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Heterosexual Anal Intercourse among Men in Long Beach, California

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Abstract

Anal intercourse poses a greater risk for HIV transmission than vaginal intercourse, and in recent years there has been a growing understanding that heterosexual anal intercourse (HAI) is not uncommon. However, the majority of the anal intercourse literature has focused on men who have sex with men. The little research on HAI has mostly looked at women, with limited work among men. This analysis examined the association between HAI and high-risk behaviors ($N=1622$) and sexual sensation seeking ($N=239$) in a sample of men recruited from 2001–2012 in Long Beach, California. Almost half of the sample was non-Hispanic Black. The median age was 42 years, 42% were homeless, and 20% reported recent HAI. Men who reported HAI were more likely to be Hispanic, homeless, had a male partner, engaged in sex exchange, and used cocaine or amphetamines during sex. Men who reported HAI scored higher on the Sexual Sensation Seeking scale. This research supports other work showing the relationship between HAI and high-risk behaviors. More importantly, it contributes new knowledge by demonstrating the association between HAI and sexual sensation seeking. This research highlights the importance of personality traits when trying to understand sexual behavior and when developing HIV prevention interventions.

Keywords

heterosexual anal intercourse; sensation seeking; personality trait; HIV-risk behaviors

Introduction

Anal intercourse has been extensively studied within the men who have sex with men (MSM) community, but it has only been in recent years that people have become more aware of the high prevalence of anal intercourse among heterosexual men and women (McBride & Fortenberry, 2010). Given the high risk of HIV transmission during anal intercourse (Powers, Poole, Pettifor, & Cohen, 2008; Reynolds, Fisher, Napper, & D'Anna, 2010, July), there has been growing interest to understand more about heterosexual anal

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Conflict-of-Interest Statement

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intercourse (HAI). According to the 2006–2008 National Survey of Family Growth, the prevalence of ever having HAI among U.S. men and women 15 to 44 years old was 36% and 31%, respectively (Chandra, Mosher, Copen, & Sionean, 2011). Among specific groups of higher risk populations, the prevalence of recent HAI is also relatively high. Prevalence of HAI in the previous 90 days among men ranged from 10% to 21% among sexually transmitted infection (STI) clinic attendees to 24% among substance-using club-goers (Ibanez, Kurtz, Surratt, & Inciardi, 2010; Javanbakht et al., 2010; Satterwhite et al., 2007). Among women, the previous 90-day prevalence ranged from 10% to 22% of STI clinic attendees and 16% of substance-using club-goers (Ibanez et al., 2010; Javanbakht et al., 2010; Satterwhite et al., 2007).

Most of the HAI literature has focused on women (Jenness et al., 2010; Koblin et al., 2010; McLellan-Lemal et al., 2012; Reynolds, Fisher, Napper, Fremming, & Jansen, 2010; Reynolds, Latimore, & Fisher, 2008). However, it is also important to understand the men who engage in HAI. This would paint a more complete picture of who engages in HAI and in what context, which could better direct the development of STI/HIV prevention interventions. The few studies that have addressed this have found that HAI among men is associated with having concurrent partners, exchanging drugs or money for sex, incarceration, sex with an injection drug user, not being heterosexual, alcohol use, and substance use (Gorbach, Manhart, et al., 2009; Ibanez et al., 2010; Javanbakht et al., 2010; Lescano et al., 2009). In addition, some studies have found racial/ethnic differences that suggest that non-Hispanic Black men are less likely to report HAI, and Hispanic men are more likely to report HAI compared to non-Hispanic White men (Ibanez et al., 2010; Javanbakht et al., 2010; Leichliter, Chandra, Liddon, Fenton, & Aral, 2007). A study that included men regardless of sexual orientation, found that homelessness was associated with unprotected anal intercourse (Gorbach, Murphy, Weiss, Hucks-Ortiz, & Shoptaw, 2009).

