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Initiation of Alcohol, Marijuana, and Inhalant Use by American-Indian and White Youth Living On or Near Reservations

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Abstract

Background—Early initiation of drinking, intoxication, marijuana, and inhalant use is associated with negative outcomes and substance use trajectories. Using national datasets, American Indian (AI) youth have been found to initiate substance use earlier than other youth. This study uses a population-based sample of youth living on or near reservations to compare substance use onset for AI and white youth where socioeconomic conditions may be similar for these youth.

Methods—Student survey data were gathered from 32 schools in 3 regions from 2009-2012. A retrospective person-period data set was constructed using reported age of initiation of intoxication and marijuana and inhalant use. Multi-level modeling and event history analysis were used to estimate initiation as a function of age, gender, ethnicity, and region.

Results—The results provide further evidence that AI youth living on or near reservations initiate substance use significantly earlier than white youth who attend the same schools and live in the same communities. Differences between the two cultural groups were most evident for marijuana initiation where the odds of initiating marijuana use ranged from seven to 10 times greater for nine vs. eight-year-old AI compared to white youth.

Conclusions—Prevention efforts targeted to AI youth must begin earlier than for non-AI youth in order to delay or prevent initiation. In addition, better understanding about the differences in the psychosocial environments of AI and white youth living in these communities is of paramount importance in designing prevention efforts.

Keywords

American Indian; adolescent substance use; initiation; marijuana; alcohol; inhalants

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Contributors:

Linda Stanley: Analyzed data; wrote Methods section; contributed to Introduction and Discussion.
Randall Swaim: Wrote Introduction and Discussion sections; contributed to Methods section.
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1. INTRODUCTION

Early initiation of drinking, intoxication, marijuana, and inhalant use is associated with a number of negative outcomes and substance use trajectories. Early onset of alcohol use (under age 14 for most studies) is associated with higher levels of subsequent drinking (Capaldi et al., 2013), higher levels of alcohol-related problems in adulthood (Liang and Chikritzhs, 2013), increased chances for developing a substance use disorder (Dawson et al., 2008) and increased chances for unintentional injuries and motor vehicle crashes while drinking (Hingson et al., 2009). Based on a 12-year prospective study of U.S. youth, the odds of developing an alcohol dependence disorder can be decreased anywhere from 5 to 9% for each year that drinking is delayed (Grant et al., 2001).

The effects of early marijuana use also lead to increased risk for negative outcomes, including occupational, relationship, and legal problems (Griffin et al., 2010); adult substance use disorders (Brook et al., 2002; Green et al., 2012); being an injection drug-user (Trenz et al., 2012); and cognitive and executive functioning deficits (Gruber et al., 2012). Similarly, early inhalant use increases risk for subsequent use of other drugs including opiates (Novins and Baron, 2004; Storr et al., 2005). Early inhalant use is also associated with development of various psychiatric disorders including mood, anxiety, and personality disorders (Wu, 2007) as well as increasing risk for delinquency and other problem behaviors (Howard et al., 2008; Mosher et al., 2004; Prinz and Kerns, 2003).

Due to their high rates of substance use compared to other racial/ethnic groups (Stanley et al., 2014), considerable research has focused on early onset among American Indian (AI) youth. Similar to other youth, early intoxication by age 14 is related to a number of negative outcomes that include heavier rates of subsequent use, more alcohol-related problems, and greater likelihood of a later substance use disorder (Henry et al., 2011; Novins and Baron, 2004). While a number of studies show that AI youth initiate alcohol and other drugs earlier than other cultural groups (Dickerson et al., 2012; Roski et al., 1997), many such findings are limited by small sample size and are often limited to one tribal group. Focus on a single AI tribe can lead to misleading conclusions due to differing rates of use, patterning of initiation, and overall outcomes across tribes (Novins and Baron, 2004; Novins and Mitchell, 1998; Whitesell et al., 2007).

