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Impact of Nursing Intervention on Decreasing Substances among Homeless Youth

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Abstract

Background—Alcohol use, and in particular, binge drinking, and methamphetamine use is pervasive among homeless youth and remains a social pressure among this vulnerable population. However, there is no compelling evidence that specific interventions for reducing drug and alcohol use are effective for homeless youth.

Objectives—This community-based participatory action pilot study assessed the impact of an intervention study focused on decreasing use of drugs and alcohol among a sample of homeless young adults (N=154) visiting a drop-in site in Santa Monica, California. The two programs consisted of a HIV/AIDS and Hepatitis Health Promotion (HHP) program led by nurses and an Art Messaging (AM) program led by artists. Six-month follow-up data were obtained from 100 of these individuals.

Results—Findings revealed significant reductions in alcohol and marijuana use and binge drinking in both the HHP and AM programs. However, homeless youth in the HHP program reported additional reductions in methamphetamine, cocaine and hallucinogen use at six-month follow-up.

Conclusions—Reductions in drugs and alcohol are important as these substances are linked to HIV/AIDS, hepatitis and other health risks in homeless youth.

Scientific Significance—The successful outcomes of the study intervention validate the utility of nurse-led and artistic health promotion strategies to decrease drug and alcohol use and other risky behaviors in homeless youth populations.

Keywords

Homeless Youth; Nursing; Substance use; Los Angeles

Introduction

It is estimated that at least 1.2 million adolescents are homeless each year within the United States (U.S).[1,2] Compared to their non-homeless counterparts, homeless youth use substances earlier and with greater frequency.[3–7] Among homeless youth in Los Angeles, recent (prior 3 months) high prevalence drug use included marijuana (68%) and amphetamines (36%).[8] High rates of injection drug use ranging from 17% to 41% have also been reported.[8–10] Furthermore, poly-drug use is also common among homeless youth in Los Angeles; over a quarter of the homeless youth in one study reported use of six or more drugs in the previous 6 months.[8] Alcohol use, and in particular, binge drinking, is pervasive

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among homeless youth and remains a social pressure among these vulnerable youth as is methamphetamine use. However, there is no compelling evidence that specific interventions for reducing drug and alcohol use are effective for homeless youth. The purpose of this study is to assess the impact of a two-group community participatory-action intervention study designed to decrease use of drugs and alcohol among homeless youth.

Influence of Drugs and Alcohol on Homeless Youth

Substance use in homeless youth has been associated with lower rates of condom use, a concomitant increase in risk of unwanted pregnancy, and infection with HIV/AIDS, hepatitis B virus (HBV), hepatitis C virus (HCV), and other sexually transmitted diseases (STDs).[11–13] Homeless youth are also more likely to participate in delinquency, survival sex, and other activities when they are under the influence of drugs or alcohol.[1,14,15] Homeless youth have reported justification to use drugs; such as to stay awake at night to avoid getting mugged, and to self-medicate to cope with the stress of life.[16,17] However, once substance use is entrenched, drugs begin to dominate all aspects of homeless youths' lives.[18] In a study of homeless youth (N=168) in Colorado, the majority of whom were between 17 to 25 years of age, alcohol, marijuana and methamphetamine (69% vs 75% vs 18%) were reported over the last nine months.[19]

Impact of Intervention Programs Focused on Reducing Substance use of Homeless Youth

A range of interventions to reduce substances in homeless youth have been tested, with varying degrees of success. Altena et al.[20] identified substance-use reduction interventions with homeless youth have included health promotion, peer mentoring, case management, [21] brief motivational interviewing,[7,22,23] cognitive behavioral interventions,[24,25] living skills/ vocation training[26] and supportive housing.[27]

Slesnick et al.[21] evaluated the impact of a case management and individual therapy intervention at a drop in day center for homeless youth (N=172), 14 – 24 24 years of age. Participants were randomly assigned to a case manager and similarly had a community reinforcement approach (CRA) therapist. At 12 months, there were improvements in substance abuse, mental health, and percent days housed.[21] Another study found that motivational interviewing (MI) was a successful intervention among drop in centers serving homeless youth (N=285) between 14 to 19 years of age.[7] At one month follow up, homeless youth who received the MI intervention reported reduced illicit drug use other than marijuana when compared to the control.[7]

