Published in final edited form as:
Arch Sex Behav. 2010 August ; 39(4): 959–967. doi:10.1007/s10508-010-9606-3.

Correlates of Heterosexual Anal Intercourse Among Substance-Using Club-Goers

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Abstract

Anal sexual intercourse represents the highest transmission risk for infection with the human immunodeficiency virus (HIV), yet much of what we know about anal sex is based on men who have sex with men (MSM). Less is known about heterosexual adults who practice anal sex, especially those who may be at risk for HIV such as substance users. The present study examined the demographic, sexual behaviors, substance use, and psychosocial correlates of recent anal intercourse among a heterosexual young adult sample of nightclub goers who also use substances. Data were drawn from an on-going natural history study of participants (*n*=597) in Miami's club scene who use club drugs, use prescription medications for non-medical reasons, and were regular attendees of nightclubs. Participants who reported anal sex (*n*=118) were more likely to be male, of moderate income, Latino, trade sex, have unprotected sex, and report victimization. Event-based and qualitative studies are needed to better understand the context in which anal sex occurs. Interventions that target heterosexual populations should include discussion about the risks of anal sex.

Keywords

Anal sex; Drug use; Heterosexual; Mental health; Sexual risk

Introduction

Anal sexual intercourse represents the highest transmission risk for infection with the human immunodeficiency virus (HIV) (Centers for Disease Control and Prevention [CDC], 2005). CDC (2005) estimates that the risk of HIV transmission is five times greater for receptive anal intercourse compared to receptive vaginal intercourse, and 1.3 times greater for insertive anal compared to insertive vaginal intercourse. Anal sex is prevalent among heterosexual populations (Gorbach et al., 2009), yet much of what we know about anal sex and HIV risk is based mainly on men who have sex with men (MSM). Little is known about the characteristics of heterosexual adults who engage in anal sex, especially specific groups of heterosexual adults who report other risk behaviors such as substance abuse (CDC, 2006; Reynolds, Latimore, & Fisher, 2008). The present study attempted to address these gaps by describing the characteristics of heterosexual young adult participants in a large natural history study of club drug use, and who also reported engaging in anal intercourse in the past 90 days.

According to the 2002 National Survey of Family Growth data, 40% of men and 35% of women report ever having anal sex (Mosher, Chandra, & Jones, 2005). Among adolescents and young adults (15–19), the prevalence of lifetime anal sex ranges from 11 to 27% (Gates & Sonenstein,

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2000; Houston, Fang, Husman, & Peralta, 2007; Ompad et al., 2006). Estimates of recent heterosexual anal intercourse are less available. The most comprehensive national data available documented past year anal sex as 9.6% of men and 8.6% of women (Laumann, Gagnon, Michael, & Michaels, 1994), with other studies finding similar rates (Reinisch, Hill, Sanders, & Ziemba-Davis, 1995; Reinisch, Sanders, Hill, & Ziemba-Davis, 1992). Most of these studies, however, have focused on general populations and are also not current.

Certain groups, such as substance users, report high rates of anal intercourse (Zule, Costenbader, Meyer, & Wechsberg, 2007). Among substance users, the prevalence of anal sex appears to be much higher, with approximately one out of three reporting recent anal sex (Gross et al., 2000; Powis, Griffiths, Gossop, & Strang, 1995). Substance users also tend to engage in HIV risk behaviors, including needle sharing, inconsistent condom use, and multiple sexual partners (Lorvick, Martinez, Gee, & Kral, 2006; McElrath, 2005). More alarming are the findings that suggest anal sex may be correlated with a range of sexual risk behaviors, including younger sexual debut, sex trading, more sexual partners, more sexually transmitted infections, and lower prevalence of condom use (Baldwin & Baldwin, 2000; Flannery, Ellingson, Votaw, & Schaefer, 2003; Gross et al., 2000; Houston et al., 2007; Karim & Ramjee, 1998; Lorvick et al., 2006; Misegades, Page-Shafer, Halperin, McFarland, & The YWS Study Investigators Group, 2001). Heterosexual adults who engage in anal sex are at high risk of HIV infection and transmission. Some HIV infections reported as heterosexually acquired were due to anal sex rather than vaginal sex (Halperin, 1999). In terms of absolute numbers, there are seven times more women than homosexual men who engage in unprotected anal sex (Halperin, 1999). One study estimated that 62% of female HIV infections were due to anal sex (Halperin, Shiboski, Palefsky, & Padian, 2002), and therefore it is important to understand the context in which anal sex may occur and contribute to heterosexual transmission of HIV.

