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Social and Behavioral Characteristics of HIV-positive MSM Who Trade Sex for Methamphetamine

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Abstract

Background—Previous research among drug-using men who have sex with men (MSM) indicates that trading sex for methamphetamine may be common.

Objectives—This study identified background characteristics, substance use variables, contextual factors, and sexual risk behaviors associated with trading sex for methamphetamine in a sample of HIV-positive MSM. Baseline data were gathered from 155 participants who were enrolled in a sexual risk-reduction intervention. Logistic regression was used to compare MSM who traded sex for methamphetamine with men who did not.

Results—Forty-three percent of the sample reported trading sex for methamphetamine in the past 2 months. Trading sex for methamphetamine was associated with being a binge user, homelessness, having an income of less than \$20,000 per year, being less assertive at turning down drugs, engaging in more anal sex without a condom, and seeking out risky sex partners when high on methamphetamine.

Conclusions and Scientific Significance—These data suggest that the trading of sex for methamphetamine may be a primary source of new HIV infections within and outside of the MSM community, necessitating targeted interventions with this vulnerable subgroup.

Keywords

methamphetamine; trading sex; men who have sex with men; sexual risk behavior

1. BACKGROUND

Trading sex has been associated with a variety of negative health outcomes, including elevated risk for HIV and other sexually transmitted infections (STIs), suicide attempts, and

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Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

sexual and physical victimization (1-4). Although the majority of studies among sex workers focus exclusively on women, a growing body of literature has examined sex trading among men who have sex with men (MSM). Compared to other MSM, those who trade sex have higher HIV prevalence and are more likely to engage in unprotected sex (5-8). Newman et al. (7) reported that MSM who engaged in sex trading were less likely to be educated or to self-identify as gay and were more likely to be homeless. Alcohol use has also been linked to sex trading in samples of MSM in the Netherlands (9).

Injection drug use has also been closely associated with trading sex among MSM. In a Canadian study, MSM who injected drugs (MSM/injection drug user (IDU)) were more likely to be HIV-positive, economically disadvantaged, and engaged in trading sex for money or drugs. Seventy-two percent of MSM/IDU traded sex in the previous year compared to only 11% among noninjecting MSM (10). Kral et al. (11) reported that self-identified heterosexual MSM/IDUs in San Francisco, CA, USA, were more likely to be homeless and trade sex for money or drugs compared to MSM who self-identified as gay. In another study, sex trading was associated with younger age, self-identification as bisexual, injection drug use, a larger number of sexual partners, and more anal sex with partners of both sexes (8).

The majority of studies examining sex workers tend to collapse money, drugs, food, and shelter as considerations for which sex is traded. In California, the term “strawberry” has been used to describe a person who exchanges sex for drugs (7). Ouellet et al. (12) suggest that the primary motivation among those trading sex for drugs is to mitigate drug withdrawal symptoms and cravings rather than to meet financial need; however, others have noted that trading sex for drugs is associated with economic disadvantage, poverty, and homelessness (5). Baseman et al. (1) proposed differentiating between trading sex for money versus for drugs, arguing that sex exchanged for drugs may be associated with a greater tendency for unprotected sex and elevated risk for HIV/STIs. Data from our group and others suggest that female sex workers who inject drugs may be more likely to acquiesce to demands for unprotected sex because of their addiction or their relationship with a steady male partner who also injects (13,14), which could help to explain their higher rates of HIV and STI prevalence in many settings.

Although both men and women trade sex for drugs, as do individuals with different sexual orientations and ethnic backgrounds (5,15), this type of exchange has been closely associated with the use of stimulants, particularly crack, rather than opiates (5). In a Houston-based study, use of crack and powder cocaine among males was associated with selling sex. In another study of individuals who used crack cocaine or injected drugs, those who traded sex for drugs had higher rates of syphilis and HIV compared to their counterparts who had not traded sex (16). In another sample of 1055 men and women, Elwood et al. (5) found crack cocaine use, homelessness, and unemployment to be independently associated with trading sex, regardless of gender or race. Similarly, in a study of 802 multi-substance users, trading sex for money or drugs was associated with high rates of cocaine use, STIs, and self-reported HIV infection (17).

