Published in final edited form as:

Am J Drug Alcohol Abuse. 2009 ; 35(5): 295–300. doi:10.1080/00952990902968585.

Differences in Sexual Risk Behaviors among Male and Female HIV-Seronegative Heterosexual Methamphetamine Users

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Abstract

Background—Despite increased awareness and attention towards methamphetamine (MA) use among men who have sex with men (MSM), few studies have examined behaviors and effects of MA use among heterosexual populations.

Objective—To learn whether behaviors and effects of MA use among heterosexuals differ according to gender.

Methods—We examined gender differences in sociodemographic characteristics, drug use practices, sexual behaviors, and consequences and motivations for methamphetamine (MA) use among 452 HIV-negative MA users (306 men, 146 women) who had engaged in unprotected sex and used MA in the previous two months.

Results—Females in the sample were younger and more likely to be married, to have been diagnosed with an STI in the last two months, and to report having been introduced to MA by a sexual partner. Women were also more likely to experience depressive symptoms and to report using MA “to lose weight.” Men were more likely to engage in sex marathons while high on MA and to use MA “to enhance sexual pleasure.”

Conclusion—These differences suggest the importance of crafting gender-specific intervention messages, and they may contribute to identifying individuals at risk for initiating MA use.

Scientific Significance—Our findings contribute to our knowledge of gender differences in behaviors and effects of MA use among heterosexuals. Future studies would benefit from collection of longitudinal data (to assess causal relationships) and use of a control group (to distinguish correlates of MA use from those of drug use in general).

Keywords

methamphetamine; gender; drug use; motivations; depression; sexually transmitted infection

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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 the paper.

Introduction

Despite increased awareness and attention towards methamphetamine (MA) use among men who have sex with men (MSM), few studies have examined behaviors and effects of MA use among heterosexual populations. Available research on heterosexual MA users reports associations between MA use and the tendency to have greater numbers of multiple (1–2) and casual or anonymous sex partners (3–6), unprotected sex with partners (5;7–10), engaging in sex marathons while high on MA (5), trading sex for MA or money (4;9;11), and a recent diagnosis of or a partner with a sexually transmitted infection (STI) (5;7;9).

Studies focusing on heterosexual MA users have reported several differences in sociodemographic characteristics by gender. Female MA users were more likely to be younger (12), have lower educational levels (13), and to have ever been married (14). Research also shows a greater overlap between sexual and drug use networks among female MA users, who are more likely to report a MA-using sex partner (9;12;16–19), MA initiation by (15) and consumption with a sex partner (8;11;12;15–19), and needle sharing (15–19). Female MA users also appear more likely than males to suffer a greater number of consequences from MA use, including depressive symptoms (11;13;14), and to cite the desire “to lose weight” or “to feel more attractive” as a motivation for using MA (5;15).

Our study team previously published data on 98 female MA users who reported personal and social disadvantages, more high risk sexual behaviors (e.g. multiple partners, anonymous sex partners, and unprotected vaginal and oral sex), and greater levels of psychiatric symptoms compared to 237 male MA users (5); additional gender differences included greater perceived behavioral consequences of MA use and motivations “to lose weight” in women, and imprisonment following a felony conviction in men. However, these results were limited by the univariate analysis of these gender differences.

Our purpose here is to expand upon our earlier studies by examining potential gender differences in terms of patterns of MA use, sexual behavior and consequences, and motivations for MA use in a heterosexual, HIV-negative population of MA users. We hypothesize that gender differences in these domains will persist after adjusting for potential confounders such as age, race, education, and marital status. We further hypothesize that female MA users will present with higher levels of depressive symptoms.

Methods

The sample consisted of 452 HIV-negative, heterosexual, male and female MA users who were enrolled in a sexual risk reduction intervention study. We examined baseline data collected between June 2001 and August 2004 using a 90-minute Audio Computer-Assisted Self-Interview (ACASI) that covered socio-demographic characteristics, alcohol and drug use, MA use patterns, sexual risk behaviors, social cognitive factors, social network factors, and physical and psychiatric health variables. Participants were compensated \$30 for their baseline assessment and first intervention counseling session. The Human Research Protections Program of the University of California, San Diego approved this study.