Effectiveness of Health Promotion and Art with Homeless Youth

Health promotion has also been shown to be effective with homeless youth in a street-based sexual health promotion intervention, revealing a significant improvement in HIV and STD knowledge pre- and post-intervention in 564 homeless youth in Texas.[28] Another intervention which utilized group and individual-level peer mentoring with homeless youth, resulted in enhanced health behaviors, improved mental well-being, decreased loneliness, expanded social network, increased coping skills, enhanced self-efficacy, and diminished use of drugs and alcohol.[29] However, despite the successes of these studies, drug use remains high among homeless youth. Art has likewise been useful as a medium for communication of risk reduction messages as well. Moreover, art has been shown to be an effective means to help young people deal with challenges, such as poverty, illegal drug use and discrimination.[30] Studies show that health promotion interventions with homeless youth that incorporate artistic activities, such as art or storytelling, improved retention and satisfaction with the intervention and provide an important creative outlet.[31]

Methods

This randomized pilot study was conducted among a convenience sample of 154 young, homeless male and female drug users to assess the impact of a two-group intervention, an HIV/AIDS and Hepatitis Health Promotion (HHP) program led by nurses and an Art Messaging (AM) program led by artists. Both the programs, described in detail in a former paper,[32] focused on decreasing use of drugs and alcohol and promoting hepatitis health by vaccinating young homeless drug users with the Twinrix Hepatitis HAV/HBV vaccine series. Six-month follow-up questionnaires were completed by 100 participants (65%) of the sample; a follow-up rate consistent with other researchers (59% to 70%) engaged with this challenging population.[33–35] Institutional Review Board approval was obtained for the study and all study-related documents.

Participants and Setting

The sample was recruited from a drop-in agency in Santa Monica, California. Eligible participants included those who were: a) homeless, defined as having spent the previous night in a shelter, hotel, motel, car, or abandoned building; b) aged 15–25 years; and c) actively engaged in drug use for the last six months. Protocols were established by a community advisory board to establish fidelity of the programs.

Participants lost to follow-up were more likely to have been African-American or Hispanic and to have had no intimate partners ($p < .05$). Cocaine users at baseline were particularly more likely to have been lost to follow-up (58% vs 28% for non-cocaine users). No differences were found with respect to age, education, or use of other substances.

Nurse-Led HIV/AIDS and Health Promotion (HHP) Program

This program, led by a research nurse, provided three 45-minute group sessions which covered: a) HBV and HCV infections; HIV infection and its transmission, and prevention strategies; b) HAV/HBV vaccination; c) training in self-management and communications skills; d) overcoming barriers to completion of the vaccine series and reducing drug use behavior; and e) development of relationships, activities and social networks.

The format of the three session program was very interactive and was presented in a discussion format. The research nurse allowed the youth to share their experiences of how they could integrate the health promotion strategies in their lives and ask questions about the content presented.

Art Messaging (AM) Program

Two California Institute of the Arts (CalArt) faculty delivered the program over three to four sessions. Each session was approximately two-three hours long. One session was focused on hepatitis and the HAV/HBV vaccine. While the health focus on hepatitis was evident as the focus of the study, the youth were more empowered by the faculty to share their life stories through photography, drawing, and documentaries. The participants were encouraged to create messages with regards to health and drug-use in order to influence other drug-using youths. The program provided an important means of involving youth in a healthy relationship with a caring adult, while working in a specialized area the youth already appreciated (i.e., the arts).

The faculty engaged youth in a group setting using poetry, video capturing, art work and pictures to explore their thoughts and feelings about living life at present, concerns about drug and alcohol use, and goals for the future. The homeless young adult participants used photography and drawing to describe what they had gone through in life as a result of

abusing drug.. These young adults also discussed the need to make right choices and having goals as well as what they could have done differently to be in a better position. The Art group facilitators also encouraged conversations about good health by raising questions about risky behaviors and ways to stay safe. Embedded in the sessions was a one-hour session informed the youth about the basic facts concerning HIV/ AIDS, hepatitis, and the HAV/HBV vaccine.

Procedure

A community-based participatory action approach was utilized to ensure cultural-appropriateness for the targeted sample. A community advisory board (CAB) comprised of homeless youth, faculty of California Institute of the Arts (CalArts), a staff representative of the drop-in site, the study investigators and trained research staff designed the intervention programs. To enhance recruitment, the CAB utilized focus groups of homeless youth to design flyers that announced the study. Youth who frequented the participating site were made aware of the study by means of these peer-designed artistic flyers that featured an artistic front followed by the standard Institutional Review Board (IRB) language on the back.