Despite the growing use of methamphetamine in the United States and other countries, few studies have examined sex work in the context of methamphetamine use. In an early study of 1392 out-of-treatment IDUs, Molitor et al. (18) reported that male IDUs who had ever used methamphetamine were significantly more likely to have traded sex for money or drugs than were their counterparts who had no history of methamphetamine use. To our knowledge, no studies have examined risk factors associated with trading sex for methamphetamine among HIV-positive MSM, who represent an important link in the spread of HIV within the broader MSM community. To develop effective interventions for this

population, it is critical to identify personal, social, and behavioral factors associated with trading sex for methamphetamine. We examined risk factors for sex trading in a sample of HIV-positive MSM who reported trading sex solely for methamphetamine. Based on a comprehensive review of the literature, we hypothesized that selected background characteristics (e.g., ethnic minority status, homelessness, low education), substance use variables (e.g., binge use of methamphetamine, more use of other illicit drugs, less assertiveness in turning down drugs), contextual factors (e.g., reports of having sex in a public venue, using methamphetamine with a stranger or dealer), and sexual risk variables (e.g., reports of having sex for hours and hours, reports of having more anal sex without a condom) would be associated with trading sex for methamphetamine.

2. METHODS

2.1. Sample Selection

These analyses used baseline data from a sample of 155 men who were enrolled in a study of the long-term efficacy of a sexual risk reduction intervention for HIV-positive, methamphetamine-using MSM. The protocol entails five behavioral change counseling sessions and eight behavioral maintenance group sessions that use motivational interviewing (19), social cognitive strategies (20), and cognitive behavioral therapy (21) to reduce high-risk sexual practices and maintain treatment effects. Eligible participants were male, at least 18 years of age, and reported having unprotected anal sex with at least one male partner during the previous 2 months. Participants also reported using methamphetamine at least twice during the past 2 months and at least once during the past 30 days. These latter criteria were intended to avoid the enrollment of one-time users of methamphetamine.

2.2. Measures

2.2.1. Trading Sex—Trading sex for drugs was ascertained through a single question, “In the past two months, did you trade sex for methamphetamine?” We also asked participants “In the past two months, did you trade something other than sex for methamphetamine? Please specify.” Those who reported trading something other than sex for methamphetamine (e.g., material goods) were excluded from the present analysis ($n = 16$). The sex-trading group was dichotomized (0 = did not trade sex for methamphetamine in the past 2 months, 1 = traded sex for methamphetamine at least once in the past 2 months). Men who did not trade sex for methamphetamine either paid money for the drug or were given some without anything in exchange. No participants in either group reported trading sex for money in the past 2 months. Men who traded methamphetamine for sex or money (i.e., engaged in “dealer” behavior) were included in the study. The majority of these individuals ($n = 17/26$) also reported trading sex for methamphetamine in the past 2 months.

2.2.2. Substance Use Variables—Methamphetamine use was measured as the number of grams of methamphetamine consumed in the past 30 days. Alcohol use was measured by one item from the Alcohol Use Disorders Identification Test (AUDIT) (22-24) (“How often do you have a drink containing alcohol?”). Frequency of alcohol consumption was coded 0 (never) to 4 (4 or more times a week). Responses were recoded to create a dichotomous variable (1 = used alcohol, 0 = did not use alcohol). Participants were also presented with a list of 13 illicit drugs and asked how often they had used each during the past 30 days. The list included marijuana or hashish, powder cocaine, crack cocaine, amyl or butylnitrates (poppers), ecstasy, hallucinogens, heroin, Special K (ketamine), gamma hydroxybutyrate acid (GHB), steroids (obtained illegally), inhalants, heroin and cocaine mixed together (speedball), heroin and methamphetamine used together (Mexican speedball), and other. Frequency of use was rated on a seven-point scale ranging from 0 (never) to 6 (everyday)

and recoded (1 = yes, 0 = no). Recoded items were added to create a summary variable representing the number of illicit drugs used in the past 30 days.