The use of barrier protection during anal sex would reduce HIV transmission, yet studies report inconsistent and low prevalence of condom use for anal sex (Dixon, Peters, & Saul, 2003; Erickson et al., 1995). According to the HIV Testing Survey (CDC, 2004), less than 15% of heterosexual men and women report always using condoms during anal intercourse with their primary partner in the last 12 months and less than one out of three report always using condoms during anal intercourse with non-primary partners in the last 12 months.

Previous studies suggest that heterosexual, young poly-drug users are more likely than non-users to participate in recent anal intercourse, particularly users of club drugs (CDC, 2006). Miami is internationally known for its late night entertainment scene, which is attended by mainly young adults and where poly drug use is common. Miami's club drug-using scene is primarily located in an extensive network of large and small nightclubs that are of a few recognized general types: large dance clubs, smaller liquor-serving clubs with small dance floors, and after-hours bars that do not serve alcohol. South Beach, the lower 20 blocks of the city of Miami Beach, remains a center of nightclub activity in the county. Closing hours for nightclubs vary by municipality, but the city of Miami, just across the causeway from Miami Beach, has created a 24-h nightclub district that has attracted much of the club and prescription drug-using community. Miami is also a high HIV/AIDS prevalence and incidence community (Florida Department of Health, 2006). Therefore, the goal of this study was to examine the potential correlates of anal intercourse among a heterosexual young adult sample of poly-drug using club goers in South Florida.

Method

Participants

Data were drawn from an on-going natural history study of 597 participants in Miami's club scene who used club drugs and also used prescription medications for non-medical reasons.

The major goals of the project were to examine the onset and progression of drug abuse, to assess changes in health and social consequences of this drug abuse over time, and to examine the mechanisms of access to prescription drugs (e.g., street sales, internet, trading with friends, doctor shopping, theft) among the sampled substance users. Participants were interviewed at baseline and at three successive six-month intervals; data reported here were from baseline interviews only.

To be eligible, participants had to be 18–49 years old, and (1) have used one or more club drugs at least three times during the past 90 days; and (2) have used one or more psychoactive prescription medications three times or more in the past 90 days for non-medical reasons; and (3) report attending recognized nightclubs at least twice per month. Club drugs, as defined in the study, included powder cocaine, ecstasy, GHB, ketamine and LSD. The 597 participants described in this report entered the study between May 2006 and May 2008. On average, participants reported a median number of 6 clubs attended in the last month.

The present study focused only on young substance using adults who reported engaging in heterosexual anal sex. Of the 597 participants, 33 male participants reported having sex with men. Subsequent analyses were based on the remaining sample (N=564). Participants were mostly male (57%), Latino (54%), had at least a high school diploma (64%), and reported working either full-time (36%) or part-time (24%). Mean age was 25.68 years. Twenty-five percent (n=138) of participants reported anal sex within the past year, with comparable prevalence of recent anal sex (within the past 90 days) also being reported (21%; n=118). Data analyses were based on recent anal sex, that is, anal sex in the last 90 days.

Procedure

Participants were recruited through respondent-driven sampling (RDS; Heckathorn, 1997). This method is similar to snowball or chain referral sampling with two notable exceptions: (1) study participants were paid an incentive for each eligible respondent they recruited who completed the baseline interview, and (2) the person making the referral did not disclose the identity of the person recruited to the researchers. In this study, five coupons were given to each study participant, with the understanding that they would earn $50 for the recruitment of each additional eligible respondent. A coupon identifying the recruiter was transmitted from the recruiter to the potential recruit, who then “validated” the incentive payment to the recruiter by presenting the coupon when he or she appeared at the field office to be interviewed. Each respondent/recruiter was limited to five coupons in order to prevent a few recruiters with large social networks from biasing the overall sample toward those with similar demographic and drug using profiles (homophily) and in order to lengthen the recruitment chains (Heckathorn, 1997). Theoretically, respondent-driven sampling has been shown to quickly reduce sources of respondent bias (such as ethnic and sexual identity, gender, and drug of choice) as successive branches or waves of respondent contacts were enrolled and then solicited for additional contacts (Heckathorn, 1997; Heckathorn, Semaan, Broadhead, & Hughes, 2002).

