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Correlates of Trading Sex for Methamphetamine in a Sample of HIV-Negative Heterosexual Methamphetamine Users

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Abstract

While many studies have examined correlates of trading sex for money, few have examined factors associated with exclusive trading of sex for drugs. We identified sociodemographic, behavioral, and psychological correlates of trading sex for methamphetamine in a sample of HIV-negative heterosexual men and women who were enrolled in a sexual risk reduction intervention in San Diego, California. Of 342 participants, 26% overall (21% of males and 31% of females) reported trading sex for methamphetamine in the past two months. Multiple logistic regression analysis revealed that recently trading sex for methamphetamine was independently associated with being female, homeless, bingeing on methamphetamine, sexual victimization in the past two months, engaging in anal sex 24 or more times in the past two months, and higher sexual compulsivity scores. Effective interventions for this high-risk population should consider gender-focused counseling for sexual abuse, motivational enhancement therapy, social-cognitive skills training, as well as enhanced access and utilization of social services, including drug treatment.

Keywords

sex trading; methamphetamine; heterosexual; sexual risk behavior

Trading sex for drugs or money has been associated with high-risk behaviors, including multiple partners, risky partners, and unprotected vaginal and anal intercourse (Surratt & Inciardi 2004; Logan, Cole & Luekefeld 2003; Hansen, Lopez-Iftikhar & [Alegría] 2002). The majority of studies examining correlates of sex trading have focused on the exchange of sex for money. Little is known about individuals who trade sex for the sole purpose of obtaining drugs; however, Kwiatkowski and Booth (2000) suggest that they may have a different social, psychological and behavioral profile than those who trade sex for money or exchange sex for either money or drugs. Studies that focus solely on factors associated with trading sex for drugs are few in number. In two earlier studies, women who traded sex for crack cocaine reported higher levels of HIV risk behaviors compared to their counterparts who traded sex for money only or both drugs and money (Kwiatkowski & Booth 2000; Inciardi 1995). Some researchers have postulated that these findings can be explained by the addictive nature of the crack cocaine as well as the social contexts associated with buying

and selling this drug (Maher & Daly 1996; DeHovitz et al. 1994; Edlin et al. 1992). Research on the preference for trading sex for drugs rather than for money has produced mixed findings. One study reported that women who use crack cocaine prefer trading sex for drugs rather than for money (Ratner 1993). Another study found that female users preferred to trade sex for money while male users preferred to exchange drugs for sex (Logan, Cole & Leukefeld 2003).

Existing literature documents a range of factors associated with sex trading behavior. Several studies have reported an association between engaging in anal sex and trading sex for money or drugs (Reynolds, Latimore & Fisher 2008; Bogart et al. 2005; Reitmeijer et al. 1998). Persons who trade sex for money or drugs also report higher rates of experiencing violence and sexual victimization as adults (Church et al. 2001; El-Bassel et al. 2001; Inciardi & Surratt 2001) as well as having been sexually abused as children (Arriola et al. 2005; Holmes, Foa & Sammel 2005; Simpson & Miller 2002; El-Bassel et al. 2001; Parillo et al. 2001; Hillis et al. 2000). Binge users of drugs, particularly those who binge on crack cocaine, are more likely to report lifetime trading of sex for drugs or money compared to nonbinge users (Miller et al. 2006). Injection drug use has also been associated with trading sex in studies of gay men who have sex with men (MSM) and heterosexually-identified MSM (Kral et al. 2005; O'Connell et al. 2004; Reitmeijer et al. 1998). Sociodemographic factors that have been identified as correlates of sex trading behavior for drugs or money include being female, African American, unemployed, and homeless (Zule et al. 2007; Risser et al. 2006; Logan & Leukefeld 2000; Sterk, Elifson & German 2000). Psychological variables related to sex trading include anxiety and depression symptoms (Golder & Logan 2007; Risser et al. 2006), sexual compulsivity (Kalichman & Cain 2004; Benotsch, Kalichman & Pinkerton 2001), and lack of assertiveness in turning down drugs (Semple et al. 2010).