Setting and Sample

Recruitment and Screening of Participants

Participants were recruited primarily in areas with known high concentrations of MA users at specific peak times of day (e.g., Saturday night after 11 p.m.) (6). Community outreach workers approached and recruited potential study subjects in person. Social marketing approaches were also utilized including posters in public areas and ads in newspapers and

magazines. Participants were also referred by family, friends, and previously enrolled participants (6).

Study Population

The inclusion criteria were: (1) self-identified heterosexual; (2) HIV-seronegative; (3) age > 18 years; and, in the 2 months prior to screening, having (4) used MA at least twice and (5) engaged in unprotected vaginal, anal or oral sex with an opposite-sex partner. Criteria (4) and (5) were imposed because the study in which these subjects were enrolled aimed at reducing high-risk sexual behaviors. The OraSure® HIV-1 Oral Collection Specimen Device was used to confirm HIV-seronegative status prior to enrollment.

Measures

Demographics

The following characteristics were examined: gender (male vs. female); age at baseline (years); race (Caucasian vs. non-Caucasian); marital status (married vs. divorced or separated vs. never married); and educational attainment (no college vs. some college and beyond).

Drug use

Variables included: amount of MA used (grams) in the last month; number of days of MA use in the last month; injection drug use (ever vs. never), and if an IDU, sharing of needles or equipment (ever vs. never).

Sexual behavior

Participants were asked about the following sexual behaviors in the previous 60 days: total number sex partners (continuous); traded sex for MA (ever vs. never); received an STI diagnosis (yes vs. no); had a sex partner with an STI (yes vs. no); engaged in sex marathons (prolonged sexual activity with genital contact for hours and hours, yes or no); and consumed MA with a sex partner (yes vs. no). Participants were also asked if they had a spouse or steady, or casual or anonymous sex partners (yes vs. no). Data on unprotected vaginal sex with a spouse, steady, casual, or anonymous sex partner and on having a sex partner with an HIV-positive or unknown serostatus were originally collected as never, rarely, sometimes, or always, but both these variables were re-coded as always vs. sometimes. Participants were also asked who introduced them to MA use: friend, family, or sex partner.

Psychosocial measures

Two additional groups of variables were examined: consequences of and motivations for MA use. We presented a list of 14 different consequences (physical, psychological, and social or legal) associated with MA use and created a score by summing the number of consequences reported. We also evaluated participants' level of depressive symptoms (range = 0–63) using the Beck Depression Inventory (BDI) (20). Finally, motivations for initiating use of MA and for currently using MA were solicited, and the most commonly reported (>20% of participants) were examined: to lose weight or feel more attractive, to enhance sexual pleasure, and to escape or cope with mood. Each of these motivating factors was analyzed separately (yes or no).

Statistical Analysis

We examined individual variables and groups of variables potentially associated with MA use by gender. Descriptive statistics were performed using chi-square and t-tests. Univariate logistic regression analyses were performed to examine the odds associated with MA use by gender. Subsequently, multivariate analyses for each grouping of variables (demographic, drug use, sex behavior, consequences of MA use, and motivations for MA use) were performed. Variables that were significantly ($p < 0.05$) associated with female gender in univariate analyses were entered into the multivariate analyses. Manual backwards elimination was conducted to produce a final multivariate model that included factors independently associated with female gender ($p < 0.05$).

Results

Among the 452 participants were 306 men and 146 women. A plurality was Caucasian (49%), followed by African-Americans (27%) and Hispanics (13%). The average age was 36.6 years ($SD=9.9$); most participants had never attended college (58%); and fewer than half had ever married (46%). Compared to men, women were more likely to be divorced or separated rather than never married ($OR=1.72$, $95\%CI=1.35, 2.19$). No other demographic characteristics significantly differed between men and women.