The research staff met with interested homeless youth who presented at the drop-in site to discuss the study and assist the youth in reading and understanding the informed consent. Following the first written informed consent, research staff administered a brief eligibility screener that inquired about demographic characteristics, drug use, homeless status, and eligibility for the HAV/HBV vaccination of the homeless youth. Eligible and interested persons then discussed the second consent form, and when fully understood, signed the informed consent to enroll in the study. Immediately thereafter, the baseline questionnaire was administered by the research staff. All participants were paid $10 for completion of the screener and baseline questionnaire and were subsequently randomized to one of the two programs.

Measures

Socio-demographic variables assessed age, race/ethnicity, gender, education, and homeless, social and health factors. Drug and alcohol use were measured by the Texas Christian University TCU Drug History Form[36] at baseline and six-month follow-up. This questionnaire has been tested with drug-using homeless adults;[37] it records the lifetime and current (within the last six months) use of drugs. This instrument has been validated with men and women with a history of drug addiction, prostitution, and homelessness and revealed two-week test-retest reliabilities in an acceptable range of .63 to .71.[38] Respondents were also asked about their history of smoking cigarettes and binge drinking. Binge drinking was defined as consumption of five or more drinks in a day.

Source of Social Support was assessed if support came primarily from drug or alcohol users, non-substance users, equally from both, or an absence of social support.

Depressive Symptoms were measured with the 20-item Center for Epidemiologic Studies Depression Scale (CES-D Scale).[39] For the general population, a score of 16 or higher suggests a need for psychiatric evaluation.[39,40] Some authors suggest that for youth and young adults, scores of 12 for males and 22 for females suggest a similar need.[41] However, we left depressive symptoms as continuous for this study since cut-off points for youth have not been established. In this study, the alpha coefficient for internal consistency for the CES-D was .91.

Emotional Well Being was measured by the 5-item Mental Health Index (MHI-5).[42] The MHI-5 has well-demonstrated reliability and validity, and has been shown to detect

significant psychological disorders.[43] Our studies have revealed good reliabilities of .74 to .85.[44] Alpha coefficient for the scale in this sample was .83.

Coping with Recent Stressful Events, adapted by Murphy et al.[45] for young adults, consists of 37 items rated on a five-point Likert scale. Seven subscale scores are calculated: self destructive escape, passive problem solving, positive action, spiritual hope, depression/withdrawal, social support and nondisclosure/problem avoidance. Internal consistency reliability coefficients ranged from .65 to .87 for young adults.

Data Analysis

Sample characteristics were described with frequencies and percents or means and standard deviations and continuous variables were checked for normality. Change over time in the dichotomous substance-use measures was assessed with McNemar's test of symmetry; program differences in change were examined with log-linear analysis. Change in continuous outcome measures was assessed with paired t tests on differences between baseline and six-month values; the two programs were then contrasted using repeated-measures analysis of variance. Although no interactions between program and time were found, we repeated the change analyses within each program since power to detect interactions at the conventional level of .05 was poor in this pilot study. The resulting profiles of change in outcomes between baseline and six months for each program allowed us to descriptively compare the two programs.

As reduction in substance use is crucial for many homeless youth, more detailed analyses examining the relative effect of the two programs were conducted on binge drinking and methamphetamine use at six months. These two measures were selected due to their prevalence at baseline and their serious health consequences. First, participants in the two programs were assessed for comparability at baseline using chi-square and two-sample t tests. Then unadjusted associations of binge drinking and methamphetamine use at six months were examined with baseline measures of these substances and with socio-demographic, health and psychosocial measures at baseline using chi-square and two-sample t tests. Variables that were associated with these six-month outcomes at the .15 level were then used as predictors in multiple logistic regression analyses.

Particular attention was directed to correlates of the six-month substance use measures that also differed between the programs since they could confound any program effect; however, other correlates were also included in the analyses since it is important to identify subsets of homeless youth who are at relatively high risk for alcohol and methamphetamine use following interventions. An indicator for program was included in the two regression models; with the exception of the program indicator, variables were sequentially eliminated from the models if they were not significant at the .10 level. The final models were assessed for multicollinearity; goodness of fit was evaluated with the Hosmer-Lemeshow test.

