Published in final edited form as:

Am J Mens Health. 2013 January ; 7(1): 18–26. doi:10.1177/1557988312456068.

Correlates of Hepatitis B Virus and HIV Knowledge among Gay and Bisexual Homeless Young Adults in Hollywood

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Abstract

Homeless gay and bisexual (G/B) young men have multiple risk factors which increase their risk of contracting hepatitis B virus (HBV) and Human Immunodeficiency Virus (HIV). This study used baseline information from structured instruments to assess correlates of knowledge to HIV and HBV infection from a 267 young (18–39 year old) gay/bisexual (G/B) active methamphetamine, cocaine and crack-using homeless men enrolled in a longitudinal trial. The study is designed to reduce drug use and improve knowledge of hepatitis and HIV/AIDS in a community center in Hollywood California. Regression modeling revealed that previous hepatitis education delivered to G/B men was associated with higher levels of HIV/AIDS and hepatitis knowledge. Moreover, higher HIV/AIDS knowledge was associated with combining sex and drinking alcohol. Associations with hepatitis B knowledge was found among G/B men who were engaging in sex while under the influence of marijuana, who were receiving support from non-drug users, and who had been homeless in the last four months. While being informed about HIV/

AIDS and hepatitis did not preclude risky sexual and drug use behavior, knowledge about the dangers of concurrent sex with substance use is important. As higher levels of knowledge of hepatitis was associated with more moderate drug use, early access to testing and teaching harm reduction strategies remains critical to reduce exposure and infection of HBV and HIV in this population.

Keywords

Hepatitis B virus; HIV; Gay/bisexual homeless young men

Introduction

Homeless young men commonly engage in poly-drug use (Rosenthal, Mallett, Milburn, & Rotheram-Borus, 2008), which increases their risk for HIV, hepatitis B virus (HBV) and hepatitis C virus (HCV) infections. Other factors that affect HIV and HBV transmission include unprotected sex (Cochran, Stewart, Ginzler, & Cauce, 2002), unwanted sex (Rosenthal & Mallett, 2003), and survival sex (Gangamma, Slesnick, Toviss, & Serovich, 2008; Greene, Ennett, & Ringwalt, 1999; Walls & Bell, 2011). In a recent study of homeless young adults, 72% used marijuana, 14% used opiates and 4% engaged in use of LSD and hallucinogens (Gomez, Thompson, & Barczyk, 2010). Moreover, about 13% of homeless individuals between 16 and 25 years of age reported sharing needles (Van Leeuwen et al., 2004). In one study of homeless young men between the ages of 14 to 23, 16% tested positive for HIV, 17% tested positive for HBV, and 12% tested positive for HCV (Beech, Myers, Beech, & Kernick, 2003). High rates of HIV and HBV infection can be traced to a myriad of environmental, psychological and social risk factors that are associated with high risk sexual behavior.

Gay and bisexual (G/B) young adults, are more likely to experience vulnerability and homelessness due to a number of issues that stem from disclosure of sexual orientation to families, family discord, childhood abuse, and physical and mental health issues (National Alliance to End Homelessness, 2009). When compared to homeless heterosexual counterparts, G/B homeless young adults between 19 and 26 years of age are more likely to experience prostitution and sexual victimization (Tyler, 2008; Whitbeck, Chen, Hoyt, Tyler, & Johnson, 2004); both of which places them at higher risk for sexually transmitted infections, including HIV and HBV.

Lack of knowledge of HBV, HCV, and HIV is another factor that may be related to prevalence of these infections among homeless young adults, though the evidence base on the topic is sparse. In a study of homeless adolescents and young adults, 44% stated that they did not have information regarding HBV and HCV and 9% were not well informed about HIV (Lifson & Halcon, 2001). Within this sample, 15% were not well informed about the HBV vaccine (Lifson & Halcon, 2001). As knowledge is generally provided in health-care settings, G/B homeless young adults are an underserved population that may face challenges accessing culturally-tailored health care services; lack of access remains another factor which may impact knowledge of these infections. Lack of knowledge remains an important risk factor for infection, and homeless G/B young adults are in greatest need of education about hepatitis B and HIV. The purpose of this study is to focus on correlates of knowledge regarding hepatitis B and HIV among G/B young adults. This information is critical to set up the culturally-sensitive education and social services programs needed to improve the lifestyle practices of this at-risk population.