Overall, research has focused on demographic and behavioral correlates of HIV-risk behaviors, but there has also been some interest in personality traits that could be associated with risky behavior. In particular there has been interest in the dynamics of sensation seeking. Sensation seeking is defined as “the tendency to prefer exciting, optimal, and novel levels of stimulation or arousal” (Kalichman et al., 1994, p. 386), which could help to explain why some individuals prefer anal intercourse. Kalichman developed two scales to assess this personality trait, one that addressed sexual sensation seeking and another that addressed non-sexual experience seeking (Kalichman et al., 1994). In addition to these two scales, Kalichman also developed a scale to measure sexual compulsivity, which is defined as “an insistent, repetitive, intrusive, and unwanted urge to perform specific acts often in ritualized or routinized fashions” (Kalichman & Rompa, 1995, p. 587). These three scales have been shown to have good reliability and validity in homosexual men and heterosexual men and women (Gaither & Sellbom, 2003; Kalichman et al., 1994; Kalichman & Rompa, 1995; Latimore, Fisher, & Reynolds, 2007, August). Studies have found that people who score higher on these scales also report more unprotected intercourse, more partners, and sex with anonymous partners (Hendershot, Stoner, George, & Norris, 2007; Kalichman & Rompa, 1995; Nguyen et al., 2012; Stulhofer & Bacak, 2011). One study assessed the correlation between the frequency of HAI and SSS among heterosexual men and women and found a positive correlation among women, but no significant association among men

(Gaither & Sellbom, 2003). However, this study was conducted among a sample of mostly white college students, and the findings may not be true of other populations. Another study conducted in a sample of heterosexual sex-research volunteers found a positive correlation between SSS and number of anal sex partners among Asian Americans and Caucasians, but no association among African Americans (Nguyen et al., 2012). In this study analyses were not stratified by gender. Given the limited research and discrepant results, more research is warranted on this topic. The current paper further explores the association between recent HAI and other risk behaviors as well as sensation seeking in a sample of low-socioeconomic status (SES) men in Long Beach, California.

Methods

Data were collected at the Center for Behavioral Research and Services (CBRS) in Long Beach, California. The data used in this analysis were obtained from people who came to CBRS between March 2001 and May 2012 to receive HIV and STI testing. In general, the population who comes to CBRS for services is low SES and reports high rates of drug abuse. This analysis focused on the men who reported having a female partner in the past 30 days, which resulted in a sample size of 1,622. All participants gave informed consent using a consent form approved by the California State University, Long Beach Institutional Review Board, and were administered the Risk Behavior Assessment (RBA) by a trained interviewer in a face-to-face interview. The RBA gathers information on demographics, sexual behavior, and drug and alcohol use. It has been shown to have good reliability and validity (Dowling-Guyer et al., 1994; Napper, Fisher, Johnson, & Wood, 2010; Needle et al., 1995).

Heterosexual anal intercourse was the outcome variable and was based on the question, “How many times in the last 30 days when you had sex did you put your penis in your *female* partner’s anus?” Responses were dichotomized into yes and no. Several covariates were assessed in bivariate analyses to determine their association with HAI. The demographic characteristics included in the analysis were race (non-Hispanic Black, non-Hispanic White, Hispanic, other), age, education (< high school, high school graduate, >high school), past month income (<\$500, \$500–999, >\$1,000), currently homeless, sexual orientation (heterosexual versus gay/bisexual), and marital status. Sexual behavior was assessed for the previous month. Participants were asked the number of partners they had in the past month, the number of male/female partners, the number of times they had vaginal intercourse, and the number of times they used a condom during vaginal intercourse. The number of partners and the frequency of vaginal intercourse were left as continuous variables, but whether or not a man reported a male sex partner was recoded to be a dichotomous variable. The frequency of vaginal intercourse and frequency of condom use variables were used to create a three-level variable of condom use (always, inconsistent, never), which is more consistent with Hershberger et al. (Hershberger, Fisher, & Reynolds, 2005). In multivariate analyses this variable was recoded into a dichotomous variable (100% condom use versus less than 100% use). Participants were also asked the number of times they had bought sex with money/drugs, sold sex for money/drugs, used alcohol before/during sex, used cocaine before/during sex, used crack before/during sex, and used amphetamines before/during sex. These were all recoded as dichotomous variables (yes/no).