Results

Sociodemographic Characteristics

As displayed in table 1, most participants were male (70%), the mean age was 21.2 years (SD: 2.4); More than half completed high school (59%) and Whites composed more than half the sample (58%). Lifetime sex partners of 10 or more was reported by almost half of the sample. Social support was obtained solely (36%) or partially (46%) from drug and alcohol users. No group differences were observed with depressive symptoms.

Unadjusted Associations

In unadjusted analyses, binge drinking at six months was related to poorer physical health, being an injection drug user (IDU), not having traded sex for money and recent unprotected sexual behavior (Table 2). In contrast, methamphetamine use at six months was related to smoking, having been jailed as an adult, having had at least 10 lifetime sex partners and at least five recent sex partners, methamphetamine use at baseline and escape coping. Both outcomes were associated with IDU and binge drinking at baseline. Depressive symptoms were not associated to either outcome in the bivariate analyses.

Multivariate Analysis

When covariates were controlled with logistic regression analysis, binge drinking at six months was primarily associated with binge drinking at baseline (Table 3). However, IDU and lower emotional well-being scores were also associated with binge drinking at follow-up. Binge drinking at baseline was also associated with methamphetamine use at six months. Other significant correlates were methamphetamine use at baseline and having at least five recent sex partners.

Impact of the Two Programs on Drug Use

While there were no significant differences in reduction of drug and alcohol use between the HHP program and the AM Program, significant reductions were noted in use of alcohol and binge drinking in both programs. Alcohol use decreased from 78% to 59% for the HHP program and from 91% to 68% for the AM program. Binge drinking also decreased dramatically in both programs. Marijuana use also declined in both the HHP (88% to 73%) and AM (96% to 77%) programs. Additional decreases in drug use were found in the HHP program only for cocaine use (17% to 2%), methamphetamine use (42% to 24%), and use of hallucinogens (27% to 7%). (Table 4).

Discussion

This study found that both the nurse-led HHP and the AM interventions were effective in decreasing alcohol consumption, binge drinking and use of marijuana at the six-month follow-up. However, homeless youth in the nurse-led HHP program reported additional reductions in methamphetamine, cocaine and hallucinogen use at six- month follow-up. We believe the nurseled HHP sessions may have been more effective than the AM sessions because they focused on HBV/HCV and HIV infection and its transmission, as well as, prevention strategies. In addition, the program focused on HAV/HBV vaccination completion, self-management, communications skills and overcoming barriers to completion of the vaccine series. Other important components were reducing drug use, and the development of relationships, activities and social networks. One of the main strengths of the program we believe was that the research nurse allowed the young adults to share their experiences of how they could integrate the health promotion strategies in their lives and ask questions about the content presented.

The fact that the AM group did not perform as well as the HHP group in reducing use of serious drugs like methamphetamine and cocaine is surprising as previous studies reported that homeless young adults believed that a healthcare intervention delivered through a creative art messaging approach would appeal to their peers and possibly increase their participation.[5] While there was a great deal of sharing experiences, further investigation needs to be conducted to qualitatively assess the effectiveness of the art program in terms of reducing drug use.

These findings are very promising as reducing alcohol and drug abuse in any population is very difficult. It is even more challenging among homeless youth who use drugs as a coping mechanism.[16,46] However, decreasing substance use is essential as homeless youth who engage in drug and/or alcohol use have a higher incidence of sexual risk-taking behaviors.[47]

Nevertheless, adolescence is a challenging developmental stage for many youth and without basic resources and support systems, youth face significant challenges. The youth in our sample experienced a multitude of life crises. More than a quarter of the study population had a history of being placed in foster care and more than 40% reported less than a 12th grade education. Further, more than one-third reported that their current social-support network consisted of individuals who themselves were using drugs and/or alcohol. This is consistent with previous studies,[48,49] thus enhancing the encouraging findings that both the HHP and the AM strategies were able to assist the youth in viewing the dangers of alcohol and drug use. The youth in our study reported using numerous illegal drugs and abused alcohol. The positive outcome of the AM intervention in reducing alcohol and binge drinking, especially among homeless youth, speaks strongly of the fact that art messages may capture the attention of a homeless youth in a way that previous methods may not have as it may provide a stage for individuality and an avenue of self-expression regarding multiple social stressors affecting homeless youth. In fact, delivery of an intervention using Art was seen as an effective means to communicate feelings and learning with peers.[31] Nevertheless, behavior change in terms of drug use did not occur as strongly as it did with the nurse-led HHP program. As homeless youth are at high risk of acquiring HIV/AIDS and hepatitis secondary to their high prevalence of poly-substance use and high-risk sexual behaviors,[36,50–53] more ongoing work is needed, from the homeless youth perspective, to strongly promote youth-sensitive programs that successfully recruit and retain these high risk youth.