Drug Use Behavior

As shown in Table 1, in the previous month, participants consumed on average 9.4g of MA ($SD=17.4$) and used MA on 14.6 days ($SD=9.1$); on average, women were more likely to report more days of MA use in the previous month than men ($OR=1.03$, $95\%CI=1.01, 1.06$). Injection drug use was reported by 29.9% of participants, of whom 49.2% had ever shared needles or equipment; needle sharing was more common among women than men ($OR=1.61$, $95\%CI=1.01, 2.42$).

Sexual Behavior

As shown in Table 2, participants reported an average of 3.7 ($SD=11.6$) sex partners during the prior two months. The majority of participants reported at least one kind of partner who used MA, was HIV-positive or of unknown serostatus, and with whom they engaged in unprotected vaginal sex; marathon sex while high on MA was also commonly reported (64%). Compared to men, women were more likely to report the following: having a spouse or steady sex partner ($OR=4.80$, $95\%CI=1.43, 16.01$) with whom they engaged in unprotected vaginal sex ($OR=2.39$, $95\%CI=1.24, 4.63$); receiving an STI diagnosis in the last 60 days ($OR=2.63$, $95\%CI=1.63, 4.23$) or having a spouse or steady sex partner with an STI ($OR=2.86$, $95\%CI=1.02, 8.04$); and being initiated to MA use by a sex partner ($OR=2.05$, $95\%CI=1.31, 3.21$). However, women were less likely to report engaging in marathon sex while high on MA ($OR=0.43$, $95\%CI=0.28, 0.64$).

Consequences of MA Use

The most commonly reported consequences of MA use were sleeplessness (70%), weight loss (63%), financial problems (62%), family problems (54%), and relationship loss (49%). Mean number of consequences reported overall by participants was 19.4 ($SD=6.9$, range=0–14); women reported a significantly greater number of consequences than did men ($OR=1.10$, $95\%CI=1.05, 1.16$). The mean BDI score for all participants was 15.3 ($SD=10.2$, range=0–51), but women had significantly higher scores than men ($OR=1.07$ per unit increase, $95\%CI=1.05, 1.09$).

Motivations for Initiating and Currently Using MA

Compared to men (Table 3), women were more likely to initiate MA use “to lose weight” (OR=5.27, 95%CI=3.24, 8.58) or “to escape” (OR=2.03, 95%CI=1.31, 3.14), and to currently use MA “to lose weight” or “to feel more attractive” (OR=6.43, 95%CI=3.49, 11.83) and “to escape” (OR=2.90, 95%CI=1.86, 4.53); women were less likely to report the desire “to enhance sexual pleasure” (OR=0.55, 95%CI=0.34, 0.91).

Factors Independently Associated with Female Gender

As shown in Table 4, the final multivariate model identified several factors independently associated with female gender ($p<0.05$) including younger age, being married, having had a recent STI diagnosis, being introduced to MA by a sexual partner, having a higher BDI score, and initiating or currently using MA use due to a desire “to lose weight.” Engaging in sex marathons while high on MA and currently using MA “to meet sex partners” were associated with male gender ($p<0.05$). The full model explained 27% of the total variance (pseudo $R^2=0.27$) (21).

Discussion

These findings show several significant differences between the male and female HIV-negative MA users in this sample. Certain drug use and sex behaviors of the female MA users in this study were influenced to a significantly greater degree by sex partners than were corresponding behaviors of males. These behaviors included initiation into MA use by a sex partner; unprotected vaginal sex with a spouse or steady; an STI or a spouse or steady with an STI; and sharing of needles or injection equipment with sex partners. Other studies have reported the greater likelihood of female MA users to be in steady relationships, especially with MA-using sex partners (9;12;16–19) and with whom they shared needles or equipment (15–19). Given the greater role of spouses and steady sex partners in HIV risk behavior among female MA users in this study, safer-sex interventions based on sex partnerships might be more effective than programs targeting the individual.