Binge use of methamphetamine was assessed with a single item, “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 any-more.” Responses were coded 1 = yes, 0 = no. Injection use of methamphetamine in the past 2 months was represented by a dichotomous variable (1 = yes, 0 = no).

Five items from the Assertion Questionnaire in Drug Use (25) were used to assess the participant’s ability to turn down drugs in social situations. Sample items include “I have no trouble telling friends not to bring drugs over to my house”; “When it comes to drugs, I have a hard time turning them down, even when I really want to.” Responses were coded on a 4-point scale ranging from 1 (strongly disagree) to 4 (strongly agree). A mean score was computed, with higher scores representing higher assertiveness ratings. One item pertaining to the use of drugs on a hospital ward was deemed irrelevant to this study population and was eliminated from the original six-item subscale.

2.2.3. Contextual Factors—Participants responded to two questions regarding the types of venue where they had sex while high on methamphetamine. The first was, “During the past 2 months, when you were high on methamphetamine, did you have sex in a commercial venue, such as a bathhouse, adult bookstore, after-hours club, or adult theatre?” The second question asked the same thing about sex in a public venue (e.g., park, public restroom or street corner, beach). A dichotomous response category was used for each item (1 = yes, no = 0). Participants were also asked whether they used methamphetamine with any one of five categories of individuals in the past 2 months: friend, sexual partner, family member, dealer, and stranger (e.g., “During the past two months did you do meth with a family member?”). A sixth item asked whether the participant did methamphetamine alone during this time frame. Responses were recorded dichotomously (1 = yes, 0 = no).

2.2.4. Sexual Risk Behaviors—Participants were asked to what extent they agreed or disagreed with five statements that described sexual behaviors associated with methamphetamine use. “When I’m high on meth: I have more anal sex without a condom”; “I seek out risky sexual partners (e.g., anonymous partners, prostitutes)”; “I have sex for hours and hours”; “I go to places where I know that I can get sex”; “I have sex until my genitals are raw, sore, or bleeding.” Response categories ranged from 1 (strongly disagree) to 4 (strongly agree). To manage skewness in item distributions, each item was recoded to create five dichotomously scored variables. Items reflecting agreement were recoded 1 (yes); items reflecting disagreement were recoded 0 (no).

2.3. Statistical Analysis

We compared subjects who reported trading sex for methamphetamine in the previous 2 months to those who did not. Skewness in the number of grams of methamphetamine used in the past 30 days necessitated a log 10 transformation. Analyses to address our research hypotheses involved two steps. In the first, four separate logistic regressions were performed to identify variables to be entered into the final logistic regression model. The four initial regressions considered background characteristics, substance use variables, contextual factors, and sexual risk behaviors, respectively. In the second step, variables that were significant at the $p < .05$ level in each of the first four regression equations were included in a final logistic regression model.

3. RESULTS

3.1. Sample Description

By design, all 155 participants were men who reported high-risk sex with at least one male partner in the past 2 months. No participants reported engaging in sex work or trading sex for money in the past 2 months. Participants were predominantly Caucasian (61.9%), never married (85.2%), living with another adult in a nonsexual relationship or living alone (53.6%), unemployed (80.0%), with a high school diploma or 2-year college degree (72.9%), an income of less than \$20,000 per year (83.9%), and an average age of 39.4 years ($SD = 8.2$, median = 40.0). Demographic variables are shown in Table 1. Forty-three percent of the sample ($n = 67$) reported trading sex for methamphetamine in the past 2 months. Nine of these individuals also reported trading sex for materials goods (e.g., jewelry, electronics, clothing).

3.1.1. What Factors Are Associated with Trading Sex for Methamphetamine?

—In the first logistic regression, background characteristics were examined in relation to trading sex. The model with six predictors was statistically significant (model $\chi^2 = 15.46$, $df = 6$, $p = .017$, Nagelkerke $R^2 = .127$). HIV-positive MSM who reported being homeless had almost 5 times the odds of trading sex for methamphetamine compared to those who reported other living arrangements (odds ratio (OR) = 4.68; 95% confidence interval (CI): 1.63, 13.50; $B = 1.54$). Moreover, MSM who reported an income of less than \$20,000 per year had thrice the odds of trading sex for methamphetamine compared to men who had an income of more than \$20,000 (OR = 3.26; 95% CI: 1.13, 9.38; $B = 1.18$). Age, ethnicity, marital status, and education were not associated with trading sex for methamphetamine.

