Profile of Lifetime Methamphetamine Use Among Homeless Adults in Los Angeles

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Abstract

Although the dramatic rise of methamphetamine use in the general population has been well-documented, little is known about methamphetamine use in the homeless population. This study examines self-reported methamphetamine use and its correlates among a sample of 664 urban homeless adults in Los Angeles. Over one-quarter of the overall sample, and 60% of whites, disclosed lifetime methamphetamine use. Less than 10% of African-Americans reported ever using methamphetamine. Approximately one-tenth of respondents reported current methamphetamine use; almost 90% of current users shared straws to snort methamphetamine and half used it daily. Logistic regression analysis in younger (18–39) and older (40+) respondents revealed that white ethnicity,

polydrug use and binge drinking were independently associated with lifetime methamphetamine use, regardless of age. Injection drug use (IDU) was also an important correlate of methamphetamine use for older African-Americans. IDU was not important for the younger group. Findings suggest that there is need for greater surveillance of methamphetamine use among homeless whites and Hispanics, and methamphetamine-use prevention and reduction targeted to younger, polydrug-using, alcohol-binging homeless adults.

1.0 Introduction

Methamphetamine has become widely available in urban, suburban and rural communities nationwide (Maxwell, 2005). Formerly a favored drug of white, male, blue-collar workers in Hawaii and western United States (US) in the early 1990s (NIDA, 2006), methamphetamine use has become increasingly common among younger adults (Springer et al., 2007) and among gay and bisexual men (Cochran et al., 2004; Thiede et al., 2003).

Homeless persons are particularly vulnerable to methamphetamine, since they have high rates of drug use (Armstrong et al., 2006; Nyamathi et al., 2006). Increased methamphetamine use threatens to intensify homeless persons' risk of exposure to the hepatitis B and C viruses, and the human immunodeficiency virus (HIV) (Gonzales et al., 2006; Shoptaw & Reback, 2006). HIV and hepatitis B and C can be transmitted via the sharing of infected needles and/or unsafe sexual activity by means of altered judgment and inhibition (NIDA, 2006). Rates of these infections are far higher in homeless persons (Klinkenberg et al., 2003) than in the general population (Armstrong et al., 2006).

The present study profiles lifetime methamphetamine use among sheltered, homeless persons in urban Los Angeles. Its goal is to identify methamphetamine-use correlates that may help target the delivery of relevant interventions among homeless populations.

2.0 Methods

2.1 Study Design

This study utilized baseline information from an intervention study on hepatitis A and B vaccination among sheltered homeless adults in downtown Los Angeles. Data were collected between September 2003 and June 2006.

2.2 Participants

Eligibility for the parent study included: 1) adult age 18–65; 2) residing in one of 16 participating homeless sites; 3) willingness to undergo hepatitis B virus (HBV), hepatitis C virus (HCV) and HIV antibody testing; 4) no history of HBV vaccination; and 5) tested HBV negative. The study included 664 participants.

2.3 Procedure

The UCLA Human Subjects Protection Committee provided oversight of all study activities. Participating shelters were randomized to one of three treatment programs. Flyers and site presentations were provided to potential participants. Following written informed consents, and a brief eligibility assessment, potentially eligible persons received pretest counseling and a blood draw to determine final study eligibility. At two-week follow-up, research nurses offered them posttest counseling and hepatitis and HIV test results. HBV-negative homeless adults were provided final written informed consent. A baseline survey was administered one-on-one by research staff before participants were randomized.

2.4 Measures

The instruments and items described below have been previously tested, modified, and validated for impoverished and/or homeless populations. Standard socio-demographic information and number of tattoos were collected using a structured questionnaire. Participants were also asked about trading sex for money or drugs. A well-established 18-item Social Support Survey was used which measured social support (Sherbourne & Stewart, 1991). Reliability of the scale in this study was 0.97. An additional item asked whether social support was received from drug users, non drug users, or both. In terms of drug and alcohol use behaviors, the Texas Christian University (TCU) Drug History form measured drug and alcohol use (Simpson & Chatham, 1995). This questionnaire has been tested with drug-using homeless adults (Nyamathi et al., 2006); it records the lifetime and current (within the last six months) use of 16 drugs, including methamphetamine. Additional items on alcohol use and binge drinking, defined as consumption of 5 or more drinks in a day, and sharing of straws for cocaine and methamphetamine use were appended (Ford, 1992).

