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Abstract

American Indians are disproportionately burdened by alcohol-related problems. Yet, research exploring predictors of alcohol use among American Indians has been limited by cross-sectional designs and reservation-based samples. Guided by a life course developmental perspective, the current study used a subsample of American Indians (n=927) from the National Longitudinal Study of Adolescent Health (Add Health) to explore alcohol use (current drinking, usual number of drinks, and binge drinking) among this population. We examined whether adult social roles (i.e., cohabitation, marriage, parenthood, college enrollment, full-time work) were linked to the rise and fall of alcohol use. Multi-level models demonstrated that adult social roles were linked to alcohol use at the within- and between-person levels. Becoming a parent was linked to a lower likelihood of being a current drinker, fewer alcoholic drinks, and less frequent binge drinking. Transitioning to full-time work was associated with a higher likelihood of being a current drinker and more frequent binge drinking. Results point to the importance of exploring within-group trajectories of alcohol use and highlight the protective and risky nature of adult social roles among American Indians.

Keywords: American Indian, alcohol use, early adulthood, longitudinal, parenthood, employment

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1. Introduction

Research demonstrates that American Indians (AIs) experience a disproportionate share of alcohol-related problems. AI adolescents have the highest prevalence of DSM-IV substance use disorders (Wu et al., 2011) and AI adults are more likely than any other racial or ethnic group to experience alcohol-related injuries (Keyes, Liu, & Cerda, 2011). Furthermore, substance use disorders among AIs escalate during adolescence and young adulthood (Whitbeck et al., 2014), emphasizing the importance of understanding factors that may shape *changes* in alcohol consumption during this period.

A useful model for understanding changes in AI alcohol consumption is the life course perspective. This perspective points to the myriad of life transitions (e.g., higher education, marriage, parenthood) clustered during early adulthood that may shape alcohol use. Although the transition to adult social roles has been linked to alcohol use (Bachman, Wadsworth, O'Malley, Johnston & Schulenberg, 1997; Staff, Greene, Maggs, & Schoon, 2014; Staff et al., 2010) associations vary by race (Akins, Lanfear, Cline, & Mosher, 2013; Paschall, Bersamin, & Flewelling, 2005), illustrating the importance of examining the impact of adult social roles on changes in alcohol use among AIs. Furthermore, although AIs are a culturally diverse group, they have a shared traumatic history which can cause stress or grief (Walters, Simoni, & Evans-Campbell, 2002) with implications for alcohol consumption. Thus, it is important to explore *within-group* predictors of alcohol use among this population.

Prior studies suggest that alcohol use among AIs is linked to social roles. Studies have found that married AIs are more likely to stop using alcohol (Stone et al., 2006) or be in remission from alcohol dependence (Gilder, Lau, Corey, & Ehlers, 2008) than those who are

never-married or divorced. However, some studies have found no association between AI

marriage and alcohol use (Akins et al., 2013) and others have shown associations only at the

bivariate level (Ward & Ridolfo, 2011). Parenthood may also be protective. For instance,

Quintero (2000) examined problem drinking among Navajo men and found that parenthood was

frequently cited as a primary catalyst for reducing alcohol consumption. Other adult statuses may

also influence substance use among AIs. One recent study found that the association of education

and employment with substance use differed for AIs and Whites: Among AIs, education and

employment were both associated with a lower likelihood of "bender drinking" (Akins et al.,

2013).

These studies provide preliminary evidence about the association between adult social

roles and alcohol use among AIs, while also revealing important gaps. For instance, most of

these studies used cross-sectional designs or focused on community-based reservation samples,

despite the fact that only about 22% of AIs live on reservations (Norris, Vines, & Hoeffel, 2012).

The current study addresses these gaps in the literature by examining whether transitions into

adult social roles (i.e., cohabitation, marriage, parenthood, full-time work, and enrollment in

higher education) are associated with changes in alcohol use among AIs included in a nationally

representative sample. We utilize a multi-level modeling strategy to disentangle how social roles

and substance use are associated at the within- and between-person level. By design, the within-

person estimates control for stable individual differences between people (Raudenbush & Bryk,

2002), thus reducing concerns related to selection.