Finally participants were asked the number of times they had been told by a health care provider that they had HIV, herpes, syphilis, gonorrhea, and *Chlamydia*. These were also recoded as dichotomous variables.

A sub-set of men ($n=239$) completed the Sexual Sensation Seeking scale (SSS), the Non-Sexual Experience Seeking scale (NES), and the Sexual Compulsivity scale (SC). The collection of these scales only took place between October 2008 and June 2009. The SC scale is a 10-item, Likert-type measure that assesses the degree to which people agree with a series of statements that address compulsive sexual behavior, sexually intrusive thoughts, and sexual preoccupation. The SSS and NES scales are each 11-item, Likert-type measures that ask respondents to rate their agreement with statements about sensation-related thoughts and feelings. These two scales were derived from Zuckerman's Sensation Seeking Scale (Zuckerman, 1994). All three scales have been shown to have good reliability and validity (Gaither & Sellbom, 2003; Kalichman & Rompa, 1995). The scales were summarized by taking the mean of the scale items among the participants who are not missing more than two items, which is consistent with instructions by the author (Kalichman, personal communication, October 8, 2012). In our sample, responses to the three scales were internally consistent (SSS $\alpha = .86$, NES $\alpha = .80$, SC $\alpha = .88$).

Bivariate and multivariate associations were assessed using logistic regression. Variables were considered for inclusion in the multivariate model based on *a priori* knowledge and significance at the bivariate level. Items were considered significant if the *p*-value was less than .05. All analyses were conducted using SAS 9.3.

Results

Almost half of this sample of low-SES men in Long Beach, California were non-Hispanic Black (46%), 28% were non-Hispanic White, and 20% were Hispanic. The median age of the sample was 42 years with a range from 14 to 80. In order to be included in the analysis the men had to report that they had a female sex partner in the past month, however, 12% of the sample identified as other than heterosexual and 10% reported having a male sex partner in the past month in addition to at least one female partner (e.g., men who have sex with men and women; MSMW). Just over half (51%) of the sample reported earning less than \$500 in the past month, and 42% reported being currently homeless.

Twenty percent of the men reported HAI in the past month. The prevalence of HAI in the previous month when assessed by year of data collection fluctuated between 14% and 30%, but this was not statistically significant by chi-square or Cochran-Armitage test of trend. Among men who had HAI, the median number of HAI acts in the past month was 2 [IQR: 1–4]. Among men who reported vaginal intercourse, the median number of acts was 5 [IQR: 2–12]. Condom use during HAI was low with 70% reporting never using a condom, 6% reported inconsistent use, and 24% reported always using a condom during HAI. The prevalence of always using a condom during vaginal intercourse was similar (23%) to always using during HAI. However, the prevalence of never using a condom during vaginal intercourse (59%) was lower than the prevalence of never using a condom during HAI.

In bivariate analyses, there were no significant differences in HAI prevalence by race/ethnicity, education, income, age, or marital status (Table 1). Men who were currently homeless were more likely to report HAI, as were gay/bisexual men. Men who reported inconsistent condom use during vaginal intercourse were more likely to have had recent HAI than men who had never used condoms during vaginal intercourse, and those who always used condoms during vaginal intercourse were less likely to have had HAI (Table 2). Men who reported recent HAI also reported a higher mean number of partners in the past month and a higher frequency of vaginal intercourse than men who did not report recent HAI. In addition, men who reported trading sex for money/drugs, buying sex with money/drugs, or used drugs or alcohol during sex were all more likely to report HAI than men who did not report these behaviors. Men who were HIV+ were not more likely to report recent HAI than HIV- men, but those who reported a history of herpes, syphilis, or gonorrhea were more likely to report HAI than men who had no history of these STIs (Table 2).