The study was conducted from the South Florida branch of the University of Delaware's Center for Drug and Alcohol Studies. The project was housed in a field office strategically located to facilitate access to a diverse population of club and prescription drug users. This site was central to the hubs of nightclub activity and was easily reachable by public transportation, automobile, bicycle or on foot by participants from throughout the county. Private offices were used for all interviews. All field staff completed the requirements for National Institutes of Health web-based certification for protection of human subjects. Human subject protections protocols were approved by the University of Delaware's Institutional Review Board.

At intake, the nature of the project was explained by the research staff, including its voluntary and confidential nature and the monetary stipends. Each client was screened for eligibility,

followed by informed consent, and interview and locator data collection. Interview data were collected using laptop computer-assisted personal interviews. Clients received HIV education literature and condoms and a $50 stipend upon completion of these baseline activities. Baseline screening and interview procedures lasted about 2 h.

Measures

The Global Appraisal of Individual Needs (GAIN; Dennis, Titus, White, Unsicker, & Hodgkins, 2002) has eight core sections (background, substance use, physical health, risk behaviors, mental health, environment, legal, and vocational), with each containing questions on the recency of problems, breadth of symptoms, and recent prevalence in days or times. Cronbach alphas for all scales and subscales were over .7 (more detail on scale development can be found at http://www.chestnut.org/LI/gain/index.html). For this study, we examined items from the background, sexual risk behaviors, substance abuse, and mental health sections. Specific sections and items are presented below.

Demographics—Age, gender, ethnicity/race, income, education, homelessness history, and employment status were assessed. For ethnicity, first participants were asked whether they were Latino or not; followed by race, which was assessed with the categories of Black/African-American, White, Asian, and other. African-Americans were used as the reference group for subsequent analyses. Participants were also asked whether or not they had a current primary sexual partner.

Sexual Behaviors—Some sexual risk items were dichotomous (yes/no) and assessed various sexual risk behaviors in the past year. Item examples were: “In the past 12 months, have you had sex while high on alcohol/drugs?”“In the past 12 months, have you had sex with a MSM?”“In the past 12 months, have you had two or more sexual partners?” Participants were also asked to report frequency of vaginal sexual activity and condom use for the past 90 days. The condom use variable was later recoded as“never,” “inconsistent,” or “always.” Participants were also asked, “When was the last time, if ever, a doctor or nurse told you that you had the following STI's: Chlamydia, gonorrhea, syphilis, HPV, herpes, any other STI, and HIV.”Responses were coded as a binary variable: never diagnosed (0) and diagnosed (1).

Drug Use Behaviors—Substance use was assessed by asking participants how many times a particular substance was used before or during sex in the last 90 days. The drug use variable was recoded as a dichotomous variable (no/yes). Substances included a comprehensive list of both illicit drugs and prescription-type drugs such as the following: alcohol, marijuana, ecstasy, methamphetamine, cocaine, crack, heroin, prescription painkillers (hydrocodone, OxyContin, oxycodone), and sedatives (Valium, Klonopin, Xanax).

Psychosocial Correlates—The mental health component of the GAIN instrument includes subscales which assess different aspects of mental health within the past year: somatic symptoms, depressive symptoms, anxiety symptoms, and traumatic stress. Somatic symptoms was assessed by 4 items (“During the past 12 months, have you had significant problems with headaches, faintness, dizziness, tingling, numbness, sweating or hot or cold spells?”or“During the past 12 months, have you had significant problems with sleep trouble, such as bad dreams, sleeping restlessly or falling asleep during the day?”). Depressive symptoms were assessed by 9 items (“During the past 12 months, have you had significant problems with feeling very trapped, lonely, sad, blue, depressed, or hopeless about the future?”). Anxiety symptoms were assessed by 12 items (“During the past 12 months, have you had significant problems with feeling very anxious, nervous, tense, scared, panicked or like something bad was going to happen?”). Traumatic stress was assessed by 13 items (“During the past 12 months, have the following situations happened to you: when something reminds you of the past, you became

very distressed and upset?"). The somatic, depressive, anxiety and traumatic stress symptoms measure are subscales of the general mental distress scale of the GAIN. General victimization scale was assessed by 15 items ("Has anyone ever done any of the following things to you: attacked you with a gun, knife, stick, bottle, or other weapon?"). All scale items used a dichotomous response format (yes/no). Total scores on each of the subscales were additive.

