Young Adult Ecstasy Users and Multiple Sexual Partners: Understanding the Factors Underlying this HIV Risk Practice†
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Abstract

The purposes of this study are to (1) examine the extent to which young adult Ecstasy users recently reported having had multiple sex partners and (2) identify the factors predictive of engaging in this behavior. Potential predictors included demographic characteristics, background and experiences measures, childhood maltreatment experiences, substance use variables, and measures assessing psychological/psychosocial functioning. This research is based on a sample of 283 young adult recurrent users of the drug, Ecstasy. Study participants were recruited in Atlanta, Georgia between August 2002 and August 2004 using a targeted sampling and ethnographic mapping approach. Interviews took approximately two hours to complete. Nearly one-third of the study participants had more than one sex partner during the preceding month, and sexual protection rates tended to be low. Multivariate logistic regression analysis revealed seven predictors associated with an increased likelihood of having multiple sex partners: (1) being nonwhite, (2) knowing someone who was HIV-positive, (3) younger age of first sexual experience, (4) using Ecstasy for its touch-enhancing qualities, (5) higher self-esteem, (6) handling disagreements more dysfunctionally, and (7) not being involved in a romantic relationship. The HIV prevention- and intervention-related implications of these findings are discussed.

Keywords

drug users/abusers; Ecstasy users; HIV/AIDS; multiple sex partners; predictors; substance use/abuse

The drug known colloquially as Ecstasy or MDMA (3,4-methylenedioxymethamphetamine) has grown in popularity in the United States in recent years (NIDA 2001), demonstrating particularly sharp increases in prevalence between the 1990s and early 2000s. Ecstasy use appears to be most popular among adolescents and young adults (NIDA 2001), and historically has been associated with partying and the “club scene” among members of this population. Its use in raves (underground music and dance clubs targeting teenagers and young adults) has been well documented since the 1990s, and it is in that arena that most people are aware of the presence of this drug.

In recent years, though, Ecstasy use appears to have been moving out of the club scene (where it still remains popular today) and into new environments (Boeri, Sterk & Elifson 2004; NIDA 2001). Nowadays Ecstasy is used by a broader array of people in a broader array of social environments (Sterk, Theall & Elifson 2006; Boeri, Sterk & Elifson 2004). As a result of its proliferation, researchers have begun to assess the risks associated with the continued use of this drug. Some studies have reported a link between Ecstasy use and such physiological problems as alterations in serotonin production (Buchert et al. 2004), sleep disorders (Montoya et al. 2002), and mood disorders (Verheyden, Henry & Curran 2003; Montoya et al. 2002). Only recently has attention been paid to one very important aspect of
risk associated with Ecstasy use—namely, HIV risk—and almost all of the published literature focusing on HIV risk among Ecstasy users has been based on samples of men who have sex with other men (since the drug has been particularly popular in the gay community for the past decade or so). In the gay community, Ecstasy use has been linked with a variety of HIV-related risk practices (e.g., having unprotected sex, having sex with multiple partners, having sexual relations while under the influence of Ecstasy and other drugs) (Lee et al. 2003; Klitzman et al. 2002; Klitzman & Pope 2000; Mattison et al. 2001), and its use typically appears to co-occur alongside the consumption of a variety of other drugs (Sterk, Theall & Elifson 2006; Lee et al. 2003; NIDA 2001). Generally speaking, however, the extent to which Ecstasy use is related to engaging in HIV-related risk behaviors has not been well documented in persons who are not gay males.

In the present study, we examine this very issue. Relying upon a community-based sample of recurrent users of Ecstasy, we focus on the extent to which Ecstasy users reported having multiple sex partners in the recent past and on the predictors of recently having had more than one sexual partner. This subject is of especial interest and importance because, more than most drugs, the use of Ecstasy can create a profound increase in sexual desire in its users (Zemishlany, Aizenberg & Weizman 2001). Furthermore, many of the users of this drug report feeling emotionally closer to their sexual partners while high on Ecstasy (Buffum & Moser 1986) and cite this as a reason for wanting to use the drug. It therefore stands to reason that a drug (like Ecstasy) that is used specifically because of its perceived/anticipated sex-enhancing effects may cause users to have multiple sex partners, thereby increasing their overall risk levels for acquiring HIV.

METHOD

Procedures

A cross-sectional study was conducted in Atlanta, Georgia among 283 Ecstasy users between the ages of 18 and 25 from August 2002 until August 2004. The principal goals of this study were to examine life issues and challenges, substance use and abuse, psychological and psychosocial functioning, and a variety of HIV-related risk behaviors among young adult Ecstasy users.