2. Methods

2.1 Data and Sample

We utilized the restricted-use National Longitudinal Study of Adolescent Health (Add Health) data (Harris, 2009), a nationally representative sample of adolescents (in grades 7-12 at Wave 1) who were initially surveyed in 1994/1995 and re-interviewed in 1996 (W2), 2001-2002 (W3), and 2007-2008 (W4). Data for this study came primarily from the in-home survey, in which information about substance use was collected using a self-administered questionnaire. Our sample was comprised of individuals who self-identified as AI or Alaskan native, either alone or in combination with another racial/ethnic group. We used the respondent's racial self-identification from Wave 3, supplementing racial self-identification from Wave 1 when Wave 3 data were missing. We limited the sample to respondents with a valid sampling weight (n=934). Individuals missing information on parental education or substance use (n=7) were omitted, yielding a final sample of 927 respondents. Models exploring usual drinks and binge drinking focused on individuals that ever consumed alcohol in their lifetime (n=833). Table 1 presents descriptive information about the sample.

2.2 Measures

Unless otherwise noted, variables were time varying and assessed at all waves.

2.2.1 Dependent Variables

Alcohol use. Current drinking was a dichotomous variable that indicated whether the respondent drank alcohol in the past year, usual drinks was the number of drinks that the respondent consumed when he/she drank alcohol (top coded at 26), and binge drinking frequency indicated how frequently the respondent drank 5+ alcoholic drinks in one episode in the past year (ranging from 0 [*Never*] to 6[*Everyday or almost everyday*]).

2.2.2. Independent Variables

Family roles. Respondents who reported living with a spouse were coded as married, those living with a partner were cohabiting, and those living with a son or daughter were parents. This approach was selected because prior research suggests that these family roles are most salient to individuals residing with family members (Staff et al., 2010).

School and Work Roles. Full-time employment was captured with a dichotomous variable that indicated whether the individual worked 35 or more hours weekly. A dichotomous variable assessed whether the respondent was attending higher education, including vocational school, college, or university.

Time-invariant controls. Analyses control for age, gender, parental education, family structure, and urbanicity.

2.3 Analytical Strategy

To account for the complex survey design and the nested data, multi-level models with rescaled sampling weights and robust standard errors were computed. Binomial, poisson, and gaussian distributions were used to model current drinking, usual drinks, and binge drinking, respectively. To distinguish within- from between-person effects (Hoffman & Stawski, 2009), the Level 1 equation included time-varying indicators of whether the individual was *currently* married, cohabiting, parenting, engaged in full-time work, or participating in higher education at the time of the survey. Level 2 included a time-invariant indicator of whether the individual *ever* occupied the adult social role across all four waves.

3. Results

Results demonstrated that adult social roles were linked to alcohol use among AIs at the within- and between-person levels. In interpreting these models, it is important to note that between-person associations indicate whether average alcohol use differs for people *who* ever

occupied a particular social role compared to those who never occupied that role. In contrast, within-person associations indicate the extent to which individuals have different alcohol use *when* they occupy a social role compared to when they do not.

As can be seen in Table 2, individuals who ever cohabited (across all waves) were more likely to be current drinkers than those who did not cohabit during the study period. At the within-person level, parenthood was associated with a lower likelihood of being a current drinker. Specifically, the odds of being a current drinker were about 60% lower when individuals resided with their children than when they did not. Full-time work was associated with a higher likelihood of being a current drinker at the within- and between-person level. That is, individuals who ever worked full-time were more likely to be current drinkers than individuals who never worked full-time, and when individuals worked full-time they were more likely to be current drinkers than when they worked less.