In keeping with earlier studies, we found that women were more likely to initiate and currently use MA “to lose weight” or “to feel more attractive” (5;15), or “to escape.” The current need “to escape” may result from our female sample’s higher number of consequences from MA use and higher depression scores; however, our study’s cross-sectional nature limits our ability to identify causal relationships. Female MA users’ motivations “to lose weight” or “to escape” may contribute to the greater number of days that they used MA per month relative to males. The more frequent use of MA might also be to mitigate negative consequences of MA use itself or to prevent the inevitable crash from a MA high. The motivation “to feel more attractive” suggests an underlying lack of self-esteem. Interventions which address negative self-perceptions may empower female MA users to not only decrease their overall MA use but also to reduce their other drug use and risky sexual behaviors.

In contrast to females, male MA users were more likely to engage in marathon sex while high, a finding that was first observed in an earlier report of this study population (5). Male MA users were also more likely to report the desire “to enhance sexual pleasure” as a motivation to begin and currently use MA (10;22;23). Coupled with the finding that male MA users were also more likely to engage in sex marathons while high, the overlap between MA use and attitudes towards sex may be a potential target for STI risk reduction programs among males. In general, the gender differences we observed in motivations to initiate and to currently use MA may be useful in constructing gender-specific prevention and

intervention messages and potentially in identifying higher-risk individuals before they initiate MA use.

Interpretation of these findings must take into account some limitations. First, this study intentionally recruited people with a higher sexual risk profile and who therefore may not be representative of the heterosexual, HIV-negative, MA using population as a whole. Further, the lack of a control group of people who use other drugs but not MA makes it impossible to identify which gender differences in sex behavior are correlated specifically to MA use and which correlate with drug use in general. Future studies could remedy this by including such a control group. Also, since we relied on self-reports of sensitive behaviors and STI diagnoses, under-reporting may have occurred, which in turn would lead to an underestimation of the odds ratios for some high risk behaviors. However, the audio-CASI method of data collection has been shown to minimize under-reporting of sensitive data (24). Finally, the cross-sectional nature of this study creates difficulties in drawing causal inferences.

Despite these limitations, this study suggests that drug treatment strategies should take gender differences in MA-use motivations into account. Prevention programs should also address the possible negative self-perceptions of female MA users and the effects of these self-perceptions on treatment efficacy, retention, and completion.

Acknowledgments

This study was funded in part by grants from the National Institute of Mental Health (R01 MH61146), the National Institute of Drug Abuse (R01 DA12116), by an NIMH Center Grant (P50 MH45294), by the Department of Veterans Affairs, and by the State of California's Universitywide AIDS Research Program (IS02-SD-701).

Reference List

1. Bogart LM, Kral AH, Scott A, et al. Sexual risk among injection drug users recruited from syringe exchange programs in California. *Sex Transm Dis* 2005;32(1):27–34. [PubMed: 15614118]
2. Gore-Felton C, Somlai AM, Benotsch EG, Kelly JA, Ostrovski D, Kozlov A. The influence of gender on factors associated with HIV transmission risk among young Russian injection drug users. *Am J Drug Alcohol Abuse* 2003;29(4):881–894. [PubMed: 14713145]
3. Fernando D, Schilling RF, Fontdevila J, el-Bassel N. Predictors of sharing drugs among injection drug users in the South Bronx: implications for HIV transmission. *J Psychoactive Drugs* 2003;35(2):227–236. [PubMed: 12924745]
4. Molitor F, Ruiz JD, Flynn N, Mikanda JN, Sun RK, Anderson R. Methamphetamine use and sexual and injection risk behaviors among out-of-treatment injection drug users. *Am J Drug Alcohol Abuse* 1999;25(3):475–493. [PubMed: 10473010]
5. Semple SJ, Patterson TL, Grant I. The context of sexual risk behavior among heterosexual methamphetamine users. *Addict Behav* 2004;29(4):807–810. [PubMed: 15135564]
6. Semple SJ, Zians J, Grant I, Patterson TL. Impulsivity and methamphetamine use. *J Subst Abuse Treat* 2005;29(2):85–93. [PubMed: 16135337]
7. Bogart LM, Kral AH, Scott A, et al. Sexual risk among injection drug users recruited from syringe exchange programs in California. *Sex Transm Dis* 2005;32(1):27–34. [PubMed: 15614118]
8. Latkin CA, Forman V, Knowlton A, Sherman S. Norms, social networks, and HIV-related risk behaviors among urban disadvantaged drug users. *Soc Sci Med* 2003;56(3):465–476. [PubMed: 12570967]
9. Molitor F, Truax SR, Ruiz JD, Sun RK. Association of methamphetamine use during sex with risky sexual behaviors and HIV infection among non-injection drug users. *West J Med* 1998;168(2):93–97. [PubMed: 9499742]
10. Rawson RA, Washton A, Domier CP, Reiber C. Drugs and sexual effects: role of drug type and gender. *J Subst Abuse Treat* 2002;22(2):103–108. [PubMed: 11932136]

