chiarella, 1998) in families was measured using the following questions: a) How many special activities or traditions, such as holiday parties, special meals, religious activities, trips, or visits does your family have that are

based on the Native American culture? b) Does your family live by or follow the Native American way of life? c) Is your family a success in the Native American way of life? Possible responses ranged from “none” to “a lot” (1-4). We combined responses to three questions in a scale with the mean value of 3.01 out of 4 ($\alpha = 0.82$).

Family socialization. Based on the review of literature outlined earlier, we developed the following family socialization measures. The first construct, *family involvement in school* (Scheer, Borden, & Donnermeyer, 2000; Oetting & Beauvais, 1991), included the following questions: a) Does your family go to school events, such as music programs, sports events, etc.? b) Does your family know what is going on in school? c) Does your family go to school meetings, such as the PTA or PTO, back-to-school night, etc.? Possible responses ranged from: no (1), not much (2), some (3), and much (4). We developed a scale combining responses to three questions with the mean value of 2.67 out of 4 ($\alpha = 0.76$).

The second family socialization construct, *family communication about alcohol* (Scheer, Borden, & Donnermeyer, 2000; Oetting & Beauvais, 1991), was measured using the following questions: a) How much would your family care if you drank alcohol? b) How much would your family care if you got drunk? c) How much would your family try to stop you from drinking alcohol? d) How much has your family talked to you about the dangers of getting drunk? e) How much has your family talked to you about the dangers of drinking alcohol? Possible responses ranged from “not at all” (1) “to a lot” (4). We developed a scale combining responses to three questions with the mean value of 3.45 out of 4 ($\alpha = 0.84$).

The third family socialization construct, *parental monitoring* (Tragesser, Beauvais, Swaim, Edwards, & Oetting, 2007), was measured by asking participants, how true are the following statements: a) My parents allow me to go out as often as I want; b) My parents let me go any place I want without asking; c) My parents are less strict than most parents in letting me have fun with my friends; d) My parents let me stay out as late as I want. Possible responses ranged from very true (1) to not true at all (4). We responses to three questions in a scale with the mean value of 3.04 out of 4 ($\alpha = 0.84$).

Based on previous empirical data examining adolescent motives for drinking alcohol, the following controls were used to isolate the influence of family socialization.

Drinking motives of adolescents. Mood-enhancing and social benefits of drinking are motivational factors for adolescent alcohol use across different populations, including Native American adolescents (Epstein, Griffin, & Botvin, 2008; Kuntsche, Knibbe, Gmel, & Engels, 2005; Yuan et al., 2010). *Mood-enhancing benefits* (Dieterich,

Stanley, Swaim, & Beauvais, 2013) was measured by asking adolescents how strongly they agreed with the following statements: a) Drinking alcohol makes me feel good; b) drinking alcohol is fun; c) drinking alcohol helps me feel better. Possible responses ranged from “strongly disagree” (1) to “strongly agree” (5). A combined scale with the mean value of 2.43 out of 5 was created ($\alpha = 0.94$). *Social benefits of drinking* (Dieterich, Stanley, Swaim, & Beauvais, 2013) was measured by asking adolescents how strongly they agreed with the following statements: a) Drinking with friends is part of being in a group; b) students my age are expected to drink alcohol; 3) drinking alcohol is an important part of being with friends; 4) drinking alcohol allows students to make friends. Possible responses ranged from “strongly disagree” (1) to “strongly agree” (5). A scale was created with the mean value of 2.20 out of 5 ($\alpha = 0.88$).

Native American adolescents report drug use while they are with friends and cousins (Kulis, Okamoto, Rayle, & Sen, 2006; Holmes & Antell, 2001), and the difficulties in refusing substance-use offers from peers and cousins (Okamoto, LeCroy, Dustman, Hohmann-Marriott, & Kulis, 2004). To account for the influence of peers in adolescent drinking behaviors, we included two categorical variables related to peer drinking: a) The number of friends that get drunk, coded as: some/most of friends =1 and few/none=0; and b) How often do friends ask you to get drunk, coded as: a lot/some=1 and not much/not at all=0.