The prevalence of HAI was higher among men who reported a male sex partner as well as a female sex partner in the past month compared to those who did not (Table 2). The MSMW sample in our study was too small for extensive multivariate analysis, but in bivariate analyses, MSMW who had anal intercourse with a male partner in the past month were more likely to have had recent HAI than MSMW who had not had anal intercourse with a male partner (insertive: 49% vs. 15%, $\chi^2(1, N=165) = 17.73, p < .001$; receptive: 55% vs. 31%, $\chi^2(1, N=164) = 8.59, p = .003$).

In multivariate analyses, Hispanic men were more likely to report HAI than non-Hispanic White men (Table 3). In addition, men who were currently homeless, had a male sex partner, traded sex for money/drugs, bought sex with money/drugs, used cocaine during sex, used amphetamines during sex, or had a greater number of sexual partners were more likely to report HAI than men who did not report these behaviors. Lastly, men who reported 100% condom use during vaginal intercourse in the previous month were less likely to report HAI than men who had unprotected vaginal intercourse (Table 3).

Additional analyses were run on the sub-set of men who completed the sensation seeking and sexual compulsivity questionnaires. In bivariate analyses, all three scales, NES, SSS, SC, were significantly associated with HAI (Table 4 & Table 5, column 1). Three multivariate analyses were then conducted. Each model contained one of the scales as well as the predictors in the original model presented in Table 3 (Table 5, column 2). Both the SSS and NES scales remained significant predictors in these models. Finally, in a model that controlled for all three of the sensation-seeking scales as well as the factors in the original model, men who were higher on the SSS scale were more likely to report recent HAI (Table 5, column 3). The three scales were significantly correlated with each other (SSS-SC: $r = .69$, SSS-NES: $r = .56$, SC-NES: $r = .48$; all $p < .001$). However, there was not a multicollinearity concern because the tolerance for the SSS, NES, and SC scales in the multivariate model were .42, .58, .43, respectively. According to Allison, when the tolerance is below .40 there might be a concern about multicollinearity (Allison, 2012). Among men who reported HAI, there was a significant inverse correlation between percent condom use and SSS score ($r = -.27, p = .03$). NES and SC was not significantly correlated with condom use (NES: $r = -.002, p = .99$; SC: $r = -.16, p = .20$).

Discussion

In this sample of low SES men, the prevalence of recent HAI was 20%. This was similar to what has been found in other studies of high-risk populations (STI clinics, substance-users) (Ibanez et al., 2010; Satterwhite et al., 2007). Given that our sample has characteristics that make it different from other samples in the literature, it is reassuring that this analysis predominately corroborates what has been found in other studies, that HAI is associated with other high-risk behaviors such as drug use, lack of condom use, and sex trading for money/drugs (Ibanez et al., 2010; Javanbakht et al., 2010; Reynolds et al., 2010). Much of the previous literature on HAI has focused on young heterosexuals. The current sample includes a wide range of ages, as well as ethnicities, and includes men of very low SES. The fact that the correlates of HAI are so stable across varying populations, lends support to the truth of these associations among high-risk populations. One factor that was bivariately significant in our data, but was not significant in the multivariate model, and, therefore, was not included in the model, was history of incarceration. This is in contrast to other findings (Javanbakht et al., 2010). The lack of association in our sample could have been due to the extremely high rates of incarceration in our sample.

Another contribution of this paper is that the analysis also examined specific drugs used in the context of sex and not just substance use in general. In multivariate analyses, cocaine and amphetamine use during sex were both significantly associated with HAI. This helps to clarify which drugs in particular may be associated with HAI instead of grouping all drugs into one summary variable. It is interesting that both drugs are stimulants. Event-level data would provide finer-grained examination of the temporality and specificity of these relationships.