A few studies have been based on population-based samples that included multiple tribal groups. With comparison to a national sample, Whitesell et al. (2007) found differences over time for initiation of marijuana use, with AI participants reporting earlier initiation than the national sample if born after 1960, but not if born before. For the younger sample of AI participants, risk was higher for early initiation among Northern Plains tribal members compared to Southwest tribal members. Similar findings were reported by O'Connell et al. (2011), although there were fewer tribal differences. Also of note in this study was the finding that alcohol use initiation by age 14 resulted in twice the risk for later diagnosis with an alcohol or marijuana disorder. In a prospective study of middle school AI students from Northern Plains tribes (Whitesell et al., 2012), a sharp increase in marijuana use at age 12 was observed.

While there appears to be a substantial difference between AI and non-AI youth in the patterning of substance use initiation, the variation reported in studies to date may reflect not ethnic differences, but may be due to exposure to socio/economic/geographic conditions that increase risk for early use. For example, even though there is variation in economic development across reservations, the lack of economic opportunity remains an important stressor for many AI youth who live on or near reservations (McLeigh, 2010). Previous studies that have compared substance use initiation patterns of AI youth to national samples have contributed to our understanding of their relative standing on early onset. To date, however, no population-based samples have compared AI and non-AI youth who reside in the same areas (on or near reservations) and who are subject to many of the same broad environmental risk factors. If such comparisons show that AI and non-AI youth residing in the same locations report similar patterns of early onset, this weakens support for an ethnicity-based explanation for early onset.

We have conducted population-based samples of AI and non-AI youth who live on or near reservations since 1974. The current study draws data from our most recent four years of data collection. It includes survey data from AI and white students attending schools on or near AI reservations and includes three geographic regions, permitting comparisons across tribal groups residing in those regions. Thus, we were able to make comparisons of initiation age of intoxication, marijuana, and inhalants by ethnicity, gender, and region.

2. METHODS

2.1 Participants

The current study was part of a larger ongoing epidemiological study of substance use among AI youth. Participants were students from schools on or near reservations that have at least 20% AI youth enrolled. Yearly recruitment was based on a sampling scheme to approximate the percentage of AI youth residing in seven geographic regions (Northwest, Northern Plains, Upper Great Lakes, Northeast, Southeast, Southern Great Plains, and Southwest). Schools were paid $500 for participation and given a comprehensive report of survey findings within two months of survey completion as incentives to participate.

Four years of student data (for school years from 2009-2012) from 32 schools in 3 regions (Southwest, Northern Plains, Upper Great Lakes) were used in the present study. Specific identity of tribes and reservations are kept confidential. The current study includes students aged 11-17 who self-identified as AI or white, for a total sample size of 3480. The mean age for students was 14.8 years (SD = 1.5); 49.4% of respondents were male and 47.4% female.

2.2 Procedure

All survey procedures were approved by the university Institutional Review Board (IRB). A resolution of support was also required from the appropriate tribal authority or school board prior to proceeding with an agreement with a school to survey their students. Further information about survey procedures can be found in Stanley et al. (2014). Less than one percent of students did not complete the survey due to lack of parental consent.

2.3 Measures

Students were administered The American Drug and Alcohol Survey™. This survey has been refined for use with AI youth and has been validated for use with majority and other ethnic minority groups (Oetting and Beauvais, 1990). Initiation of intoxication, marijuana, and inhalant use were measured by items asking "How old were you the first time you got drunk/tried marijuana/sniffed or huffed?" Responses were "never used, 7 or younger, 8, 9, …18, 19 or older".

Gender and ethnicity were dummy coded (male=1; AI=1), with any respondent self-identifying as American Indian coded as 1 for ethnicity. While respondents could self-identify as multiethnic, 93.1% identified solely as either American Indian (71.8%; 2497) or white (21.3%; 742) while 1.9% (65) identified as both white and American Indian and 3.5% (121) identified as American Indian and some other race/ethnicity (the largest being Latino/Hispanic). Age was measured as an interval variable, and age-squared was included to account for potential non-linear growth in the odds of initiation, as found elsewhere (Lillehoj et al., 2005; Novins and Barón, 2004; Reardon et al., 2002). Finally, region was measured with two dummy variables where Northern Plains was the base.