Alcohol availability is associated with use among adolescents (Komro, Maldonado-Molina, Tobler, Bonds, & Muller, 2007), through access to alcohol at home or at the home of friends (Swahn & Hammig, 2000). For Native American adolescents, alcohol availability is a risk factor as many of them can access alcohol fairly easily (Yuan et al., 2010). However, they are less likely to obtain access at home, which probably reflects the parenting of Native American parents who proactively restrict access to alcohol for adolescents at home (Friese, Grube, Seninger, Paschall, & Moore, 2011). We included an alcohol availability factor, coded dichotomously as “alcohol is very easily available” =1 and “other” = 0.

Age is a critical factor for the onset of alcohol use and the gradual development of substance-abuse disorders among adolescents. Studies have found that adolescents who started drinking at the ages of 11 to 14 were more likely to develop alcohol-abuse disorders (DeWitt, Adlaf, Offord, & Ogborne, 2000). The initiation age was found to be a potential indicator of developing substance-use disorders among Native American adolescents as well (Barnes, Welte, & Hoffman, 2002). We limited the age sample between the years of 11 to 16 for analysis in order to include a group of adolescents who had recently begun developing personal autonomy from their families and who

were still being influenced by socialization practices within their family construct. Research also points to gender differences as a factor in adolescent alcohol use (Schulte, Ramo, & Brown, 2009); subsequently, we included a control variable for gender (males=1; females =0).

Analysis

We report descriptive, bivariate, and multivariate analyses. We used parallel mediation models (Hayes, 2013) to test if the effect of Native American cultural identification on drinking outcomes is simultaneously mediated by family socialization mechanisms. We tested hypotheses for each drinking outcome: occasional drinking, recent drinking, and heavy drinking. Each model included control variables. To test the significance of indirect effects of Native American cultural identification on drinking outcomes, we utilized a bootstrapping technique selecting 5,000 samples with 95% confidence intervals. We assessed effect sizes relying on the unstandardized indirect effect size (Preacher & Kelley, 2011; Hayes, 2013). The unstandardized indirect effect offers an opportunity to interpret findings in original metrics of the dependent and independent variables. We utilized Hayes' (2013) PROCESS macro to assess mediation models and effect sizes.

Results

Descriptive Statistics

[Insert Table 1 here]

The distribution (see Table 1) of responses for drinking outcomes was as follows: 35% of respondents reported drinking occasionally; 18% respondents reported getting drunk recently; 19% of reported heavy drinking episodes during the previous two weeks. Table 1 illustrates correlations and descriptive statistics, such as means and standard deviations, percentages, and Cronbach's alpha coefficients. The average number of times adolescents got drunk during the previous twelve months was 0.69 ($SD = 1.15$). The average number of times adolescents got drunk during the previous month was 0.27 ($SD = 0.65$). The average number of heavy drinking episodes during the previous two weeks was 0.56 ($SD = 1.55$).

Adolescent perceptions regarding familial identification with Native American culture were high ($M = 3.01$ out of 4), indicating that Native American families living in or around a reservation followed their cultural traditions. On average, adolescents disagreed with statements regarding mood enhancing ($M = 2.43$ out of 5) and the social benefits of drinking ($M = 2.20$ out of 5). Adolescents reported that their families were involved in school to some degree ($M = 2.67$ out of 4). Adolescent assessment of family communication about alcohol was high ($M = 3.45$

out of 4), indicating that families in general communicated with adolescents about alcohol. Adolescent perceptions of parental monitoring were high as well ($M = 3.04$ out of 4). Identification with Native American culture positively correlated with family school involvement and the communication of positive norms regarding alcohol use, but the correlation with parental monitoring was negative. Although statistically significant, the small effect sizes of some correlations indicated weak associations.

