Interest in a Methamphetamine Intervention Among Men Who Have Sex With Men

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Objective: To assess the interest of out-of-treatment methamphetamine-using men who have sex with men (MSM) seen at public health STD clinics in an intervention specifically targeting their drug use.

Study Design: An anonymous, self-administered survey of MSM who use methamphetamine attending public health STD clinics in Seattle and San Francisco.

Results: Among 174 men surveyed, 36% reported being considerably or extremely troubled or bothered by their methamphetamine use, 62% reported a considerable or extreme desire to reduce or stop their use of methamphetamine, and 52% reported considerable or extreme interest in attending a program to stop or decrease methamphetamine use. While 70% of the men surveyed had attempted to stop using methamphetamine, only 12% had ever been in drug treatment.

Conclusions: In a two-city sample of MSM who use methamphetamine, interest in an intervention to help men stop or decrease their methamphetamine use is high. Interventions that target methamphetamine use and are delivered through the public health system merit further investigation.

IN 2003, MEN WHO HAVE SEX with men (MSM) accounted for 49% of all new HIV infections and 53% of new diagnoses of AIDS in the United States.[1] Although the prevalence of high-risk sexual behavior and the incidence of HIV declined in the late 1980s and early 1990s,[2,3] surveillance data reveal an ongoing resurgence in the spread of bacterial sexually transmitted diseases (STDs) and, possibly, HIV among MSM.[4–22] Data on trends in methamphetamine use in MSM indicate that use of the drug increased concurrently with observed rates of STD,[23] and recent random digit dial studies found that 17% of San Francisco MSM[24] and 6% of sexually active Seattle MSM[25] used methamphetamines in the preceding 12 months.

Numerous studies have associated methamphetamine use with incident HIV infection[12,26–28] and a wide spectrum of HIV-related risk behaviors.[29–39] Amphetamine use during sex independently enhances the likelihood that sex will involve unprotected anal intercourse with a partner of unknown or discordant HIV status[40]; and MSM engage in riskier sex during periods characterized by increased use of methamphetamine, poppers, or sniffed cocaine relative to periods during which use of these drugs is less frequent.[41] Additionally, researchers have demonstrated that methamphetamine increases sexual behavior in rats.[42–45] These findings indicate that methamphetamine use may increase sexual risk behaviors that facilitate HIV acquisition and transmission.

Trials of both cognitive behavioral therapy and contingency management suggest that these interventions may be effective in reducing methamphetamine use and high-risk sex in treatment-seeking MSM.[46,47] (Contingency management is a therapeutic approach in which patients receive incentives or rewards for meeting specific behavioral goals.[48]) To date, interventions to decrease the use of methamphetamines have not been tested outside the context of drug treatment or integrated into the existing public health infrastructure.[49] As part of a public health effort to develop an intervention to decrease methamphetamine use in high-risk MSM, we surveyed methamphetamine-using MSM seen at 2 public health STD clinics and evaluated their interest in a program to help them stop or reduce their methamphetamine use.

We approached men who reported having had sex (oral or anal) with one or more men in the past year and who reported methamphetamine use in the preceding 6 months seen in the Public Health–Seattle and King County STD Clinic or the San Francisco City Clinic for participation in the study. Study subjects attended the clinics for routine clinical evaluation or STD and HIV testing and were not seeking referrals to drug treatment programs. Assessment of methamphetamine use is part of routine clinical evaluations. Men were recruited between December 2003 and January 2005. We excluded men who were under 18 years of age, who did not speak English, and whom staff believed could not provide informed consent. Although the study population included men who reported sex exclusively with other men and men who reported sex with both men and women, for simplicity, we refer to the population as MSM. Institutional Review Boards at each participating institution approved the study. All participants provided written informed consent.

