

## EXPERIENCES AND SEXUAL BEHAVIORS OF HIV-INFECTED MSM WHO ACQUIRED HIV IN THE CONTEXT OF CRYSTAL METHAMPHETAMINE USE

Matthew J. Mimiaga, Andrew D. Fair, Kenneth H. Mayer, Karestan Koenen, Steven Gortmaker, Ashley M. Tetu, Jeremy Hobson, and Steven A. Safren

The prevalence of crystal methamphetamine “meth” use among men who have sex with men (MSM) has been shown to be 20 times that of the general population, and it has been linked to increased sexual risk taking in MSM and others. Although previously seen as a “West Coast” phenomenon, clinical and other reports indicate that it is problematic among MSM regardless of geographic location. To assist in future intervention development, we interviewed 20 HIV-infected MSM who believe they seroconverted in the context of using crystal meth. Topics included factors related to continued and previous meth use, HIV risk behavior prior to and after HIV infection, and the consequences of sustained use. Generally, participants openly discussed the highly destructive effects of using crystal meth. Almost every (95%) participant spoke of chronic depression and anxiety following cycles of discontinued use, and participants often claimed an inability to enjoy activities that used to be pleasurable. Almost all (90%) respondents also reported that their social relationships were compromised by their crystal addictions. Many had lost friends, and in some cases, non-drug-using friends distanced themselves because of the addiction. A striking number of participants felt strongly that MSM sexual partner-meeting Web sites represented a major starting point for crystal-influenced sexual “hookups,” and that they should likewise be a starting point for interventions. Corroborating previous research in this arena, this study exhibits support for a link between crystal meth use and high-risk sexual behavior among East Coast MSM. The study also draws attention to the need for associated mental health, functional and quality-of-life impairments that seem to accompany continued use in individuals with HIV.

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Matthew J. Mimiaga and Steven A. Safren are with the Fenway Institute, Fenway Community Health, Boston, and Harvard Medical School / Massachusetts General Hospital Boston. Andrew D. Fair is with the Fenway Institute and the Harvard School of Public Health, Boston. Kenneth H. Mayer is with the Fenway Institute and Brown University, School of Medicine, Providence, RI. Karestan Koenen and Steven Gortmaker are with the Harvard School of Public Health. Ashley M. Tetu is with the Fenway Institute and Boston University, School of Public Health, Boston. Jeremy Hobson is with the Fenway Institute.

Address correspondence to Matthew J. Mimiaga, The Fenway Institute, Research and Evaluation Department, Prudential Tower, 4th floor, 800 Boylston St., Boston, MA 02199; e-mail: mmimiaga@partners.org

The prevalence of crystal methamphetamine “meth” use among men who have sex with men (MSM) has been shown to be 20 times that of the general population, with an estimated 10% of MSM having used crystal meth in the past 6 months (Fernandez et al., 2005; Shoptaw & Frosch, 2000; Stall & Purcell, 2000). Crystal meth remains extremely affordable, simple to manufacture, and easy to obtain (Halkitis et al., 2003).

A number of studies have documented that the use of crystal meth is associated with increased sexual risk taking among MSM; crystal meth augments an individual’s drive for sex and allows users to stay high for extended periods of time, which may increase the odds of multiple sexual encounters with many sexual partners over an extended period of time (Colfax et al., 2004; Frosch, Shoptaw, Huber, Rawson, & Ling, 1996; Halkitis et al., 2003; Shoptaw & Frosch, 2000; Stall et al., 2001). A study of 2,172 urban MSM found that recreational drug use, particularly crystal meth, was highly prevalent among urban MSM (52%) and independently associated with risky sexual practices (Stall et al., 2001). Baseline data from the EXPLORE study ( $n = 4,295$ ) demonstrated that crystal meth use was significantly associated with unprotected sex (Koblin et al., 2003). Another study conducted to evaluate drug use among MSM who attend circuit parties found that serodiscordant unprotected anal sex was more likely to occur among men who used methamphetamine, Viagra, and nitrate inhalants (Colfax et al., 2004), and each associated with risky sex. Furthermore, a cross-sectional study conducted in Boston with a cohort of 508 young (mean age = 23.3) gay men found that individuals who had unprotected anal intercourse were more likely to have used recreational drugs, such as crystal meth, compared with individuals who did not engage in unprotected anal intercourse (Seage et al., 1998). A more recent study conducted in Boston during 2003 surveyed 873 MSM at MSM frequented venues and found that 8% had used crystal meth in the previous 6 months (Case, 2004).