Direct and Indirect Effects of Culture through Family Socialization

[Insert Table 2 here]

The first outcome was occasional drinking (see Table 2). From parallel mediation models, there was no evidence that occasional drinking of adolescents differed as a function of Native American cultural identification ($c' = 0.00, p = .98$), CI 95% [-0.04, .04]. Indirect effects through family involvement in school and family communication about alcohol were not significant, as their confidence intervals included zeros. An indirect effect of Native American culture through parental monitoring was statistically different from zero, as 95% confidence interval was above zero, CI 95% [.00, .01]. Adolescents whose families differed by one point (out of four points) in their identification with Native American culture engaged in occasional drinking more often ($ab = 0.01$) as a result of the reduced parental monitoring ($b = -0.06, p = .00$), which was associated with reduced occasional drinking ($b = -0.12, p = .00$). The total model accounted for 40% of the variance in occasional drinking, $F(11, 2015) = 120.41, p = .00$. Age, alcohol availability, internal motivation, and peer drinking contributed to explained variance.

[Insert Table 3 here]

The second outcome was recent drinking (see Table 3). Results of parallel mediation models showed no evidence of the independent effect of Native American cultural identification on recent drinking ($c' = 0.02$), 95% CI [-0.01, 0.04]. There was no evidence of indirect effects of Native American cultural identification through family involvement in school and family communication about alcohol. There was an indirect effect through parental monitoring, even though the effect size was very small (.004), CI 95% [.00, .01]. The total model accounted for 24% of variance in recent drinking ($F(11, 2013) = 57.48, p = .00$), with internal motivation and peer drinking as contributing factors.

[Insert Table 4 here]

Finally, we assessed the heavy drinking outcome (see Table 4). There was no direct effect of identification with Native American culture on heavy drinking ($c' = 0.05, p = .16$), CI 95% [-0.02, .11]. An indirect effect through

family communication about alcohol showed that adolescents whose families differed by one point (out of four points) on the Native American cultural identification engaged 0.03 times less in heavy drinking as a result of increased communication about alcohol ($b = 0.18, p = .00$), CI 95% [.14, .21], which was associated with reduced heavy drinking ($b = -0.16, p = .00$), CI 95% [-.25, -.08]. This indirect effect through family communication was statistically different from zero, as 95% confidence interval did not include zero, CI 95% [-.05, -.01]. An indirect effect through parental monitoring indicated that adolescents whose families differed by one point in their identification with Native American culture were estimated to drink 0.01 times more as a result of the reduced parental monitoring ($b = -0.07, p = .00$), CI 95% [-.11, -.04], which in turn was associated with reduced heavy drinking ($b = -0.08, p = .05$, CI 95% [-.16, .00]). An indirect effect through parental monitoring was statistically different from zero, as 95% confidence interval did not include zero, CI 95% [.00, .02]. The model accounted for 18% of variance in heavy drinking of adolescents, $F(11, 2181) = 43.96, p = .00$, with internal motivation and peer drinking contributing to explained variance.

Discussion

In this study we found limited evidence of the mediating effect of family socialization on the relationship between identification with Native American culture and alcohol use due to the lack of direct effect between Native American culture identification and alcohol use. We did, however find significant indirect relationships between Native American culture and some alcohol-use outcomes through family socialization factors, with cultural identification being related to all three aspects of family socialization --family involvement in schools, family communication regarding alcohol, and parental monitoring--tested in this study. These findings lend support to the primary socialization theory by providing evidence that the role of culture acted as a secondary socializer impacting family processes, which in turn, acted directly on the adolescent as a primary socializer (Oetting & Donnermeyer, 1998; Whitbeck, 1999). More specifically, as hypothesized, the findings of this study demonstrate a positive relationship between Native American cultural identification and family communication about alcohol, which was associated with less heavy drinking among adolescents. This finding adds to prior research which suggests that family communication about alcohol is associated with positive adolescent development (Dalla & Kennedy, 2014), despite the challenges of family communication with adolescents due to intergenerational substance use (Myhra, Wieling, & Grant, 2015). These findings suggest the possibility of a larger aspect of family socialization, such as engaged parenting, that may be working to prevent higher rates of heavy drinking among this population; it could

also reflect a direct mechanism by which parents are having an actual impact on the school environment. Therefore, relationship between the family's engagement in Native American culture and the family's level of involvement in school suggests that these interactions are a part of the familial socialization process.