2.5 Statistical Analyses

Associations of standard sociodemographic characteristics and risk behaviors for HBV, HCV and HIV with lifetime methamphetamine use were examined with chi-square tests. Initially, variables that were associated with methamphetamine use at the .15 level were used in stepwise backwards logistic regressions to identify correlates of using methamphetamine. The retention level was .10. "Other" racial/ethnic groups were excluded from the regression analyses due to low sample size (n = 17). Age and ethnicity (both p < .001) and injection drug use (p < .05) were key predictors of methamphetamine use in the initial regression model. Two-way interactions involving age, race/ethnicity and any injection drug use (IDU) were assessed (i.e., age by IDU, ethnicity by IDU and age by ethnicity) using cross-products. Significant interaction terms for African-American race/ethnicity and age (p < .02) and IDU (p < .01) were observed. To simplify interpretation, without losing racial/ethnic differences, we divided the sample into younger (18–39) and older (40 +) age and repeated the analytic procedure for each age group. Based upon similar methamphetamine use patterns, Hispanics and whites were pooled. An interaction term for IDU and race/ethnicity (i.e., Hispanic/white vs. African-American) was important (p < .001) for older participants. The final models contained correlates that were important for either age group. To simplify interpretation, the interaction between IDU and Hispanic/white ethnicity is presented as a design variable rather than a cross-product. However, the results are consistent with each other and with results of analyses stratified by IDU and by ethnicity. Final predictors of methamphetamine use for each age group were examined for multicollinearity; model goodness of fit was assessed with the Hosmer-Lemeshow test.

3.0 Results

The average age of the respondents was 42 (SD: 9.0) and they had a mean of 12 (SD: 1.8) years of education. The sample was predominantly African-American (70%) and male (77%). Almost one-quarter (23%) of the sample reported lifetime methamphetamine use (36% of those under 40 vs. 16% of those 40 and older, p<.001). Rates of lifetime methamphetamine use ranged from 10% for African-Americans to over 50% for whites, Hispanics and mixed-race persons; 29% of these users also reported current (past 6 months) methamphetamine use. Large percentages of both lifetime and current methamphetamine users reported a history of inhaling methamphetamine (92% and 96%, respectively), as well as a history of sharing straws to inhale methamphetamine (74% and 88%, respectively). The prevalence of IDU (including heroin, cocaine, methamphetamine, etc.) among lifetime and current methamphetamine users was also high (39% and 45%, respectively). Close to half of current users said they used methamphetamine at least once a day (48%), and one-fourth (27%) said they were injecting it.

Two-thirds of injectors were white or Hispanic, so there was substantial overlap between ethnicity and IDU.

As depicted in Table 1, African-Americans were less likely to report methamphetamine use than whites and Hispanics. Younger age, drug-using support networks, binge drinking, use of at least two additional serious drugs and having three or more tattoos were also associated with methamphetamine use.

3.1 Multivariable Analysis

As shown in Table 2, white/Hispanic race/ethnicity, use of multiple additional serious drugs, having 3 or more tattoos and binge drinking had important associations with methamphetamine use for younger participants. African-American injectors were also more likely to have used methamphetamine than African-American non-injectors. When the interaction effect was dropped and a model with main effects only was fit to the data, whites and Hispanics had 19 times greater odds of reporting methamphetamine use than African-Americans (95% CI: 8.2, 45.4). The logistic regression model in Table 2 was able to correctly classify 78% of cases (sensitivity 86%, specificity 74%).

In the older age bracket, whites and Hispanics (regardless of IDU status and African-American injectors were more likely to have used methamphetamine than African-American non-injectors. Use of multiple additional serious drugs and binge alcohol drinking were also associated with lifetime methamphetamine use. The model was able to correctly classify 84% of lifetime methamphetamine users (sensitivity 85%, specificity, 83%).

When the sample was stratified by ethnicity and a similar model was tested in the two subsamples, IDU was found to be associated with lifetime methamphetamine use among African-Americans, but not among the group of whites and Hispanics.

4.0 Discussion

This study suggests that there is need for greater surveillance of methamphetamine use among homeless whites and Hispanics. In this sample, more than a quarter of respondents reported a history of lifetime methamphetamine use, and nearly one-third of these respondents also used methamphetamine more recently. Among active users, 48% were using it on a daily basis and nearly one-third were injecting it, with concomitant risk for HCV (Nyamathi et al., 2006) and other serious infections such as HBV.

The vast majority of methamphetamine users reported ingesting it by snorting; 74% of lifetime users and 88% of current users shared straws to inhale it, potentially putting themselves at risk for intranasal and oral-mucosal transmission of disease.

The demographic profile of homeless methamphetamine users in this sample parallels that of methamphetamine-using respondents from similar racial/ethnic backgrounds in the general population (SAMHSA, 2005). Overall, the likelihood of using methamphetamine increased as age in the total sample decreased. Further, methamphetamine users were more likely than non-users to use two or more additional serious drugs and to binge on alcohol. As in the general population, African-Americans in this homeless sample were the least likely ethnic group to use methamphetamine (SAMHSA, 2005).

