Substance Use Patterns among High-Risk American Indians/Alaska Natives in Los Angeles County

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Abstract

Background—Substance abuse among American Indians/Alaska Natives (AI/ANs) is a significant and longstanding health problem in the U.S. Two-thirds of American AIs/ANs reside in the urban setting. However, studies analyzing substance use characteristics among urban AI/ANs are very limited. One reason is due to the shortage of available data with regard to substance abuse characteristics among urban AI/ANs.

Methods—Three datasets from programs targeting individuals at high risk for substance abuse and risky sexual behaviors within Los Angeles County were analyzed. Among a sample of AI/ANs (n = 77) and other ethnic/racial groups in Los Angeles County at high risk of substance abuse, the purposes of this study are to: (1) analyze and compare age of first drug and alcohol use, (2) compare the correlation of subjective methamphetamine craving (reinforcement) and age of onset of methamphetamine use, and (3) analyze injection drug use patterns.

Results—Compared to all other ethnic/racial groups, AI/ANs demonstrated significantly younger age of onset of alcohol, marijuana, methamphetamine, and "other" drug use, higher correlations of age of first use of amphetamine with a measure of the drug's reinforcement, and higher mean number of illicit drug injections in the 30 days before being interviewed.

Conclusions—Results from this study highlight a critical need for furthering our understanding of substance abuse problems among urban AI/ANs. Potentially useful strategies are provided which may assist towards decreasing substance use among urban AIs/ANs.

INTRODUCTION

Substance abuse is a significant and pervasive health problem among American Indians/Alaska Natives (AI/ANs).[1,2] According to the 2009 National Survey on Drug Use and Health (NSUDH), AI/AN adults have higher rates of past-month binge alcohol use and illicit

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drug use than the national averages (30.6% vs. 24.5% and 11.2% vs. 7.9%, respectively),[3] although lower rates in past-month alcohol use have been observed among AI/AN adults compared to the national average (43.9% vs. 55.2%).[3] Also, from 2008 to 2009, AI/ANs were one of two ethnic/racial groups that demonstrated increases in the rate of current illicit drug use for AI/ANs aged 12 years or older (from 9.5% to 18.3%)[3] [Hispanics were the other ethnic/racial group with an increase from 6.2% to 7.9%.[3]] Thus, a significant need exists for increasing our understanding of substance abuse characteristics among AI/ANs, who continue to be an understudied population where substance abuse is concerned.

Yet the need for studies in this area is becoming increasing important. Approximately two-thirds of AI/ANs now reside in urban settings.[4] Moreover, significant health related disparities exist among urban AI/ANs. For example, high poverty and unemployment rates, disparities in healthcare access and utilization, and ongoing cultural/historical-based trauma are predominant among urban AIs.[5,6,7] Furthermore, they face significant physical and mental health concerns, often related to their cultural disenfranchisment.[8,9] Hence expanding our limited knowledge of these conditions and their interrelationships is imperative, especially in urban settings.

Secondary analyses of available data have the potential to cost-effectively identify relevant substance abuse and other characteristics and potential trends among urban AI/ANs. The authors have access to three datasets from programs targeting individuals at high risk for substance abuse and risky sexual behaviors within Los Angeles County. Due to sampling methods and the targeted items of interest within the parent studies, which focused on high-risk populations and associated high-risk behaviors, we are limited somewhat in the breadth of data coverage. However, there have been no manuscripts of which we are aware that have examined these types of data. In addition, our literature review extracted several understudied issues that could be addressed by our data. Accordingly, the main variables of interest (discussed below) included: age of first drug/alcohol use, methamphetamine reinforcement measures, and intravenous drug use (IDU) history.