Although the hypothesized mediating effect of family communication was not supported, identification with Native American culture was also found to be indirectly related to heavy drinking through parental communications regarding alcohol use. Contrary to previous findings (Chen, Balan, & Price, 2012; Myhra, Wieling, & Grant, 2015), this study provides evidence that family communication regarding alcohol use is independently associated with reduced heavy drinking among adolescents living in or around a reservation. These findings align closely with studies of other populations, which have demonstrated the importance of family communication regarding substance-use norms in preventing adolescent substance use (Scheer, Borden, & Donnermeyer, 2000). The relationship between Native American cultural identification and family communication reflects traditional parenting values that emphasize respect for the autonomy of the adolescent and the importance of the relationship. This suggests that enculturation (the re-engaging of Native American parents with traditional cultural values and practices) may prevent adolescent alcohol use by increasing familial communications. It is also possible that the prevention messages, aimed at increasing family communication regarding adolescent alcohol use, may fit within traditional cultural norms; subsequently, increasing the likelihood of their adaptation and effectiveness.

Again, although the mediating role of parental monitoring was not supported, an indirect relationship between identification with Native American culture and drinking behavior was found, but unlike communication the relationship between cultural identification and paternal monitoring was negative. This finding offers a more complex understanding of the relationship between culture, family socialization, and adolescent alcohol use. The negative relationship observed, supports existing evidence that suggests that Native American familial socialization processes are less likely to impose restrictive measures on adolescents; granting them instead greater autonomy (Waller, Okamoto, Miles, & Hurdle, 2003). This negative relationship between cultural identification and parental monitoring did not, however, diminish the protective effect of parental monitoring on alcohol use; a result consistent with relationships found across other populations (Getz & Bray, 2005). These findings suggest that while monitoring may be important in preventing alcohol use among Native American adolescents, it may be incongruent with cultural parenting norms. Prevention programs aligned with cultural norms should focus on involving extended family and community members in monitoring adolescent behaviors, rather than recommending that parents

implement a stricter monitoring routine. This approach would utilize the cultural beliefs of Native American families as protective factors, and would not interfere with the traditional views of Native American tribes regarding adolescent autonomy and shared responsibility within the extended family and community.

The differences in finding across levels of alcohol use may also point to family and cultural process that are important to consider in this population. More specifically the result indicated that, culture, family involvement, and communication were not related to decreases in occasional drinking or recent drinking but were related to significant decreases in heavy drinking. This could point to a distinction in family and cultural norms around the amount of alcohol consumption that is permissible for use. This distinction could reflect cultural norms around autonomy, the belief that youth need to be allowed to follow their own path or may be a reflection of higher rates of alcohol use among adults in this population. Within this context, families and parents may not necessarily view occasional alcohol use by adolescents as harmful. Concurrently, findings also suggest that parents and family are likely to engage in socialization activities to prevent or reduce heavy drinking by adolescents, acknowledging the dangers of excessive use.

Limitations

These results should be interpreted in light of several study limitations. From the measurement perspective, the common method biases resulting from the fact that the same respondent reported on dependent, predictor, and mediator variables could potentially increase the probability of spurious relationships between study variables. In terms of control factors, we were not able to control for a specific family structure, a potentially important factor given that the definition of a Native American family is broader in scope compared to that of mainstream culture (Jackson & Hodge, 2010). We were also not able to account for parental drinking behavior another aspect of family socialization that may be crucial in this population. Additionally, sampling in schools may exclude youth who had dropped out of high school. This selection bias may result in an under reporting of alcohol use behaviors in the population and may limit our ability to detect an existing relationship between identification with Native American cultural and substance use. It should also be noted that this study relied on adolescent self-report for all family measures. This subjective account of family socialization may not accurately reflect family process and maybe a reflection of the overall quality of the family relationships. This study also relied on the youth's assessment of the family's identification with Native American culture. Lastly this data is cross sectional precluding any causal

inferences. While the study hypotheses and modeling strategy was supported by primary socialization theory, future research in this area would be strengthened by the use of longitudinal data.