2.4 Analysis

The analysis used both multi-level modeling and event history analysis. Event history analysis in this context considers the timing as well as the occurrence (or nonoccurrence) of first intoxication/use, and takes into account the fact that some students had not experienced their first intoxication/use at the time of the survey. Multilevel modeling was used to account for the nesting of students within schools and allowed for the estimation of regional differences. Level-1 variables included age, gender, and ethnicity while region was the only level-2 variable.

We utilized a discrete-time model (Singer and Willett, 1993) that allows for inclusion of time-invariant (gender, ethnicity, region) and time-dependent covariates (age) and that properly models right censored data due to some youth not initiating use before the end of the study. Because the data are cross-sectional, the first step was to construct a retrospective person-period data set following techniques proposed by Reardon, Brennan, and Buka (Reardon et al., 2002). Level-one proportional odds assumptions were tested by including interaction terms between age and the independent variables, gender and ethnicity. Level-one proportional odds assumptions for subgroups of ethnicity*gender could not be rejected; this 3-way interaction is not included in the models. We could not reject the assumption of level-two proportional odds for all models; thus, no cross-level interactions with age are included in the models.

2.5 Missing data procedures

The percent of missing observations ranged from 0% for age to a high of 3.2% for gender. A total of 93.7% of respondents had no missing data. Non-AI and AI youth had very similar patterns of missing data, with complete data of 93.9% and 93.3%, respectively. We found no indication that missing data were not missing at random (MAR), and thus multiple imputation (Shafer and Graham, 2002) was completed using ICE in Stata software, Version

10.0 (Royston, 2004, 2005, 2007). ICE imputes by chained equations, and its major strength is that there is no multivariate joint distribution assumption, thus allowing different types of variables to be imputed together. The imputation model included variables from this analysis in addition to auxiliary variables measuring risk and protective factors (e.g., parental monitoring). Five datasets were imputed, and estimates were combined using Rubin's (1987) rules.

3. RESULTS

3.1 Intoxication

Columns 1 and 2 of Table 1 present the population-average odds ratios (OR) and their confidence intervals (CI), respectively, for first intoxication. For all models, the intercept represents an 8 year-old white female residing in the Northern Plains (NP). The likelihood of first intoxication varied significantly by age and ethnicity. In addition, significant interactions were found, including age × gender indicating non-proportionality of the hazard function. Non-proportionality of the hazard function means that the effect of ethnicity on the log-odds of initiation is not the same across ages. By including the interaction between ethnicity and age, we are allowing the effect of ethnicity to vary across ages. As expected, the likelihood of first getting drunk significantly increased as age increased (OR_{age}=3.02, p<.01), although at a decreasing rate ($OR_{age*age}$=.95, p<.01). Thus, a 9-year-old white female's odds of initiating intoxication were about 3 times those of an otherwise similar 8-year-old. However, a 16-year-old white female's odds of first getting drunk were 1.49 times the odds of a comparable 15-year-old, all else equal. For males, each of those odds ratios were somewhat less due to a significant age by gender interaction ($OR_{age*male}$=.94, p<.01).

Turning to ethnicity, AIs were significantly more likely to initiate intoxication at all ages compared to similar white youth (p<.01). An AI youth had, on average, an odds ratio of initiation 2.3 times that of a comparable white youth. There were no significant interactions between ethnicity and gender and ethnicity and age.

Finally, comparing by region shows that there were no significant differences in the likelihood of first intoxication between females living in the NP compared to those living in the Southwest (SW) or the Upper Great Lakes (UGL). However, UGL males were significantly more likely to initiate intoxication compared to their NP and SW counterparts (OR_{UGL}= 1.55; p<.01).