Limitations and Recommendations

Although within the norm for similar populations and methodology,[33,35] the follow-up sample size was small (N=100, 65%). Furthermore, there was no control group included in this study and thus alternative explanations for the effects observed cannot be ruled out. In addition, the youth were a convenience sample taken from one drop-in site in one geographical location. In addition, sampling bias may have occurred as it may be that persons who agreed to be in the study actually wanted to decrease their substance use and it is not possible to separate such desire from the effects of the programs. Data were also based on participants' self-report.

Conclusion

Homeless youth report high levels of drug and alcohol use, which places them at high risk for poor health. It is interesting that both the nurse-led HHP program and the AM program both produced significant reductions of alcohol and marijuana use and binge drinking, and furthermore, that the nurse-led program resulted in significant decreases in reported use of serious drugs such as cocaine, methamphetamine and hallucinogens. Future research is needed to continue building the nurse-led HHP program as it is effective in promoting harm reduction and health promotion in this vulnerable population.

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Table 1

Sample Characteristics ($n = 100$)

	Total Sample		Health Promotion		Art Messaging	
Characteristics	***N***	**%**	**N**	**%**	**N**	**%**
Age Groups:						
18–20	39	39.0	18	38.3	21	39.6
21–23	39	39.0	17	36.2	22	41.5
24–25	22	22.0	12	25.5	10	18.9
Male	70	70.0	30	63.8	40	75.5
Race/Ethnicity:						
African-American	11	11.0	7	14.9	4	7.6
White	58	58.0	25	53.2	33	62.3
Hispanic	9	9.0	6	12.8	3	5.7
Mixed	11	11.0	4	8.5	7	13.2
Other	11	11.0	5	10.6	6	11.3
High School/GED	59	59.0	26	55.3	33	62.3
Sexual Intimate Partner	48	48.0	22	46.8	26	49.1
Chronically Homeless[a]	51	51.0	26	55.3	25	47.2
Physical Health:						
Excellent/Very Good	48	48.0	21	44.7	27	50.9
Good	33	33.0	19	40.4	14	26.4
Fair/Poor	19	19.0	7	14.9	12	22.6
Recent Unprotected Sex	13	13.0	7	14.9	6	11.3
Injection Drug Use Ever	28	28.0	12	25.5	16	30.2
MSM[b]	10	10.0	5	10.6	5	9.4
Foster Care History	29	29.0	13	27.7	16	30.2
In Jail as Adult	60	60.6	28	60.9	32	60.4
Primary Support:						
Drug/Alcohol Users	36	36.0	13	27.7	23	43.4
Non-Users	9	9.0	7	14.9	2	3.8
Both Equally	46	46.0	23	48.9	23	43.4

	Total Sample		Health Promotion		Art Messaging	
Characteristics	***N***	**%**	**N**	**%**	**N**	**%**
No Help	9	9.0	4	8.5	5	9.4
Current Smoker	82	82.0	41	87.2	41	77.4
Five or More Recent[c] Partners	13	13.0	5	10.6	8	15.1
Ten or more Lifetime Partners	48	48.0	19	40.4	29	54.7
Ever Traded Sex for Money	14	14.1	8	17.0	6	11.5

[a] Homeless for a year or more

[b] Men having sex with men

[c] Past 6 months

Table 2

Associations with Binge Drinking and Use of Methamphetamine at Six Months (n = 100)