The next set of analyses demonstrated that individuals who were ever married averaged fewer drinks across all waves than those who were never married. However, when respondents were currently married, they consumed more drinks than when they were single. Parenthood showed the opposite pattern: Respondents with children averaged more "usual drinks" than respondents without children. However, after becoming parents, individuals were less likely to drink in the past year or binge drink than they were before becoming parents. Furthermore, individuals who attended college drank less and were less likely to binge drink than individuals who did not attend college. And last, when individuals worked full-time, they binge drank more frequently than when they did not work full-time.

4. Discussion

Given the high rates of alcohol misuse and alcohol-related problems among AIs, the current study sought to explore whether family, work, and school roles protected against alcohol use among this population. Although significant associations were documented at the between- and within-person level, we focus our attention on discussing the latter as they are likely less biased due to selection factors. Below, we apply a life course developmental perspective to inform our interpretation of the results.

Within the domain of family roles, parenthood emerged as a particularly salient within-person predictor of alcohol use. After becoming parents, respondents were less likely to drink in the past year, and if they did drink, they drank fewer drinks on average. In many AI tribes, family is highly valued and assuming the role of a parent may motivate reductions in drinking (Quintero, 2000). But other family roles – such as marriage and cohabitation—were less consistently associated with alcohol use. A significant within-person association indicated that individuals averaged more alcoholic drinks when they were married than when they were single. It is possible that light—but not binge—drinking increased in the current sample as a result of increased income due to resource pooling during marriage. Interestingly, cohabitation was not linked to alcohol use at the within-person level, perhaps because cohabitation is a more ambiguous social role than marriage, leading to less resource pooling.

Additionally, working full-time was associated with an increased likelihood of being a current drinker and more frequent binge drinking. This finding contrasts with results from a recent study which found that employed AIs in Washington were less likely to engage in bender drinking than those who were unemployed (Akins et al., 2013). This discrepancy may be explained by the different specifications of employment (i.e., full-time work versus any work) or the different levels of the analyses (i.e., a within-person effect versus a between-person effect).

As others have noted, full-time work may increase alcohol use due to increased disposable income, drinking with coworkers, or job-based stress or work alienation (Eitle, Taylor, & Eitle, 2010; Martin & Roman, 1996; McMorris & Uggen, 2000). Given our findings, the association between full-time work and binge drinking among AIs merits further research.

Finally, although college attendance was not associated with alcohol use at the within-person level, the between-person associations demonstrate that AIs who attended college drank less and binge drank less frequently than those who did not attend college. This finding suggests that college attendance may be protective among AIs, even if their alcohol consumption does not decrease while they are attending college.

4.1 Limitations and Implications

The current study has some limitations that must be mentioned. First, the tribal identity of the respondents was unknown. Given that tribal groups have unique norms and patterns of alcohol use (Young & Joe, 2009), this limitation is notable. Second, it is possible that the association between social roles (such as full-time work) and alcohol use differ for reservation and urban American Indians. For instance, scarce employment opportunities on reservations may require AIs to travel further and exert more effort to obtain employment. Unfortunately, data limitations make it impossible to compare reservation and urban-dwelling AIs in the Add health data. However, exploring variation by urbanicity and reservation status will be an important direction for future research.

Despite these limitations, the current study is one of the first to use national longitudinal data to explore time-varying correlates of alcohol use among AIs. Our findings suggest that the transition to adult social roles for AIs may help to explain trajectories of alcohol use from adolescence through young adulthood. Understanding these patterns may help identify

transitions that curtail dangerous drinking behaviors. Indeed, our findings affirm that, consistent with other racial and ethnic groups, becoming a parent increases the likelihood that AIs will abstain from drinking and decreases the risk of heavy drinking for nonabstainers.

References

Akins, S., Lanfear, C., Cline, S., & Mosher, C. (2013). Patterns and Correlates of Adult
American Indian Substance Use. *Journal of Drug Issues*, *43*(4), 497–516.
doi:10.1177/0022042613491100

Bachman, J. G., Wadsworth, K. N., O'Malley, P. M., Johnston, L. D., & Schulenberg, J. E.
(1997). *Smoking, drinking, and drug use in young adulthood: The impacts of new
freedoms and new responsibilities* (Vol. xix). Hillsdale, NJ, England: Lawrence
Erlbaum Associates, Inc.