One understudied drug use characteristic among urban AI/ANs is age of first drug or alcohol use. Such information may serve to increase our understanding of the longitudinal patterns of drug and alcohol use, predict future alcohol and drug problems, and provide information for enhancing substance abuse prevention and treatment efforts among urban AI/ANs. Studies analyzing and comparing first age of illicit drug and alcohol use of AI/ANs compared to other ethnic/racial groups in urban settings have been limited. However, one study conducted among an urban sample of AI youth and youth from other racial/ethnic groups participating in an evidenced-based drug prevention curriculum in the Southwest, found that AI urban youth reported a steeper trajectory in the amount and frequency of alcohol (and marijuana) use compared to youths in the intervention groups with other racial/ethnic identifications.[10]

Over the past decade, high rates of methamphetamine use among AI/ANs has been recognized as a significant substance abuse issue.[11] Approximately three times more AI/ANs aged 12 years of age and older reported using methamphetamine in the past year compared to U.S. rates in the general population as represented by all races between 2006–

2008 (1.4% vs. 0.54%).[12] However, studies analyzing methamphetamine use among urban AI/ANs have been sparce. One secondary analysis found that among those who sought substance abuse treatment in Los Angeles County from 2001–2005, methamphetamine was the primary drug of dependence among AI/AN women (31.7%) and second only to alcohol among men (17.5.%).[13]

A recognized high-risk drug use characteristic pertinent to the transmission of infectious diseases is IDU. Recent reports have demonstrated alarming trends of IDU among some AI/AN groups.[14,15] For example, national data showed that AI/ANs aged 12 or older had the highest rate of past-year injection drug use (0.24%) compared to any other racial/ethnic group; the next highest rates were among Caucasians and Hispanics/Latinos (both at 0.18%). The highest rates overall were among those reporting "two or more races" (0.35%).[16] In addition, various health-related disparities known to exist among AI/ANs regarding HIV/AIDS suggest a higher likelihood of IDU among urban AI/AN. Such disparities include limited access to culturally appropriate HIV/AIDS prevention and treatment programs, limited access to adequate health care, and lack of access to proper medical management.

Given our access to three samples of high-risk urban AI/AN adults residing in Los Angeles County and comparison samples from other ethnic/racial groups (African American, Hispanic, Asian/Pacific Islander), the purposes of this study are to: (1) analyze and compare age of first drug and alcohol use, (2) compare the correlation of subjective methamphetamine craving (reinforcement) and age of onset of methamphetamine use, and (3) analyze injection drug use patterns. Our hypotheses were: (1) compared to other racial/ethnic groups, urban AI/ANs would demonstrate similar age of onset for alcohol use and all illicit drugs except for methamphetamine due to their documented rate of methamphetamine use in Los Angeles,[13] (2) correlations between subjective craving associated with methamphetamine use and age of methamphetamine onset would be similar among both AI/ANs and other racial/ethnic groups, and (3) AI/ANs would demonstrate higher IDU patterns to other racial/ethnic groups given the reports of higher IDU among AI/ANs in previous reports.

METHODS

Participants

Between June 2000 and April 2010, data were accumulated through the 3 parent studies (described below) on 4,796 high-risk adult men and women residing in Los Angeles County between the ages of 9 and 79 years ($M = 39.7$ years, $SD = 11.5$). The agency that conducted the three source programs was the Center for Behavior Research and Services (CBRS) at California State University, Long Beach. The programs were created to provide prevention and counseling services to individuals at risk for HIV/AIDS and drug and alcohol use, representing, in part, the area's lesbian and gay communities. Recruitment methods for the three programs shaped the sample composition. Overall, sample demographics were 38.2% White, 28.5% African American, 24.1% Hispanic, 4.5% Asian/Pacific Islander, 3.1% "other," and 1.6% AI/AN. Although the number of AI/ANs was low ($n = 77$), the combined samples allowed testing of our 3 primary hypotheses.

Hepatitis Demonstration Program—The Hepatitis Demonstration Program operates a mobile unit that provides on-site immediate morbidity testing and counseling services to drug users both in and out of treatment.[17,18] This program serves Behavior Risk Groups identified and targeted by the County of Los Angeles Office of AIDS Programs and Policy (OAPP), including homosexual men, injection drug users, men who have sex with men (MSM), women at sexual risk, and transgender individuals.