11. Semple SJ, Grant I, Patterson TL. Female methamphetamine users: social characteristics and sexual risk behavior. *Women Health* 2004;40(3):35–50. [PubMed: 15829444]
12. Evans JL, Hahn JA, Page-Shafer K, et al. Gender differences in sexual and injection risk behavior among active young injection drug users in San Francisco (the UFO Study). *J Urban Health* 2003;80(1):137–146. [PubMed: 12612103]
13. Senjo SR. Trafficking in meth: an analysis of the differences between male and female dealers. *J Drug Educ* 2005;35(1):59–77. [PubMed: 16270698]
14. Lin SK, Ball D, Hsiao CC, Chiang YL, Ree SC, Chen CK. Psychiatric comorbidity and gender differences of persons incarcerated for methamphetamine abuse in Taiwan. *Psychiatry Clin Neurosci* 2004;58(2):206–212. [PubMed: 15009828]
15. Brecht ML, O'Brien A, von MC, Anglin MD. Methamphetamine use behaviors and gender differences. *Addict Behav* 2004;29(1):89–106. [PubMed: 14667423]
16. Latkin CA, Mandell W, Knowlton AR, et al. Gender differences in injection-related behaviors among injection drug users in Baltimore, Maryland. *AIDS Educ Prev* 1998;10(3):257–263. [PubMed: 9642423]
17. Montgomery SB, Hyde J, De Rosa CJ, et al. Gender differences in HIV risk behaviors among young injectors and their social network members. *Am J Drug Alcohol Abuse* 2002;28(3):453–475. [PubMed: 12211360]
18. Riehm KS, Kral AH, Anderson R, Flynn N, Bluthenthal RN. Sexual relationships, secondary syringe exchange, and gender differences in HIV risk among drug injectors. *J Urban Health* 2004;81(2):249–259. [PubMed: 15136658]
19. Sherman SG, Latkin CA, Gielen AC. Social factors related to syringe sharing among injecting partners: a focus on gender. *Subst Use Misuse* 2001;36(14):2113–2136. [PubMed: 11794586]
20. Beck, AT. *Depression: Clinical, experimental and theoretical aspects*. New York: Harper & Row; 1967.
21. Kleinbaum, D.; Kupper, L.; Muller, K.; Nizam, A. *Multiple Regression Analysis: General Considerations*. In: Kugushev, A., editor. *Applied Regression Analysis and Other Multivariable Methods*. Pacific Grove: Duxbury Press; 1998. p. 120-121.
22. Semple SJ, Patterson TL, Grant I. Binge use of methamphetamine among HIV-positive men who have sex with men: pilot data and HIV prevention implications. *AIDS Educ Prev* 2003;15(2):133–147. [PubMed: 12739790]
23. Volkow ND, Wang GJ, Fowler JS, Telang F, Jayne M, Wong C. Stimulant-induced enhanced sexual desire as a potential contributing factor in HIV transmission. *Am J Psychiatry* 2007;164(1):157–160. [PubMed: 17202559]
24. Des J, Paone D, Milliken J, et al. Audio-computer interviewing to measure risk behaviour for HIV among injecting drug users: a quasi-randomised trial. *Lancet* 1999;353(9165):1657–1661. [PubMed: 10335785]