In the second logistic regression, eight substance use variables were examined in relation to trading sex. The model with eight predictors was statistically significant (model $\chi^2 = 26.25$, $df = 8$, $p = .001$; Nagelkerke $R^2 = .217$). MSM who binged on methamphetamine had more than twice the odds of trading sex in the past 2 months compared to nonbinge users (OR = 2.62; 95% CI = 1.22, 5.60; $B = .962$). Similarly, injectors of methamphetamine had twice the odds of trading sex compared to noninjectors (OR = 2.30, 95% CI: 1.05, 5.03; $B = .832$). MSM who traded sex also scored lower on a measure of assertiveness in turning down drugs. For every unit increase in assertiveness, the odds of being in the traded sex group decreased by 22% (OR = .773; 95% CI: .661, .904; $B = -.258$). Amount of methamphetamine used in the past 30 days, frequency of methamphetamine use, number of years used, frequency of alcohol use, and number of illicit drugs used in the past 30 days were not associated with trading sex for methamphetamine.

In a third logistic regression, contextual factors were examined in relation to trading sex. The seven-variable model was statistically significant (model $\chi^2 = 17.42$, $df = 7$, $p = .015$, Nagelkerke $R^2 = .143$). Participants who had sex in a commercial venue in the past 2 months had twice the odds of trading sex for methamphetamine (OR = 2.12; 95% CI: 1.05, 4.26; $B = .751$). Also, participants who reported using methamphetamine with a stranger in the past 2 months had almost thrice the odds of trading sex for methamphetamine (OR = 2.61; 95% CI: 1.23, 5.51; $B = .958$). Reports of sex in a public venue and having used methamphetamine alone or with family, friends, and sexual partners were not associated with trading sex for methamphetamine.

In a fourth regression, sexual risk behaviors were examined in relation to sex trading. The model with five predictors was statistically significant (model $\chi^2 = 27.99$, $df = 5$, $p = .001$, Nagelkerke $R^2 = .223$). MSM who reported having more anal sex without a condom when high on methamphetamine had four times the odds of trading sex compared to men who do not have more unprotected anal sex when high (OR = 4.0; 95% CI: 1.53, 10.45; $B = 1.39$).

Similarly, men who reported that they seek out risky partners when high on methamphetamine had approximately two and one-half times the odds of trading sex for this drug (OR = 2.44; 95% CI: 1.03, 5.80; $B = .892$). Having marathon sex, going to places where getting sex is a certainty, and having sex until genitals are raw and bleeding were not associated with trading sex for methamphetamine.

The nine variables that were associated with trading sex for methamphetamine in the above regressions were considered in a final logistic regression equation. Six variables remained significantly associated with trading sex (Table 2). Being homeless, having an income of less than \$20,000, being a binge user of methamphetamine, lacking assertiveness in turning down drugs, and having more anal sex without a condom and seeking out risky partners when high on methamphetamine were factors associated with trading sex in exchange for methamphetamine.

4. CONCLUSION

This study contributes to the existing literature on trading sex for drugs by focusing on the risk behaviors of HIV-positive, methamphetamine-using MSM, who have not previously been studied. Forty-three percent of our sample reported recently trading sex for methamphetamine. Although the men who we studied did not self-identify as sex workers, they appeared to represent a highly vulnerable subgroup that is in need of targeted prevention efforts. Because of their HIV-positive serostatus, this group is at high risk for transmitting HIV to individuals with whom they trade sex. They also place themselves at high risk for acquiring new STIs and more virulent strains of HIV from their sex trading partners.