Figures 1a and 1b shows the hazard rates of first intoxication at each age for females and males, respectively, for various subgroups based on these results. These functions show the probability that a respondent would initiate intoxication at age j, given that he or she had not been intoxicated before age j. Non-significant coefficients were not used to calculate hazard rates; therefore, females are differentiated only by ethnicity whereas males are differentiated by region and ethnicity. Comparing subgroups at age 13 shows that the hazard rates differed significantly depending on ethnicity, gender, and to some extent, region. For example, AIs had about twice the hazard rate of whites when controlling for gender and ethnicity. The hazard rate for a 13-year-old white male was, on average, .10 for those living in the NP or SW region and .15 for those living in the UGL region. The comparable rates for AI males

were .20 and .28 respectively. These differences became larger, in absolute terms, as age increased.

3.2 Marijuana

Columns 3 and 4 of Table 1 present population-average ORs and CIs for marijuana initiation. The likelihood of initiating marijuana use varied significantly by age, gender, ethnicity, and region. In addition, significant interactions were found; thus, differences in the likelihood of initiation must be discussed accordingly. As expected, the likelihood of initiating marijuana use increased significantly as age increased (OR_{age}=2.34, p<.01), although at a decreasing rate ($OR_{age*age}$=.97, p<.01). Thus, a 9-year-old white female's odds of initiating marijuana use were 2.30 times those of an otherwise similar 8-year-old. However, a 16-year-old white female's odds of initiating marijuana use were 1.50 times the odds of a comparable 15-year-old. Comparing males and females, a white male was significantly more likely to have initiated marijuana use than a comparable white female at younger ages. However, this difference decreased as age increased, and for white youth living in the NP or UGL, the likelihood of initiating given previous non-use for females exceeded those for males at about age 13 (p<.01). For comparable AI youth, females' likelihood of initiating became greater than males at about 11 years of age (p<.01).

The largest difference in initiating was between AI and white youth. An 8-year-old AI female had odds of initiating marijuana use 10.5 times higher than those of a similar white female (p<.01). The difference in odds ratios was smaller for males, with an AI 8-year-old male having an odds ratio about 7 times larger than that of a similar white male (p<.05). As with intoxication, non-proportionality of the hazard function was found with respect to ethnicity, meaning that the effect of ethnicity varied across ages. Specifically, as age increased, the difference in the odds of initiating marijuana use between AIs and white youth became somewhat smaller (OR_{age*AI} = .81, p<.01).

Finally, comparing by region shows that there were no significant differences in the likelihood of initiation between youth living in the NP compared to those living in the UGL region. However, females residing in the SW were significantly less likely to initiate marijuana use compared to their NP counterparts (OR_{SW}=.57, p<.01); the same was true comparing males, though the difference was not as dramatic ($OR_{male*SW}$*OR_{SW}=.83, p<.01).

Figures 2a and 2b show the probability of initiating use, given previous nonuse, by region and ethnicity for females and males, respectively. These graphs illustrate the large differences in initiation for AI youth especially for those living in the NP and UGL. For example, a 14-year-old white female living in the NP or UGL, on average, has a probability of initiating marijuana use of .14 while for a similar AI female, the probability is .33. For white and AI males, the comparative figures are .13 and .24, respectively.

3.3 Inhalants

Table 1, columns 5 and 6, present population-average ORs and CIs for initiation of inhalants. Similar to marijuana, the likelihood of initiating inhalant use varied significantly by age, gender, ethnicity, and region. However, few significant interactions were found,

except for gender and region. The likelihood of initiating inhalant use increased with age up to approximately 14 years of age, but then declined past that age (OR_{age}=2.70, p<.01; $OR_{age*age}$=.92, p<.01). Thus, on average, a 9-year-old white female's odds of initiating inhalant use were 2.70 times those of an otherwise similar 8-year-old. However, a 16-year-old white female's odds of initiating inhalant use were .72 times the odds of a comparable 15-year-old. Females were significantly more likely to have initiated inhalant use than comparable males (OR_{male}=.44, p<.05) while AI youth were significantly more likely to initiate inhalant use, all else equal (OR_{AI}=1.76, p<.01). Unlike for intoxication and marijuana, proportionality of the hazard function was not rejected, meaning that the effect of ethnicity (and gender) did not vary by age.