The survey was an anonymous, 27-item, self-administered, written questionnaire. It recorded demographic information and sex and methamphetamine use behaviors. Four items assessed moti-

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TABLE 1. Bivariate Analysis of Demographic, Drug Use, and Sexual Risk Characteristics of Men Participating in a Survey to Assess Interest in Reducing or Stopping Methamphetamine Use, Public Health–Seattle and King County Sexually Transmitted Disease Clinic and San Francisco City Clinic, December 2003–January 2005

	Seattle (n = 99)	San Francisco (n = 75)	Total (n = 174)	P*
Age (yrs), median (interquartile range)	31 (24–39)	34 (26–40)	32 (25–39)	0.16
Education, n (%)				**<0.01**
Stopped before high school/some high school	24 (24)	2 (3)	26 (15)	
High school graduate or equivalent	25 (25)	6 (8)	31 (18)	
Some college	36 (36)	34 (45)	70 (40)	
College graduate/more than college	13 (13)	32 (53)	45 (26)	
Race/ethnicity, n (%)				**<0.01**
White	76 (77)	46 (61)	122 (70)	
Hispanic	1 (1)	8 (11)	2 (1)	
Asian/Pacific Islander	0 (0)	8 (11)	11 (6)	
Black	5 (5)	6 (8)	8 (5)	
Native American/Alaska native	2 (2)	0 (0)	9 (5)	
Multiracial/other	14 (14)	7 (9)	21 (12)	
Sex of partners in the past year, n (%)				**<0.01**
Men only	62 (63)	65 (87)	127 (73)	
Men and women	36 (37)	10 (13)	46 (26)	
HIV status, n (%)				0.64
Positive	18 (18)	15 (20)	33 (19)	
Unknown	19 (19)	18 (24)	37 (21)	
Number of unprotected anal sex partners in past 12 mo, median (interquartile range)†	2 (0–6)	5 (2–16)	3 (1–9)	**<0.01**
Nonconcordant unprotected anal intercourse in past 12 mo, n (%)‡				
HIV-negative respondents	11 (18)	22 (54)	33 (32)	**<0.01**
HIV-positive respondents	8 (44)	9 (60)	17 (52)	0.18
Years of methamphetamine use, median (interquartile range)				
Days of methamphetamine use in past 30, median (interquartile range) mode of methamphetamine administration in last month, n (%)	6 (2–10)	4 (2–7)	4.5 (2–9)	**0.02**
Inject	59 (60)	14 (20)	73 (44)	**<0.01**
Smoke	70 (73)	59 (87)	131 (78)	**0.02**
Snort	49 (51)	44 (64)	94 (56)	0.09
Eat	27 (27)	13 (19)	40 (24)	0.19
Rectal	15 (15)	23 (33)	38 (23)	**0.01**
Other (hot rail)	6 (6)	0 (0)	6 (4)	**0.01**
Multiple modes	62 (64)	51 (73)	118 (68)	0.17
Ever been in treatment, n (%)	12 (12)	9 (12)	21 (12)	0.77
Ever tried to stop, n (%)	70 (71)	53 (71)	123 (71)	0.51
Longest cessation attempt in days, median (interquartile range)‖	98 (21–360)	150 (60–360)	120 (21–360)	0.96
Frequency of methamphetamine use during unprotected anal sex among those reporting any anal sex in the past 12 months, n (%)				**<0.01**
Never	25 (28)	6 (8)	31 (19)	
Occasionally	30 (33)	30 (41)	60 (37)	
Often	20 (22)	26 (36)	46 (28)	
Always	14 (16)	9 (12)	23 (14)	
Do not know	1 (1)	0 (0)	1 (0.6)	

*Bold values indicate P <0.05.
†Excludes men who reported no anal sex in the preceding 12 mo.
‡Unprotected anal intercourse with a partner of unknown or discordant HIV status.
§Restricted to men who reported methamphetamine use in the preceding 30 d.
‖Restricted to men who have ever tried to stop using methamphetamine.

vation to reduce or stop methamphetamine use and used a 5-point Likert scale (not at all, slightly, moderately, considerably, extremely): 1) "How troubled or bothered have you been in the past 30 days by problems from your meth use?"; 2) "To what extent would you like to stop or cut back on how much you use meth?"; 3) "If there were a program available to help you decrease or stop your meth use, how likely would it be that you would go to it?";

and 4) "How much more likely would you be to go to such a program if you got $20 each time you attended?"