Conclusion

There is consensus among researchers and practitioners (Sanchez-Way & Johnson, 2000; Moran, 2001; Trimble & Beauvais, 2001; Beauvais, 2001), confirmed by evidence from community studies (Yuan et al., 2010; Holmes & Antell, 2001) that substance-abuse prevention and treatment with Native American populations should be implemented with a conscious effort in recognizing the cultural traditions of the tribe. Researchers and practitioners argue that in the cultural context of Native American reservations, family is the most important institution for targeting substance abuse with interventions (Sanchez-Way & Johnson, 2000). Notwithstanding the limitations, this study represents an effort to elucidate the relationship between culture, socialization practices, and adolescent alcohol use in or around reservations. The findings indicate an indirect role of cultural identification and the positive role of family socialization practices in the reduction of drinking among Native American adolescents. The findings of the study lend support to the socialization theory and suggest that cultural traditions and values may be an important secondary socializing force for this population. Within a larger context of research and practice, understanding the relationship between cultural norms and family socialization may lead to prevention interventions that operate within a Native American cultural context; consequently, enhancing program effectiveness and addressing an important public health issue for this population. We conclude by stating that Native American cultural identification can have both positive and negative influences on behavioral outcomes of adolescents through family socialization. Future studies should, therefore, consider behavioral outcomes of adolescents in the context of unique socialization mechanisms of Native American families.

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Table 1. Correlations and descriptive statistics

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Male	1.00													
2. Age 11-16	0.00	1.00												
3. Alcohol availability	-0.09**	0.22**	1.00											
4. Mood-enhancing benefits	-0.05	0.14**	0.36**	1.00										
5. Social benefits of drinking	0.02	0.06**	0.28**	0.55**	1.00									
6. Friends get drunk	-0.12**	0.17**	0.26**	0.26**	0.20**	1.00								
7. Friends offer to get drunk	-0.09**	0.14**	0.27**	0.38**	0.27**	0.34**	1.00							
8. NA family culture	-0.03	0.00	0.05*	0.02	0.03	0.05**	0.06**	1.00						
9. Family involvement in school	-0.04*	-0.04	-0.02	-0.15**	-0.08**	-0.03	-0.07**	0.20**	1.00					
10. Family communication	-0.06**	-0.02	-0.06*	-0.24**	-0.16**	-0.05	-0.09**	0.19**	0.30**	1.00				
11. Parental monitoring	-0.18**	-0.01	-0.12**	-0.23**	-0.18**	-0.08**	-0.15**	-0.09**	0.08**	0.16**	1.00			
12. Occasional drinking	-0.04	0.21**	0.29**	0.56**	0.31**	0.29**	0.42**	0.02	-0.11**	-0.17**	-0.24**	1.00		
13. Recent drinking	-0.02	0.11**	0.19**	0.43**	0.26**	0.22**	0.33**	0.03	-0.09**	-0.16**	-0.21**	0.76***	1.00	
14. Heavy drinking	0.00	0.09**	0.15**	0.38**	0.25**	0.19**	0.27**	0.03	-0.11**	-0.17**	-0.15**	0.60**	0.67***	1.00
<i>M</i>		14.17		2.43	2.20			3.01	2.67	3.45	3.04	0.69	0.27	0.56
<i>SD</i>		1.26		1.30	1.02			0.89	0.83	0.74	0.78	1.15	0.65	1.55
Percent	50.87%		61.32%			42.03%	42.06%							
α				0.94	0.88			0.82	0.76	0.84	0.84			

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2. Parallel Mediation Analysis for Occasional Drinking ($N = 2,031$)

Variables	<i>b</i>	<i>SE</i>	<i>p</i>	95% CI
Paths <i>a</i>				
NA cultural identification on family involvement in school	.20	.02	.00	[.16, .24]
NA cultural identification on communication about alcohol	.16	.02	.00	[.12, .19]
NA cultural identification on parental monitoring	-.06	.02	.00	[-.10, -.02]
Paths <i>b</i>				
Family involvement in school	.00	.02	.91	[-.05, .04]
Family communication about alcohol	-.06	.03	.05	[-.11, .00]
Parental monitoring	-.12	.03	.00	[-.04, -.06]
NA cultural identification	.00	.02	.98	[-.04, .04]
Males	-.02	.04	.59	[-.10, .06]
Age 11-16	.07	.02	.00	[.04, .10]
Alcohol availability	.10	.04	.02	[.02, .19]
Mood-enhancing benefits	.35	.02	.00	[.31, .39]
Social benefits of drinking	-.04	.02	.11	[-.08, .01]
Most/some friends get drunk	.14	.04	.00	[.06, .22]
Friends offer to get drunk	.48	.04	.00	[.39, .56]
Effects				
Total effect (path <i>c</i>)	.00	.02		[-.04, .04]
Direct effect (path <i>c'</i>)	.00	.02		[-.04, .04]
Total indirect effect (<i>c - c'</i>)	-.01	.01		[-.02, .01]
Through family involvement in school	-.01	.01		[-.01, .01]
Through communication about alcohol	-.01	.01		[-.02, .00]
Through parental monitoring	.01	.00		[.00, .01]