Finally, comparing by region showed that there were no significant differences in the likelihood of initiation between youth living in the NP compared to those living in the SW. However, youth residing in the UGL were significantly less likely to initiate inhalant use compared to their NP and SW counterparts (OR_{UGL}=.54, p<.01).

Figures 3a and 3b show the probability of initiating inhalant use, given previous nonuse, by region and ethnicity for males and females, respectively. The graph clearly shows the decline in hazard rates past age 14. Both AI females and males living in the NP and SW show significantly higher rates of initiation than their white counterparts or AI counterparts living in the UGL. Comparing across the graphs clearly shows the higher risk to females of initiating inhalant use. For example, at age 14 females living in the NP and SW had an estimated hazard rate of .11 while the similar figure for males was .05.

4. DISCUSSION

Previous studies of differences in substance use for AI youth versus other, typically white, youth have often used samples of youth where the AI youth were likely to live under very different conditions (e.g., on reservations) than the white youth (e.g., far from reservations). Thus, differences observed between the ethnicities may have been due, in part, to differences in the environment in which these youth lived and attended school. This study compared patterning of initiation among AI and white youth who attended the same set of schools located on or near AI reservations in three regions. This comparison affords some control for social, economic, and geographic conditions in estimating the effects of ethnicity on substance use initiation. Thus, the finding that AI youth living on or near reservations initiate substance use earlier than white youth is especially troubling given that the differences are for those attending the same set of schools, and thus, having exposure to many of the same environmental conditions.

Differences between the two groups were most evident for marijuana initiation. The odds of initiation of marijuana use ranged from 7 to 10 times greater for nine-vs. eight-year-old AI youth compared to white youth. Comparing males to females, the pattern of initiation changed with age for both ethnicity groups. At age 11, AI females were more likely to begin using marijuana compared to their male counterparts while for white UGL and NP youth, the greater likelihood of initiation among females did not emerge until age 13. Other regional differences were found for marijuana with SW males and females less likely to

initiate use compared to their NP counterparts. The result for NP youth is consistent with Whitesell et al. (2007) who found that among those born after 1959, NP tribal members had the highest risk for initiating marijuana use, as compared to SW tribal members and a national sample. Our results corroborate their findings and further emphasize the importance of considering cultural and geographic differences in tribal groups across the U.S.

Less surprising results were found for initiation of intoxication. As with marijuana, the hazard rate for AI youth was higher compared to white youth, but the difference was less extreme, about two times greater, controlling for age and region. The difference between the two cultural groups increased as a function of age. There were no regional differences found for female students, but male UGL students, both AI and white, had a greater risk for initiation than their NP and SW male counterparts.

The differences in marijuana hazard rates as compared to intoxication hazard rates for AI and white youth are noteworthy. Whitesell et al. (2012) found a disproportionate risk for marijuana initiation among younger members of NP and SW tribal members, as compared to older members of those tribes. They note that high initiation rates of marijuana use among younger NP and SW tribal members may reflect emerging common vulnerabilities among reservation-based youth, such as easier access to marijuana (especially as compared to alcohol on reservations where it has been banned) and lack of economic and educational opportunities. If this is the case, our results suggest that these same vulnerabilities may not be as salient to white youth living in the same areas. Interestingly, white youth in this sample reported a significantly higher level of perceived availability of alcohol as compared to AI youth while the perceived availability of marijuana was not significantly different between AI and white youth. Although these youth attended the same schools, a higher share of AI youth may have lived where alcohol is banned as compared to the white youth in the sample.