In support of earlier research, homelessness and economic disadvantage were strongly associated with trading sex for methamphetamine. Tyler et al. (26) proposed that individuals turn to trading sex because they have no other way to acquire the drug that they are craving (26). In this subgroup, trading sex for methamphetamine may be a stronger indicator of addiction severity than it is of the desire for sexual activity. In one study, trading sex was associated with use of crack cocaine, even though crack cocaine users reported reduced desire for sex after using the drug (27). Accordingly, behavioral interventions for sex-trading MSM may need to have a dual focus on managing their drug use to avoid the desperation associated with withdrawal as well as on proposing strategies to reduce sexual risk behaviors. The present research also suggests that economic disadvantage should be considered a point of intervention among individuals who trade sex for methamphetamine. This might be accomplished most effectively by developing sexual risk reduction interventions that are integrated with community services that address drug and alcohol use, homelessness, unemployment, HIV seropositivity, and psychological health issues (28). Ethnographic studies of the social and economic contexts of high-risk sexual behavior among HIV-positive MSM who trade sex may be key to this process. Enhanced understanding of the role demands, interpersonal expectations and behaviors, transaction costs, and social norms that shape and influence sex for methamphetamine exchanges could be instrumental in the development of effective behavioral interventions for this vulnerable population.

A unique finding was that lack of assertiveness in turning down drugs was associated with trading sex for methamphetamine. As suggested by Tyler et al. (26), individuals may be coerced into having unsafe sex to gain access to their drug of choice. In a sample of street-involved young adults, participants reported that partners could be manipulated or coerced into having sex through the use of drugs and alcohol (29). Similarly, sexual partners may exploit the emotional and economic vulnerability of methamphetamine users by

manipulating, coercing, or forcing them into high-risk behaviors (30). In this study, we did not ask participants to report the characteristics of individuals with whom they traded sex for methamphetamine. However, a higher percentage of MSM who traded sex for methamphetamine reported using it with a dealer or stranger compared to men who did not trade sex. In such cases, individuals who find themselves unable to turn down an offer of drugs may similarly be less likely to negotiate condom use. The implications are that individuals need to be prepared how to respond to those who take advantage of their economic need or dependence on methamphetamine. A first step would be to help substance-dependent individuals identify high-risk situations where sexual partners are likely to take advantage of them by offering drugs. A second step would involve teaching individuals how to manage or respond to propositions and sexual coercion in the context of methamphetamine use. In the intervention, we use a skill-building approach to communication, whereby the counselor teaches a step-by-step process for assertive communication in the context of safer sex negotiations (31).

Binge use of methamphetamine was also associated with trading sex for drugs. This finding is consistent with previous research that has shown a relationship between binge use of crack cocaine and trading sex (32,33). Harzke et al. (32) reported that binge use of crack cocaine appears to be intertwined with homelessness and trading sex for drugs. Miller et al. (33) reported a similar association between binge injection drug use and trading sex for drugs. A similar pattern may exist for methamphetamine users. Homelessness may be associated with more opportunities to binge with sex partners who are willing to exchange methamphetamine for sex. It is also plausible that the stimulating and arousing effects of methamphetamine are exacerbated during heavy binge use, resulting in impaired judgment regarding the negative consequences of risky sex (18). More research is needed to understand the link between binge use of methamphetamine and sex trading so that effective interventions can be developed to meet the needs of HIV-positive binge users of methamphetamine.

Trading sex for methamphetamine was also associated with engaging in higher levels of unprotected anal sex and seeking out risky sex partners. These behaviors suggest that the trading of sex for methamphetamine may be a primary source of new HIV infections within and outside of the MSM community. Delivering safer sex messages to HIV-positive men who participate in trading sex for drugs may help to decrease the number of new HIV infections. HIV intervention strategies should include assessing high-risk situations, identifying triggers of risky behavior, and managing urges and cravings for methamphetamine. Protocols should also take into account the diversity of sexual situations (i.e., partner types and serostatuses, contexts of sex) to identify the level of risk posed to sexual partners. It might also be effective to target for intervention the men who offer methamphetamine in exchange for sex because they are likely to have more power to insist on safer sex practices. Finally, trading sex for methamphetamine should be addressed in the context of substance-use treatment programs (e.g., cognitive behavioral therapies, self-help, or 12-step programs). Cessation or reduction in the use of methamphetamine is likely to result in a decrease or termination of this high-risk behavior.

