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Club Drug Use in Los Angeles among Young Men Who Have Sex with Men

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Abstract

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Little is known about young men who have sex with men's use of club drugs and the risk factors associated with such use. A structured survey was administered in 2005 to 496 young men who were 18-22 years old (40% were 18-19 years old); self-identified as with a same-sex sexuality (83%), bisexual (16%), and/or had had sex with a man (97%); Caucasian (35%), African American (24%), and Latino of Mexican descent (40%). Subjects were recruited from gay-identified venues in Los Angeles, California using a venue-based probability sampling design. Descriptive statistics revealed a high prevalence of drug and club drug use. Regression analyses revealed risk factors associated with recent club drug use, including place of residence, religiosity, disclosure of sexuality to family, frequency of attendance at bars/clubs, and involvement in sexual exchange and the street economy. Limitations and implications of this research are discussed.

Keywords

Adolescents; youth; gay; bisexual; bars; club drugs; HIV risk

Introduction

While it is now well understood that most adolescents will experiment with alcohol and drugs at some point during their teens (Arnett, 2000), there is also considerable evidence that young men who have sex with men (YMSM)¹ are at particularly high risk for drug use. For many YMSM, adolescence is a time of rejection from family and friends, stigmatization, and social isolation. While connectedness with family has repeatedly been found to be highly protective against drug use and other risky behaviors among young people (Flaherty & Richman, 1986; Kobak & Sceery, 1988; Sarason, Pierce, Bannerman, & Sarason, 1993; Sneed, Morisky, Rotheram-Borus, Ebin, & Malotte, 2001; Sroufe & Fleeson, 1986), YMSM often find themselves feeling disconnected and isolated from their families because of their sexuality. Moreover, the struggle to develop and integrate a positive adult identity, a primary developmental task for all adolescents, becomes an even greater challenge for YMSM given the disapproval, discrimination, and homophobia many experience (D'Augelli & Herschberger, 1993; Gonsiorek, 1988; Hetrick & Martin, 1987; Hunter & Mallon, 1999; Ryan & Futterman, 1997; Savin-Williams, 1989, 1990b; Telljohann & Price, 1993; Uribe & Harbeck, 1992). YMSM may resist disclosure of their sexuality out of fear of rejection by peers or family members (Carpineto et al., 2006; Gonsiorek, 1988; Savin-Williams, 1989, 1990b). Among those that have “come out”, families may not react well to this disclosure (Telljohann & Price, 1993), with negative reactions ranging from “tolerance” rather than active support of the individual to extreme hostility, abuse, and violence (Hunter, 1990; Remafedi, 1987). These negative reactions may in turn result in a range of health and mental health problems (Martin & Hetrick, 1988; Savin-Williams, 1990a; Savin-Williams & Lenhart, 1990), including alcohol and drug use. To ease their sense of isolation, these youth may seek out and begin to spend time in gay venues, such as bars or clubs, where they may find acceptance, but also be introduced to illicit drugs, including “club drugs.”

To date, little research has been conducted to examine the impact of these experiences – i.e., the impact of “coming out” to family and friends, feeling acceptance and/or rejection from family and friends – on YMSM's use of drugs and involvement in risk behaviors (Ryan & Futterman, 1997). The limited research that has been conducted suggests that YMSM are significantly more likely than heterosexual youth to report lifetime use of alcohol and drugs, including injectable drugs, as well as report use of marijuana and cocaine before 13 years of age (Wolitski, Valdiserri, Denning, & Levine, 2001). Risk factors associated with high levels

¹The term of YMSM is used in this paper although it is important to note that the YMSM, as well as the adult MSM populations, are heterogeneous and not homogenous groups.

of substance use include a history of childhood sexual abuse (Hughes & Eliason, 2002), stressful life events (Rosario, Schrimshaw, & Hunter, 2004), gay-related verbal harassment and discrimination (Rosario, Rotheram-Borus, & Reid, 1996), and involvement in gay-related social events (Rosario et al., 2004). Unfortunately, the vast majority of studies conducted to date with YMSM have been descriptive in nature and conducted with small, non-representative samples of convenience. The one exception is the Young Men's Survey, a large-scale study conducted in the mid-1990s with 15- to 22-year old YMSM in seven US cities (Valleroy et al., 2000). Findings from this study revealed a high prevalence of lifetime, recent, and frequent illicit drug use, including stimulants such as, cocaine and amphetamines. Risk factors found to be associated with drug use in this sample included race/ethnicity (with White youth being at increased risk), sexual identity (with youth who identified as bisexual and heterosexual being at increased risk), disclosure of sexual identity (with nondisclosure associated with increased risk), history of sexual abuse, and history of homelessness. No subsequent research has been conducted to examine YMSM's drug use patterns in light of more recent trends in the availability and popularity of illicit drugs.

In contrast to the limited research that has been conducted to date with YMSM, considerable research has been conducted to examine the drug use patterns of older adult men who have sex with men (MSM), suggesting that MSM may have as much as a sevenfold increase in illicit drug use when compared to a nationally representative sample of single urban men (Woody, 2001). Risk factors found to be associated with drug use among MSM include a history of forced sex and/or childhood sexual abuse (Ellickson, Collins, Bogart, Klein, & Taylor, 2005; Kaukinen, 2002), attendance in gay bars or nightclub (Waldo, McFarland, Katz, MacKellar, & Valleroy, 2000), and internalized homophobia (Malyon, 1982; Nungesser, 1983; Shidlo, 1994; Swadi, 1999).