Despite the high prevalence of crystal meth use in MSM and its association to high-risk sex and HIV acquisition and transmission, few, if any, effective interventions exist. The present study was therefore designed to lay the groundwork for intervention research targeting MSM who combine crystal meth use with unsafe sex. Men enrolled in this study were those who believe they acquired HIV in the context of using crystal meth (this was prescreened for eligibility and required for enrollment); we thought that would be an ideal group to interview for prevention purposes in order to gain insight into what to do differently for those who are HIV-uninfected and at risk and how to assist those who are already HIV infected.

## METHODS

### STUDY DESIGN

Twenty participants were interviewed by one of two trained interviewers between mid-April 2005 and mid-June 2006. Interviews were guided by an open-ended, semistructured protocol, developed as described below. Participants were eligible for the study if they were 18 years of age or older, HIV infected, a Massachusetts resident, believed that they had seroconverted as a result of sexual behaviors engaged in while under the influence of crystal meth, identified as a man who has sex with other men, and were willing and able to provide informed consent. Each interview was recorded with the consent of the participant and transcribed verbatim by a professional transcription company. In addition, each participant was administered a short survey to

collect key demographic information such as age, sexual identity, race, level of education, income, and health insurance status.

All study related activities took place at Fenway Community Health (FCH), a freestanding health center that focuses on the health care needs of the lesbian, gay, bisexual, and transgendered community and specializes in HIV/AIDS care (Mayer, Mimiaga, VanDerwarker, Goldhammer, & Bradford, 2007). FCH's institutional review board approved the study and each participant completed an informed consent process.

### RECRUITMENT

Study recruitment was conducted primarily through flyers at FCH, Boston, with some participants hearing of the study through word of mouth from other study participants or the study investigators. Participants were compensated with a onetime payment of \$50 for completing the qualitative interview and demographic survey.

### DEVELOPMENT OF STUDY INSTRUMENTS

Questions for the open-ended, semistructured interview protocol were based on needs identified by a literature review and by MSM health specialists at FCH. The topics focused on the use of crystal meth and HIV risk behaviors prior to and after HIV infection, the consequences of sustained use among HIV-infected MSM, and appropriate interventions for this population.

### DATA ANALYSIS

The qualitative data from this study were analyzed using content analysis (Strauss & Corbin, 1997). After transcripts were reviewed for errors and omissions, study staff developed a thematic codebook and, using NVIVO software, organized transcripts according to each code. A team of two analysts then individually reviewed the coded transcripts to determine emerging themes and then together agreed on final themes. Data were reexamined and ongoing discussion between coders and study investigators allowed for further theorizing and making interconnections between research questions, coding categories, and crude data (Strauss & Corbin, 1997). During this process, recruitment continued until the interviews generated redundant themes, as is typical in qualitative research (Miles & Huberman, 1994).

## RESULTS

### DEMOGRAPHICS

Participants ranged in age from 21 to 58 years ( $M = 38.2$ ,  $SD = 7.44$ ). Eighty-five percent were Caucasian, 5% African American / Black, and 10% American Indian / other.

Seventy percent of the sample identified as exclusively homosexual, whereas 30% reported sexual relationships with women. Fifty percent of the sample reported having less than a college education. Only 30% had full-time employment at the time of their study interview, however, 90% reported having some form of health insurance. Seventy percent of the sample reported an annual income of less than \$30,000 per year.

### EMERGENT THEMES

To depict the general content of the interviews, we present summary information about the most frequent themes that emerged. These included (a) consequences of

crystal use, (b) appropriate interventions for this population, (c) use of crystal and HIV risk prior to HIV infection, (d) current crystal use, (e) HIV and sexual behaviors, (f) HIV status disclosure, (g) general drug use, and, (h) maintaining self-care behaviors. For each major theme, we describe the general types of statements made by participants, and insert relevant direct quotations to further illustrate the quality of the responses.

### THEME 1: CONSEQUENCES OF CRYSTAL USE

Participants spoke of a variety of negative consequences of their crystal use, including physical, mental, financial, professional, and social repercussions. All participants remarked on the negative effects of crystal, and while some looked upon their crystal use more positively than others, all expressed feelings of loss as a result of their crystal use.