$$R^2 = 40, F(11, 2015) = 120.41, p < .001$$

Table 3. Parallel Mediation Analysis for Recent Drinking ($N = 2,025$)

Variables	<i>b</i>	<i>SE</i>	<i>p</i>	95% CI
Paths a				
NA cultural identification on family involvement in school	.20	.02	.00	[.16, .24]
NA cultural identification on communication about alcohol	.16	.02	.00	[.13, .20]
NA cultural identification on parental monitoring	-.06	.02	.00	[-.10, -.03]
Paths b				
Family involvement in school	.00	.01	.88	[-.03, .03]
Family communication about alcohol	-.04	.02	.03	[-.07, .00]
Parental monitoring	-.07	.02	.00	[-.10, -.04]
NA cultural identification	.02	.01	.22	[-.01, .04]
Males	-.02	.02	.36	[-.07, .02]
Age 11-16	.00	.01	.76	[-.02, .02]
Alcohol availability	.00	.03	.92	[-.05, .05]
Mood-enhancing benefits	.15	.01	.00	[.12, .17]
Social benefits of drinking	-.01	.01	.66	[-.03, .02]
Most/some friends get drunk	.07	.02	.00	[.02, .12]
Friends offer to get drunk	.20	.03	.00	[.15, .25]
Effects				
Total effect (path c)	.02	.01		[-.01, .04]
Direct effect (path c')	.02	.01		[-.01, .04]
Total indirect effect (c - c')	.00	.00		[-.01, .01]
Through family involvement in school	.00	.00		[-.01, .01]
Through communication about alcohol	-.01	.00		[-.01, .00]
Through parental monitoring	.04	.00		[.00, .01]

$$R^2 = .24, F(11, 2013) = 57.48, p < .001$$

Table 4. Parallel Mediation Analysis for Heavy Drinking ($N = 2,193$)

Variables	<i>b</i>	<i>SE</i>	<i>p</i>	95% CI
Paths a				
NA cultural identification on family involvement in school	.21	.02	.00	[.17, .25]
NA cultural identification on communication about alcohol	.18	.02	.00	[.14, .21]
NA cultural identification on parental monitoring	-.07	.02	.00	[-.11, -.04]
Paths b				
Family involvement in school	-.06	.04	.09	[-.13, .01]
Family communication about alcohol	-.16	.04	.00	[-.25, -.08]
Parental monitoring	-.08	.04	.04	[-.16, .00]
NA cultural identification	.05	.03	.16	[-.02, .11]
Males	.01	.06	.84	[-.10, .13]
Age 11-16	.02	.02	.48	[-.03, .06]
Alcohol availability	.01	.07	.84	[-.11, .14]
Mood-enhancing benefits	.30	.03	.00	[.24, .36]
Social benefits of drinking	.03	.03	.32	[-.03, .10]
Most/some friends get drunk	.13	.06	.04	[.01, .26]
Friends offer to get drunk	.43	.07	.00	[.31, .56]
Effects				
Total effect (path c)	.01	.03		[-.05, .08]
Direct effect (path c')	.05	.03		[-.02, .11]
Total indirect effect (c - c')	-.04	.01		[-.07, -.01]
Through family involvement in school	-.01	.01		[-.03, .00]
Through communication about alcohol	-.03	.01		[-.05, -.01]
Through parental monitoring	.01	.00		[.00, .02]

$$R^2 = .18, F(11, 2181) = 43.96, p < .001$$