Recent Anal Sexual Intercourse—The outcome variable was a single item, "How many times have you had anal sex in the last 90 days?" Responses were recoded as a dichotomous variable (no/yes).

Results

Demographics

Table 1 reports the demographic differences between those who reported recent anal sex versus those who did not. Of the eight demographic variables examined, four variables were significantly related to recent anal sex. Cross-tabulations show that women were less likely to report recent anal sex and Latino participants were more likely to report anal sex than African-American. Participants with moderate income ($19,000–34,999) were over twice as likely to report recent anal sex as those who reported lower income. Lastly, those with a primary sexual partner were more likely to report recent anal sex than those who did not.

Sexual Risk Behaviors

Participants reported that they had vaginal sex an average of 38 times, and anal sex an average of 2.5 times in the last 90 days. Condom use was low for both vaginal and anal sex in the last 90 days. Thirty-six percent of participants who had vaginal sex in the last 90 days never used condoms and 33% used them inconsistently. Approximately half of those who reported anal sex in the last 90 days never used condoms, with another 9% using them inconsistently.

Table 2 reports the association of recent anal sex with sexual risk behaviors. Of the 10 variables examined, six variables were significantly related to recent anal sex. As shown in Table 2, condom use during recent vaginal sex was related to recent anal sex. Specifically, participants who reported recent anal sex were less likely to use condoms during vaginal sex during the past 90 days than those who did not and those who had a primary sexual partner were more likely to engage in recent anal sex. In addition, participants who reported recent anal sex were also more likely to trade sex to get money or drugs, use drugs or money to buy sex, have two or more sex partners, have unprotected sex in the past year, and use alcohol/drugs to make sex last longer in the past year. Finally, the prevalence of STI's among this sample included the following: Chlamydia (8%), gonorrhea (6%), syphilis (2%), HPV (4%), herpes (3%), any other STI's (4%), and HIV (1%).

Drug Use Behaviors

Table 2 also shows the substances used before or during sex in the last 90 days that correlated with recent anal sex. Of the six variables examined, three variables were significantly related to recent anal sex. Only the significant associations between substance use and recent anal sex are presented in the table. Recent anal sex was significantly related to alcohol, ecstasy, and cocaine use before or during sex in the last 90 days.

Psychosocial Correlates

In Table 3, psychosocial correlates of recent anal sex were examined. Of the five variables, four were significantly related to recent anal sex. Participants who reported recent anal sex also

reported more depressive symptoms, anxiety symptoms, and traumatic stress symptoms in the past 12 months, as well as a history of general victimization.

Lastly, as shown in Table 4, a multivariate logistic regression analysis was conducted which included recent anal sex regressed on most significant bivariate predictors. We wanted to streamline the multivariate analyses in order to ensure enough power to determine a medium effect size. Therefore, the significant substance abuse correlates in the bivariate analyses were not included because other predictor variables also measured substance use (e.g., had sex while high, trading sex to get drugs, and used alcohol/drugs to make sex last longer). Also, mental health subscales used in the bivariate analyses (e.g., somatic, depressive, anxiety, and traumatic symptoms subscales) were combined to form the general mental distress scale, which is part of the standardized GAIN assessment tool. Therefore, the predictor variables in the multivariate analyses included the following: demographics (gender, race, income, and primary sexual partner), sexual risk behaviors (had sex while high, trading sex to get money/drugs, used drugs/money to buy sex, multiple partners, unprotected sex in past year, used alcohol/drugs to make sex last longer), and psychosocial correlates (general mental distress, and general victimization). Of the 12 variables that were included in the multivariate analyses, seven variables continued to be significant predictors of recent anal sex: gender, race, income, having a primary sex partner, trading sex for money/drugs in past 12 months, having unprotected sex in the past 12 months, and a history of victimization.