Methods

Design

The current study analyzed baseline data from an intervention study designed to reduce stimulant use and promote hepatitis/HIV prevention among G/B young stimulant-using homeless men attending a community center. Data were collected from November 2009 to May 2011. The UCLA and Friends Research Institute (FRI) Human Subjects Protection Committees approved the study.

Sample and Setting

A total of 267 methamphetamine, cocaine and crack-using G/B men meeting the following eligibility criteria were enrolled in the study: a) age 18 – 39; b) self-reported being homeless; c) G/B identity; d) stimulant abuse (SA; methamphetamine and/or cocaine/crack use) within the last three months; and e) no self-reported participation in drug treatment in the last 30 days. SA was confirmed by urine screening or by hair analysis if the urine screening could not detect SA metabolite within the previous 3 months.

Procedure

Recruitment procedures consisted of distributing flyers in G/B homeless-frequented community sites in the Hollywood area. In addition, directors of community-based organizations using these sites provided permission for the research team to provide short presentations. Persons were excluded from the study if, during an initial interview, they appeared high or cognitively impaired. The research staff provided a full description of the study to interested persons, reviewed the informed consent form in a private location, and administered a short screening assessment to confirm eligibility. The screening assessment took about 2 minutes to complete; it assessed demographic characteristics, homeless status, and substance use and dependency using the Texas Christian University (TCU) Drug Screener (Simpson & Chatham, 1995).

Eligible persons were asked to provide a blood sample to be tested for hepatitis B and HIV antibodies against these viruses. The participants were asked to return after two days to receive their hepatitis test results from the study nurse; thereafter, a second informed consent was reviewed and signed and a rapid HIV test was administered by oral swab. A baseline assessment was then administered by the research staff. Participants were paid \$10 to complete the screening questionnaire and \$20 to complete the baseline questionnaire.

Measures

Sociodemographic information was collected by a structured questionnaire and included age, birthdate, ethnicity, education, employment, relationship status, and recent history of homelessness. The questionnaire primarily assessed behaviors from the previous four months, although a lifetime history was obtained for some items.

Health Status was assessed using a self-reported one-item measure (Stewart, Hays, & Ware, 1988), asking about general health and ranging in responses from “excellent” to “poor”. It was used as a dichotomized variable (fair/poor vs. good/very good/excellent) in the analyses.

Social Support was measured by a 6-item scale used in the RAND Medical Outcomes Study (Sherbourne & Stewart, 1991). The items elicit information about how often respondents had friends, family or partners available to provide them love and affection, help with chores, etc. on a 5-point Likert scale ranging from 1) none of the time to 5) all of the time. The instrument has demonstrated high convergent and discriminant validity and internal

consistency (Sherbourne & Stewart, 1991). The Cronbach's alpha for this sample population was .88. A mean score of the 6-item scale was used in the analyses as a social support measure. Participants were considered to be without social support if they answered "none of the time" for all the 6 items. In addition, participants were asked "who are those you turn to for friendship and assistance". Those who answered "primarily non-users of drugs or alcohol" or "about equally divided between users and non-users" were considered having social support from non-drug users.

Knowledge of and Attitudes toward hepatitis B were measured by a modified 17-item instrument used in a prior HBV study (Nyamathi, Tyler, et al., 2010). A sample item included "a person who has hepatitis B can look and feel well." Items were measured on a five-point scale ranging from 1 ("definitely true") to 4 ("definitely false"). In addition a "don't know" item was also included. Cronbach's reliability coefficient for the instrument was .88 in this population. With the range of 0–17, a person who answered at least 14 items correctly (the upper quartile score) was considered as having a high score of HBV knowledge.

Knowledge of and attitudes toward HIV/AIDS were measured by a modified 21-item CDC knowledge and attitudes questionnaire for HIV/AIDS (National Center for Health Statistics, 1989). The range was 0–21. Modifications to the CDC instrument have been detailed elsewhere (Leake, Nyamathi, & Gelberg, 1997). Internal consistency reliability for the overall HIV knowledge and attitude scale was .86 in this homeless population. A person who answered at least 19 items correctly (the upper quartile score) was considered to have a high score of HIV/AIDS knowledge.

Drug Use and Related Problems were assessed during screening with the Addiction Severity Index ASI, (McLellan et al., 1992), a standardized clinical interview that assesses self-reported substance use. The ASI reveals excellent inter-rater and test-retest reliability, as well as discriminate and concurrent validity. Self-report of substance use utilized a 30-day report period.