In addition, we found that men who reported having a male sexual partner in the past 30 days (MSMW) were more likely to have HAI than men who only had female partners (MSW). This is also supported by other work showing that MSMW are more likely to have HAI than MSW (Foxman, Aral, & Holmes, 1998; Gorbach, Murphy, et al., 2009; Lescano et al., 2009; Zule, Bobashev, Wechsberg, Costenbader, & Coomes, 2009). The MSMW in our sample who had anal intercourse with a male partner in the past month were more likely to have recent HAI, than MSMW who had not had anal intercourse with a male partner. These men may acquire a preference for anal, compared to vaginal, intercourse, which is manifested in their sexual encounters with both men and women. However, qualitative research in this population suggests that MSMW are unlikely to have anal intercourse with a woman (Schnarrs et al., 2012). Future research may want to further explore in more detail the motivations for anal intercourse with both men and women in an MSMW population.

A major contribution of this paper is that it extends previous research by also examining the association between sensation seeking and HAI. As would be hypothesized based on previous work (Kalichman & Rompa, 1995), sensation seeking and sexual compulsivity were both associated with HAI at the bivariate level. It is not surprising that those who seek out heightened stimulation and arousal would be more likely to have recent HAI, and that those who are sexually compulsive are also more likely to have HAI. However, when potentially confounding factors are controlled for in the model, SC is no longer associated

with HAI while the two sensation seeking scales remain significant. It appears that one of the key confounders that attenuate the association between SC and HAI is the number of sexual partners. This fits in with the definition of SC, which is defined as an unwanted repetitive urge, so the sexual acts are an effort to avoid the anxiety generated by the compulsion. The sexual acts are not a result of seeking new and exciting sensations. Therefore, SC is probably more highly associated with frequency of sexual acts and not necessarily with whether or not a specific type of sexual behavior was performed at least once. The sensation seeking constructs identify people who desire new stimulation and arousal, which may be fulfilled by HAI. Finally, when all three scales are included in the same model, the one that remains significant is the sensation seeking scale that is specific to sexual stimulation and arousal. This suggests that the NES-HAI association was confounded by SSS. There might be concern about multicollinearity because of the correlation between the scales, but inspection of the tolerance scores suggests that this was not the case (Allison, 2012). Therefore, when SSS was included in the model there was no longer an independent effect from the unique variance of NES.

The association between SSS and HAI highlights the importance of the sensation seeking personality construct in helping to understand why some men engage in HAI. This supports other work that has found an association between sensation seeking and various risky behaviors, such as having concurrent partners and having sex under the influence of drugs or alcohol (Charnigo et al., 2012; Stulhofer & Bacak, 2011). Others have found a positive association between SSS and SC and unprotected anal intercourse among MSM (Groves, Parsons, & Bimbi, 2010; Kalichman, Heckman, & Kelly, 1996). However, there have been discrepant results for HAI among heterosexuals. One study among heterosexuals found that SSS was associated with number of anal sex partners, but their emphasis was on ethnicity (Nguyen et al., 2012). Another study found no correlation between HAI and SSS among heterosexual men. That study looked for a correlation with frequency of anal intercourse as opposed to whether or not anal intercourse occurred, which could account for the discrepancy in results (Gaither & Sellbom, 2003). To our knowledge, the current study is the first study to consider the association between HAI and sensation seeking among men while controlling for other potential covariates.

The fact that men higher on SSS were more likely to have recent HAI and were less likely to use condoms during HAI suggests that sensation seekers are more willing to take risks in order to achieve heightened stimulation and arousal. This result can be applied to the development of HIV-prevention interventions in an effort to improve their efficacy. One approach might be to emphasize novelty and arousal in HIV-prevention messages that target this group, as was suggested in previous work among MSM (Kalichman et al., 1996). In recent years, this type of message has become more common in interventions that target MSM, but is still uncommon in interventions that target heterosexual men.