Methamphetamine is a potent stimulant that is used widely throughout many regions of the United States, Australia and Southeast Asia (Degenhardt et al. 2010), and is associated with a variety of HIV/STI risk behaviors as well as sex trading among women and men (Watanabe-Galloway et al. 2009; Corsi & Booth 2008; Mimiaga et al. 2008). One recent study found that 43% of a sample of methamphetamine-using men who have sex with men (MSM) in San Diego, California reported trading sex for methamphetamine in the past two months (Semple et al. 2010). Trading sex for methamphetamine was associated with unprotected anal intercourse and seeking out risky partners, suggesting that those who exchange sex for methamphetamine are a high-risk population. To date, the prevalence and correlates of trading sex for methamphetamine have not been investigated among heterosexually-identified methamphetamine-using men and women. The identification of factors uniquely associated with trading sex for methamphetamine in this population is potentially important for the tailoring of HIV/STI prevention strategies and drug treatment programs (Edwards, Halpern & Wechsberg 2006).

This study used an integrative social, psychological and cognitive-behavioral framework (Catania, Kegeles & Coates 1990; Bandura 1986; Beck et al. 1979) to identify correlates of trading sex for methamphetamine in a sample of HIV-negative, heterosexually-identified methamphetamine users. We hypothesized that trading sex for methamphetamine would be associated with greater social disadvantage, higher-risk methamphetamine use patterns, reduced psychological well-being, and greater sexual risk behaviors.

METHODS

Sample Selection

These analyses used baseline data from a sample of 342 HIV-negative, heterosexually-identified men and women who were enrolled in a sexual risk reduction intervention that was designed to reduce sexual risk practices, depressive symptoms, and methamphetamine use in the target population (Semple et al. 2009). [Data for these analyses were collected between December 2006 and November 2009.] The protocol used motivational interviewing concepts, social cognitive strategies, and cognitive behavioral therapy to promote positive behavior change in the three targeted areas (Miller & Rollnick 1991; Bandura 1986; Beck et al. 1979). Eligible participants were at least 18 years of age, male or female, self-identified as heterosexual, and reported having unprotected vaginal or anal sex with at least one opposite-sex partner in the previous two months. Participants also had to report having used methamphetamine at least twice during the past two months and at least once in the past 30 days. Several exclusion criteria were applied: not sexually active or always used condoms with all partners in the past two months; unprotected sex only with a spouse or steady partner (i.e., monogamous relationship); trying to get pregnant or trying to get partner pregnant; psychiatric diagnosis with current psychotic symptoms or suicidal ideation; and currently enrolled in a formal outpatient or residential drug treatment program. Because of the mood-regulation component of the intervention, individuals who scored three or less on the seven-item Beck Depression Inventory-Fast Screen (BDI-SF) for medical patients were excluded (Beck, Steer & Brown 2000). All participants provided written informed consent. [The research protocol was reviewed and approved by UCSD's Human Research Protections Program (Project #061330).]

Procedures

All participants completed a baseline assessment, which was administered through computer-assisted self-interviewing technology (audio-CASI; Turner et al. 1998), and covered a range of topics that included sociodemographic characteristics, drug and alcohol use, sexual risk behaviors, social cognitive factors, attitudes, intentions, social norms, mood, social support, self-esteem, sexual abuse, and family relations. Participants were compensated \$30 for the baseline assessment.

Recruitment

Participants were recruited for the intervention study in numerous ways. Outreach workers placed posters in neighborhoods known to have high concentrations of methamphetamine users, and weekly advertisements were placed in local magazines and newspapers. Additional recruitment was achieved through referrals from case managers and staff at social service and public health agencies. Participants were also referred to the project through enrolled participants as well as by their family and friends.

Measures

Trading sex—Sex trading behavior was determined by the following question: “In the past two months, did you trade sex for methamphetamine?” A dichotomous response category was used (1 = traded sex for methamphetamine in the past two months; 0 = did not trade sex for methamphetamine in the past two months). Trading sex for money was asked about in a separate question. None of the participants in these analyses reported trading sex for money in the past two months.