Female and AI youth were at greater risk for initiation of inhalant use. However, the greater risk for AI youth was not as large as that seen for marijuana. The risk for inhalant initiation increased with age, peaking at 14 among all youth and then decreasing. One regional difference for inhalants was found, with UGL youth at lower risk for initiation compared to NP and SW youth.

4.1 Implications

These findings have important implications for prevention, including the targets and types of prevention efforts. With regards to marijuana, AI youth, especially those living in the NP and UGL, are more likely to initiate use at significantly younger ages than white youth living in those same areas. Thus, prevention efforts targeted to AI youth must focus on relatively young youth in order to delay or prevent initiation. Likewise, our results suggest that inhalant prevention efforts targeted to young AI females living in the NP and SW are especially important.

At the same time, it is important to understand the reasons behind this early initiation, and specifically, why AI youth initiate at much younger ages as compared to white youth living in the same geographic areas and attending the same set of schools. Better understanding

about the differences in the psychosocial and environmental dynamics of AI and white youth living in these areas is of paramount importance in designing prevention efforts. As noted earlier, various negative outcomes associated with early substance use initiation make identification of those at higher risk particularly important. Providers of mental and public health services in and around AI reservations need to be aware that AI youth may be at substantially higher risk for accelerating patterns of substance use, earlier development of substance use disorders, and development of comorbid emotional disorders and co-occurring delinquent behaviors. However, it is also important to note that there are likely to be regional differences in the patterning of both substance use initiation and related outcomes, with risk appearing to be lower among SW youth compared to those residing in the UGL and NP.

4.2 Limitations

Although these findings contribute substantially to the knowledge of AI substance use initiation, they must be considered in light of several limitations. Although this study used a large sample of AI students living on or near reservations in three regions, it did not reflect a random sample of all schools on or near reservations in these regions. In addition, these results were based on a cross-sectional sample of youth. This required construction of a person-period retrospective data set, which relied upon respondents' memories as to age of first use. However, if time or response bias is similar across all youth in the sample, comparisons made between groups of these youth will still be valid. Without longitudinal data, the only time-varying covariate in the analysis was age; thus, we were not able to explore relationships between psychosocial variables measured before or at the time of first use and the likelihood of initiation.

Although these students were broadly exposed to similar social, economic, and geographic environments, we did not gather data on individual-level socio-economic measures. Such variables could partially explain differences in initiation by ethnicity if there are systematic differences in socio-economic status by ethnicity. In addition, we did not include socio-economic measures for each reservation. Using census data to measure socio-economic conditions may be productive in explaining differences in initiation at the school/reservation level. Finally, data was not gathered on whether each respondent lived on or off reservation. Seventy percent of the schools were located on-reservation, and it is likely that most survey respondents from those schools lived on-reservation. However, in the future, this data should be collected, as the environment for those living off-versus on-reservation can differ dramatically. This problem may be lessened for this sample as all but one school was categorized as "rural" using the NCES locale codes while the non-rural school was classified as town/remote. However, future analysis of the relationships of school and individual socioeconomic measures to initiation is likely to prove insightful.

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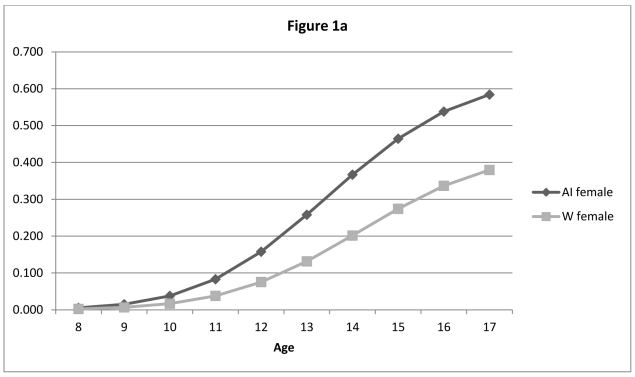
Highlights

- We compare substance use onset for American Indian and white youth on reservations.
- Native youth initiate substance use significantly earlier than white youth.
- Differences were large for marijuana initiation, e.g., odds of 7 to 10 times greater.
- Marijuana hazard rates were greater for AI youth age 13 and less than intoxication.
- Differences were found between Southwest, No. Plains, and Upper Great Lakes youth.



