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Methamphetamine-Using HIV-Positive Men Who Have Sex with Men: Correlates of Polydrug Use

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ABSTRACT *Methamphetamine use has become a major problem among communities of men having sex with men (MSM), where it has been associated with high-risk behaviors. Methamphetamine is often combined with other drugs that may increase its risks and adverse health consequences. To examine differences in background characteristics, HIV-risk behaviors, and psychosocial variables among polydrug-using HIV-positive MSM, the researchers classified a sample of 261 HIV-positive, methamphetamine-using MSM into three user groups: (1) methamphetamine only; (2) methamphetamine, marijuana, and poppers (light polydrug users); and (3) methamphetamine and other drugs (e.g., cocaine, heroin, hallucinogens, and ketamine; heavy polydrug users). Only 5% reported using only methamphetamine during the past 2 months; 31% were classified as light polydrug users, and 64% were classified as heavy polydrug users. Heavy polydrug users were significantly younger than light polydrug users (35.6 vs. 38.4, $P<.01$) and reported using methamphetamine for significantly fewer years (10.3 vs. 14.2 years, $P<.001$), but did not differ in the amount and frequency of methamphetamine or alcohol consumed. Heavy polydrug users reported significantly more sex partners of HIV-negative and unknown serostatus and had more unprotected sex with these partners. Heavy polydrug users had significantly higher scores on impulsivity and negative self-perceptions, as compared with those of light polydrug users. In this sample of HIV-positive MSM, most of those who used methamphetamine had a pattern of polydrug use. Heavy polydrug users reported significantly more high-risk sexual behaviors and tended toward higher levels of impulsivity than light polydrug users. The implications of these findings are two-fold: (1) Longitudinal research is needed to establish causal relationships among methamphetamine use, impulsivity, negative self-perceptions, and sexual risk behavior in this target population; (2) behavioral interventions should evaluate whether methamphetamine use and sexual risk behavior can be reduced by modifying impulsivity and negative self-perceptions.*

KEYWORDS *HIV, Methamphetamine, MSM, Polydrug abuse, Sexual risk.*

INTRODUCTION

Methamphetamine is widely used by men who have sex with men (MSM),[1,2] a population that continues to have among the highest HIV incidence rates in the United States.[3] High-risk behaviors among methamphetamine-using HIV-positive MSM

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may contribute to ongoing transmission of HIV to sexual and drug-using partners. Although many studies suggest that MSM using methamphetamine and the other so-called club drugs are polydrug users, these studies have typically classified individuals according to whether they use or do not use methamphetamine. However, a broader consideration of polydrug use patterns may help explain some of the variability in risk behaviors that has been observed among HIV-positive methamphetamine-using MSM.

A review of the substance-use literature provides a variety of definitions for polydrug use. For example, Greenwood et al.[4] defined polydrug use as "using three or more street drugs during the past year" (p. 107). Others have used terms such as multiple drug use[5] or drug co-use,[6] but in general, polydrug use refers to the use of illicit drugs or street drugs other than marijuana.[4]

Polydrug use is an indicator of severe substance-abuse problems.[7] The potential toxicity associated with combining different chemical agents as well as overdose mortality is a primary concern.[7] Among HIV-positive individuals, polydrug use can interfere with the effectiveness of antiretroviral medications and adherence. Also, ingesting a combination of drugs may lead to transient immune suppression.[8] Polydrug use is associated with increased participation in high-risk sexual practices, particularly among young gay and bisexual men. Studies of injection drug users have shown that injecting "speedballs" rather than heroin or cocaine alone is associated with higher rates of HIV infection and overdose and is more likely to occur among MSM.[9,10]

Research has identified reasons for polydrug consumption, including the potentiating effect that is associated with mixing drugs.[6] Participants often say that co-ingesting drugs leads to "a better high" or a "more trippy" experience.[7] Another reason may be to extend the duration of pleasurable effects,[6] in particular sexual performance endurance.[11] Amyl nitrites ("poppers") have been used extensively by the gay community for this purpose.[5] Some individuals report using cocaine to sustain the pleasurable body rushes associated with Ecstasy.[5] Combining drugs has been described as a means to counterbalance negative effects from one drug with another. For example, methamphetamine users often report smoking marijuana to "take the edge off" or to reduce the undesirable effects associated with "crashing" on methamphetamine.

Two recent studies have identified individual and contextual factors associated with polydrug use in samples of gay and bisexual men. Greenwood et al.[4] reported that polydrug use was associated with younger age, lower educational attainment, having sex with persons of HIV-positive serostatus or unknown serostatus, frequent attendance at gay bars, and more male sex partners. Stall et al.[5] found that multiple drug use was associated with younger age, not being in a steady male relationship, more visits to bathhouses or sex clubs, participation in public sex cruising, having unprotected anal intercourse with a secondary partner, and being "out" to a greater proportion of friends. These studies utilized large probability samples of MSM drawn from urban areas and included some HIV-positive MSM, but neither study targeted HIV-positive methamphetamine users.