Foodbank Program—The Foodbank Program uses the Project RESPECT Brief Counseling Intervention (BCI). This Centers for Disease Control and Prevention (CDC)-initiated project[19] is combined with foodbank services to provide risk reduction counseling to out-of-treatment drug users, women at risk, and MSM. The BCI provides a stages-of-change/motivational interviewing framework over 2 sessions[20] to help participants initiate a behavior change process for preventing HIV infection or transmission.

Ready for Action Program—The Ready for Action Program is a modified version of the Centers for Disease Control and Prevention (CDC) Disseminated Effective Behavioral Interventions (DEBI) for HIV prevention and risk reduction.[21] The Ready for Action program targets men who have sex with men (MSM), men-who-have-sex-with-men-and-women (MSMW), MSM who inject drugs (MSMIDU), and MSM who use methamphetamine.

Measures

Two instruments provided the measures used in the analyses, the Risk Behavior Assessment and the Desires for Speed Questionnaire. A description of each and their respective psychometric properties follows.

Risk Behavior Assessment—The Risk Behavior Assessment (RBA) is a 20–30 minute, structured interview developed by the Community Research Branch of the National Institute on Drug Abuse (NIDA) in collaboration with the NIDA Cooperative Agreement for Community-Based Outreach/Intervention Research grantees.[22] The RBA, which is administered by trained interviewers, codes demographics and assesses HIV risk behaviors (eg, drug use, needle sharing, and sexual behaviors), drug history, health history and status, work status, and income.

Specific drug use variables include lifetime use of a variety of drugs, age of first use, and frequency of use during the most recent 30 day period (ie, number of times used and number of days used). These assessments cover use of alcohol, marijuana, cocaine (crack, powdered, and injection), heroin, speedball (heroin and cocaine mixed together), non-prescription methadone, other opiates, and amphetamines. Previous studies have found that the RBA drug use and sexual behavior items have good reliability.[23–27] For example, reliability coefficients for days of crack, cocaine, and heroin use ranged from .80 to .85. Reliability of days of injection cocaine use was .73 and days of injection heroin use was .81. Reliability coefficients for number of times injecting drugs including cocaine and heroin ranged from .69 to .87. Reliability coefficients for sex in the last 30 days, number of sex partners, and number of drug-using sex partners ranged from .86 to .92.[23] Self-report of ever having used

amphetamines is also reliable (kappa = .79).[28] Relative to validity of recent drug use, self-reported drug use was found to be highly correlated with biological markers of drug use conducted by urinalysis.[23,27,29] Cohen's kappa validity coefficients for cocaine and opiates at two time points ranged from .52 to .65.[22]

Desires for Speed Questionnaire—The Desires for Speed Questionnaire (DSQ) is a 40-item measure of amphetamine craving.[30] Developed by Darren James and colleagues, the DSQ measures craving for amphetamine with a total score and one for each of four subscales: positive and negative reinforcement, strong desires and intentions, mild desires and intentions, and efforts to control amphetamine use.[30] The reinforcement scale (Cronbach's $\alpha = 0.92$) includes eight items that reflect anticipated relief from negative states and anticipation of positive outcomes through amphetamine use (eg, "All my tension would completely disappear if I took some speed now"). Strong desires and intentions (eg, "I need some speed now") are measured on a 10-item scale (Cronbach's $\alpha = 0.93$). The third scale measures mild desires and intentions (eg, "I would consider taking some speed now") with four items (Cronbach's $\alpha = 0.89$). The two-item control scale of the DSQ reflects efforts to control amphetamine use once the behavior is initiated (Cronbach's $\alpha = 0.64$). Total scores and domain subscales were assessed for significant associations with other variables.