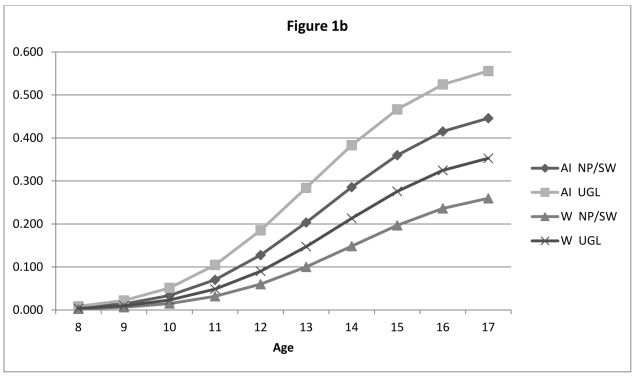
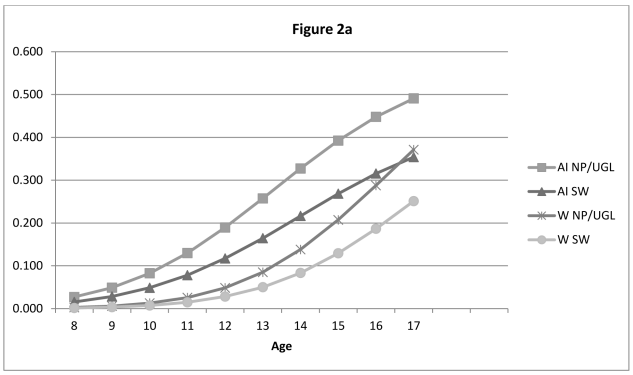


Figure 1.

a: Hazard rates of first intoxication for ages 8-17 for females by ethnicity. These functions show the probability that a respondent would initiate intoxication at age j, given that he or she had not been intoxicated before age j.

b: Hazard rates of first intoxication for ages 8-17 for males by ethnicity and region

Notes: W=White; AI=American Indian; NP=Northern Plains; SW=Southwest; UGL=Upper Great Lakes Non-significant coefficients for region, male, age*AI, male*AI, and male* SW were not used to calculate the hazard rates in Figures 1a and 1b.



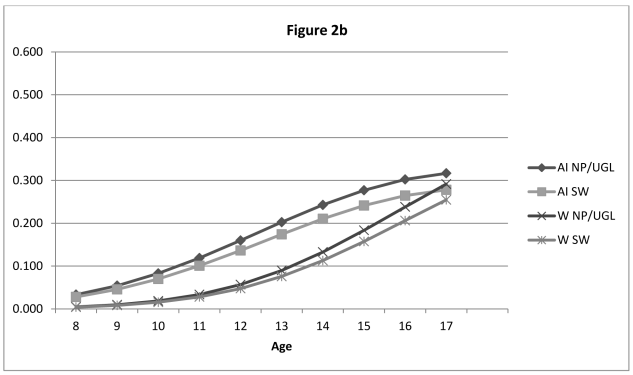
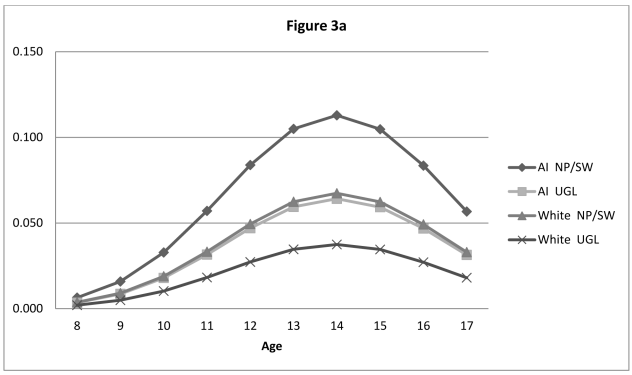