The primary objective of this study was to classify HIV-positive methamphetamine-using MSM on the basis of their drug use (i.e., methamphetamine only and light and heavy polydrug use) and to examine possible sociodemographic, substance use, sexual risk, and psychosocial differences among them. Though limited in scope, this analysis provides insights into the use and effects of methamphetamine, particularly in association with high-risk sexual behaviors among HIV-positive MSM.

METHODS

Sample Selection

A sample of 261 HIV-positive MSM was enrolled in a sexual risk reduction intervention for active methamphetamine users. The project (known as the EDGE, named by participants who considered their lifestyles as "living on the edge") is ongoing and is conducted by researchers from the Department of Psychiatry at the University of California, San Diego. The EDGE protocol was approved by a UCSD Institutional Review Board in April 1999 and has since received annual reviews and approval. Master-level counselors conduct all participant interviews and counseling sessions.[11] Eligible participants self-identified as MSM, used methamphetamine at least twice in the past 2 months, and reported having unprotected anal or oral sex with at least one HIV-negative or unknown serostatus partner during this same period. Exclusion criteria were severe psychiatric impairment and having been diagnosed as HIV positive for less than 2 months. Multiple recruitment strategies were used, including street outreach, poster campaigns, advertisements in the print media, as well as referrals from social service providers and enrolled participants. The EDGE protocol involved a 90-minute baseline assessment, five counseling sessions, three booster sessions, and follow-up assessments at 4, 8, and 12 months. Informed consent was obtained at baseline and covered all subsequent contacts with the participant. Individual counseling sessions addressed the context of methamphetamine use and unsafe sex, use of condoms, negotiation of safer sex, disclosure of HIV seropositivity to sexual partners, and enhancement of social supports. Participants were paid $40 for completing their baseline assessment and first counseling session. Thereafter, participants were paid $20 for each counseling session and $25 for each follow-up interview.

Measures

Background Characteristics Data were gathered on participants' age, ethnicity, marital status, education, sexual orientation, living arrangement, employment status, and income. Health variables included number of months since HIV diagnosis, $CD4^+$ cell count, and the Centers for Disease Control and Prevention classification system for HIV infection.[12] Psychiatric status was determined by self-reported psychiatric diagnoses, current use of psychiatric medications, and scores on the Beck Depression Inventory.[13,14]

Substance Use Data Frequency of methamphetamine use was measured by self-reports of times used per day during the past 2 months. Amount of methamphetamine used was the number of grams used during this period. Participants were asked about their frequency of use of 14 illicit drugs other than methamphetamine over the past 2 months and whether they mixed any of the specific drugs they had used and in what combination. The Semi-Structured Assessment for the Genetics of Alcoholism was used to classify the severity (i.e., dependent, not dependent, abuse categories) of participants' use of methamphetamine and other substances.[15–17]

Sexual Risk Behavior Sexual risk behavior was defined as having had unprotected anal, oral, or vaginal sex (insertive and receptive) with HIV-negative, HIV-positive, and unknown serostatus partners in the previous 2 months. Partner types included steady (e.g., spouse, boyfriend), casual (e.g., one-night stand), and anonymous (e.g., someone in the park).

Psychosocial Factors Social problems were assessed using a scale developed by the San Diego Association of Governments.[18] Scale items included family problems, work problems, financial difficulties, violent behavior, legal problems, and the loss of important personal relationships and were summarized by one variable that represented the total number of social problems experienced in the past 2 months. Impulsivity was measured with Dickman's 12-item impulsivity scale[19] and is generally defined as the tendency to act without thinking and without regard for the negative consequences.[20] Stigma,[21] satisfaction with emotional support,[22] and negative self-perceptions[23] were also assessed.

Statistical Analysis

Participants were classified by self-reported methamphetamine use in the previous 2 months into three groups: (1) methamphetamine only or non-polydrug users; (2) methamphetamine, marijuana and poppers, or light polydrug users; and (3) methamphetamine and "heavier" drugs such as cocaine, heroin, hallucinogens, and ketamine or heavy polydrug users. Five percent of participants (n=13) reported using only methamphetamine in the past 2 months and were excluded from the analysis.

RESULTS

Of the 261 participants, 31% reported light polydrug use and 64% reported heavy polydrug use. Heavy polydrug users were significantly younger than light polydrug users (35.6 vs. 38.4, $t=2.8$, $P=.01$). Heavy users were less well educated; 42% of heavy polydrug users had a high-school or less education compared with 26% of light polydrug users ($\chi^2=5.6$, $P=01$). There were no differences between the two groups in background characteristics or in the three Semi-Structured Assessment for the Genetics of Alcoholism categories (i.e., dependent, not dependent, abuse).