In order to participate in the study, several eligibility criteria had to be met. Study participants had to be between 18 and 25 years of age, capable of conducting their interviews in English, not be in a substance abuse treatment program or any other institutional setting at the time of enrollment in the study, and not be intoxicated or otherwise impaired cognitively at the time of their interview. To make sure that recurrent users (as distinguished from first-time or experimental users) of Ecstasy comprised the study sample, all persons had to report having used Ecstasy on at least three different days during the preceding 90 days.

The initial recruitment was based largely on targeted sampling, including ethnographic mapping (Sterk 1999; Watters & Biernacki 1989). The targeted neighborhoods were chosen because of their concentration of Ecstasy users. These communities were “hot spots” of local drug activity characterized by frequent drug sales and widespread drug use. Within these community hot spots, the outreach workers targeted places where Ecstasy users were known to gather (e.g., clubs, public parks) so as to maximize their recruitment efforts. In addition, passive recruitment was also used to advertise the study and bolster recruitment possibilities. This latter approach, which accounted for approximately one-quarter of the study participants who eventually enrolled, involved the posting of flyers in local clubs and venues, colleges and universities, coffee shops, and various on-the-street locations.
Prior to conducting interviews, all eligible persons were provided with appropriate information to facilitate the informed consent process. Institutional Review Board approvals for this study and all related research protocols were obtained from Emory University and Georgia State University. On average, interviews took two hours to complete. Face-to-face interviews were conducted by trained interviewers using a computer-assisted interview. At the completion of the interview, people were paid $25 for their participation.

Measures

A structured survey instrument was designed specifically for this study. It was constructed based on existing validated instruments that are used in the field (Needle et al. 1995; Dennis et al. 1995; McLellan et al. 1985), as well as on a formative research study conducted by members of the research team using a similar population of Ecstasy users.

The dependent variable used in this study’s analyses is a dichotomous measure indicating whether or not the respondent had undertaken sexual relations with more than one person during the 30 days prior to interview. This measure takes into account oral, vaginal, and anal sex, and is based on three different types of partners (main/steady partner; casual partner, friend, or acquaintance; someone known for less than 24 hours).

Several types of predictor variables were considered and included as independent variables in these analyses. All were chosen because of their relevance to the Health Belief Model (Fisher & Fisher, 2000), the Theory of Reasoned Action (Azjen, 1992; Brown, 1999), and/or the Theory of Planned Behavior (Brown, 1999), which are the principal paradigms underlying/guiding this research. The predictor variables used in these analyses also were selected based on published research documenting their relevance to the subject matter at hand.

For example, a number of studies have shown that HIV risk behaviors differ, often quite dramatically, based on demographic characteristics such as race/ethnicity, age, marital status, and homelessness (Wayment et al. 2003; Newcomb et al. 1998; Smereck & Hockman 1998). Accordingly, we examined a number of sociodemographic and background characteristics, including gender (male versus female), age (continuous measure), race/ethnicity (two measures, one comparing Caucasians versus non-Caucasians and one comparing African Americans to non-African Americans), educational attainment (continuous measure), and marital status (two measures, one comparing single versus other-than-single persons and the other comparing “involved” versus “other-than-involved” persons). Also included here was one measure indicating the number of persons the respondent knew who were HIV-positive (continuous measure) and the age of the person’s first sexual experience (continuous measure).

Also included as potential predictors are several substance use/abuse-related measures, such as living with any substance abusers (coded yes/no), number of alcohol-related problems experienced (continuous scale measure, Cronbach’s alpha = 0.83), and amount of illegal drug use in past month (continuous measure based on the sum of 13 different types of illegal drugs). In addition, several measures specific to the participants’ Ecstasy use were included: ever binging on Ecstasy (coded yes/no), doing things to enhance the effects of Ecstasy (continuous scale measure, Cronbach’s alpha = 0.77), using music to enhance the effects of Ecstasy (continuous scale measure, Cronbach’s alpha = 0.75), using lighting to enhance the effects of Ecstasy (continuous scale measure, Cronbach’s alpha = 0.81), and using Ecstasy for its touch-enhancing qualities (continuous scale measure, Cronbach’s alpha = 0.81). This category of predictors was selected as a result of the extensive body of published research demonstrating the relevance of substance use/abuse and exposure to substance users/abusers.
to having multiple sex partners (Sagrestano et al. 2005; Semple, Grant & Patterson 2004; Maranda, Han & Rainone 2004).