Sexual Behavior in relation to substance use was assessed by the Behavioral Questionnaire (BQ) – Amphetamine (Chesney, Barrett, & Stall, 1998). This scale has been validated with methamphetamine-using populations (Twitchell, Huber, Reback, & Shoptaw, 2002) and assesses specific sexual behaviors alone and accompanying substance use such as alcohol or drugs, both with primary and other partners, relating to unprotected insertive and receptive anal sex, as well as number of sexual partners over the past 30 days. The BQ-A has an excellent overall reliability of .92 for the G/B population (Twitchell et al., 2002).

Depressive Symptoms were assessed with the 10-item short-form version of the Center for Epidemiologic Studies-Depression Scale (CES-D) (Radloff, 1977). Like the parent, this questionnaire measures depressive symptoms on a 4-point continuum. The CES-D has well-established reliability and validity with homeless and drug addicted populations (Nyamathi et al., 2012). Scores on the CES-D range from 0–30, with higher scores indicating greater depressive symptomatology. Internal consistency reliability for this scale was .82 in this homeless population. For purposes of this study, depressed mood was defined as having a CES-D score of at least 10. This cut-off point has been used to identify persons in need of psychiatric evaluation for depression in previous work (Andresen, Malmgren, Carter, & Patrick, 1994).

HIV status was assessed by analyzing samples for the HIV antibody with the Enzyme-linked immunosorbent assay (ELISA), and, if positive, confirmed by Western Blot.

HBV/HCV status was assessed by hepatitis B surface antibody and hepatitis C antibody respectively as performed by enzyme immunoassay (EIA) with commercial kits.

Data Analysis

Descriptive statistics, including means and standard deviations were computed to present the sample sociodemographic and other background characteristics. Due to skewed distributions, the HBV knowledge and HIV/AIDS knowledge scores were both dichotomized at the upper quartile and analyzed as categorical variables. Bivariate relationships between potential correlates and knowledge of hepatitis B and HIV/AIDS were examined using chi-square tests and t-tests. Stepwise multiple logistic regression analyses were then used to create models of hepatitis B knowledge and HIV/AIDS knowledge; initial predictor sets included correlates that were significant at the 0.15 level in the bivariate analyses. Covariates that were significant at the 0.10 level were retained in the final models. Age, ethnicity and education were forced into the final models to see whether specific demographic subgroups need to be targeted for HIV/AIDS and/or hepatitis B education. Multicollinearity was assessed and model fit was examined with the Hosmer-Lemeshow test. All statistical analyses were conducted using SAS, version 9.1 (SAS Institute, Cary, NC).

Results

Sample Characteristics

The mean age of the sample ($n = 267$) was 33.9 ± 8.0 years. The sample was primarily African American ($N = 102$; 38%) or White ($N = 98$; 37%), mostly high school educated ($N = 198$; 74%) and largely unemployed ($N = 245$; 92%) (Table 1). More than three quarters of the men ($N = 204$) reported being homeless for the past four months. Less than one in four ($N = 61$) reported having a significant partner.

In terms of injection drug use (IDU), about one-third of the sample ($N = 85$; 31%) reported injecting heroin, other opiates or pain relieving drugs, while about two-thirds ($N = 164$; 61%) reported any injection drug use during their lifetime (Table 1). Less than one-quarter ($N = 61$; 23%) reported having sex while drinking alcohol during the last month and slightly less ($N = 56$; 21%) reported having sex while smoking marijuana (data not shown). Three quarters of the sample ($N = 199$) reported a history of incarceration. Among the latest subset of 52 enrolled who were asked about non-IDU use, 50 (96%) reported snorting either crack or MA.

While only about one-quarter of the sample ($N = 63$; 24%) reported being in fair or poor health, over half ($N = 140$; 52%) were HBV positive based on baseline blood testing and a little under a third ($N = 78$; 29%) reported being HCV positive. HIV positive status was found for 17% ($N = 45$) of the sample. The likelihood of being infected with HIV, HBV or HCV was increased with age ($p = .04$, $p < .001$, and $p = .005$, respectively). In terms of knowledge, nearly two-thirds ($N = 159$; 60%) reported receiving information about hepatitis prior to enrollment in the study; yet, hepatitis B knowledge scores were found to be low ($M = 9.1$, $SD = 5.1$, range = 0–17), whereas HIV/AIDS knowledge was moderate ($M = 16$, $SD = 3.9$, range = 0–21). In terms of mental health, nearly two-thirds ($N = 166$; 62%) reported a CES-D score consistent with need for clinical assessment for depression. Few participants ($N = 20$; 8%) reported having no social support network and 72% ($N = 192$) reported receiving social support from non-drug users.