We identified predictors of extreme or considerable interest in attending a program to reduce or stop methamphetamine use. All recorded variables were examined in bivariate logistic regression models. Variables found to be significant (P <0.05) in these models were entered into a multiple logistic regression model. All

TABLE 2.   Bivariate and Multivariate Predictors of Considerable or Extreme Interest in Attending a Program to Cut Back or Stop Methamphetamine Use, Public Health–Seattle and King County Sexually Transmitted Disease Clinic and San Francisco City Clinic, December 2003–January 2005

Characteristic	Interest in a Program (%)		Bivariate Odds Ratio (95% confidence interval)	Multivariate Odds Ratio (95% confidence interval)
	Considerable/Extreme (n = 91)	No/Slight/Moderate (n = 83)		
Demographic				
Age ≥33 years	48%	49%	0.9 (0.5–1.7)	
Nonwhite race/ethnicity	31%	28%	1.1 (0.6–2.1)	
Education >12 years	62%	72%	0.6 (0.3–1.2)	
Location Seattle	57%	57%	1.0 (0.6–1.9)	
Methamphetamine use				
Use ≥11 days in past 30 days	47%	54%	0.8 (0.4–1.4)	
Use ≥4.5 years	54%	52%	1.1 (0.6–2.0)	
Mode of administration, past 30 days				
Smoke	82%	75%	1.6 (0.7–3.3)	
Snort	55%	57%	0.9 (0.5–1.7)	
Inject	45%	42%	1.1 (0.6–2.1)	
Eat	24%	24%	1.0 (0.5–2.0)	
Rectal	21%	24%	0.9 (0.4–1.8)	
Hot rail	3%	2%	1.8 (0.3–10)	
Multiple	71%	64%	1.4 (0.7–2.7)	
Troubled by use in past 30 days				
Not at all	8%	24%	1.0	1.0
Slightly/moderately	42%	55%	2.4 (0.9–6.3)	1.0
Considerably/extremely	50%	21%	7.6 (2.7–21)	1.5 (0.7–3.4)
Ever tried to stop	84%	59%	3.8 (1.8–7.9)	3.0 (1.3–6.9)
Cessation attempt ≥30 days	57%	43%	1.7 (0.9–3.2)	
Ever been in treatment	16%	9%	2.0 (0.8–5.2)	
Considerable or extreme interest in reducing or stopping use	87%	35%	12 (5.8–26)	9.5 (4.1–22)
HIV acquisition or transmission risk				
Anal sex partners in past 12 months				
0	4%	9%	1.0	
1	5%	9%	1.3 (0.2–6.7)	
2–4	31%	24%	2.5 (0.6–9.5)	
5–9	12%	16%	1.5 (0.3–6.4)	
10+	47%	43%	2.2 (0.6–7.9)	
Unprotected anal sex partners in past 12 months				
0	16%	21%	1.0	
1	10%	16%	0.8 (0.3–2.5)	
2–4	28%	27%	1.4 (0.6–3.4)	
5–9	20%	12%	2.2 (0.8–6.2)	
10+	26%	23%	1.5 (0.6–3.7)	
Nonconcordant unprotected anal intercourse, past 12 months*	46%	32%	1.8 (0.9–3.7)	
Frequency of methamphetamine use with sex in past 12 months				
Never	18%	30%	1.0	1.0
Occasionally	34%	38%	1.5 (0.7–3.4)	1.0
Often/always	48%	33%	2.5 (1.1–5.5)	1.0 (0.5–2.3)
HIV status				
Negative	54%	65%	1.0	
Positive	20%	18%	1.4 (0.6–3.0)	
Unknown	26%	17%	1.8 (0.9–4.0)	

*Sex with a partner of unknown or discordant HIV status.

data were analyzed using STATA 8.2 (Stata Corp., College Station, TX).