The most commonly cited physical consequence of crystal meth use was weight loss. This symptom was nearly universally reported. Participants often described losing 20 to 40 pounds while using crystal and looking “like a walking skeleton.” A few (15%) participants indicated that crystal “fooled” them into believing that their weight loss appeared attractive: “So you’re going to waste away. And you’re going to look like shit. You’re going to think you look fabulous.”

Although lost weight can be regained, other physical consequences were described as being chronic even long after cessation of crystal use. Examples included jitteriness and twitchiness, tooth decay (“meth mouth”), injuries caused by meth-induced sleep deprivation (one participant fell down a flight of stairs and broke his shoulder after being awake for 6 days on crystal), and sexually transmitted infections contracted while high on crystal (in addition to HIV, gonorrhea, HPV, and crabs were reported).

*Onset of Depression and Anxiety as a Result of Crystal Meth Use.* Almost every (95%) participant also spoke of chronic depression and anxiety following their period of crystal use. Most of these participants claimed an inability to take pleasure in certain activities that used to be pleasurable. As one respondent put it, “It’s almost like it takes away, permanently, the . . . the ability to really get high without doing drugs. You know? Like, when you’re walking to a carnival as a kid and you get excited by all the lights. You know, you don’t ever get that pleasure anymore.” Interestingly, one participant claimed that crystal had permanently increased his mental acuity.

Half of the (50%) participants spoke of mental consequences of crystal use, as well (not including depression or anxiety). During crystal use, some participants experienced hallucinations, paranoia, and meth-induced psychosis. Long-term sequelae included impaired memory (both short-term and long-term memory deficits were reported), impaired concentration, inability to “find the right word,” and diminished sex drive when not using crystal.

*Financial and Social Consequences of Crystal Use.* Several (50%) of the respondents said that they ran into financial woes as a result of their crystal addictions. Losses of as much as \$75,000 in crystal expenditures were reported, and one participant needed his parents to pay off a debt to his drug dealer. Missed bills and rent payments were frequently mentioned, and several respondents were evicted. Moreover, nearly all participants spoke of difficulty maintaining a regular work schedule during their period of crystal use, with the majority eventually losing their job as a result. One

participant who attributed the loss of his career to his crystal addiction described the destructive cycle he found himself caught in:

I wasn't smart enough to realize I had a problem! You know, calling in sick all . . . you know? Partying all night, and then calling in sick the next day. I mean, and then . . . well, there's three days off after that, so I might as well keep going, and then, you know, it just . . . it became a mess.

Finally, almost all (90%) respondents stressed that their social relationships were compromised by their crystal addictions. Many had lost friends. In some cases, non-drug-using friends distanced themselves from participants because of their addictions; in others, participants who had quit crystal distanced themselves from drug-using friends in order to help maintain their sobriety. Respondents also frequently reported estrangement from their families as a consequence of their crystal use, though this was generally a temporary breakdown of communication which was repaired following crystal cessation.

#### THEME 2: APPROPRIATE INTERVENTIONS FOR THIS POPULATION

The most commonly mentioned intervention for the crystal-using MSM community was development of prevention advertisements visually demonstrating the destructive effects of crystal methamphetamine via photographs of men before and after becoming addicted to crystal. Several respondents said that appealing to gay men's vanity was the best strategy, by showing them that crystal addicts "literally look like they're dead." Respondents emphasized that it is important to show potential crystal users the physical effects of the drug on other men, because once they are hooked their distorted thinking may fool them into thinking that crystal makes them look more attractive. A number of participants suggested that such before-and-after advertisements would be best placed on MSM-specific sexual partner-seeking Web sites. One participant cautioned that advertisements depicting attractive men as crystal addicts made the drug look "enticing."

Many (45%) participants also noted the importance of education campaigns, both focusing on the health effects of crystal and on practicing safe sex. Some felt strongly that educational efforts needed to begin in school, and several stressed that non-judgmental, nonmoralizing, fact-based interventions were likely to be most effective. Several respondents commented that before they started using crystal, they knew very little about the drug and its effects, so "talking about what is crystal, what does it do, how does it work, what are the detrimental side effects of it" is essential to a successful prevention campaign. Some participants suggested that former crystal users would make the most effective educators.

Several (45%) respondents mentioned the need for social support networks for young gay men. In-person meeting venues were recommended; MSM sexual partner-meeting Web sites were criticized by many participants as facilitating crystal use and HIV transmission. One participant explained, "Young camaraderie is . . . should be a huge push. I think there should be options of young people conglomerating besides alcohol induced bars, or drug induced private homes." In addition to helping prevent crystal initiation, some respondents noted that peer groups help to aid in recovery for crystal addicts. Two participants cited Alcoholics Anonymous as having helped them recover from their crystal addictions, and one felt that a daily Crystal Meth Anonymous group was necessary.