This research has several limitations that warrant discussion. Our convenience sample of MSM who were volunteers in a sexual risk reduction intervention should not be considered representative of all MSM who trade sex for drugs. In addition, sex trading may be subject to self-report biases and inaccuracies of faulty recall. The two sexual risk variables that were associated with trading sex for methamphetamine involved general statements regarding risk behavior. Future studies should use variables with more specific definitions regarding the intensity and frequency of sexual risk behaviors. They should also assess the use of harm-reducing behaviors (e.g., choosing oral instead anal sex) among HIV-positive MSM who

trade sex for methamphetamine. Furthermore, our sample did not include MSM who traded sex for money. Future studies should use a four-group design to examine differences in risk factors associated with trading sex for methamphetamine, trading sex for money, trading sex for money and methamphetamine, and never trading sex. HIV prevention efforts should target MSM who trade sex for money in addition to those who trade sex for methamphetamine. The cross-sectional design of this study also makes it impossible to establish causality between methamphetamine use and trading sex for drugs. Future research should use prospective data and longitudinal analyses to examine whether causality can be determined in this relationship.

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TABLE 1

Characteristics of the sample of HIV-positive methamphetamine-using MSM ($N = 155$).

Variable	Traded sex for meth ($n = 67$)	Did not trade sex for meth ($n = 88$)
Ethnicity	% (n)	% (n)
Caucasian	61.2 (41)	62.5 (55)
African American	25.4 (17)	20.5 (18)
Latino	9.0 (6)	12.5 (11)
Other	4.5 (3)	4.5 (4)
Education		
Less than high school	13.4 (9)	11.4 (10)
High school or equivalent	25.4 (17)	25.0 (22)
2-year degree or some college	44.8 (30)	50.0 (44)
4-year college degree	9.0 (6)	5.7 (5)
Graduate or advanced degree	7.5 (5)	8.0 (7)
Marital status		
Never married	83.6 (56)	86.4 (76)
Married	1.5 (1)	0.0 (0)
Separated	3.0 (2)	4.5 (4)
Divorced	11.9 (8)	9.1 (8)
Living arrangement ^{**}		
With same sex spouse/steady	6.0 (4)	19.3 (17)
With opposite sex spouse/steady	1.5 (1)	0.0 (0)
With other adults	26.9 (18)	27.3 (24)
Alone	26.9 (18)	26.1 (23)
Homeless	23.9 (16)	6.8 (6)
Other	14.9 (10)	20.5 (18)
Income		
Less than \$10,000	52.2 (35)	42.0 (37)
\$10,000–\$19,999	38.8 (26)	36.4 (32)
\$20,000–\$29,999	4.5 (3)	6.8 (6)
\$30,000–\$39,999	1.5 (1)	5.7 (5)
\$40,000–\$49,999	3.0 (2)	2.3 (2)
\$50,000 or more	0.0 (0)	6.8 (6)
Employed	16.4 (11)	22.7 (20)
Age in years (mean, SD)	38.7 (8.4)	39.9 (8.1)

**
 $p < .01$.

TABLE 2

Final multivariate logistic regression to examine factors associated with trading sex for methamphetamine in a sample of HIV-positive MSM ($N = 155$).

Variable	<i>B</i>	Odds ratio	95% confidence interval
Annual income (less than \$20,000 per year)*	1.47	4.350	1.270–14.903
Living arrangement (homeless versus other)*	1.29	3.632	1.040–12.690
Binge user of methamphetamine*	.872	2.391	1.067–5.358
Injected methamphetamine in the past 2 months	.703	2.020	0.892–4.577
Assertiveness at turning down drugs (per unit increase)*	-.187	0.830	0.702–0.982
Had sex with a stranger in the past 2 months	.677	1.967	0.842–4.596
Had sex in a commercial venue in the past 2 months	-.334	0.716	0.312–1.645
Seeks out risky sex partners when high on methamphetamine*	1.03	2.791	1.128–6.906
Has more anal sex without a condom when high on methamphetamine**	1.27	3.547	1.293–9.729

Model $\chi^2 = 51.64$, $df = 9$, $p = .001$, Nagelkerke $R^2 = .383$.

* $p < .05$;

** $p < .01$.