Procedures

Following protocols approved and monitored by the Institutional Review Board at California State University, Long Beach, participants were interviewed in individual sessions, were provided informed consent, and were allowed to ask questions of the interviewers. The single interview sessions lasted approximately 1.5 hours, during which each participant was administered the RBA followed by the DSQ. Participants were reimbursed for their time and expenses, and were provided referrals to other services as deemed necessary during the interview. All data collected were protected by certificates of confidentiality from the federal government.

Identification of American Indians/Alaska Natives and Sample Characteristics
—Utilizing a coding system, the RBA interviewer asked participants, "Do you consider yourself African American, Caucasian, Hispanic (or Latino), Asian/Pacific Islander, American Indian/Alaska Native, or another or mixed race?" The AI/AN thus were all self-identified. No documentation of ethnic/racial composition (ie, degree of Indian blood or percent tribal ancestry) or information with regard to specific tribal affiliation was available in the data sets examined.

Statistical Analyses

Tukey HSD tests were used to identify significant comparisons between AI/ANs and other ethnic/racial groups. African Americans, Caucasians, Hispanics (or Latinos), Asians/Pacific Islanders, and others were compared to AI/ANs using orthogonal contrasts. Correlations were used to examine the relationship between age of first use of amphetamines and amphetamine craving for each ethnic/racial group. We used the Fisher Z test to test the difference between the correlation for each ethnic group and AI/ANs. Due to the small n of AI/ANs available for this analysis, we examined the scatterplot of age of first use versus

reinforcement subscale score. The scatter-plot was acceptable for indicating a correlation to test our hypothesis.

RESULTS

Results are presented in four sections. First, sociodemographic information and baseline injection behaviors are presented, followed by first age of substance use by ethnic/racial group, the reinforcement scale of amphetamine craving, number of any drug use injections in the past 30 days, and days injecting cocaine in the past 30 days. Results are presented utilizing "F" to test the overall model of whether any mean is different from any other mean and "Contrast F" as a test of the specific contrast of whether the AI/AN group was different from all the other groups taken together. This approach uses orthogonal polynomials in the contrast statement.

Sociodemographic Characteristics and Baseline Injection Behaviors

As shown in Table 1, the overall sample consisted of 77 AI/AN and 4,677 non-AI/ANs; the ethnic/racial composition was 38.2% Caucasian, 28.5% African American, 24.1% Hispanic, 4.48% Asian/Pacific Islander, 3.1% other, and 1.6% AI/AN. With regard to AI/ANs, the majority (48 [62.3%]) were recruited through the Hepatitis Demonstration program, 25 (32.5%) through the Food Bank program, and 4 (5.2%) through the Ready for Action program. The AI/AN sample was evenly split between genders, whereas the non-AI/AN group had 74% males. Compared to all other racial/ethnic groups, AI/ANs had significantly higher rates of homelessness (44% vs. 32%) and significantly fewer high school graduates (58% vs. 69%). Significantly more AI/ANs had injected drugs at least once in their lifetime (50% vs. 36%).

Age of First Drug and Alcohol Use

As shown in Table 2, AI/ANs had a significantly younger age of first use of alcohol use (12.1 years) compared to all other racial/ethnic groups (Range 14.2–16.7 years) [$F(5, 4632) = 19.42, p < .0001$. Contrast $F (1, 4632) = 32.57, p < .0001$.]. AI/ANs also had a significantly younger age of first use of marijuana (13.8 years), compared to all other racial/ethnic groups (Range 15.7–18.6 years) [$F (5, 3979) = 10.00, p < .0001$. Contrast $F (1, 3979) = 16.26, p < .0001$.]. Further, AI/ANs had a significantly younger age of first use of amphetamine (19.7 years) compared to all other racial/ethnic groups (range 21.0–26.9 years). In terms of age of first use of other drugs, AI/ANs were significantly younger (16.7 years) only in comparison to African American participants (23.4 years) [$F(5, 1152) = 6.01, p < .0001$. Contrast $F(1, 1152) = 3.86, p < .05$.]. AI/ANs had similar ages of onset of crack cocaine use (24.2 years vs. a range of 25.2–27.5 years) and heroin use (20.9 years vs. range of 21.5–24.6 years).