Finally, two participants were pessimistic about the ability of interventions to curb crystal use among MSM, claiming that no campaign would have been likely to prevent them from starting crystal use. One respondent commented, “I don’t know whether the gay community wants intervention.” Several believed that crystal users need to “hit rock bottom” before they can commit to reform.

*Recruitment of Crystal Users Into an Intervention.* Several (40%) participants recommended online MSM partner-meeting Web sites as the optimal locus for recruitment of MSM crystal users for interventions. Participants noted that these Web sites are where the most at-risk MSM tend to congregate. Some, however, pointed out that Web site users might ignore an online intervention recruitment advertisement.

Other suggestions included recruitment in clubs and advertisements in gay-specific newspapers and magazines. One participant, however, observed the following challenge to recruitment: “I would say that people who are really at risk for crystal . . . are not really interested in crystal studies.”

### THEME 3: USE OF CRYSTAL AND HIV RISK PRIOR TO HIV INFECTION

Many (50%) participants mentioned being introduced to crystal methamphetamine while living in Boston. Most, but not all, were introduced to the drug in the context of sex. Some participant reported that they initially used crystal for non-sexual recreational purposes.

*Rapid Escalation of Their Frequency and Intensity of Crystal Meth Use.* Participants often described a rapid escalation of their frequency and intensity of use, as exemplified by the following selection of transcript:

And so that was 2002, started smoking on the weekend. Um, the weekends blended over to the Friday to Monday, for 2002, 2003. And then, the past two years, it overlapped into the week. The morning, before going to work. The afternoon, I would, I would reward myself, at 5:00 p.m., coming home from work after a good day. And, of course, everyday use then, smoking, uh, with a pipe, um, and then, in the past two years, injecting . . . the drug. Um, and everyday use.

Many (50%) respondents eventually engaged in lengthy crystal binges, sometimes going several months without being sober.

A large number of respondents found their sexual partners online when using crystal, on MSM-specific sexual meeting Web sites. Some also found sexual partners at clubs or gay “cruising” areas.

Every participant described engaging in more sexual behaviors, which placed them at high risk for HIV while using crystal than while sober. Sex was frequently characterized as more “animalistic” and less inhibited on crystal. Condom use was frequently described as inconsistent and some participants admitted to never using a condom while on crystal. Group sex was consistently reported, including among individuals who claimed not to take part in group sex outside the context of crystal use. In addition, respondents participated in sex acts (typically riskier ones) when on crystal that they believed they never would have while sober, such as “fisting,” “water sports,” and engaging in unprotected receptive anal intercourse. Participants attributed their high-risk behaviors to their crystal use.

Only one participant claimed to practice safer sexual behaviors while using crystal than while sober:

Before I was infected it was uh . . . I'd use it every weekend. I would um always have safe sex. I'd be incredibly careful. Because um the crystal would make my — me, what I think, more intelligent. So uh therefore I was always more careful, sexually.

This respondent always demanded that a condom be used during his sexual encounters while on crystal. He acknowledged, however, that he was in the minority for practicing safer sex while on crystal.

One participant stated that after having used crystal, he no longer enjoyed sex without crystal. In particular, though the participant enjoyed receptive anal intercourse while high on crystal, he found it uncomfortable and no longer desired it while sober.

#### THEMES 4 AND 5: CURRENT CRYSTAL USE, HIV, AND SEXUAL RISK BEHAVIORS

Several (30%) participants made efforts to reduce their crystal use following being diagnosed with HIV, and most considered themselves “clean” from crystal at the time of their interview. For example, one participant had only used crystal for one binge within the past 15 years, another had been sober for 2 years, and another had been sober for 6.5 months. In contrast, several participants continued using crystal intermittently (once every 1 to 3 months) since their HIV diagnosis, and a couple maintained regular use (at least every week).

Some participants reported being less sexually active following their HIV diagnosis than before. Among those who continued using crystal, most continued to use the drug in the context of sex; one respondent, however, claimed that his current crystal use was almost entirely social, not sexual, because he was worried about losing his inhibitions having sex on crystal. Another respondent stated that he only had sex on crystal.