Discussion

The present study examined the demographic, sexual risk, drug use, and psychosocial correlates of recent anal sex among a heterosexual sample of substance using club goers. The prevalence of recent anal sex (21%), although higher than general population estimates in previous studies (Laumann et al., 1994), was comparable to those found in other drug using populations (Strang, Powis, Griffiths, & Gossop, 1994). Few studies have examined recent anal sex within a heterosexual population, and fewer still include psychosocial correlates using multivariate analyses.

Our findings suggest that there were important demographic correlates of anal sex including gender, race/ethnicity, income, and having a current primary sexual partner. Previous studies have also found demographic characteristics, such as race/ethnicity and income, related to anal sex (Misegades et al., 2001). For example, the present study found that Latinos were more likely to report recent anal sex than African-American participants. Previous studies have found high prevalence of anal sex among Latinos in the U.S. (Laumann et al., 1994; Quadagno, Sly, Harrison, Eberstein, & Soler, 1998) as well as samples from other Latin American countries (Dixon et al., 2003; Halperin, 1999). Reasons for this ethnic difference are unclear; however, anecdotal information suggests that anal sex may be high in the Latino community because of the perceived increased sexual pleasure for the male partner (Marin & Gomez, 1997). Latina women report engaging in anal sex because of their male partner's requests or demands (Davila & Brackley, 1999). The findings that gender, race/ethnicity, and partner status seem to be important correlates of recent anal sex, suggest that future research may benefit from examining relationship-level factors such as sexual communication and decision-making. Qualitative as well as longitudinal studies in particular may be beneficial in determining the interaction between socio-cultural and intra-personal factors involved in anal sex. For Latinos living in the United States, this may also include the association between acculturation (i.e., the process of adapting to the U.S.) and sexual risk behaviors. Future studies should examine cultural level factors such as traditional gender role norms and acculturation.

At the bivariate level, alcohol, ecstasy, and cocaine use during sex were significant correlates of recent anal sex. Previous studies have found that cocaine use is linked to sexual risk behaviors

in diverse populations (Parry et al., 2008; Sumnall, Beynon, Conchie, Riley, & Cole, 2007; Zule et al., 2007), and can promote a greater willingness to sexually experiment (Sumnall et al., 2007). However, in the present study, we assessed cocaine use before and during any sexual encounter in the last 90 days, not just anal sex. We were unable to determine whether cocaine use plays a role in facilitating anal sex specifically or simply risky behaviors in general. Further research, including event-based designs, could shed light on which substances may be more likely linked to anal sex. In addition to event-based studies, qualitative studies would be beneficial to determine what situational factors, decision-making processes, specific drug use, and psychosocial correlates may predict anal intercourse.

Our findings were congruent with the current literature, which suggest that those who engage in anal sex also engage in other sexual risk behaviors that may lead to sexually transmitted infections including HIV (Baldwin & Baldwin, 2000; Erickson et al., 1995). Those who reported engaging in anal sex were more likely to also report other behaviors that put them at risk for HIV infection: lower prevalence of condom use with recent vaginal sex, trading sex to get money/drugs, using drugs/money to buy sex, having multiple partners, having unprotected sex, and using alcohol/drugs to make sex last longer. However, once these predictors were entered into a multivariate model, only those who had traded sex for drugs or money, and had unprotected sex in the past year, were more likely to report recent anal sex. This finding suggests that those who engage in heterosexual anal sex are also engaging in multiple risk behaviors and are an important group to target for prevention intervention. Previous studies suggest that those who engage in anal intercourse are higher on certain personality characteristics such as erotophilia and sensation-seeking (Baldwin & Baldwin, 2000; Zuckerman, 1979). Sensation seeking and impulsivity are known to be related to sexual risk behaviors in other populations (Kalichman, Heckman, & Kelly, 1996). In addition, our qualitative work with this population suggests that those who engage in anal sex imply that this was the next step in their sexual lives and that they engaged in anal sex due in large part to add more novel stimulation. Future research should examine the association between sensation seeking and anal sex among heterosexual populations.

On the bivariate level, a substantial number of our psychosocial measures correlated with recent anal sex. Those who reported engaging in anal sex also reported more depressive and anxiety symptoms, traumatic stress, and general victimization. However, only victimization remained significant at the multivariate level. In general, research on the association between anal sex and psychosocial factors is scant. Previous studies suggest a correlation between anal sex and forced sex or sexual coercion (Ferguson & Morris, 2003; Stadler, Delany, & Mntambo, 2007), which may lead to conflict and feelings of victimization. It is unclear what role a history of victimization may play in sexual decision-making. Future studies are needed to shed light on the association between victimization, different types of abuse, and the decision to engage in anal sex.