Eitle, D., Taylor, J., & Eitle, T. M. (2010). Heavy episodic alcohol use in emerging adulthood:
The role of early risk factors and young adult social roles. *Journal of Drug Issues*, *40*(2),
295–320. doi:10.1177/002204261004000203

Gilder, D. A., Lau, P., Corey, L., & Ehlers, C. L. (2008). Factors associated with remission from
alcohol dependence in an American Indian community group. *The American Journal of
Psychiatry*, *165*(9), 1172–1178. doi:10.1176/appi.ajp.2008.07081308

Harris, K. M (2009). The National Longitudinal Study of Adolescent Health (Add Health),
Waves I & II, 1994-1996; Wave III, 2001-2002; Wave IV, 2007-2009 [machine-readable
data file and documentation]. Chapel Hill, NC: Carolina Population Center, University of
North Carolina at Chapel Hill. doi:10.3886/ICPSR27021.v9.

Hoffman, L., & Stawski, R. S. (2009). Persons as contexts: Evaluating between-person and
within-person effects in longitudinal analysis. *Research in Human Development*, *6*(2-3),
97–120. doi:10.1080/15427600902911189

Keyes, K. M, Liu, X., C., & Cerda, M. (2011). The role of race/ethnicity in alcohol-attributable
injury in the United States. *Epidemiologic Reviews*, 1-14. doi: 10.1093/epirev/mxr018

Martin, J. K., & Roman, P. M. (1996). Job satisfaction, job reward characteristics, and employees' problem drinking behaviors. *Work and Occupations*, *23*(1), 4–25. doi:10.1177/0730888496023001002

McMorris, B. J., & Uggen, C. (2000). Alcohol and employment in the transition to adulthood. *Journal of Health and Social Behavior*, *41*(3), 276–294.

Norris, T., Vines, P., L., & Hoeffel, E. M. (2012, January). The American Indian and Alaska Native Population: 2010. U.S. Census Bureau. Retrieved from http://www.census.gov/prod/cen2010/briefs/c2010br-10.pdf

Paschall, M. J., Bersamin, M., & Flewelling, R. L. (2005). Racial/Ethnic differences in the association between college attendance and heavy alcohol use: a national study. *Journal of Studies on Alcohol*, *66*(2), 266–274.

Quintero, G. (2000). "The lizard in the green bottle": "aging out" of problem drinking among Navajo men. *Social Science & Medicine*, *51*(7), 1031–1045. doi:10.1016/S0277-9536(00)00017-4

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. SAGE.

Staff, J., Greene, K. M., Maggs, J. L., & Schoon, I. (2014). Family transitions and changes in drinking from adolescence through midlife. *Addiction, 109*(2), 227-236. doi: 10.1111/add.12394

Staff, J., Schulenberg, J. E., Maslowsky, J., Bachman, J. G., O'Malley, P. M., Maggs, J. L., & Johnston, L. D. (2010). Substance use changes and social role transitions: Proximal developmental effects on ongoing trajectories from late adolescence through early

adulthood. *Development and Psychopathology*, *22*(4), 917–932.

doi:10.1017/S0954579410000544

Stone, R. A. T., Whitbeck, L. B., Chen, X., Johnson, K., & Olson, D. M. (2006). Traditional

practices, traditional spirituality, and alcohol cessation among American Indians. *Journal*

of Studies on Alcohol and Drugs, *67*(2), 236.

Walters, K. L., Simoni, J. M., & Evans-Campbell, T. (2002). Substance use among American

Indians and Alaska natives: incorporating culture in an "indigenist" stress-coping

paradigm. *Public Health Reports*, *117*(Suppl 1), S104–S117.

Ward, B. W., & Ridolfo, H. (2011). Alcohol, Tobacco, and Illicit Drug Use Among Native

American College Students: An Exploratory Quantitative Analysis. *Substance Use &*

Misuse, *46*(11), 1410–1419. doi:10.3109/10826084.2011.592437

Whitbeck, L. B., Hartshorn, K. J. S., Crawford, D. M., Walls, M. L., Gentzler, K. C., & Hoyt, D.