The range of sexual behaviors currently engaged in by participants varied in their level of risk. Some became much more careful after their HIV diagnosis, one even claiming to be “afraid of sex” since finding out he had HIV. Several (20%) more, however, revealed that they currently practiced risky sexual behaviors—sometimes even riskier than they used to before being infected. For instance, unprotected anal sex, sex with anonymous partners, and “aggressive” sex were reported as current behaviors while using crystal. Two participants stated that their current sexual activities mainly consisted of masturbating; one of these respondents reported using crystal while masturbating.

Many (65%) participants reported meeting sexual partners online since being diagnosed with HIV, while other partner-meeting locales included bars, the gym, the street, and a “party line” telephone line. Overall, participants revealed more negative feelings towards the online sexual meeting community since being infected with HIV.

Respondents demonstrated a range of responses to being diagnosed with HIV. For instance, one participant explained that his crystal use, sex, and partying all spiraled out of control when he received his HIV diagnosis: “That’s when I went really off the deep end . . . We were . . . partying out of control. So [testing positive] just fueled it . . . ‘It’s already over. Life is done. Let’s just go crazy.’” In contrast, another participant became extremely careful: “I really sort of went back to, to, you know, just, you know, condoms and I didn’t want to be responsible for anyone and I would talk about it and ask if they were HIV positive. And I would always assume they had AIDS and if they didn’t I wouldn’t do anything different.” In both instances, the participants described a shifting over time from the extremes of sexual risk-taking and sexual carefulness towards a middle ground.

### THEME 6: HIV STATUS DISCLOSURE

Half of the (50%) participants reported that they did not consistently disclose their HIV status to their sexual partners. Only one participant claimed to always disclose his status as an HIV-infected individual to his sexual partners. Other participants disclosed with varying regularity.

Participants often feared sexual rejection if they disclosed that they were HIV infected. They repeatedly emphasized that HIV status disclosure rarely takes place in group-sex settings. It is much easier to disclose, they claimed, one-on-one. In lieu of disclosing, many participants would insist on condom use during sex, though some participants engaged in unsafe sex with partners of unknown status, without revealing to them that they were HIV infected. One respondent mentioned that he sometimes lied to his partners that he was uninfected but used condoms. Another participant found it difficult to explicitly state to his partners that he was infected but instead found other ways of implying his status, such as, “I see a doctor, and I have medication to take . . . Do you mind using a condom? Or do you mind if you don’t have anal sex with me?” Some participants would only disclose their HIV status if their partner specifically asked. A couple respondents mentioned that if their partners did not ask their status, they would assume that their partners either already knew that they were HIV infected or that their partners were also HIV-infected themselves.

Among those participants who continued using crystal methamphetamine following their HIV diagnosis, most remarked that HIV status disclosure was more sporadic—or simply did not take place—while high on crystal. One participant, who claimed that while high on crystal, he only disclosed his HIV status if pointedly asked, explained,

[When I’m high] it’s kind of one of those things like don’t ask, don’t tell. . . It’s not something that I want to like promote, but it’s like when you get in that mind-set you’re on crystal and it’s just about sex, sex, sex. . . When I’m not high um it’s definitely something that I let people know about. I think I’m thinking more with like a clearer mind, but honestly it’s like when I’m not high it’s really always in the front of my mind.

Some respondents claimed to always disclose their HIV status while sober but rarely while high.

Some (15%) respondents also commented that HIV status was infrequently discussed in online partner-seeking settings. One participant admitted, “I would never put [my HIV status] in my [online] profile . . . And I often wouldn’t discuss it online. I would prefer to discuss that stuff in person or on the phone.” He went on to describe how some people not only fail to disclose their HIV status but even lie that they are uninfected in their online profiles.

Finally, several (30%) participants remarked that their decision of whether or not to disclose their HIV status depended partly on what sex acts they were engaging in. For instance, disclosure was frequently deemed less necessary for oral sex, rimming, or protected anal sex than for unprotected anal sex.

### THEME 7: GENERAL DRUG USE

Use of other drugs in addition to crystal methamphetamine was ubiquitous in the study sample. The most common illicit drugs used were ecstasy, GHB, ketamine, marijuana, and cocaine. Half of the (50%) participants reported alcohol use, and some reported alcoholism. All but two respondents had used Viagra. Other drugs reported with lesser frequency included amyl nitrite (poppers), mushrooms, and crack cocaine.

Only one participant specifically mentioned LSD use. A number of respondents claimed to have “done every drug except heroin.”