Behavioral factors—Number of anal and vaginal sex acts was determined by asking participants how many times during the previous two months they engaged in receptive or

insertive anal and vaginal intercourse with four categories of partner type (i.e., spouse or live-in, steady, casual, anonymous). Summary variables were calculated and then recoded as dichotomous variables using a cutpoint of one standard deviation above the mean for anal sex (24 or more anal sex acts in the past two months = 1, less than 24 = 0), and vaginal sex (66 or more vaginal sex acts in the past two months = 1, less than 66 = 0).

Coerced sex before the age of 18 years was assessed using the following questions: “Have you ever been forced or coerced to have sex against your will?” (yes = 1, no = 0). If yes, “The first time this happened, how old were you?” Forced or coerced sex in the past two months was asked in relation to each partner type: “In the past two months, did your (spouse or live-in partner) sexually abuse you (rape, forced sexual advances or nonconsensual sexual acts)?” Response categories ranged from 1 (never) to 4 (very often). A summary variable was computed and recoded as a dichotomous variable (any sexual abuse in the past two months = 1, no sexual abuse in the past two months = 0). Binge use of methamphetamine was measured by a single question: “Are you a binge user? By binge user, we mean that you keep using large quantities of methamphetamine for a period of time, until you run out or just physically can’t do it anymore” (yes = 1, no = 0). Injection use of methamphetamine in the past two months was coded as a dichotomous variable (yes = 1, no = 0). Number of grams of methamphetamine used in the past 30 days was recoded as a dichotomous variable using a cutpoint of one standard deviation above the mean (≥ 30 grams of methamphetamine = 1, < 30 grams of methamphetamine = 0).

Sociodemographic factors—Age was treated as a continuous variable. The following variables were coded dichotomously: gender (female = 1, male = 0), annual income (less than \$10,000 = 1, \$10,000 or more = 0), living arrangement (homeless = 1, other = 0), ethnicity (ethnic minority = 1, Caucasian = 0), education (high school or less = 1, some college or more = 0), and marital status (married = 1, not married = 0).

Psychological factors—*Depressive symptoms* were assessed using the 21-item Beck Depression Inventory (BDI-II; Beck, Steer & Brown 1996). Each item has four graded statements that are ordered (0–3) to show increasing depressive symptoms. Summary scores range from 0 to 63. Five items from the Drug Item subscale of the Assertion Questionnaire in Drug Use (Callner & Ross 1976) were used to assess *assertiveness in turning down drugs* (e.g., “I have no trouble telling friends not to bring drugs over to my house”). Response categories range from 1 (strongly disagree) to 4 (strongly agree). The scale has good test-retest reliability and adequate convergent and discriminant validity (Callner & Ross 1976). *Sexual compulsivity* was measured using a ten-item scale developed by Kalichman and colleagues (1994). Scale items reflect statements about sexually compulsive behavior, sexual preoccupations, and sexually intrusive thoughts (e.g., “My sexual appetite has gotten in the way of my relationships”) (Kalichman & Rompa 2001). Responses range from 1 (“not at all like me”) to 4 (“very much like me”).

Statistical Analysis

The distribution of each variable was examined prior to analyses. Number of grams of methamphetamine used in the previous 30 days, total number of anal sex acts, and total number of vaginal sex acts yielded positively skewed distributions. To manage skewness in these distributions, each variable was dichotomized using a cutpoint of one standard deviation above the mean. Trading sex for methamphetamine in the past two months was defined as the dependent variable. T-tests and contingency table analysis were used to examine group differences in continuous and categorical variables, respectively. Univariate and multivariate logistic regressions were performed to identify factors associated with trading sex for methamphetamine in the past two months. Based on our guiding framework

and review of the sex trade literature, the following variables were examined in univariate analyses: gender, living arrangement, injection of methamphetamine, binge use of methamphetamine, forced or coerced sex in the past two months, forced or coerced sex before the age of 18 years, number of vaginal and anal sex acts in the past two months, sexual compulsivity, assertiveness in turning down drugs, and Beck Depression scores. Factors that were significant in the univariate logistic regressions were examined in a multivariate logistic model. The limited number of males who reported trading sex for methamphetamine ($n = 34$) precluded a significant examination of gender differences in the factors considered in these analyses.