Age of First Use of Amphetamine and Reinforcement Subscale of Desires for Speed

As shown in Table 3, AI/AN and "other" racial/ethnic groups demonstrated significantly higher correlations of age of first use of amphetamine in only the reinforcement subscale of the Desire for Speed Questionnaire ($r = 0.82$ and $r = 0.61$, respectively), but not in the total score nor in other subscales. The younger the age that AI/ANs started methamphetamine

use, the lower their reported desire for methamphetamine on the reinforcement subscale. For other specific racial/ethnic groups, there were no significant correlations with regard to the association of age of first use of methamphetamine and desires for methamphetamine at later ages.

Number of Drug Use Injections and Number of Days Injecting Cocaine in past 30 Days

Among individuals who injected any illicit drugs, AI/ANs demonstrated a significantly higher mean number of any drug use injections (68 times) in the past 30 days compared to all other ethnic/racial groups (range: 29.8–50.5 times) [$F(5, 579) = 2.29$, $p < .05$. Contrast $(1,579) = 4.10$, $p < .05$.]. Our data sets also included information specifically with regard to injection cocaine use. AI/ANs injected cocaine on significantly more days in the past 30 days (10.3 days) compared to all racial/ethnic groups (Range 0.13–3.04 days) [$F(5, 295) = 4.03$, $p < .01$. Contrast $(1, 295) = 13.76$, $p < .001$.].

DISCUSSION

Our results bring attention to the need for further data related to substance abuse among urban AI/ANs. Large epidemiological datasets need specifically to be developed to examine the substance abuse characteristics of urban AI/ANs, and/or oversampling of this population in the major recurrent surveys (MTF, NDUH). Larger epidemiological datasets have the potential to significantly increase our understanding of substance abuse behaviors among urban AI/ANs, thus assisting in the development of potentially more effective substance abuse prevention and treatment strategies, in addition to identifying areas for further research investigation.

Results revealed significantly younger ages of onset of alcohol, marijuana, methamphetamine, and "other" drugs and similar ages of onset for crack cocaine and heroin. Both AI/ANs and "other" racial/ethnic groups demonstrated significantly higher correlations of age of first use of amphetamine with the reinforcement subscale of the Desire for Speed Questionnaire. In addition, AI/ANs demonstrated a significantly higher mean number of any drug use injections and injected cocaine on significantly more days in the past 30 days compared to all other racial/ethnic groups combined.

Although an expectedly younger age of first use of methamphetamine was found, contrary to our hypotheses, urban AI/AN also demonstrated significantly younger age of first use of alcohol, marijuana, and "other" drugs. Since the majority of AI/ANs currently reside in urban areas, these findings have policy, prevention, treatment, and research implications entailing the need for further attention to substance abuse issues among urban AI/AN adults and youths. Furthermore, these findings are noteworthy since the AI/AN population is diverse and consists of a wide array of tribal affiliations, degree of cultural identity (ie, percent "Indian," personal cultural identification, and residence of origin [ie, reservation setting vs. urban setting]), further suggesting that our findings may have some level of generalizability among at-risk urban AI/AN populations.

Younger age of onset of marijuana, alcohol, methamphetamine, and "other drugs" use among AI/ANs compared to other racial/ethnic groups warrants further investigation into

potential risk factors which may contribute to substance use at younger ages Again, research is limited with regard to potential reasons for illicit drug and alcohol use initiation among urban AI/ANs. However, in a recent study of urban AI/AN youth receiving mental health services in Southern California,[31] high rates of traumatic exposure were reported, including witnessing domestic violence (84.2%) and being physically abused (26.3%). The majority of these youth also lived with at least one individual who has a substance abuse problem (64.7%). Ensuring that urban AI/AN youths experiencing mental health problems have access to adequate mental health and substance abuse treatment and prevention programs may help to decrease the likelihood of their initiating drug and alcohol use at younger ages.