Many of the above drugs were used in combination with crystal by study participants. In particular, ecstasy, ketamine, GHB, marijuana, and sometimes cocaine were reported as drugs used in conjunction with crystal. One respondent referred to the combination of crystal and GHB as “the ultimate in sexual experience.” Furthermore, almost all participants had used Viagra with crystal, often with considerable frequency. Participants explained that Viagra was used to prevent “crystal dick,” or the tendency of methamphetamine to cause erectile dysfunction in some men, and to enable marathon sex parties while on crystal. A few participants combined poppers, Viagra, and crystal, though they recognized the acute health risk (myocardial infarction) posed by this combination. One respondent observed, “So you’re taking a drug that’s going to make your heart pump like crazy and then you’re going to take another drug that’s going to make all of your blood go to one place and then you’re going to take another drug that’s going to open up your aorta as far as possible to shoot the blood . . . You know, that’s like a death wish. Of course, a year later, I was never a poppers person, but I took the Viagra and the crystal.”

Some participants explained that the profile of their drug use changed once they started using crystal, with other drug use sometimes dropping off in response to initiation into crystal use. For instance, one respondent said, “So before crystal, though, I had the long cocaine, uh, history, like 15 years or so of cocaine . . . just, once the crystal got involved, uh it was like why do cocaine when you can do crystal.” Another described how after starting to use crystal, he used ecstasy and GHB less than he used to because “crystal made me stay in more. I didn’t find myself going out” to use other drugs. Another participant, however, remarked that he only used other drugs such as GHB after he was already high on crystal.

#### THEME 8: MAINTAINING SELF-CARE BEHAVIORS

Most (60%) participants reported that crystal compromised their ability to maintain self-care behaviors, especially taking HIV medications and other medications, and keeping doctor’s appointments. In some instances, this was because crystal caused them to forget to keep up with these behaviors. Other participants were too busy with crystal to make time for these health-maintenance behaviors. One respondent explained: “I did not do any of my meds [when I was doing crystal] . . . I couldn’t be bothered. I was too busy fucking . . . I did not make [doctor’s appointments] . . . Like I said, I couldn’t be bothered.” One respondent claimed that his prior crystal use damaged his memory to the extent that he still forgets to take his medicines and keep his doctor’s appointments. In contrast, another participant took too much of his HIV medication while high on crystal, because he could not remember whether or not he had already taken it. On one occasion, he took triple the appropriate dose.

Other affected self-care behaviors took the form of diminished food consumption and poor oral hygiene. One participant claimed he “had never had a cavity, and I got my first one, you know, at age 39 . . . just because I didn’t brush my teeth for 7, 8 days in a row.”

#### DISCUSSION

This study highlights the degree to which crystal use can have profoundly destructive effects on the lives of MSM. For the individuals in the present study, it affected their self-care in many ways, particularly with respect to sexual risk taking. Consistent

with the literature in this arena, many of the interviewed MSM indicated that they practiced risky sexual behaviors while using crystal that they would not practice while sober, with partners they would not have sex with while sober (e.g., Colfax et al., 2004; Frosch et al., 1996; Halkitis et al., 2003; Shoptaw & Frosch, 2000; Stall et al., 2001). Because disclosure of HIV status is inconsistent in sexual encounters involving crystal, crystal-using MSM may be placing themselves at risk without even realizing it. These data suggest that interventions to curb crystal use may also reduce HIV and other transmission of sexual infection among MSM, as well as combating other consequences of crystal use such as financial ruin and destruction of social networks.

A remarkable finding of this study is the frankness with which participants discussed the destructive effects of crystal. One might suspect that the negative consequences of methamphetamine are exaggerated by antidrug advocacy groups, and that actual crystal users would paint a different picture of the drug, either because their experiences are milder or owing to denial or a desire to defend their habit. However, all but one participant described crystal as an insidiously damaging drug, with consequences ranging from HIV infection to permanent mental impairment, from social isolation to job loss and homelessness. Crystal-related deaths of acquaintances were also described. Although most respondents said that crystal meth enhanced their sexual experiences, only one respondent believed that his life was richer for his crystal use.