Associations with Hepatitis B and HIV/AIDS Knowledge

The sociodemographic variables not found to be associated with knowledge of hepatitis B and HIV/AIDS were race, education, and employment status (Table 2). Depressive symptoms were likewise found not to be associated with knowledge of these infections. Ever having been given information about hepatitis was significantly associated with knowledge of hepatitis B (73% vs. 54.7%, $p < .006$) and, to a lesser extent, with knowledge of HIV/AIDS (66.9% vs 53.5%, $p < .026$). Being homeless during the last four months was positively correlated with hepatitis B knowledge only (86.5% vs. 72.5%, $p < .016$). In terms of seroprevalence, those found to be HIV-positive were found to have greater knowledge of HIV/AIDS than their counterparts not found to be infected (22% vs. 13%, $P=0.054$).

Having had sex while smoking marijuana in the past month was significantly associated with knowledge of both hepatitis B (32.4% vs.16.1%, $P=0.003$) and HIV/AIDS (27.4% vs. 14.7%, $P=0.01$). Furthermore, having had insertive anal sex in the last month showed a strong association with knowledge of hepatitis B (13.5% vs. 4.2%, $P=0.006$), while a trend for HIV/AIDS knowledge was also apparent. However, having had sex while drinking alcohol in the past month was only significantly associated with knowledge of HIV/AIDS (31.5% vs. 14.7%, $P=0.001$). Receiving support from non-drug users was significantly associated with hepatitis B knowledge (83.8% vs. 67.4%, $P=0.008$). Although having sex while using crack or cocaine was not associated with HIV or Hepatitis B infection, G/B males who had sex while smoking marijuana were more likely to have sex while smoking cocaine ($p < .0001$) or crack ($p < .0001$).

Multivariate Results

Table 3 shows final regression models for high levels of hepatitis B and HIV/AIDS knowledge. Having been given information about hepatitis in the past was associated with relatively high levels hepatitis B ($\beta=0.78$, $P=0.018$) and HIV/AIDS knowledge ($\beta=0.56$, $P=0.044$). Combining sex with alcohol use in the past 30 days was associated with HIV/AIDS knowledge ($\beta=0.88$, $P=0.01$). While no knowledge difference was found among persons based on age, education or race, two other significant findings were found for hepatitis B knowledge only. Having had sex while using marijuana in the last 30 days ($\beta=1.08$, $P=0.003$), receiving support from non-drug users ($\beta=1.15$, $P=0.004$), and being homeless in the last four months ($\beta=1.13$, $p=0.005$) were all associated with high scores on hepatitis B knowledge. This was likewise the case for those found to be HBV-infected ($\beta=0.64$, $P=0.044$).

Discussion

This study focused on identifying correlates of hepatitis B and HIV/AIDS knowledge for a hidden and difficult-to-find community-based sample of homeless G/B men. Findings revealed that knowledge of hepatitis B was higher among men who were having sex while under the influence of marijuana, among those who received support from non-drug users, and those previously informed about hepatitis B and found to be HBV-infected. Several studies have also revealed the association between marijuana use and higher STD rates (Boyer et al., 1999; De Genna, Cornelius, & Cook, 2007), or between having unprotected sex and smoking marijuana (Hendershot, Magnan, & Bryan, 2010). It is plausible that individuals who attend STD clinic appointments were concurrently being educated about Hepatitis B and its transmission and therefore became more knowledgeable about Hepatitis B. Another possibility is that among verified stimulant users, those combining marijuana with sex in the last 30 days may be more than moderate substance users who have retained more cognitive learning about hepatitis. This possibility is more likely as findings confirm that while participants were as likely to have sex while using crack or cocaine, the

relationship with these more serious drugs and knowledge of hepatitis B or HIV was not apparent.

Prior research has revealed that knowledge of hepatitis disease transmission does not always lead to disease prevention (Wang, Wang, & Tseng, 2009), nor does frequent contact with health care personnel lead to improved knowledge of HBV (Seal et al., 2000). While timing of prior hepatitis B knowledge and learning about seroprevalence of HBV was not assessed in this study, those found to be HBV- positive and those who reported receiving previous health information about hepatitis had greater levels of hepatitis B knowledge than their counterparts. These findings may suggest that access to testing for HBV and the associated pre- and post-test counseling may have increased the knowledge levels of these participants. For providers, whenever contact is made with persons at risk for hepatitis, in addition to communicable disease screening, counseling and referral services may be helpful both to improve knowledge and to reduce risky drug use and sexual behaviors.