Figure 2.

a: Hazard rates of initiating marijuana use for females ages 8-17 by ethnicity and region. These functions show the probability that a respondent would initiate marijuana use at age j, given that he or she had not been intoxicated before age j.

b: Hazard rates of initiating marijuana use for males ages 8-17 by ethnicity and region

Notes: W=White; AI=American Indian; NP=Northern Plains; SW=Southwest; UGL=Upper Great Lakes. Non-signficant coefficients for UGL and male*UGL were not used to calculate the hazard rates in Figures 2a and 2b.



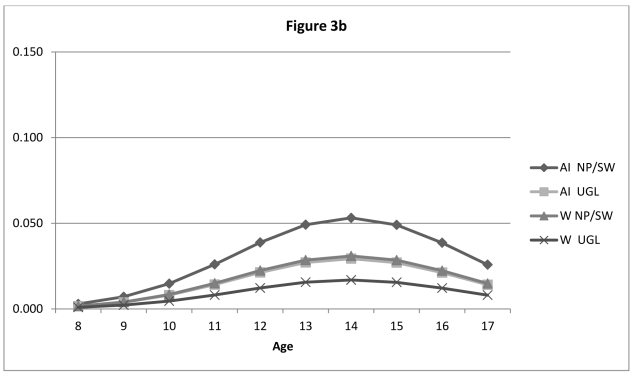


Figure 3.

a: Hazard rates of initiating inhalant use for females ages 8-17 by ethnicity and region. These functions show the probability that a respondent would initiate inhalant use at age j, given that he or she had not been intoxicated before age j.

b: Hazard rates of initiating inhalant use for males ages 8-17 by ethnicity and region

Notes: W=White; AI=American Indian; NP=Northern Plains; SW=Southwest; UGL=Upper Great Lakes. Non-signficant coefficients for SW, male*region, age*male, age*AI, and male*AI were not used to calculate the hazard rates in Figures 3a and 3b.

Table 1

Hazard model results for AI and white youth ages 12-17 with demographic covariates predicting initiation of intoxication, marijuana, and inhalants [1]

	Intoxication		Marijuana		Inhalants	
	OR	**CI**	**OR**	**CI**	**OR**	**CI**
Intercept	.00**	(0.00, 0.00)	.00**	(0.00, 0.01)	.00**	(0.00, 0.01)
Upper Great Lakes (UGL)	.87	(0.59, 1.28)	.80	(0.49, 1.29)	.54**	(0.36, 0.81)
Southwest (SW)	.76	(0.44, 1.34)	.57**	(0.42, 0.78)	.69	(0.31, 1.50)
Age	3.02**	(2.65, 3.43)	2.34**	(2.08, 2.63)	2.70**	(2.30, 3.17)
Age^2	.95**	(0.94, 0.96)	.97**	(0.97, 0.98)	.92**	(0.91, 0.94)
Male	.82	(0.60, 1.13)	1.80**	(1.19, 2.73)	.44*	(0.24, 0.81)
UGL	1.55**	(1.14, 2.12)	1.06	(0.77, 1.46)	1.25	(0.85, 1.85)
SW	1.27	(0.86, 1.87)	1.46**	(1.21, 1.77)	.81	(0.40, 1.68)
American Indian (AI)	2.30**	(1.54, 3.42)	10.50**	(5.96, 18.49)	1.76**	(1.29, 2.40)
Age*Male	.94**	(0.90, 0.98)	.90**	(0.85, 0.95)	1.01	(0.93, 1.09)
Age*AI	.94	(0.88, 1.00)	.81**	(0.76, 0.88)	1.02	(0.98, 1.07)
Male*AI	1.00	(0.76, 1.31)	.69*	(0.51, 0.94)	.95	(0.62, 1.47)

[1]: Numbers in table represent odds ratios. H_0: OR = 1.

*: $p < .05$;

**: $p < .01$.