R. (2014). Mental and substance use disorders from early adolescence to young

adulthood among indigenous young people: final diagnostic results from an 8-year panel

study. *Social Psychiatry and Psychiatric Epidemiology*, 1–13. doi:10.1007/s00127-014-

0825-0

Wu, L.-T., Woody, G. E., Yang, C., Pan, J.-J., & Blazer, D. G. (2011). Racial/ethnic variations in

substance-related disorders among adolescents in the United States. *Archives of General*

Psychiatry, *68*(11), 1176–1185. doi:10.1001/archgenpsychiatry.2011.120

Young, R. S., & Joe, J. R. (2009). Some thoughts about the epidemiology of alcohol and drug

use among American Indian/Alaska Native populations. *Journal of Ethnicity in*

Substance Abuse, *8*(3), 223–241. doi:10.1080/15332640903110443

Table 1
 Descriptives for the Sample (*N* = 927)

	Percent	SE
Demographic Characteristics		
Female	0.460	0.022
Two Biological or Adoptive Parents	0.601	0.032
Urbanicity		
Urban	0.368	0.066
Suburban	0.441	0.068
Rural	0.192	0.068
Parent Education		
Less than High School	0.238	0.028
High School Degree	0.535	0.028
College Degree	0.227	0.024
Adult Roles		
Ever Married	0.379	0.029
Ever Cohabited	0.284	0.023
Ever Parents	0.450	0.021
Ever College	0.268	0.027
Ever Full-time Work	0.714	0.024
Alcohol Use (Means)[a]		
Current Drinker	0.602	0.018
Usual Number of Drinks	3.176	0.198
Binge Drinking	1.044	0.057

Source: National Study of Adolescent Health.

[a]Alcohol variables are based on person-means (i.e., each person's average across all waves).

Note: Results are weighted to account for the complex survey design.

Table 2

Multi-level Models Predicting Alcohol Use among American Indians

	Current Drinking		Usual Drinks		Binge Drinking	
	B	*SE*	*B*	*SE*	*B*	*SE*
Ever Married	-0.432	0.287	-0.386	0.124 **	-0.124	0.117
Currently Married	0.460	0.401	0.245	0.120 *	-0.216	0.163
Ever Cohabited	0.495	0.206 *	-0.014	0.070	0.167	0.097 †
Currently Cohabiting	-0.084	0.282	-0.117	0.130	-0.224	0.144
Ever Parents	0.228	0.211	0.281	0.118 *	0.087	0.104
Currently Parents	-0.908	0.238 ***	-0.357	0.099 ***	-0.436	0.098 ***
Ever Attended College	0.056	0.158	-0.246	0.071 ***	-0.297	0.074 ***
Currently Attending College	0.365	0.210 †	0.029	0.075	-0.003	0.079
Ever Worked Full-time	0.350	0.158 *	-0.020	0.146	-0.068	0.093
Currently Working Full-time	0.644	0.139 ***	0.086	0.063	0.163	0.081 *
Constant	-1.010	0.235 ***	0.396	0.225 †	0.749	0.103 ***
Random Effects						
Level 1 Variance[a]					1.687	0.117
Level 2 Variance	4.299	0.964	1.464	0.090	0.629	0.127
Covariance Intercept and Slope	-0.265	0.065	-0.109	0.009	-0.026	0.012
Slope (Age) Variance	0.044	0.012	0.009	0.001	0.005	0.002
Level 3 Variance	0.280	0.143	0.086	0.026	0.059	0.067

Source: National Study of Adolescent Health.

Models control for age, quadratic age, gender, family structure, parent education, and urbanicity.

[a]Level 1 variance is only shown for the model using linear regression.

Note: Results are weighted to account for the complex survey design.

***$p<.001$, **$p<.01$, *$p<.05$, †$p<.1$