In multivariable analyses, a history of IDU was associated with methamphetamine use for older African-Americans. However, both injecting and non-injecting whites and Hispanics in the older age group had much greater odds of having used methamphetamine compared to African-American non-injectors. Findings also suggest that non-injecting whites and Hispanics are

particularly likely to have a history of methamphetamine use among younger homeless adults. Younger homeless adults with extensive body art were also more likely to report methamphetamine use than those with less body art. Since tattoos have been associated with HCV infection (Howe et al., 2005)**,** younger homeless adults who have a methamphetamine use history may have a higher HCV risk profile than their peers without such history.

Both logistic regression models were able to correctly classify about 80% of persons who reported methamphetamine use. Thus, over 75% of lifetime methamphetamine users in this sample could be identified using a handful of variables; these findings have implications for screening of the targeted population.

To our knowledge, this is the first study to profile homeless methamphetamine users and to identify potential correlates of methamphetamine use in homeless adults. However, it has several limitations. Since all measures were self-reported, findings may not be generalizable; HBV-positive persons were excluded; numbers of whites, Hispanics and females were relatively small; and the study was cross-sectional, so causality cannot be determined. In addition, the sample may not be representative of homeless methamphetamine users in general as this sample volunteered for this intervention and those who had been treated for hepatitis were excluded. This study supports the need for greater surveillance of methamphetamine use among homeless persons, particularly whites and Hispanics, and the design of methamphetamine-use prevention and reduction targeted to younger, polydrug-using, alcohol-binging homeless adults.

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Table 1

Demographic and Drug Use Characteristics by Lifetime Methamphetamine Use Status for Homeless Adults in Los Angeles

Characteristic	Used Methamphetamine (%) (N = 153)	Did Not Use Methamphetamine (%) (N = 509)	Total Sample (%) (N = 662)
Age: [*]			
18–25	10.5	3.5	5.1
26–39	46.1	26.7	31.2
40+	43.4	69.7	63.7
High School Graduate:	62.8	74.4	71.8
Male	81.7	72.7	74.8
Ethnicity: [*]			
African-American	30.1	82.1	70.1
White	36.6	7.3	14.1
Hispanic	29.4	8.5	13.3
Mixed	2.0	0.2	0.6
Other	2.0	2.0	2.0
Support Sources: [*]			
Drug Users	14.0	2.9	5.4
Non-Drug Users	55.9	73.8	69.7
Both	30.1	23.4	24.9
Veteran	8.5	13.8	12.6
Trade Sex, past 6 months	9.2	4.6	5.6
Tattoos – 3 or more [*]	39.9	20.2	24.8
IDU, Ever [*]	40.5	10.1	17.9
Multiple Serious Drug Use,[+] lifetime [*]	83.0	39.9	49.9
Used Alcohol > 4 times/day, past 6 months	35.9	19.7	23.8
Binge Drinker, past 6 months [*]	34.9	12.8	17.9

[+] Use of at least 2 of the following: crack, cocaine, heroin, methadone, heroine + cocaine, other opiates and hallucinogens

[*] p < .001, chi-square for group differences

Table 2

Logistic Regression Results for Lifetime Methamphetamine Use Stratified by Age

Variable	18–39 Years (n = 227)			≥40 Years (n = 415)		
	AOR	95% CL	p value	AOR	95% CI	p value
Ethnicity × IDU						
African-American non-injector	1.00	-	-	1.00	-	-
African-American Injector	5.97	(1.33, 26.86)	.020	5.31	(1.98, 14.24)	.001
White/Hispanic Injector	15.46	(5.33, 44.82)	.001	15.35	(4.97, 47.39)	.001
White/Hispanic, non-injector	26.36	(9.92, 70.08)	.001	18.52	(6.85, 50.05)	.001
African-American Injector	NA	NA	NA	5.31	(1.98, 14.24)	.001
Drug-User Support	2.13	(0.53, 8.48)	.286	4.68	(1.00, 21.93)	.051
Tattoos (3 or more)	2.19	(1.02, 4.71)	.045	0.68	(0.25, 1.81)	.440
Multiple Serious[+] Drug Use, Lifetime	3.90	(1.59, 9.59)	.003	23.08	(6.98, 76.33)	.001
Binge Drinker	2.81	(1.11, 7.12)	.030	5.98	(2.62, 1361)	.001

[+] Use of 2 or more of the following: crack, cocaine, heroin, methadone, heroine + cocaine and hallucinogens

[++] Use of any drug by injection