RESULTS

Sample Description

Participants were predominantly female (51.5%), [minority (i.e., non-Caucasian, 66.7%)], never married (52.3%), living with another adult in a nonsexual relationship or living alone (50.6%), unemployed (76.6%), [with a high school diploma or equivalent (40.4%) or a two-year degree or some college (30.4%)], and an income of less than \$10,000 per year (68.1%). The average age was 37.4 years ($SD = 9.8$, median 38.0, range 18–68). Participants who traded sex for methamphetamine were significantly more likely to be female and homeless (see Table 1).

Sexual and Drug Use Behaviors

Twenty-six percent of the sample reported trading sex for methamphetamine in the past two months. On average, participants had been using methamphetamine for 16 years ($SD = 8.8$, median = 16.0), used methamphetamine 14 days in the past 30 ($SD = 9.3$, median = 14.5) and had consumed 11.7 grams of methamphetamine in the past 30 days ($SD = 18.7$, median = 3.5). Fifty-one percent reported binge use of methamphetamine in the past two months, and 22% injected methamphetamine during this time frame. The mean number of unprotected sex acts in the past two months was 72.2 ($SD = 89.5$, median = 40.5).

Approximately 30% of the sample reported a history of forced or coerced sex before the age of 18. Among women, perpetrators were most likely to be a male relative (43%), a stranger (38%), or a boyfriend or steady partner (15%). Among men, perpetrators were most likely to be a stranger (33%), a male relative (26%), a female relative (15%), or a girlfriend or steady partner (15%).

Gender differences in variables of interest were also examined. Women were significantly more likely than men to earn less than \$10,000 per year (73.9% versus 62.0%, respectively, $\chi^2 = 5.49$, $p = .013$), more likely to be homeless (17.0% versus 7.2%, $\chi^2 = 7.64$, $p = .004$), and to have higher Beck Depression scores (25.5 versus 19.1, $t = 4.75$, $p = .000$). A significantly larger percentage of women reported forced or coerced sex before the age of 18 years compared to men (40.9% versus 16.3%, $\chi^2 = 25.2$, $p = .000$). Men reported significantly more acts of anal sex in the past two months compared to women (8.1 versus 4.0, $t = 2.1$, $p = 0.04$). Men and women did not differ in their scores for sexual compulsivity or assertiveness in turning down drugs. In addition, there were no gender differences in the percentage of participants who reported being a binge user or an injection user of methamphetamine. Lastly, men and women did not differ in the percentage who reported forced or coerced sex in the past two months. For both sexes, forced, coerced or nonconsensual sex was reported most often with an anonymous partner (8.3% for women, 8.2% for men).

Factors Associated with Trading Sex for Methamphetamine

As shown in Table 2, compared with those who did not trade sex for methamphetamine in the past two months, those who traded sex for methamphetamine were more likely to be female (OR = 1.77, 95% CI 1.08–2.89), homeless (OR = 3.83, 95% CI 1.97–7.43), report binge use of methamphetamine (OR = 2.74, 95% CI 1.64–4.58), use greater amounts of methamphetamine in a 30-day period (OR = 3.06, 95% CI 1.31–7.15), report 24 or more anal sex acts in the past two months (OR = 3.04, 95% CI 1.27–7.29), report experiencing forced or coerced sex in the past two months (OR = 3.19, 95% CI 1.45–6.99), score higher on depressive symptoms (OR = 1.04, 95% CI 1.02–1.06) and sexual compulsivity (OR = 2.85, 95% CI 1.91–4.27), and score lower on assertiveness in turning down drugs (OR = 0.53, 95% CI 0.34–0.84).