Finally, many studies have linked sexual risk to various measures assessing psychological and psychosocial functioning, such as self-esteem, depression, and anxiety, among others (Roberts et al. 2003; McCoul & Haslam 2001; Hollar & Snizek 1996). Therefore, in the present analyses, we included depression (continuous scale measure, Cronbach’s alpha = 0.87), impulsivity (continuous scale measure, Cronbach’s alpha = 0.78), self-esteem (continuous scale measure, Cronbach’s alpha = .88), and functionality of handling disagreements (continuous scale measure, Cronbach’s alpha = .80) as potential predictor variables.

Analysis

Since the dependent variable used in these analyses was dichotomous (had versus did not have more than one sex partner during the previous 30 days), multiple logistic regression was used as the principal approach in these analyses. Initially, bivariate relationships were examined to determine which variables might be related to having more than one sex partner and, therefore, ought to be entered into the multivariate equation. Whenever the predictor variable was dichotomous, categorical, or ordinal with fewer than five response categories, chi-square tests were performed. Whenever the independent variable was continuous in nature, logistic regression was used to test these bivariate relationships.

Then, items that were found to be statistically-significant predictors in the bivariate analyses were selected for entry into the multivariate prediction model. To assess the overall goodness-of-fit of the multiple logistic regression equation, the Hosmer-Lemeshow chi-square statistic was computed. With this statistic, a non-significant chi-square test indicates a model that fits the data well. Throughout all of these analyses, results are reported as statistically significant whenever p < .05.

RESULTS

In all, 283 people participated in this study and 70.0% were male. Most were either Caucasian (49.8%) or African American (37.1%). Nearly one-quarter (24.0%) of the study participants had not completed high school or its equivalent; conversely, 38.2% had at least some college training. Slightly more than half of the respondents were employed on a full-time (24.7%) or a part-time (30.4%) basis, but a sizable proportion were unemployed at the time of their involvement in the project (25.4%). Self-assessed socioeconomic status was assessed, with most respondents considering themselves to be lower than the middle class (31.8%) or in the middle class (48.1%). Most of the study participants (58.4%) were involved in a relationship (i.e., married, engaged, seriously dating somebody) at the time they were interviewed, but a large proportion (39.9%) reported being single. Almost all of the respondents (98.2%) reported the use of more than one type of illegal drug during the preceding 90 days, and nearly half (47.0%) reported having used at least three types of illegal drugs in addition to Ecstasy during this time period.

Nearly one-third of the study participants (29.7%) reported having had more than one sex partner during the month prior to interview. Although not the specific focus of this study, it is interesting and important to note that sexual protection rates were relatively low in this group (see Discussion section for further elaboration upon this point). Among persons with a single sex partner, 28.6% of all sexual acts involved the use of a condom or other barrier. Among those with two or three sex partners, the protection rate increased to 44.7%; among those with four or five sex partners, the protection rate was 50.5%; and among those with more than five sex partners, the protection rate was 58.7%.

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The bivariate analyses revealed several variables that were predictive of whether or not a respondent had more than one sex partner during the recent past. With respect to the sociodemographic measures examined, males were more likely to have had multiple sex partners than females were (33.7% versus 19.1%, \(p < .05\)). Caucasians were less likely to report having had more than one sex partner than non-Caucasians (22.3% versus 36.2%, \(p < .05\)). Persons who were involved in a relationship were less likely than those who were not involved with someone to report multiple sex partners (23.5% versus 37.9%, \(p < .01\)). The more HIV-positive people the respondent knew, the more likely he/she was to report having had multiple sex partners (\(p < .05\)). Also, the younger the person was the first time he/she had sex, the more likely he/she was to report having multiple sex partners (\(p < .001\)).

Somewhat surprisingly, only two of the substance abuse measures were found to be linked with a person’s likelihood of having multiple sex partners. First, people who lived with an alcohol abuser were less likely than those who did not live with such a person to report having had more than one sex partner during the preceding month (23.0% versus 34.2%, \(p < .05\)). Second, the more someone reported using Ecstasy for its touch-enhancing properties, the more likely that person was to have had two or more sex partners (\(p < .001\)).