Univariate associations of sociodemographic characteristics and drug use comparing female to male HIV-negative methamphetamine users in San Diego, CA, 2001–2005

Table 1

Characteristic	All (N=452)		Women (N=146)		Men (N=306)		Reference = Men	
	%	(n)	%	(n)	%	(n)	OR	95%CI
Mean Age in years (SD) *	36.6	(9.9)	35.4	(10.1)	37.1	(9.7)	0.98	(0.96,1.00)
Race: Caucasian (vs. other minority)	49.3	(223)	45.2	(66)	51.3	(157)	0.78	n.s.
Education: ≤ High school (vs. ≥ College)	58.0	(260)	59.3	(86)	57.4	(174)	0.92	n.s.
Marital Status							1.72	(1.35,2.19)
Married: Yes (vs. No)	8.4	(37)	10.4	(15)	7.4	(22)		
Divorced/Separated: Yes (vs. No)	35.9	(159)	45.8	(66)	31.1	(93)		
Never Married: Yes (vs. No)	55.8	(247)	43.8	(63)	61.5	(184)		
Mean Grams of MA Used Last 30 days (SD) *	9.4	(17.4)	10.3	(21.6)	9.0	(15.1)	1.00	n.s.
Mean # of Days of MA Use Last 30 days (SD) *	14.6	(9.1)	16.4	(9.0)	13.7	(9.0)	1.03	(1.01,1.06)
Injection Drug Use: Ever (vs. Never)	29.9	(136)	27.4	(40)	30.4	(93)	0.86	n.s.
Share needles: Ever (vs. Never)	49.2	(63)	61.5	(24)	43.8	(39)	1.61	(1.01,2.42)

* Values for these characteristics are in the form of Mean (SD) instead of % (n).

Abbreviations: SD = standard deviation; n.s. = not significant (95%CI includes 1.0); OR = odds ratio; CI = confidence interval

Table 2

Comparison of sexual behaviors of female vs. male HIV-negative methamphetamine users in San Diego, CA, 2001–2005

Characteristic	All (N=452)		Women (N=146)		Men (N=306)		Reference = Men	
	%	(n)	%	(n)	%	(n)	OR	95%CI
Types of Sex Partners in Last 60 days								
Spouse/Steady	93.2	(424)	98.0	(143)	90.9	(278)	4.80	(1.43,16.01)
Casual/Anonymous	89.0	(405)	85.6	(125)	90.5	(277)	0.62	n.s.
Mean # of Sex Partners in Last 60 days (SD) *	3.7	(11.5)	4.8	(15.9)	3.1	(8.7)	1.01	n.s.
Unprotected Vaginal Sex (last 60 days)								
Spouse/Steady: Always (vs. Sometimes)	85.4	(386)	91.8	(134)	82.4	(252)	2.39	(1.24,4.63)
Casual/Anonymous: Always (vs. Sometimes)	69.0	(312)	69.2	(101)	69.0	(211)	1.01	n.s.
Trade sex for MA: Ever (vs. Never)	29.0	(63)	33.7	(30)	25.8	(33)	1.46	n.s.
Sex Partner with HIV(+)/unknown status								
Spouse/Steady: Yes (vs. No)	55.1	(249)	55.5	(81)	54.9	(168)	1.02	n.s.
Casual/Anonymous: Yes (vs. No)	95.8	(433)	95.9	(140)	95.8	(293)	1.04	n.s.
Any STIs in last 60 days: Yes (vs. No)	20.0	(89)	31.0	(45)	14.6	(44)	2.63	(1.63,4.23)
Sex Partner had STI in last 60 days								
Spouse/Steady: Yes (vs. No)	14.1	(19)	20.6	(13)	8.3	(6)	2.86	(1.02,8.04)
Casual/Anonymous: Yes (vs. No)	5.8	(21)	8.1	(9)	4.8	(12)	1.76	n.s.
Marathon Sex while high on MA: Yes (vs. No)	64.8	(293)	51.4	(75)	71.2	(218)	0.43	(0.28,0.64)
Sex Partner MA-user								
Spouse/Steady: Yes (vs. No)	97.6	(441)	98.0	(143)	97.4	(298)	1.28	n.s.
Casual/Anonymous: Yes (vs. No)	97.6	(441)	96.6	(141)	98.0	(300)	0.56	
Consume MA with sexual partner: Yes (vs. No)	86.3	(390)	84.9	(124)	86.9	(266)	0.85	n.s.
Who initiated participant into MA use								
Friend: Yes (vs. No)	68.5	(309)	64.8	(94)	70.3	(215)	0.78	n.s.
Family: Yes (vs. No)	11.7	(53)	15.2	(22)	10.1	(31)	1.59	n.s.
Sex Partner: Yes (vs. No)	23.3	(105)	32.4	(47)	18.9	(58)	2.05	(1.31,3.21)