Crystal meth use has been linked with depression in the wake of cessation of use, with a loss of pleasure and interest in other activities accompanying periods of abstinence (Meredith, Jaffe, Ang-Lee, & Saxon, 2005; Peck, Reback, Yang, Rotheram-Fuller, & Shoptaw, 2005). Notably, several studies suggest that pleasurable activities reported prior to the initiation of crystal meth use become much less enjoyable in the absence of sustained use (e.g., Newton, Kalechstein, Duran, Vansluis, & Ling, 2004; Zweben et al., 2004). Other reports indicate that the crystal “high” becomes normalized for the user, and abstinence (which used to be the normal state) comes to be perceived by the user as a subnormal condition (Kurtz, 2005). Within the first several days of ceasing crystal meth use, individuals report anhedonia, irritability, and poor concentration—symptoms consistent with apathy and depression (Newton et al., 2004). There is also evidence that depressive symptoms may persist for many months following cessation of use (Zweben et al., 2004). The anhedonia reported by crystal meth users during periods of abstinence parallels the loss of interest in sex and other activities without meth reported by many MSM users of crystal (Frosch et al., 1996). In fact, the fear of no longer being sexual has been identified as a major barrier to giving up meth among MSM (Semple, Patterson, & Grant, 2002). These findings are consistent among the MSM in this study, as 95% reported chronic depression and anxiety following their period of crystal use. In addition, most of these participants claimed an inability to take pleasure in certain activities that used to be pleasurable.

Along with collecting data on the risks faced by MSM who use crystal, a primary purpose of this study was to conduct some of the necessary formative work to aid in the development of interventions to benefit this population by following NIH guidelines for a stage model of psychosocial treatment development (Rounsaville, Carroll, & Onken, 2001). A striking number of participants felt strongly that MSM sexual partner-meeting Web sites represented a major starting point for crystal-influenced sexual “hookups” and that they could likewise be a starting point for interventions. Intervention research studies may look to such Web sites for recruitment of participants, and advertisements placed strategically on these Web sites may serve to educate

MSM about the dangers of crystal meth use and high-risk sexual practices and give them cause to consider the potential consequences of their behaviors before embarking on a hookup. It is necessary to investigate, however, ways to make online advertisements more visible and compelling to viewers so that they are not simply ignored. Furthermore, public health education campaigns are unlikely to be sufficient on their own, given the degree to which this drug seems to affect the lives of these participants; several participants suggested that in addition to greater education about crystal meth, more in-person social meeting venues are needed for MSM to complement the online recruitment, which facilitate crystal meth-influenced sex. Behavioral treatments have been effective at diminishing crystal use and risky sexual behaviors among MSM crystal users. Effective strategies include contingency management (such as the provision of vouchers in return for clean urine samples) (Shoptaw, 2005), and sexual risk reduction strategies among HIV-infected MSM (Patterson & Semple, 2003). However, to date no published interventions have placed an emphasis on depression as a mediator of sustained crystal meth use; the findings from this study suggest that treating depression caused by discontinued use might be an effective intervention (relapse prevention) strategy for this population.

The MSM interviewed in this study comprise only a specific subset of all MSM at risk for using crystal meth, and generalizability of results may be limited. All study participants were infected with HIV and may represent a population of greater risk takers than other crystal-using MSM. On the other hand, most of the MSM in this study had ceased using crystal, which may point to a relevant difference in behavior patterns from those who choose not to or are unable to break away from their crystal addiction. Furthermore, the population of crystal-using MSM who volunteer to participate in a research study may not be comparable to those who decline to participate. One might expect that those who take control of their crystal use and those who take an active interest in public health research efforts might behave in a healthier, more sexually responsible manner than others. However, the degree of sexual risk taking in this study population was considerable and ubiquitous and gives cause for alarm that the greater crystal-using MSM population may be at high risk for spreading HIV and STIs through their sexual practices. Thus, interventions to curb crystal meth addiction need to be carefully designed and tested, as a potential strategy for curbing further HIV transmission and acquisition among this at risk population.

## REFERENCES

- Case, P. (2004). HIV risk and club drugs among MSM—A two-city comparison. *AIDScience* archives.
- Colfax, G., Husnik, M., Coates, T., Koblin, B., Madison, M., Buchbinder, S. et al. (2004). Longitudinal patterns of club-drug use among a cohort of high-risk men who have sex with men (MSM): The EXPLORE Study. Poster presented at the 15th International AIDS Conference, Bangkok, Thailand.
- Fernandez, M.I., Bowen, G.S., Varga, L.M., Collazo, J.B., Hernandez, N., Perrino, T. et al. (2005). High rates of club drug use and risky sexual practices among Hispanic men who have sex with men in Miami, Florida.
- Frosch, D., Shoptaw, S., Huber, A., Rawson, R.A., & Ling, W. (1996). Sexual HIV risk among gay and bisexual male methamphetamine abusers. *Journal of Substance Abuse Treatment*, 13, 483–486.
- Halkitis, P.N., Parsons, J.T., & Wilton, L. (2003). An exploratory study of contextual and situational factors related to methamphetamine use among gay and bisexual men in New