Two of the psychological/psychosocial measures examined were found to be related to the likelihood of having multiple sex partners. The greater participants’ self-esteem levels were, the more likely they were to report having had more than one sex partner (\(p < .05\)). Also, the more dysfunctionally they tended to handle disagreements, the more likely they were to have multiple sex partners (\(p < .001\)).

When the multivariate equation was developed, seven of the aforementioned measures were found to contribute significantly to the prediction of having multiple sex partners (see Table 1). They were: race, relationship status, number of HIV-positive persons known, age of first sexual experience, using Ecstasy for its touch-enhancing properties, self-esteem, and dysfunctionality of handling disagreements. Together, these items accounted for approximately 27.3% of the variance. The Hosmer-Lemeshow goodness-of-fit test was nonsignificant (\(\chi^2[8df] = 6.35, p < .61\)), indicating an excellent fit with the data.

**DISCUSSION**

Before discussing our main conclusions, we would like to acknowledge four potential limitations of this research. First, the data collected as part of this study of young adult Ecstasy users were all based on uncorroborated self-reports. Therefore, the extent to which respondents underreported or overreported their involvement in risky behaviors is unknown. In all likelihood, the self-reported data can be trusted, as numerous authors have noted that persons in their research studies (which, like the present study, have included fairly large numbers of substance abusers) have provided accurate information about their behaviors (Jackson et al. 2004; Higgins et al. 1995; Anglin, Hser & Chou 1993; Nurco 1985).

A second potential limitation of the present study is that very few of the persons studied (1.8%) reported Ecstasy use as their only illegal drug use during the past 90 days. Indeed, nearly half of the sample reported having used Ecstasy and at least three other types of illegal drugs in the recent past. This widespread polydrug abuse, which is quite common among users of MDMA, makes it difficult to attribute the results obtained in this study of young adult Ecstasy users specifically to individuals’ Ecstasy use. We have addressed the issues surrounding polydrug abuse and HIV risk among members of this population in another article (Klein, Elifson & Sterk 2006), and readers are encouraged to consult that work for further information.
A third possible limitation pertains to recall bias. Respondents were asked to report about their beliefs, attitudes, and behaviors during the past 30 days, the past 90 days, and the past year, depending upon the measure in question. These time frames were chosen specifically (1) to incorporate a large enough amount of time in the risk behavior questions’ time frames so as to facilitate meaningful variability from person to person, and (2) to minimize recall bias. The exact extent to which recall bias affected the data cannot be assessed, although other researchers collecting data similar to that captured in this study have reported that recall bias is sufficiently minimal that its impact upon study findings is likely to be small (Jaccard & Wan 1995).

A fourth possible limitation of these data comes from the sampling strategy used. All interviews were conducted in the Atlanta, Georgia metropolitan area. There may very well be local or regional influences or subcultural differences between these participants and those residing elsewhere that could affect the generalizability of the data. Additionally, the chain referral sampling approach used to identify study participants is not a random sampling strategy, and there may be inherent biases in who was/not identified as a potential study participant in this research. A good discussion of the factors pertinent to this issue may be found in a study by Heckathorn (1997), along with strategies that can be employed to minimize any bias that could result from the use of a chain-referral sampling approach.

Despite these possible—and, we contend, minimal—limitations, we believe that many interesting and important findings were revealed in the present study. First, persons who reported having had more than one sex partner during the preceding month reported higher rates of protected sex than did those who had only one sex partner during that time. Even so, protection was used, on average, only about half of the time. While it is encouraging that study participants who had multiple partners used condoms or other barrier methods to protect themselves more frequently than other study participants did, there was much room for improvement in this regard. With a greater number of sex partners comes a greater risk for HIV, and if only half of all sex acts are protected (as was the case in this study), then many people in this study engaged in behaviors that frequently placed them at risk for acquiring HIV. Clearly, young adult Ecstasy users need to be reminded of the importance of protecting themselves and their partners during all (versus merely some) of their sexual encounters.