Similar to other researchers (J. Carey et al., 2005; Heimer et al., 2002), findings of this study revealed that levels of hepatitis B knowledge were low in this population, while levels of HIV/AIDS knowledge were moderate. Yet, there is room for both hepatitis B and HIV/AIDS knowledge to increase due to the fact that G/B homeless young people report getting tested for HIV more frequently than heterosexual homeless young adults (Rew, Whittaker, Taylor-Seehafer, & Smith, 2005). Periodic testing is likely to increase both hepatitis B and HIV/AIDS knowledge in this population, as free HIV testing is accompanied by brief risk reduction counseling (Branson et al., 2006). Thus, ongoing hepatitis B and HIV knowledge and periodic testing seems important to maintaining a reasonable level of risk awareness. While controversy exists about the use of cash incentives for research, such as for completion of questionnaires, etc, Festinger, Marlowe, Dugosh, Croft, & Arabia, 2008 revealed that when incentives were increased from \$70 to \$160 in their research with drug-using participants, the higher rates were not associated with greater risk for new drug use or perceptions of coercion.

The finding of higher hepatitis B knowledge among G/B men who had non drug-using support agrees with results from other at-risk populations, such as methadone maintenance program clients (Nyamathi, Sinha, Greengold, Cohen, & Marfisee, 2010). Having a social support network that includes non-drug users may indicate the influence of people who are aware of hepatitis B infection risk among G/B men and who shared their knowledge with study participants. It is likewise interesting that high baseline rate of HBV infection (52%) was related to hepatitis B knowledge. However, this was not the case for those found HIV and HCV infected. Heimer and colleagues (2002) found that greater hepatitis knowledge was associated with HBV and HCV infection among an IDU population, while Carey and colleagues (2005) revealed that among needle exchange patrons in New York City, knowledge of one's positive HIV status was significantly correlated with knowledge of the hepatitis vaccine.

Further, in this sample, knowledge of hepatitis B and HIV/AIDS was not related to socio-demographic characteristics, such as race, age, education or employment status. While it is surprising that level of education did not impact HIV/AIDS or hepatitis B knowledge, this finding may result from the lack of variance found in the education level among this sample.

The finding that being homeless for the past four months was significantly correlated with relatively higher hepatitis B knowledge in both bivariate and multivariate analyses is quite interesting considering the fact that HIV/AIDS knowledge was not equally found to be higher. In a study of young men who had been homeless for more than one year, Rew and colleagues found that AIDS knowledge was greater than among those who were homeless

for less time. As longer duration of homelessness is correlated with a greater number of risk factors for hepatitis, such as emotional distress, and greater substance and injection drug use (Stein, Dixon, & Nyamathi, 2008), the greater likelihood of being exposed to hepatitis prevention information with longer periods of homelessness may be key to offsetting the increase in predisposing factors for hepatitis.

Finally, while not significant in multivariate analysis, an unadjusted correlation between fair/poor health status and low levels of hepatitis B knowledge was apparent. Previous research has found that homeless young adults face many barriers to receiving culturally-competent primary health care, including substance use treatment (Christiani, Hudson, Nyamathi, Mutere, & Sweat, 2008; Hudson et al., 2010). Missed opportunities to provide health care to G/B homeless substance users are also missed opportunities to provide education about their hepatitis B risk. Thus, providing information about HIV/AIDS and hepatitis B remains a primary concern.

Limitations

The current research is based on cross-sectional assessments of hepatitis B and HIV/AIDS knowledge obtained at baseline. Therefore, no inferences about causality can be made from the associations presented here. The study is also limited by the fact that the sample captured was one of convenience and obtained in one state only.

Conclusions

Given that both HBV and HIV/AIDS are transmitted through the exchange of blood and sexual fluids, populations that are vulnerable to infection by one of these viruses are also vulnerable to infection with the other. This makes simultaneous education for prevention of HBV and HIV/AIDS infection a natural fit among populations with high rates of unprotected sex and unsafe injection practices. It is also important that populations at high risk for HIV/AIDS be informed that becoming infected with HBV could exacerbate HIV/AIDS infection and that hepatitis B is preventable with a widely available and well-tested vaccine. People who engage in concomitant sex while smoking marijuana in particular were more informed about hepatitis B in this study, yet concurrent sex with substance use has been well established as a risk factor for engaging in HIV and hepatitis risk behaviors (J. W. Carey et al., 2009). Clearly, being more informed about hepatitis B and HIV/AIDS did not preclude risky behavior in this population. High risk substance users need information on how to change their behaviors in addition to information on HIV/AIDS and hepatitis risk and prevention. Skills such as goal setting, safer sex negotiation and harm reduction should be integral to HIV/AIDS and hepatitis B prevention messages.