Factors Independently Associated with Trading Sex for Methamphetamine

Correlates identified as significant in the univariate analyses were examined in a multivariate logistic model. A test of the full model with nine predictors against a constant-only model was statistically significant ($\chi^2 = 59.3$, 9 df, $p < .001$, -2 log likelihood = 268.8). Six factors were independently associated with trading sex for methamphetamine. As shown in Table 3, participants who traded sex for methamphetamine in the past two months were more likely to be female (adjusted OR [AOR] = 1.95), to be homeless (AOR = 4.18), to describe themselves as a binge user of methamphetamine (AOR = 2.33), to report having experienced coerced or forced sex in the past two months (AOR = 3.35), to report 24 or more acts of anal intercourse in the past two months (AOR = 4.79), and to score higher on a measure of sexual compulsivity (AOR = 1.96). Variables that were not significant in the multivariate model included assertiveness in turning down drugs, number of grams of methamphetamine used in the past 30 days, and Beck depression scores.

DISCUSSION

In this study of factors associated with trading sex exclusively for methamphetamine, we found several social, psychological, and behavioral correlates among our sample of HIV-negative, heterosexual men and women. As expected, women were more likely than men to have traded sex for methamphetamine. This finding is consistent with previous literature on gender differences in sex trading behavior (Wright et al. 2007; Zule et al. 2007). As others have suggested, economic factors are powerful determinants of sexual risk behavior for women (Campbell et al. 2009). Many impoverished women, particularly those who are drug dependent, rely upon men for economic support and for drugs. Psychological issues also come into play: drug-dependent women have high rates of depression and anxiety, which can interfere with sexual decision-making and lead to male dominance in sexual relationships (Plotzker, Metzger & Holmes 2007; Sterk, Theall & Elifson 2006; Nyamathi, Bennett & Leake 1995). The issue of sex trading for drugs is best addressed in women-focused HIV prevention and intervention programs that incorporate training in assertive communication, sexual negotiation skills, enhanced self-efficacy, mood management, and gender empowerment (Wechsberg et al. 2004).

Homelessness was another correlate of trading sex for methamphetamine. This suggests that homeless methamphetamine users are a particularly vulnerable population who may be trading sex for methamphetamine as a way to satisfy their cravings for the drug (Tyler et al. 2007). Homeless drug users lack access to money, employment opportunities, and housing. Many suffer from mental health conditions that sometimes interfere with their access to drug treatment and other social services (e.g., Tucker et al. 2011). In an effort to prevent and intervene on sex trading behavior among homeless methamphetamine users, community services should be expanded to include sexual risk reduction interventions or counseling

programs that address the risks associated with trading sex for methamphetamine. Long-term planning for homeless methamphetamine users should also include job training and employment support, drug and alcohol treatment, assistance in accessing housing, and primary health care, as well as crisis support and referral (Dickson-Gomez et al. 2007; Wright & Tompkins 2006; Hwang et al. 2005).

Trading sex for methamphetamine was also associated with recent forced or coerced sex. This finding is consistent with studies of runaway youth, many of whom report being forced or coerced by sexual partners into high-risk sexual behaviors through the use of alcohol and other drugs (Strike et al. 2001). For some participants, particularly those who had been victims of childhood sexual abuse (CSA), forced or coerced sex in adulthood may seem a normal aspect of sexual relationships. Sexual risk reduction interventions may need to address the role of sexual history, including CSA, in the context of sex-for-methamphetamine exchanges. Also, cravings for methamphetamine are a likely link between sex trading and recent sexual victimization; however, the drugs may be used as a method for coping with the psychological distress associated with ongoing sexual abuse, particularly if it occurs in primary relationships. Further research is needed to enhance our understanding of the factors that link sex-for-methamphetamine exchanges and adult sexual victimization. From a clinical perspective, health care professionals should be trained to recognize symptoms of adult sexual victimization, particularly among methamphetamine users (Arias 2004: 471). Individuals who are victims of forced or coerced sex and exchange sex for methamphetamine might also benefit from assertiveness and communication training that teaches them how to respond to sex partners who take advantage of their drug dependence.