Another noteworthy finding in this study was that persons who were not involved in a relationship were more likely to have had sex with more than one person than were their counterparts who were married, partnered, etc. Unmarried, “uninvolved” Ecstasy users constitute a risk group in need of targeted intervention. Overlooked by this statement, however, is the fact that nearly one-quarter (23.5%) of the people who were in relationships also reported having had multiple sex partners. This finding of nonmonogamy among persons who consider themselves to be involved with a steady partner indicates a need for intervention efforts to target persons who are married or in other types of marital-type relationships. Many of these persons believe that they do not need to use condoms with their partners because they are “involved” and hence presumed—falsely presumed, we would point out—to be safe. Educational and intervention efforts targeting “involved” persons are most likely to be effective if they can enlist the participation of both partners in the couple, as published studies have shown that couples-oriented HIV interventions are quite successful with respect to sexual risk (El Bassel et al. 2001). A number of authors have discussed the potential benefits of couples-oriented HIV educational programs and the need for HIV interventions to target both members of sexually-involved couples (Sherman & Latkin 2001; Polacsek et al. 1999; Wells et al. 1994).
Another interesting finding obtained in the current study was that there was a direct association between the number of HIV-positive persons Ecstasy users knew and their own likelihood of having multiple sex partners. Although this is somewhat counterintuitive and definitely a finding that runs counter to what HIV prevention workers and interventionists would hope for, it is consistent with findings obtained by other researchers as well (Camlin & Chimbwete 2003; Nadeau, Truchon, & Biron 2000). Rather than dissuading them from taking similar risks, it appears that, for many Ecstasy users, knowing people who are HIV-infected does not prevent them from having sex with more than one person.

Two explanations for this finding seem plausible. First, it is possible that, as the adage goes, “birds of a feather flock together.” That is, Ecstasy users who have sex with multiple partners may be more likely to be friends with people who acquired HIV by virtue of their own sexual risk practices. If this is a valid explanation of our finding, then it has less to do with causality than it does with social relationships. An alternative explanation is that many young adult Ecstasy users may have become complacent about the risks associated with HIV. They hear about life-prolonging medications for people who are HIV-positive, see their friends who are HIV-infected living long, relatively normal, healthy lives, and in the process diminish their perception of the riskiness of their own behaviors (e.g., having more than one sex partner). This line of argument has been used in recent years to explain why so many young gay males continue to engage in high rates of risky behaviors despite awareness of the potential risks associated with their behaviors. If this explanation is valid for the current study’s finding, then it points to a need for interventionists to find ways to elevate people’s perceived risk for acquiring HIV to a level that is on par with their actual risk practices. People who do not consider themselves to be at risk for HIV are unlikely to take the steps necessary to protect themselves—a fact that is borne out by published research (Belcher et al. 2005; DeVisser 2004). Practitioners working with young adult Ecstasy users might want to conduct risk assessments with their clients, and then provide them with educational sessions informing them about their overall levels of HIV-related risk and about the specific steps they can take to reduce their risk level.

In addition to the preceding, we also discovered that the younger a person was the first time he/she had sex, the greater his/her likelihood was of having multiple sex partners. Other researchers have also identified early-onset sexual contact as a risk factor for later-life HIV risk practices (Locke, Newcomb & Goodyear 2005; Scivoletto et al. 2002; Flisher & Chalton 2001). This finding suggests that Ecstasy users who began having sex at an early age constitute a high-risk group where HIV is concerned. Targeted interventions for these individuals may need to address as-yet-unresolved issues pertaining to their sexuality, emotional attachments, and so forth, thereby necessitating appropriate referrals to qualified professionals who can provide psychological counseling.

Perhaps one of the more intriguing findings derived in the current research was the one pertaining to multiple partners and the use of Ecstasy for its touch-enhancing qualities. As mentioned earlier in this article, the use of Ecstasy often creates a profound increase in sexual desire (Zemishlany, Aizenberg & Weizman 2001) along with a sensation of being closer emotionally to one’s sexual partners (Buffum & Moser 1986). These are often cited by Ecstasy users as their reasons for wanting to use the drug. In this study, our scale measure assessing the use of Ecstasy for its touch-enhancing qualities included such items as “Ecstasy makes me want to touch people in a sensual way” and “Ecstasy makes me want to touch people in a sexual way” and “Ecstasy increases my sexual desires” and “Ecstasy makes people want to be touched more,” among other similar items. Greater values on this scale corresponded with an increased likelihood of having multiple sex partners. This particular psycho-physiological effect of Ecstasy use has been the subject of very little previous research, and to our knowledge, it has not been addressed in HIV intervention.
efforts targeting drug abusers. Developing an intervention curriculum that can address this aspect of the drug’s effects would be a worthwhile effort for future HIV projects to undertake. At the very least, our finding shows the importance of bearing in mind that all drugs are not identical to one another in terms of the specific HIV-related risks they pose to persons who use them, and that Ecstasy use conveys with it drug-specific risks that must be recognized and addressed.