* Values for these characteristics are in the form of Mean (SD) instead of % (n).

Abbreviations: SD = standard deviation; n.s. = not significant (95%CI includes 1.0); OR = odds ratio; CI = confidence interval

Univariate associations of consequences of current methamphetamine use and motivations for initiating and current use of MA comparing female to male HIV-negative MA users in San Diego, CA, 2001–2005

Table 3

Characteristic	All (N=452)		Women (N=146)		Men (N=306)		Reference = Men	
	%	(n)	%	(n)	%	(n)	OR	95%CI
Mean # of Consequences of MA use (SD) *	6.2	(4.2)	7.4	(4.1)	5.7	(4.2)	1.10	(1.05,1.16)
Mean Beck Depression Inventory Score (SD) *	15.3	(10.2)	20.1	(10.5)	13.1	(9.3)	1.07	(1.05,1.09)
Motivations for Starting MA Use								
To escape	25.4	(115)	34.9	(51)	20.9	(64)	2.03	(1.31,3.14)
To enhance sexual pleasure	23.7	(107)	18.5	(27)	26.2	(80)	0.64	n.s.
To lose weight	20.4	(92)	39.7	(58)	11.1	(34)	5.27	(3.24,8.58)
Motivations for Continuing MA Use								
To escape	24.3	(110)	38.4	(56)	17.6	(54)	2.90	(1.86,4.53)
To enhance sexual pleasure	24.9	(34)	17.9	(26)	29.3	(86)	0.55	(0.34,0.91)
To lose weight/feel more attractive	12.7	(57)	27.6	(40)	5.6	(17)	6.43	(3.49,11.83)

* Values for these characteristics are in the form of Mean (SD) instead of % (n).

Abbreviations: SD = standard deviation; n.s. = not significant (95%CI includes 1.0); OR = odds ratio; CI = confidence interval

Table 4

Multivariate analysis of sociodemographic, drug use and sexual behavior characteristics, and consequences of and motivations for MA use comparing females to males among 452 MA users in San Diego, CA, 2001–2005

Characteristic	Adj. Odds Ratio	95% CI
Age (years)	0.97	(0.94,0.99)
Ever Married	1.68	(1.25,2.24)
STI Diagnosis in last 60 days	2.49	(1.37,4.53)
Marathon Sex while High on MA	0.37	(0.22,0.62)
MA Initiation by a Sexual Partner	1.94	(1.09,3.43)
Beck Depression Inventory Score (1 unit increase)	1.07	(1.04,1.09)
Initiated MA Use to Lose Weight	2.61	(1.42,4.79)
Currently Use MA to Lose Weight	4.70	(2.14,10.33)
Currently Use MA to Meet Sex Partners	0.40	(0.21,0.77)