Another potential reason for an earlier onset of marijuana, alcohol, methamphetamine and "other drugs" use initiation may be related to issues associated with cultural identity. For instance, it has been demonstrated that AI/ANs of mixed races may experience cultural conflicts resulting from their bicultural experience that may complicate their sense of identity and sense of belonging.[32,33] Such intrapersonal conflicts among urban AI adolescents have been postulated to contribute to lower self-worth, which has been identified as a relevant factor in the genesis and maintenance of alcohol-associated problems.[34] Further studies analyzing the association between cultural identity factors among urban AI/AN youths and first age of substance use are needed in order to examine this potential substance abuse risk factor among urban AI/AN youth.

Community-based approaches to substance abuse prevention may be especially useful for AI/ANs.[35,36] In a literature review of aboriginal community-based alcohol and substance abuse programs utilizing 34 relevant articles (from 1975 to 2007) found through MEDLINE, HealthSTAR, and PsychINFO, an emphasis on partnerships and the integration of substance abuse prevention and treatment into existing community programs was identified.[35] Researchers suggested involving schools, community organizations, band councils (aboriginal administrative/governing bodies), and social services in the substance abuse prevention process. Utilization of community-wide substance abuse prevention strategies among service entities and community organizations in urban areas may help delay or prevent substance use initiation among urban AI/ANs.

Contrary to our hypothesis, there was a significant effect associated with the positive reinforcement scale of the DSQ with age among AI/ANs, in that those who initiated methamphetamine use at younger ages reported fewer subjective positive effects associated with that use. Although limited by the small sample size, this statistically significant result merits further attention, especially considering the scarcity of information about methamphetamine use among AI/ANs. What these results are suggesting is that when the correlation is positive, individuals who first took methamphetamine at an older age did so because it was reinforcing, whereas those who first took methamphetamine at a younger age are not typically using methamphetamine as much for the reinforcing effects as for other, unmeasured reasons such as peer influence or to blunt negative emotional affect. Our findings may assist towards targeting methamphetamine prevention efforts, possibly utilizing peer-related approaches for the younger at-risk user, but that these approaches may not be appropriate for older potential at-risk users. Peer-oriented prevention programs for younger AI/AN youths may assist them in developing coping strategies. Also, comorbid

psychiatric disorders, high exposure to traumatic events, and a shortage of culturally tailored methamphetamine prevention programs for urban AI/AN youths may contribute to the tendency to use methamphetamine at younger ages in order to blunt negative states. Of note, Hispanics had a very low correlation in general which suggests that this scale may not be a useful scale to use with Hispanics. For African Americans and Asians/Pacific Islanders, the correlation was negative but low, which indicates a weak effect. Further studies analyzing characteristics associated with first methamphetamine use among AI/AN youths would increase our understanding of with regard to why AI/ANs first use methamphetamine. Our results demonstrate a high rate of IDU among urban AI/ANs. Although these findings were expected, these results have implications as they relate to AI/ANs and health-related disparities known to exist in this population. Health-related disparities that may be experienced by AI/ANs with HIV/AIDS include limited access to culturally appropriate HIV/AIDS prevention and intervention programs, limited support services for the AI/AN lesbian, gay, bisexual, and transgender population, and limited access to adequate health care, all leading to poorer health outcomes. In addition, urban AI/ANs may experience risk factors associated with IDU known to typically exist in urban areas, including an increased likelihood to trade sex for money or drugs and unsafe sexual practices.[37] Thus, substance abuse prevention programs targeting urban AI/ANs need to incorporate strategies to decrease the potential for IDU and related harms. Furthermore, as IDU is a known risk factor for HIV/AIDS, further attention to IDU in HIV/AIDS prevention programs among urban AI/ANs is recommended. In addition, future research analyzing IDU patterns among urban AI/ANs is needed.