Participants who reported 24 or more acts of anal sex in the past two months were five times more likely to have traded sex for methamphetamine compared to their counterparts who had fewer anal sex acts in the same period. This finding is consistent with previous research that has documented a relationship between anal sex and sex trading (Mackesy-Amiti, McKirnan & Ouellet 2010; Reynolds, Latimore & Fisher 2008; Bogart et al. 2005). Mackesy-Amiti and colleagues (2010) reported that anal sex was not associated with emotional or social closeness in a sample of female drug users, lending support to the notion that high levels of anal sex, particularly in the context of methamphetamine use, can be motivated by disinhibition, impulsivity, and sexually compulsive urges (Kalichman & Cain 2004; Semple, Patterson & Grant 2002; Benotsch, Kalichman & Kelly 1999). Individuals who engage in anal sex in exchange for methamphetamine may be satisfying their own sexual desires or responding to the demands of their sexual partners who control the drug (Maynard et al. 2009). The latter would suggest an inequity in the voluntary nature of anal sexual encounters and raise concerns regarding the level of risk involved. In a study of female drug users, condom use during anal sex was rare and was not related to partner type (Mackesy-Amiti, McKirnan & Ouellet 2010). More research is needed to enhance our understanding of the motivations underlying anal sex encounters among heterosexual methamphetamine users as well as the interpersonal or relationship dynamics that influence sex-for-drug exchanges. Also, HIV/STI prevention interventions for heterosexual methamphetamine users need to address elevated levels of risk associated with high-frequency anal sex in the context of trading sex for drugs.

Binge users of methamphetamine were two times more likely than nonbinge users to have traded sex for drugs. Elevated levels of stimulation and arousal associated with binge use of methamphetamine could result in impaired judgments regarding levels of risk in sexual situations (Molitor et al. 1999). Alternatively, trading sex for methamphetamine may simply create the opportunity for heavy and prolonged use of the drug with sex partners who participate in the exchange. Regardless of directionality, the relationship between binge use

and sex-for-drug exchanges suggests the need for treatment programs that explore the social and psychological processes that underlie binge use (e.g., triggers, motivations, meaning) and trading sex for methamphetamine. Motivational Enhancement Therapy (MET), which promotes personal insights and understanding of behavior in the context of personal values and social contexts, may be an effective treatment option (Miller et al. 1992).

Higher sexual compulsivity scores were also associated with trading sex for methamphetamine. Kalichman and Cain (2004) and others contend that sexually compulsive individuals have difficulty controlling sexual urges. The stimulant quality of methamphetamine may exacerbate existing impulse control disorders, such that individuals who have sexually compulsive tendencies have even more difficulty than usual in saying no to drugs and high-risk sex. Trading sex for methamphetamine may be motivated by a propensity or drive to experience pleasure from drug use or sexual encounters without regard for risky consequences. This perspective would suggest that managing sex-for-drug trading behavior might involve strategies used to treat obsessive compulsive disorders, including cognitive behavioral therapy and pharmacological treatments (e.g., serotonin-enhancing drugs).

In summary, we identified a number of risk factors associated with sex-for-drug exchanges among heterosexual methamphetamine users. These findings can be used by researchers and service providers to develop and tailor HIV/STI interventions to match the needs and characteristics of individuals who trade sex for methamphetamine. These data should be interpreted in light of study limitations. The volunteer nature of our sample and specific eligibility criteria could have affected the representativeness of our sample and the generalizability of the findings. Moreover, our measurement was focused on a narrow timeframe of two months. This approach could have resulted in a misclassification of participants who might have reported sex trading if a broader time frame had been used. Our sample did not include individuals who traded sex for money. A stronger analysis of sex trading behavior would involve a three-group design (i.e., exchange of sex for drugs only, money only, both money and drugs). This study also used retrospective and self-report measures of behavior, which raises concerns about possible reporting biases and inaccurate recall. Because of the small sizes in the gender-by-trading-sex grouping, gender interaction terms were not examined in this study. Lastly, the cross-sectional study design makes it impossible to determine the direction of causality between sex-for-drug exchanges and the correlates examined. Future studies should seek to identify protective factors as well as risk factors associated with trading sex for methamphetamine to inform the development of programs that are effective in changing HIV/STI risk behaviors in this vulnerable subpopulation.