One hundred one men completed the survey in Seattle and 75 men completed the survey in San Francisco. Two men from Seattle were excluded from analysis; one had sex exclusively with women and the other had not used methamphetamines in the preceding 6 months. Table 1 summarizes the demographic characteristics, patterns of methamphetamine use, and sexual behavior of the 174 MSM included in the sample.

Twelve percent of men had previously been in treatment for methamphetamine use and 71% had attempted to stop using methamphetamines. Thirty-six percent were extremely or considerably

troubled by their methamphetamine use in the preceding 30 days, 62% were extremely or considerably interested in stopping or reducing their methamphetamine use, and 52% were extremely or considerably interested in attending a methamphetamine intervention program. Sixty-eight percent of men surveyed reported being extremely or considerably more interested in an intervention program if a $20 incentive was offered each time they attended.

Compared with men who never used methamphetamine during unprotected anal intercourse, men who used methamphetamine often or always during unprotected sex were more likely to report being considerably or extremely interested in a program to reduce or stop methamphetamine use (Table 2). Men interested in such a program were more likely to have tried to stop using methamphetamine in the past. Compared with men who were not at all troubled by their methamphetamine use in the past 30 days, men who were considerably or extremely troubled were more likely to be considerably or extremely interested in a methamphetamine intervention program. Men who were considerably or extremely interested in cutting back or stopping their methamphetamine use were more likely to be considerably or extremely interested in attending an intervention program relative to men with less interest in cutting back or stopping use.

STD clinics serve large numbers of methamphetamine-using MSM at high risk for acquiring or transmitting HIV.[24,50] We found that of 174 such men seen in one of 2 public health STD clinics, most had tried to stop using methamphetamines, very few had ever been in substance abuse treatment, almost two-thirds were interested in decreasing or stopping their use of methamphetamines, and half were interested in participating in a methamphetamine intervention program. Interest in such a program increased if it was presented as including a monetary incentive, a component of previously studied programs that appear to be effective.[47,51–66] In this population, strong interest in attending an intervention program was predicted by frequent use of methamphetamine during unprotected anal intercourse, being troubled by methamphetamine use, having tried to stop using methamphetamines, and by greater interest in decreasing or stopping methamphetamine use.

Convenience sampling may limit the external validity of our findings. As a result, we cannot generalize our findings to all nontreatment-seeking, methamphetamine-using MSM seen in STD clinics, the group we might seek to enroll in a future intervention study. Nevertheless, many MSM in this population are interested in attending a methamphetamine intervention program. Moreover, recruitment of these men over a 1-year period with very limited resources demonstrates that such clinics can access methamphetamine-using MSM in substantial numbers; whether such men would actually participate in a program to help them decrease or stop their methamphetamine use remains to be proven. Additionally, there are no data to indicate the proportion of nontreatment-seeking MSM who enroll in such a program would complete the program.

Providing incentives to substance users for abstinence is controversial. Drug treatment programs that use contingency management do not use cash as reinforcement; instead, these programs use vouchers that may be exchanged for goods or services. Numerous studies have found that contingency management reduces substance use and its associated morbidity in a number of populations.[47,51–66] The cost of voucher-based reinforcement programs, however, may limit their widespread use, and additional research on the efficacy and cost-effectiveness of contingency management programs is warranted.

Although trials suggest that contingency management and cognitive behavioral therapy may be effective in reducing methamphetamine use and high-risk sexual behavior, there is little experimental evidence for the effectiveness of interventions for methamphetamine use among nontreatment-seeking MSM; and, currently, no pharmacologic agents exist for the treatment of methamphetamine dependence. The National Institute on Drug Abuse has identified the link between drug abuse, specifically methamphetamine, and HIV infection as a research priority.[67] Given the large number of high-risk methamphetamine-using MSM seen in STD clinics, the high level of interest in an intervention that incorporates monetary reward found in this study, and the success of voucher-based reinforcement strategies in numerous populations for an array of problem behaviors, we believe that public health contingency management programs administered to MSM at high risk for HIV and STD acquisition and transmission merit further evaluation.

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