Limitations

Results are subject to various limitations. First, since our sample is small and was conducted in only one urban area, generalization of findings should be done cautiously. Also, the AI/ANs in the sample were individuals at particularly high risk of HIV/AIDS, including a significant number of men who have sex with men, further affecting generalizability. In addition, the non-AI/AN comparison group consisted of 74% males, whereas the AI/AN group consisted of 52% males, a composition that may have affected the outcomes of analyses. With regard to IDU, we were not able to separate out types of drug use injection in the past 30 days other than cocaine. Thus, we were not able to demonstrate the potential for cocaine use contributing to total IDU use. Furthermore, our secondary analyses consisted of three different datasets for diverse subpopulations at high-risk for substance abuse, which may limit the uniformity of the samples. Nonetheless, we believe our results provide useful information in establishing a better understanding of substance use behaviors among urban AI/ANs.

In summary, results highlight the critical need for both exploiting existing data and establishing new data collection on substance abuse behaviors among urban AI/ANs. Also, results demonstrate concerning trends among urban AI/ANs who are at particularly higher risk for substance abuse. Further research is needed as it relates to potential risk factors that may contribute to an earlier onset of alcohol, marijuana, methamphetamine, and "other" drug use, the subjective effects associated with methamphetamine use, and IDU among urban AI/ANs. In addition, further research investigating the association of cultural identity,

traumatic exposure and substance abuse among AI/ANs is needed to increase our understanding of substance abuse among urban AI/ANs. Finally, further development of coordinated substance abuse treatment and prevention programs among clinics serving AI/ANs within urban areas is needed.

Acknowledgments

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TABLE 1

Sociodemographic characteristics and baseline drug injection behaviors among American Indians/Alaska Natives (AI/ANs) and non-AI/ANs

Variable	(AI/ANs, n = 77) % (n)	(Non-AI/ANs, *n* = 4,677) % (*n*)	χ^2 (1)
Male	52 (40)	74 (3,462)	19.28[**]
Homeless	44 (34)	32 (1,498)	4.77[*]
High school graduates	58 (45)	69 (3,219)	3.96[*]
Ever injected drugs	50 (38)	36 (1,695)	5.98[*]
Mean age (*SD*)	40.4 (*10.30*)	39.7 (11.48)	*t*(4695) = −.52, NS

[*]
p < .05,

[**]
p < .001.

Fisher's *z* is the test of the difference between the correlation for each ethnic group and AI/ANs.

[*]
p < .05,

[**]
p < .01.

TABLE 2

Age of first age of substance use by ethnic/racial group

	Alcohol	Marijuana	Crack Cocaine	Heroin	Amphetamine	"Other" Drugs
Asian/Pacific Islander	16.6	18.6	25.7	23.7	21.8	20.6
African American	15.0	16.1	27.5	24.6	26.9	23.4
Hispanic	15.1	15.9	25.2	21.5	23.0	20.0
American Indian/Alaska Native	12.1*	13.8*	24.2	20.9	19.7*	16.7
Caucasian	14.2	15.7	26.6	23.5	21.0	20.7
Other	14.7	15.4	26.6	23.8	22.0	19.7

*
$p < .05$.

TABLE 3

Age of first use of amphetamine and reinforcement scale of the Desire for Speed Questionnaire

	n	**r**	**Fisher's z**
Black—Not Hispanic	48	−0.21	−2.92**
White	111	0.15	−2.24*
Hispanic	67	−0.08	−2.70**
Asian/ Pacific Islander	8	−0.27	−2.30*
American Indian/Alaska Native	8	.82*	
Other	11	.61*	−0.7

Fisher's z is the test of the difference between the correlation for each ethnic group and American Indians/Alaska Natives

*
$p < .05$,

**
$p < .01$.