The findings from the present study have several research and practical implications. It is one of the few studies that focus on recent anal sex among a heterosexual adult sample. It is also a sample of young substance users at risk for HIV. As mentioned earlier, in order to better understand the context in which anal sex occurs, future research must study the risks of anal sex at the event level and qualitatively. In terms of practical implications, HIV prevention and interventions need to include information specific to heterosexual anal sex such as the higher risk of infection.

The present study has the usual limitations that accompany a study that is cross-sectional and based on self-report. Although reliance on self-report behavioral measures is somewhat controversial, a variety of controlled studies have documented that when questioned about drug use and sexual activities in a non-threatening environment, drug users provide reliable

information and are truthful to the best of their recollection (Needle, McCubbin, & Lorence, 1985; Sobell & Sobell, 1990; Stephens, 1972). We would suggest that these findings, combined with assurances of confidentiality and the use of specially trained staff in the present study, served to mitigate the potential deficiencies in reliance on self-report data. This study also has some not able strengths. First, it is one of the few studies to explore anal sex practices among a heterosexual population. Third, the sample is a young substance using sample at risk for HIV/STI. Fourth, the use of respondent driven sampling reduces the sampling biases inherent in recruiting a hard to reach population: club-going substance users. Lastly, although causality cannot be determined from cross-sectional data, this study contributes to our knowledge of the psychosocial correlates of recent anal sex.

In conclusion, anal sexual intercourse continues to be a social taboo and a highly stigmatized behavior, yet it appears to be relatively common among young adult heterosexual poly drug users. HIV prevention efforts need to address the particular risk that anal sex represents for heterosexual populations. There is evidence that those who engage in anal sex also report other sexual risk behaviors. Interventions need to include a discussion on the specific risks of anal sex. Moreover, our study suggests that there may be important psychosocial correlates to anal sex that are not well-understood such as a history of victimization. Future studies need to delve deeper into the practice of anal sex through event-based studies, qualitative and longitudinal studies in order to understand the context and processes that lead to anal sex.

Acknowledgments

This research was supported by Grant Number R01DA019048 from the National Institute on Drug Abuse (NIDA). NIDA had no further role in the study design; in the collection, analysis and interpretation of the data; in the writing of the report; or in the decision to submit the paper for publication.

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Table 1

Characteristics of substance-using heterosexual adults who engaged in recent anal sex (*N*=564)

Variables	Had recent anal sex (%)[a]		Odds ratio (95% [CI])	*p*
	Yes (*n*=118)	No (*n*=441)		
Gender			0.60 [0.39, 0.93]	.020
Male (*n*=321; ref)	24	76		
Female (*n*=235)	16	84		
Race				
African-American (*n*=124; ref)	13	87		
Hispanic (*n*=300)	26	74	2.37 [1.32, 4.26]	.004
White (*n*=116)	18	82	1.49 [0.74, 3.02]	ns
Other (*n*=17)	18	82	1.45 [0.37, 5.60]	ns
Income				
$0–18,999 (*n*=323; ref)	17	83		
$19,000–34,999 (*n*=139)	31	69	2.23 [1.40, 3.55]	.001
$35,000+ (*n*=97)	22	78	1.38 [0.78, 2.42]	ns
Education				
<High school (*n*=125; ref)	25	75		
High school (*n*=232)	21	79	0.79 [0.47, 1.32]	ns
Some college+(*n*=201)	19	81	0.73 [0.43, 1.25]	ns
Ever homeless in last 90 days			1.12 [0.58, 2.15]	ns
No (*n*=502; ref)	21	79		
Yes (*n*=57)	23	77		
Employment status				
Full-time (*n*=199; ref)	24	76		
Part-time (*n*=132)	21	79	0.87 [0.51, 1.48]	ns
Unemployed (*n*=92)	21	79	0.84 [0.46, 1.54]	ns
In School (*n*=49)	14	86	0.54 [0.23, 1.28]	ns
Other (*n*=87; e.g., military)	20	80	0.79 [0.42, 1.46]	ns
	M (*SD*)	*M* (*SD*)	*F* test	
Age	25.14 (7.14)	25.83 (7.85)	0.73	.392

ref reference

[a]Data missing for 5 participants

Table 2

Percentage of sample that reported recent anal sex and other sexual risk behaviors (*N*=564)