This study has several limitations including the self-reported nature of the data, which is common to almost all sexual and drug behavior research. Self-report data can suffer from low reliability, however, in this case the behavior instrument has been found to have very good reliability and the validity of the drug use variables are also very good (Dowling-Guyer et al., 1994; Napper, Fisher, Johnson, et al., 2010; Needle et al., 1995). The

personality measures have been reported to have excellent psychometric properties and have been in widespread use (Gaither & Sellbom, 2003; Kalichman & Rompa, 1995; Latimore et al., 2007, August). The study sample consisted of low SES men who chose to obtain free HIV/STD testing at a county-funded agency. These men could be different from other parts of the population, and therefore the results may not be generalizable. However, this population does represent an important high-risk group, and it is imperative to understand their behavior in order to provide appropriate interventions. Finally, the study did not include event-level data, so we can only approach the analysis of the context in which HAI occurred in a course-grained manner. It would be beneficial in future research to collect event-level data. Then we could determine the exact associations and sequences of sex trading, drug use, and HAI. Couple studies, both qualitative and quantitative, would also better inform the research by presenting both partners' experiences.

This study demonstrates, in a racially diverse sample of low SES men, that a substantial number of them are engaging in HAI. Twenty percent reported HAI within the past month, which suggests that these men are practicing HAI with relatively high frequency. It is likely that if the time frame had been extended, then the number of men reporting HAI would have been even greater. Three months has been recommended as an optimal recall period for sexual behaviors of this nature (Napper, Fisher, Reynolds, & Johnson, 2010). These men are also engaging in other risky behavior and are rarely using condoms, which further lends support to calls for more emphasis on HAI in HIV/STI prevention interventions. This research also makes an important contribution that highlights the need to consider personality traits when trying to understand sexual behavior and when developing those interventions. More study is obviously needed to fully understand the context in which HAI occurs.

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Table 1

Demographic Characteristics of Men with Female Sex Partners who Engaged in Heterosexual Anal Intercourse (HAI) (N = 1622)

Characteristic	HAI in past month (%)		Odds ratio [95% CI]
	Yes (n=327)	No (n=1295)	
Race/ethnicity			
Non-Hispanic Black (n=740)	20	80	1.11 [0.83, 1.50]
Non-Hispanic White (n=452)	18	82	ref
Hispanic (n=325)	22	78	1.29 [0.91, 1.83]
Other (n=105)	22	78	1.25 [0.74, 2.10]
Education			
<High school (n=450)	19	81	ref
High school (n=546)	20	80	1.04 [0.76, 1.43]
>High school (n=624)	21	79	1.11 [0.82, 1.50]
Sexual Orientation			
Heterosexual (n=1421)	18	82	ref
Gay/Bisexual (n=187)	37	63	2.78 [2.00, 3.85]
Currently homeless			
No (n=929)	16	84	ref
Yes (n=674)	26	74	1.85 [1.45, 2.37]
Income – past month			
<\$500 (n=824)	21	79	ref
\$500–\$999 (n=388)	20	80	0.92 [0.68, 1.24]
>\$1,000 (n=398)	18	82	0.81 [0.59, 1.09]
Married/living with partner			
No (n=1259)	20	80	ref
Yes (n=351)	19	81	0.92 [0.69, 1.25]
History of incarceration			
No (n=327)	15	85	ref
Yes (n=1269)	21	79	1.51 [1.09, 2.10]
Age (mean (SD))	40.75 (10.81)	40.48 (12.20)	1.00 [0.99, 1.01]

Note. CI = confidence interval.

Table 2

Percentage of Men with Female Sex Partners that Reported Heterosexual Anal Intercourse (HAI) and History of Sexually Transmitted Infections (STI) (N = 1622)