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TABLE 1

Sample Characteristics of Heterosexually-Identified Methamphetamine-Using Men and Women

Variable	Total Sample (N = 342) N (%) or Mean (SD)	Traded Sex for Meth (N = 89) N (%) or Mean (SD)	Did not Trade Sex for Meth (N = 253) N (%) or Mean (SD)
Gender [*]			
Female	176 (51.5%)	55 (61.8%)	121 (47.8%)
Male	166 (48.5%)	34 (38.2%)	132 (52.2%)
Ethnicity			
Caucasian	114 (33.3%)	26 (29.2%)	88 (34.8%)
African American	108 (31.6%)	33 (37.1%)	75 (29.6%)
Latino	64 (18.7%)	16 (18.0%)	48 (19.0%)
Other	56 (16.4%)	14 (15.7%)	42 (16.6%)
Education			
Less than High School	88 (25.7%)	25 (28.1%)	63 (24.9%)
High School or Equivalent	138 (40.4%)	33 (37.1%)	105 (41.5%)
Two-Year Degree or Some College	104 (30.4%)	26 (29.2%)	78 (30.8%)
Four-Year College Degree	9 (2.6%)	4 (4.5%)	5 (2.0%)
Graduate or Advanced Degree	3 (0.9%)	1 (1.1%)	2 (0.8%)
Marital Status			
Never Married	179 (52.3%)	41 (46.1%)	138 (54.5%)
Married	27 (7.9%)	7 (7.9%)	20 (7.9%)
Separated	46 (13.5%)	14 (15.7%)	32 (12.6%)
Divorced	84 (24.6%)	26 (29.2%)	58 (22.9%)
Widowed	6 (1.8%)	1 (1.1%)	5 (2.0%)
Living Arrangement ^{***}			
With Spouse	25 (7.3%)	7 (7.9%)	18 (7.1%)
With Steady Partner	50 (14.6%)	12 (13.5%)	38 (15.0%)
With Other Adults	116 (33.9%)	25 (28.1%)	91 (36.0%)
Alone	57 (16.7%)	15 (16.9%)	42 (16.6%)
Homeless	42 (12.3%)	22 (24.7%)	20 (7.9%)
Other	52 (15.2%)	8 (9.0%)	44 (17.4%)
Income			
Less than \$10,000	233 (68.1%)	66 (74.2%)	167 (66.0%)
\$10,000–\$19,999	65 (19.0%)	15 (16.9%)	50 (19.8%)
\$20,000–\$29,999	23 (6.7%)	4 (4.5%)	19 (7.5%)
\$30,000–\$39,999	10 (2.9%)	1 (1.1%)	9 (3.6%)
\$40,000–\$49,999	8 (2.3%)	3 (3.4%)	5 (2.0%)
\$50,000 or More	3 (0.9%)	0 (0.0%)	3 (1.2%)
Employed	80 (23.4%)	18 (20.2%)	62 (24.5%)
Age in Years	37.4 (9.8)	38.3 (9.7)	37.1 (9.9)