Variables	Had recent anal sex (%)[a]		OR [CI]	*p*
	Yes (*n*=118)	No (*n*=441)		
Has current primary sexual partner			1.69 [1.02, 2.81]	.042
No (*n*=145; ref)	15	85		
Yes (*n*=414)	23	77		
Used condom with recent vaginal sex				
Always (*n*=157; ref)	15	85		
Inconsistent (*n*=166)	24	76	2.18 [1.27, 3.75]	.049
Never (*n*=184)	28	72	1.76 [1.00, 3.09]	.005
Used needles to use drugs			0.50 [0.15, 1.68]	ns
No (*n*=36; ref)	25	75		
Yes (*n*=35)	14	86		
Had sex while high on alcohol/drugs			3.52 [1.07, 11.62]	.028
No (*n*=40; ref)	8	92		
Yes (*n*=518)	22	78		
Had sex with IDU			1.19 [0.46, 3.04]	ns
No (*n*=533; ref)	21	79		
Yes (*n*=25)	24	76		
Had sex with MSM			1.62 [0.61, 4.32]	ns
No (*n*=536; ref)	21	79		
Yes (*n*=20)	30	70		
Traded sex to get money/drugs			2.82 [1.31, 6.08]	.006
No (*n*=529; ref)	20	80		
Yes (*n*=29)	41	59		
Used drugs/money to buy sex			2.27 [1.05, 4.92]	.033
No (*n*=527; ref)	20	80		
Yes (*n*=30)	37	63		
Had 2+sex partners			1.62 [1.04, 2.51]	.032
No (*n*=208; ref)	84	16		
Yes (*n*=350)	24	76		
Had unprotected sex in last year			2.48 [1.46, 4.22]	.001
No (*n*=161; ref)	12	88		
Yes (*n*=397)	25	75		
Used alcohol/drugs to make sex last			1.58 [1.04, 2.39]	.032
No (*n*=368; ref)	81	19		
Yes (*n*=190)	26	74		
Used alcohol before/during sex			2.08 [1.09, 3.95]	.024
No (*n*=94; ref)	13	87		
Yes (*n*=455)	23	77		
Used ecstasy before/during sex			1.85 [1.11, 3.08]	.018

Variables	Had recent anal sex (%)[a]		OR [CI]	*p*
	Yes (*n*=118)	No (*n*=441)		
No (*n*=156; ref)	15	85		
Yes (*n*=310)	24	76		
Used cocaine before/during sex			1.85 [1.19, 2.86]	.006
No (*n*=235; ref)	17	83		
Yes (*n*=268)	73	27		

ref reference; *IDU* intravenous drug user; *MSM* men who have sex with men

[a]Data missing for 5 participants

Table 3

Bivariate analyses: recent anal intercourse regressed on psychosocial symptoms (*N*=564)

Psychosocial symptoms	B	[95% CI]	*p*
Somatic symptoms	.05	[−0.11, 0.43]	ns
Depressive symptoms	.09	[0.08, 1.25]	.027
Anxiety/fear symptoms	.10	[0.14, 1.34]	.016
Traumatic stress	.09	[0.07, 1.57]	.033
General victimization scale	.17	[0.60, 1.76]	.001

Table 4

Multivariate analyses: recent anal sex regressed on demographic, sexual risk, drug use, and psychosocial correlates significant at the bivariate level (*N*=564)

Variables	B	OR [95% CI]	*p*
Gender	−.62	0.54 [0.33, 0.89]	.020
Race			
African-American (ref)			
Hispanic	.94	2.55 [1.34, 4.87]	.005
Income			
$0–18,999 (ref)			
$19,000–34,999	.70	2.02 [1.22, 3.34]	.006
Current primary partner	.70	2.02 [1.15, 3.55]	.014
Traded sex in past year	1.16	3.18 [1.16, 8.72]	.025
Had unprotected sex in past year	.68	1.97 [1.13, 3.46]	.018
Victimization	.11	1.12 [1.02, 1.22]	.015