Heavy polydrug users reported using methamphetamine for far fewer years (10.3 vs. 14.2, $t=3.4$, $P=001$) compared with light polydrug users. The two groups differed in their reasons for initiating the use of methamphetamine, with heavy polydrug users more likely to initiate methamphetamine use: "to get more energy" (48.4% vs. 34.2%, $\chi^2=4.2$, $P=.03$), "to meet sex partners" (29.8% vs. 17.1%, $\chi^2=4.4$, $P=.03$), and "to cope with mood" (33.5% vs. 22.4%, $\chi^2=3.1$, $P=.05$). There were no differences between light and heavy polydrug users in their reasons for currently using methamphetamine, nor did they differ in the amount and frequency of use of methamphetamine, alcohol, marijuana, and poppers in the past 2 months.

Heavy polydrug users reported more sex partners who were HIV negative or of unknown serostatus (11.1 vs. 9.5, $t=2.0$, $P=.04$) and more unprotected sex with this partner type (37.3 vs. 29.4, $t=2.1$, $P=.03$). Also, heavy polydrug users were more likely to use one or more drugs in addition to methamphetamine before or during sex compared with light polydrug users (78.9% vs. 55.3%, $\chi^2=16.7$, $P=.001$).

Heavy polydrug users had higher impulsivity (5.5 vs. 4.4, $t=2.2$, $P=.03$) and negative self-perception scores (60.5 vs. 54.8, $t=1.9$, $P=.05$) compared with light polydrug users, but there were no differences in reports of social problems, satisfaction with emotional support, or social stigma.

Polydrug Users' Practices and Experiences

Heavy polydrug users reported using marijuana (32.6%), gamma-hydroxybutyric acid (17.8%), and cocaine (11.1%) most frequently with methamphetamine. Heavy users gave the following reasons for mixing other drugs with methamphetamine:

"to get a better high" (26.3%), "other drug takes the edge off the methamphetamine high" (15.0%), "the other drug was available" (10.5%), and "other drug enhanced sexual pleasure" (9.0%).

Light polydrug users reported using methamphetamine, marijuana, and/or poppers. They reported they used these drugs with methamphetamine "to take the edge off the methamphetamine" (20.5%), "to get a better high" (12.8%), and "other drug enhanced sexual pleasure" (1.28%).

DISCUSSION

In this sample of 261 HIV-positive MSM, the use of methamphetamine in combination with other drugs was the rule and not the exception. Just 5% of the participants used methamphetamine only, whereas the remaining 95% used methamphetamine with a variety of other drugs, from marijuana to heroin and cocaine. These findings highlight an important and as yet poorly understood problem for further research on the use and interactive effects of illicit substances and HIV medications among HIV-positive individuals.

Although there were no differences in the amount or frequency of methamphetamine use between light and heavy polydrug users, heavy users were younger and less educated and had used methamphetamine for fewer years. This pattern is characteristic of drug-using careers, when heavier use occurs in the earlier years and tapers off with age. Studies of drug injectors have also shown that younger age of initiation is associated with more frequent and riskier injection-drug–use behaviors.[24,25]

Reasons for initiating methamphetamine use (to "get more energy," "meet sex partners," and "cope with mood") and for mixing drugs ("to get a better high," "to take the edge off methamphetamine," and "to enhance sexual pleasure") suggest the need for specialized behavioral intervention and treatment strategies for HIV-positive MSM. Such strategies should address the understanding of HIV and its effects on health and social functioning, self-medication motivations, and impulsivity associated with the use of methamphetamine and other drugs among HIV-positive MSM. In addition, targeted approaches are needed to reach and engage heavy drug-using HIV-positive MSM into behavioral change and treatment interventions. In this study, heavy drug-using HIV-positive MSM reported significantly more unprotected sex with partners who were HIV negative or had an unknown serostatus. Moreover, the findings of this study underscore the need for new pharmacological interventions for methamphetamine users similar to methadone for opiate addiction.

From a prevention perspective, research suggests that reductions in substance abuse, including methamphetamine use, correspond with concomitant reductions in high-risk sexual behavior.[26] The findings reported here suggest that prevention intervention programs that target both substance abuse and sexual risk among HIV-positive methamphetamine users have the potential of being highly effective. These and other efforts similar to them are crucial for reducing numbers of new infections and averting the spread of HIV to other populations.

This study has many limitations. The sample was derived from a single city and may not represent other HIV-positive MSM or other methamphetamine users in other locations. The study was aimed at developing an intervention for HIV-positive MSM, so that all of the participants had to report some risk behavior. Alcohol abuse was excluded from the study's definition of polydrug use; alcohol is not strictly considered a drug, but it is often pervasive when multiple substances are

used. Individuals were classified into drug-user groups on the basis of self-reported drug use and naturally occurring frequencies; it was not possible to examine specific drug-use combinations that may have accounted for observed differences. Despite these limitations, and in light of research showing that impulsivity and negative self-perceptions are associated with methamphetamine use and high-risk sexual practices,[27,28] these findings underscore the importance of reaching and engaging heavy drug-using, HIV-positive MSM in HIV prevention and drug treatment interventions.

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