Variable	Total Sample (N = 342) N (%) or Mean (SD)	Traded Sex for Meth (N = 89) N (%) or Mean (SD)	Did not Trade Sex for Meth (N = 253) N (%) or Mean (SD)
Drug Use			
Duration of Methamphetamine Use in Years	16.1 (8.8)	16.2 (8.4)	16.1 (8.9)
Number Grams of Methamphetamine Used in Past 30 Days ^{***}	11.7 (18.7)	17.8 (26.1)	9.7 (15.1)
Number of Days Used Methamphetamine in Past 30 Days ^{a***}	13.8 (9.3) ^b	16.8 (9.1) ^b	12.8 (9.2) ^b
Injected Methamphetamine in Past Two Months	74 (21.6%)	24 (27.0%)	50 (19.8%)
Binge Use of Methamphetamine ^{***}	173 (50.6%)	61 (68.5%)	112 (44.3%)
Psychosocial			
Beck Depression ^{***}	22.4 (12.7)	26.9 (12.0)	20.8 (12.6)
Assertiveness in Turning Down Drugs ^{**}	2.46 (.56)	2.31 (.54)	2.51 (.56)
Sexual Compulsivity ^{***}	2.02 (.66)	2.34 (.73)	1.91 (.59)
Sexual Behavior			
Number of Vaginal Sex Acts in Past Two Months ^a	31.8 (34.2) ^b	36.8 (38.5) ^b	30.0 (32.5) ^b
Number of Anal Sex Acts in Past Two Months ^{a**}	6.0 (18.4) ^b	10.6 (24.9) ^b	4.4 (15.0) ^b
History of Abuse			
Forced to Have Sex In Past Two Months ^{**}	28 (8.2%)	14 (15.7%)	14 (5.5%)
Forced Sex Before the Age of 18 Years	99 (28.9%)	27 (30.3%)	72 (28.5%)

*
 $p < 0.05$

**
 $p < 0.01$

 $p < 0.001$

^a Statistical test performed on log 10 transformed variable

^b Values reported for untransformed variable

TABLE 2

Factors Associated with Trading Sex for Methamphetamine in a Sample of HIV-Negative, Heterosexually-Identified Men and Women (N = 342)

Variable	Univariate Odds Ratio	95% Confidence Interval
Age (Per Year Increase)	1.01	0.99–1.04
Gender (Female Versus Male)	1.77	1.08–2.89
Ethnicity (Minority Versus White)	1.36	0.81–2.30
Marital Status (Married Versus Not Married)	1.00	0.41–2.44
Education (High School or Less Versus More Than High School)	0.95	0.57–1.57
Income (<\$10,000 Per Year Versus \$10,000 or More Per Year)	1.48	0.86–2.54
Living Arrangement (Homeless Versus Other)	3.83	1.97–7.43
Beck Depression Score (Per Unit Increase)	1.04	1.02–1.06
Assertiveness in Turning Down Drugs (Per Unit Increase)	0.53	0.34–0.84
Sexual Compulsivity (Per Unit Increase)	2.85	1.91–4.27
Number of Anal Sex Acts in Past Two Months (High Versus Low)	3.04	1.27–7.29
Number of Vaginal Sex Acts in Past Two Months (High Versus Low)	1.20	0.57–2.55
Forced or Coerced Sex in the Past Two Months	3.19	1.45–6.99
Forced or Coerced Sex Before the Age of 18 Years	1.10	0.65–1.86
Binge Use of Methamphetamine in Past Two Months	2.74	1.64–4.58
Injection Use of Drugs in Past Two Months	1.50	0.86–2.63
Number of Grams of Methamphetamine Used in Past 30 Days (High Versus Low)	3.06	1.31–7.15

TABLE 3

Factors Independently Associated with Trading Sex for Methamphetamine in a Sample of HIV-Negative, Heterosexually-Identified Men and Women (N = 333)*

Variable	Adjusted Odds Ratio	95% Confidence Interval
Gender (Female Versus Male)	1.95	1.03–3.72
Living Arrangement (Homeless Versus Other)	4.18	1.87–9.37
Binge User of Methamphetamine	2.33	1.25–4.37
Assertiveness at Turning Down Drugs (Per Unit Increase)	0.90	0.51–1.56
Beck Depression Score (Per Unit Increase)	1.01	0.98–1.04
Sexual Compulsivity (Per Unit Increase)	1.96	1.17–3.28
Forced or Coerced Sex in Past Two Months	3.35	1.17–9.60
Number of Anal Sex Acts in Past Two Months (24 or More Acts Versus Less Than 24 Acts)	4.79	1.61–14.3
Number of Grams of Methamphetamine Used in Past 30 Days (30 or More Versus Less Than 30)	1.64	0.60–4.48

* There were nine cases of missing data.