- York City. *Journal of Drug Issues*, 22, 413–432.
- Koblin, B.A., Chesney, M.A., Husnik, M.J., Bozeman, S., Celum, C.L., Buchbinder, S. et al. (2003). High-risk behaviors among men who have sex with men in 6 US cities: Baseline data from the EXPLORE study. *American Journal of Public Health*, 93, 926–932.
- Kurtz, S.P. (2005). Post-circuit blues: Motivations and consequences of crystal meth use among gay men in Miami. *AIDS and Behavior*, 9, 63–72.
- Mayer, K.H., Mimiaga, M.J., VanDerwarker, R., Goldhammer, H., & Bradford, J.B. (2007). Fenway Community Health's model of integrated community-based LGBT care, education, and research. In I.H. Meyer & M. E. Northridge (Eds.), *The health of sexual minorities*. Springer Science+Business Media LLC, New York, NY, pp 693–715; 2007.
- Meredith, C.W., Jaffe, C., Ang-Lee, K., & Saxon, A.J. (2005). Implications of chronic methamphetamine use: A literature review. *Harvard Review of Psychiatry*, 13, 141–54.
- Miles, M.B., & Huberman, A.M. (1994). *Qualitative data analysis* (2nd ed.). Newbury Park, CA: Sage.
- Newton, T.F., Kalechstein, A.D., Duran, S., Vansluis, N., & Ling, W. (2004). Methamphetamine abstinence syndrome: Preliminary findings. *American Journal of Addictions*, 13, 248–255.
- Patterson, T.L., & Semple, S.J. (2003). Sexual risk reduction among HIV-positive drug-using men who have sex with men. *Journal of Urban Health*, 80, iii77–iii87.
- Peck, J.A., Reback, C.J., Yang, X., Rotheram-Fuller, E., & Shoptaw, S. (2005). Sustained reductions in drug use and depression symptoms from treatment for drug abuse in methamphetamine-dependent gay and bisexual men. *Journal of Urban Health*, 82, 100–108.
- Rounsaville, B.J., Carroll, K.M., & Onken, L.S. (2001). A stage model of behavioral therapies research: Getting started and moving on from stage I. *Clinical Psychology: Science and Practice*, 8, 133–142.
- Seage, G.R. III, Mayer, K.H., Wold, C., Lenderking, W.R., Goldstein, R., Cai, B. et al. (1998). The social context of drinking, drug use, and unsafe sex in the Boston Young Men Study. *Journal of Acquired Immune Deficiency Syndrome and Human Retrovirology*, 17, 368–375.
- Semple, S.J., Patterson, T.L., & Grant, I. (2002). Motivations associated with methamphetamine use among HIV+ men who have sex with men. *Journal of Substance Abuse Treatment*, 22, 149–156.
- Shoptaw, S., & Frosch D. (2000). Substance abuse treatment as HIV prevention for men who have sex with men. *AIDS and Behavior*, 4, 193–203.
- Shoptaw, S., Reback, C.J., Peck, J.A., Yang, X., Rotheram-Fuller, E., Larkins, S., et al. (2005). Behavioral treatment approaches for methamphetamine dependence and HIV-related sexual risk factors among urban gay and bisexual men. *Drug Alcohol Depend*, 78, 125–134
- Stall, R., & Purcell, D. (2000). Intertwining epidemics: A review of research on substance use among men who have sex with men and its connection to the AIDS epidemic. *AIDS and Behavior*, 4, 181–192.
- Stall, R., Paul, J.P., Greenwood, G., et al. (2001). Alcohol use, drug use and alcohol-related problems among men who have sex with men: *The Urban Men's Health Study*. *Addiction*, 96, 1589–1601.
- Strauss, A., & Corbin, J. (1997). *Grounded theory in practice*. Thousand Oaks, CA: Sage.
- Zweben, J.E., Cohen, J.B., Christian, D., Galloway, G.P., Salinardi, M., Parent, D. et al. (2004). Methamphetamine Treatment Project. Psychiatric symptoms in methamphetamine users. *American Journal of Addictions*, 13, 181–190.

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