Baseline Measure	Binge Drinking		Methamphetamine Use	
	Yes	No	Yes	No
	n = 26	*n* = 74	*n* = 25	*n* = 75
Age (Mean, SD)	21.6(2.3)	21.1(2.4)	21.4(1.9)	21.1(2.5)
	%	%	%	%
Male	73.1	69.9	80.0	66.7
White	42.3	63.0	52.0	59.5
High School/GED	65.4	57.5	60.0	58.7
Foster Care History	34.6	27.4	36.0	27.0
Current Smoker	80.8	83.6	96.0	77.3*
IDU Ever	46.2	21.9*	48.0	21.3*
Jailed as Adult	64.0	59.5	84.0	53.4**
Excellent/Very Good Health	30.8	54.8*	32.0	54.1
Recent Unprotected Sex	32.1	8.2*	8.0	14.7
At Least 10 Lifetime Partners	53.9	46.6	72.0	40.5**
At least 5 Recent Partners	11.5	13.7	32.0	6.8**
Ever Traded Sex for Money	16.0	19.2*	20.0	12.3
Binge Drinking	88.5	52.1**	88.0	52.0**
Methamphetamine Use	30.8	37.0	60.0	27.0**
Support from Drug Users	50.0	31.5	52.0	31.1
AM Program	65.4	49.3	60.0	51.4
Mean (SD)				
Emotional Well-Being	55.5 (27.4)	64.3(20.2)*	58.0(23.4)	63.5 (22.3)
Depressive Symptoms	21.6 (14.1)	17.9 (12.2)	20.3 (13.5)	18.4 (12.5)
Escape Coping	3.4 (1.0)	3.2 (1.1)	3.7 (1.0)	3.1(1.0)**
Harm Self	1.7 (1.0)	1.5 (0.8)	1.7 (0.9)	1.5 (0.8)
Spiritual Hope	2.6 (1.6)	3.0 (1.6)	2.4 (1.4)	3.1 (1.7)
Harm Self	1.7 (1.0)	1.5 (0.8)	1.7 (0.9)	1.5 (0.8)
Went to Support Group	1.8 (1.2)	1.9 (1.1)	1.8 (1.2)	1.9 (1.1)

* p<.05, chi-square, Fisher's Exact or t test

** p<.01. chi-square, Fisher's Exact or t test

Table 3

Multiple Logistic Regression Results for Binge Drinking and Methamphetamine Use at Six-Month Follow-Up

	Binge Drinking (*n* = 100)			Methamphetamine Use (*n* = 99)		
Measure	**Adj OR**	**95% CI**	***p***	**Adj OR**	**95% CI**	***p***
Art Program	2.89	0.91, 9.11	.075	1.95	0.62, 6.13	.253
White Ethnicity	0.34	0.10, 1.17	.087	-	-	-
Ever in Jail	-	-	-	3.33	0.88, 12.58	.076
Methamphetamine Use, Baseline	-	-	-	3.15	1.02, 9.67	.046
Binge Drinking, Baseline	13.34	2.70, 65.87	.002	5.63	1.31, 24.14	.020
Injection Drug Use, Ever	3.83	1.15, 12.68	.028	-	-	-
At least 5 Recent Sex Partners	0.23	0.04, 1.26	.090	4.81	1.18, 19.63	.029
Recent Unprotected sex	4.44	0.79, 26.65	.094	-	-	-
Emotional Well-Being	0.97	0.95, 0.996	.025	-	-	-
Spiritual Hope				0.70	0.47, 1.03	.06

Table 4

Past Six Month Substance Use at Baseline and Follow-Up Stratified by Intervention Group

	HHP Group (N=41)			
	Baseline Use		**Six Month Use**	
Substance:	N	%	N	%
Alcohol	32	78.1	24	58.5*
Crack	3	7.3	3	7.3
Marijuana	36	87.8	30	73.2+
Cocaine	7	17.1	1	2.4*
Methamphetamine	17	41.5	10	24.4*
Hallucinogens	11	26.8	3	7.3*
Heroin	5	12.2	4	9.8
Sedatives	3	7.3	0	0
Binge Drinking	25	61.0	9	22.0***
	AM Group (N=44)			
Alcohol	40	90.9	30	68.2*
Crack	5	11.4	2	4.6
Marijuana	42	95.5	34	77.3**
Cocaine	9	20.5	6	13.6
Methamphetamine	16	36.4	11	25.0
Hallucinogens	12	27.3	9	20.5
Heroin	5	11.4	4	9.1
Sedatives	1	2.3	0	0
Binge Drinking	23	52.3	13	26.9**

* $p < .05$, McNemar's test of symmetry

** $p < .01$, McNemar's test of symmetry

*** $p < .001$, McNemar's test of symmetry

+ $p < .10$, Mc Nemar's test of symmetry