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Table 1

Sample Characteristics (N = 267)

Measure	Mean	(SD)
Age	33.9	(8.0)
HBV knowledge (range 0–17)	9.1	(5.1)
HIV knowledge (range 0–21)	16.2	(3.9)
Measure	N	%
Race/Ethnicity		
African American	102	38.2
White	98	36.7
Hispanic	39	14.6
Other	28	10.5
Being Homeless in the Past 4 Months (Yes)	204	76.4
Partner (Yes)	61	22.9
High School Graduate (Yes)	198	74.2
Working (Yes)	22	8.3
General Health Status (Fair/Poor)	63	23.6
Ever Injected Heroin/Opiates/Painkiller (Yes)	85	31.4
Ever Injected Recreational/Illegal Drugs (Yes)	164	61.4
HBV+ (Yes)	140	52.4
HCV+ (Yes)	78	29.2
HIV+ (Yes)	45	16.9
Ever Been Given Info about Hepatitis (Yes)	159	60.0
Depression (Yes; CES-D < 10)	166	62.2
Social Support (None)	20	7.5
Social Support from Non-drug Users (Yes)	192	71.9
Ever incarcerated (Yes)?	199	74.5

Table 2

Bivariate Correlates for Hepatitis B and HIV/AIDS Knowledge

Measure	Hepatitis B Knowledge			HIV/AIDS Knowledge		
	Low (%)	High (%)	P - Value	Low (%)	High (%)	P-Value
Non-White (Yes)	61.1	68.9	0.238	61.5	65.3	0.522
Partner (Yes)	20.7	28.4	0.183	17.5	29.0	0.025
High School Graduated (Yes)	72.0	79.7	0.198	70.6	78.2	0.157
Working (Yes)	78.8	86.3	0.163	79.6	82.3	0.580
Depression * (Yes)	61.7	63.5	0.779	60.1	64.5	0.462
General Health Status (Fair/Poor)	26.9	14.9	0.038	23.8	23.4	0.941
Ever Been Given Info about Hepatitis (Yes)	54.7	73.0	0.006	53.5	66.9	0.026
HIV+ (Yes)	16.5	18.9	0.638	13.0	22.0	0.054
HBV+ (Yes)	49.5	60.8	0.097	51.4	54.3	0.669
Being Homeless All the Time for the Past 4 Months (Yes)	72.5	86.5	0.016	76.2	76.6	0.941
Ever Had Sex while smoking Marijuana in the Past 30 days (Yes)	16.1	32.4	0.003	14.7	27.4	0.010
Ever Had Sex while drinking Alcohol in the Past 30 days (Yes)	20.7	27.0	0.270	14.7	31.5	0.001
Insertive Anal Sex in Last Month (Yes)	4.2	13.5	0.006	4.2	9.7	0.075
Received Social Support From Non- drug-user (Yes)	67.4	83.8	0.008	67.8	76.6	0.111

Note. HBV = hepatitis B virus; HCV = Hepatitis C virus.

* CES-D > 10

Table 3
Adjusted Logistic Regression Model for High Levels of Hepatitis B and HIV/AIDS Knowledge Scores

Measure	Hepatitis B Knowledge			HIV/AIDS Knowledge		
	β	SE*	P-value	β	SE*	P-value
Age	0.01	0.01	0.554	0.03	0.02	0.049
Graduated High School (Yes)	0.42	0.36	0.234	0.29	0.31	0.347
Non-White (Yes)	0.12	0.32	0.683	-0.05	0.29	0.860
Partner (Yes)	--**			0.62	0.35	0.068
Ever Been Given Info on Hepatitis (Yes)	0.78	0.33	0.018	0.56	0.28	0.044
Had Sex while drinking Alcohol in the Past 30 days (Yes)	--**			0.88	0.34	0.010
Ever Had Sex while smoking Marijuana in the Past 30 days (Yes)	1.08	0.36	0.003	--**		
Received Social Support From Non-drug-user (Yes)	1.15	0.40	0.004	--**		
HBV (+)	0.64	0.32	0.044	--**		
Being Homeless for the Past 4 Months (Yes)	1.13	0.40	0.005	--**		

* SE: standard error

** Variable not included in the model