Past month sexual behavior	HAI in past month (%)		Odds ratio [95% CI]
	Yes (n=327)	No (n=1295)	
Had a male sex partner			
No (n=1455)	18	82	ref
Yes (n=166)	37	63	2.68 [1.90, 3.77]
Condom use during vaginal intercourse			
Never (n=924)	21	79	ref
Inconsistent (n=283)	27	73	1.43 [1.06, 1.95]
Always (n=357)	14	86	0.63 [0.45, 0.88]
Traded sex to get money/drugs			
No (n=1473)	17	83	ref
Yes (n=149)	48	52	4.47 [3.15, 6.33]
Used money/drugs to buy sex			
No (n=1304)	17	83	ref
Yes (n=316)	34	66	2.62 [2.00, 3.45]
Used alcohol before/during sex			
No (n=783)	16	84	ref
Yes (n=828)	24	76	1.56 [1.22, 2.00]
Used cocaine before/during sex			
No (n=1548)	19	81	ref
Yes (n=64)	45	55	3.52 [2.12, 5.85]
Used crack before/during sex			
No (n=1229)	18	82	ref
Yes (n=382)	27	73	1.68 [1.29, 2.20]
Used amphetamines before/during sex			
No (n=1406)	18	82	ref
Yes (n=205)	34	66	2.35 [1.71, 3.24]
Number of partners (mean (SD))	3.23 (3.99)	1.82 (3.13)	1.15 [1.10, 1.21]
Number of times had vaginal intercourse (mean (SD))	17.03 (46.02)	9.03 (15.82)	1.02 [1.01, 1.02]
History of STI			
HIV			
No (n=1593)	20	80	ref
Yes (n=26)	19	81	0.94 [0.35, 2.51]
Herpes			
No (n=1568)	20	80	ref
Yes (n=48)	38	62	2.45 [1.35, 4.44]
Syphilis			
No (n=1531)	20	80	ref

Past month sexual behavior	HAI in past month (%)		Odds ratio [95% CI]
	Yes (n=327)	No (n=1295)	
Yes (n=86)	29	71	1.67 [1.03, 2.70]
Gonorrhea			
No (n=1294)	19	81	ref
Yes (n=325)	25	75	1.38 [1.04, 1.85]
Chlamydia			
No (n=1471)	20	80	ref
Yes (n=144)	26	74	1.42 [0.95, 2.10]

Note. CI=confidence interval; SD=standard deviation.

Table 3

Multivariate Logistic Regression Predicting Heterosexual Anal Intercourse (N=1526)

Variable	Odds ratio	95% CI
Race (ref: non-Hispanic White)		
Non-Hispanic black	0.97	0.67, 1.39
Hispanic	1.70	1.15, 2.52
Other	1.47	0.83, 2.63
Currently homeless	1.50	1.13, 2.00
Past month sex behaviors		
Traded sex to get money/drugs	2.27	1.47, 3.51
Used cocaine before/during sex	2.00	1.12, 3.57
Used money/drugs to buy sex	1.96	1.37, 2.80
Used amphetamines before/during sex	1.78	1.22, 2.59
Had a male sex partner	1.71	1.13, 2.60
Number of partners	1.05	1.01, 1.10
100% condom use during vaginal sex	0.68	0.48, 0.97
Age	1.00	0.99, 1.02
Year of interview	1.08	1.03, 1.12

Note. CI = confidence interval.

Table 4

Sensation Seeking and Sexual Compulsivity Scales by HAI Behavior (n=239)

Scale	HAI in past month (mean (SD))		t	p-value
	Yes (n=68)	No (n=171)		
Sexual sensation-seeking	2.73 (0.74)	2.26 (0.64)	-4.85	<.001
Nonsexual experience-seeking	2.43 (0.58)	2.10 (0.67)	-3.52	<.001
Sexual compulsivity	2.11 (0.71)	1.81 (0.70)	-2.98	.003

Note. HAI=heterosexual anal intercourse; SD=standard deviation.

Table 5

Logistic Regression Models Predicting Heterosexual Anal Intercourse (n=239)

Scale	OR [95% CI]	AOR [95%CI] ^a	AOR [95% CI] ^b
Sexual sensation-seeking	2.76 [1.77, 4.31]	2.27 [1.35, 3.82]	2.56 [1.22, 5.37]
Nonsexual experience-seeking	2.14 [1.37, 3.33]	1.94 [1.14, 3.29]	1.45 [0.75, 2.80]
Sexual compulsivity	1.78 [1.20, 2.63]	1.33 [0.82, 2.16]	0.63 [0.32, 1.23]

Note. OR=odds ratio; AOR=adjusted odds ratio; CI=confidence interval.

^aEach row represents a different multivariate model that controls for all the variables in Table 3.

^bThe values in this column are from 1 multivariate model controls for all three scales as well as all the variables in Table 3.