In this research, we also found an association between handling arguments dysfunctionally (i.e., with anger, threats, or violence) and having multiple sex partners. This appears to be a manifestation of avoidant coping—a process by which persons try to cope with anger or stress by escaping their problems, avoiding dealing with their “issues,” and finding ways to feel better, even if only temporarily. Perhaps in the heat of anger, particularly in situations involving their main partners, people leave the house and seek comfort, hedonistic escape, or maybe revenge in the form of engaging in sexual relations with others. Previous research examining the relationship between avoidant coping and HIV risk practices has shown the former to be a risk factor for the latter (Nyamathi, Stein & Brecht 1995; Stein & Nyamathi 1999). Our finding, coupled with the published studies on avoidant coping, suggest that some young adult Ecstasy users might benefit from anger management training, particularly if at least part of the intervention content were to deal with issues of coping with anger in healthy ways. In another work (Klein, Elifson & Sterk 2004), we have addressed the issue of sexual coping and HIV risk in greater detail and we encourage interested readers to consult that work for further information on this subject.

Finally, we would like to discuss our finding pertaining to self-esteem. We discovered that greater self-esteem corresponded with an increased likelihood of having more than one sex partner. This is unlike most published reports, about three-quarters of which have shown that low self-esteem corresponds with greater behavioral risk for HIV (see, for example, Stein et al. 2005; Sterk, Klein & Elifson 2004; MacDonald & Martineau 2002). Generally speaking, findings such as these are attributed to low self assessments leading people to show less concern about themselves and their well-being, thereby increasing their willingness to practice risky behaviors.

Interestingly, however, some studies, including the present one, have found that higher levels of self-esteem are associated with greater involvement in HIV risk behaviors (see, for example, Hollar & Snizek 1996). This finding led some researchers to seek answers to the underlying question of why, seemingly counterintuitively, higher self-esteem may correspond with greater, rather than lesser, involvement in HIV risk for many persons. Research on this subject has revealed several processes that may be at work. First, some studies have shown that many persons with higher levels of self-esteem engage in rationalization processes that enable them to justify to themselves their own high-risk behaviors (Boney-McCoy, Gibbons & Gerrard 1999; Smith, Gerrard & Gibbons 1997). Smith, Gerrard, and Gibbons (1997) referred to these processes as self-serving cognitive strategies. In other work, a similar behavioral phenomenon has been referred to as compensatory self-enhancement (Gerrard et al. 2000). Second, other authors (McNair, Carter & Williams 1998) have discovered that persons with low levels of self-esteem are more likely than persons with higher levels of self-esteem to perceive their behaviors as risky. This, in turn, enables persons who are high in self-esteem to continue to engage in risky behaviors while those who are lower in self-esteem avoid practicing those same behaviors. Third, other research has found that persons with higher levels of self-esteem worried less about acquiring HIV, thereby enhancing their likelihood of becoming involved in risky behaviors (Abel & Chambers 2004). The bottom line seems to be this: When greater self-esteem is associated with greater, rather than lesser, involvement in HIV risk (as was the case in the current study), this relationship appears to be the result of cognitive processes.
that make it possible for high-self-esteem persons to minimize their self-perception of risk whereas their low-self-esteem counterparts do the opposite.

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### TABLE 1

Multivariate Predictors of Having Multiple Sex Partners

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Odds Ratio</th>
<th>95% Confidence Interval</th>
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<tr>
<td>Race = non-Caucasian</td>
<td>0.47 *</td>
<td>0.26 – 0.85</td>
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<tr>
<td>Relationship status = involved</td>
<td>0.54 *</td>
<td>0.30 – 0.98</td>
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<tr>
<td>Number of HIV-positive persons known</td>
<td>1.06 *</td>
<td>1.01 – 1.12</td>
</tr>
<tr>
<td>Age of first sexual experience</td>
<td>0.84 **</td>
<td>0.74 – 0.96</td>
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<tr>
<td>Using Ecstasy for its touch-enhancing properties</td>
<td>1.05 **</td>
<td>1.02 - 1.09</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>1.06 *</td>
<td>1.01 – 1.11</td>
</tr>
<tr>
<td>Dysfunctionality of handling disagreements</td>
<td>1.18 ***</td>
<td>1.05 – 1.33</td>
</tr>
<tr>
<td>Likelihood ratio chi-square</td>
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<tr>
<td>−2 log likelihood</td>
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<td>R²</td>
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\* \( p < .05 \)
\** \( p < .01 \)
\*** \( p < .001 \)