Recent studies have begun to examine MSM's use of "club" drugs, particularly within the context of MSM's involvement in HIV risk behaviors (Halkitis, Parsons, & Stirratt, 2001; Koblin et al., 2003; Reback, 1997; Reback, Larkins, & Shoptaw, 2004; Stall & Ostrow, 1989; Thiede et al., 2003; Weber et al., 2003). Generally speaking, club drugs refer to a category of drugs that are commonly used at clubs, raves, or dance parties, including cocaine, methamphetamine, ecstasy, GHB, and Ketamine. Club drugs in general, but stimulants in particular, are believed to be responsible for the increased prevalence of sexually transmitted infections (STIs) reported among MSM since the late-1990s (Eichenthal, 2001; Guss, 2000; Halkitis, Fischgrund, & Parsons, 2005; Halkitis et al., 2001; Halkitis, Parsons, & Wilton, 2003; Patterson & Semple, 2003; Reback et al., 2004). Methamphetamine, one of the most commonly used club drugs (Finnerty, 2003) has been found to put MSM at increased risk for engaging in HIV risk-related sexual behaviors and infection (Stall et al., 2001; Eichenthal, 2001). Methamphetamine is believed to encourage risky sexual behaviors by intensifying and prolonging sexual encounters, increasing the subjective pleasure of sex (Guss, 2000; Halkitis et al., 2005; Halkitis et al., 2001; Halkitis et al., 2003; Patterson & Semple, 2003), increasing a sense of euphoria and confidence, and encouraging impulsivity that may in turn lower one's inhibition to engage in unprotected sex (Halkitis et al., 2003; Kurtz, 2005; Purcell, Ibanez, & Schwartz, 2005). Despite rising concerns about club drug use among MSM, little is known about YMSM's use of these drugs.

In this paper, we report the prevalence of illicit drug use and correlates of recent club drug use among a large and ethnically diverse sample of YMSM recruited from gay-venues in Los Angeles, California using a venue-based probability sampling design. The research received Institutional Review Board approval.

Methods

Study Sample and Sampling Design

A total of 496 subjects were recruited into the study between February and December of 2005². Young men were eligible to participate in the study if they were 18 to 22 years old; self-identified as gay, bisexual, or uncertain about their sexual orientation and/or reported having had sex with a man; self-identified as Caucasian, African American, or Latino of Mexican descent; and a resident of Los Angeles County with no expectation of living outside the County for at least six months following recruitment.

Young men were recruited at public venues using the venue-based probability sampling design developed by the Young Men's Study and later modified by the Community Intervention Trials for Youth study (MacKellar, Valleroy, Karon, Lemp, & Janssen, 1996; Muhib et al., 2001). Public venues included bars, coffee houses, parks, beaches, and high-traffic street locations where YMSM spend time or 'hang out'; social events such as a picnic or baseball game sponsored by an agency or organization that serves YMSM, and special events such as gay pride festivals. Enumerations of young men attending these types of venues were first conducted at different days and times. Based on these enumerations, sampling frames were constructed of specific 4-hour time periods from 36 venues where a minimum of eight eligible men might be encountered (see Ford et al., 2006) for further information about the study design and sampling methods).

Recruitment Procedures

Three to four researchers conducted 4-hour sampling events in accordance with monthly sampling calendars. Young men who entered the venue and appeared to be eligible for the study were systematically counted (using a "clicker") and invited to complete a brief screening instrument to determine eligibility. Young men were counted or approached only once, regardless of whether they entered a venue multiple times. If a young man was found to meet the study criteria, he was provided with a detailed description of the study. The screening instrument was administered in English and Spanish. Informed consent and contact information was obtained from those who agreed to participate. All interviews were scheduled within two weeks of the recruitment date.

Survey Instrument

The survey was administered in both English and Spanish using computer-assisted interview (CAI) technologies and an on-line testing format (Kissinger et al., 1999; Ross, Tikkanen, & Mansson, 2000). The CAI software used in this study incorporated sound files, which allowed the respondent to silently read questions and/or listen to the questions read through headphones and enter their responses directly into the computer. Administration of the survey required on average 1 1/2 hours. Analyses were performed to examine the prevalence of illicit drug use, as well as the relationship between the following demographic and psychosocial variables (independent variables) and recent club drug use (dependent variable):

Demographic variables—Participants were asked to report their age; race/ethnicity; place of birth; immigration status; current place of residence; employment status; whether they are attending school; had ever been homeless; had ever "exchanged a sexual act or favor for something like money, drugs, or a place to stay;" and had ever participated in the street economy (e.g., selling/running drugs, prostitution, panhandling).

²Recruitment extended throughout the course of the year in large part to account and control for any potential seasonal variations that might have created sampling biases.

Sexuality—Participants were asked which sexual identity they most identified with (e.g., gay, queer, bisexual, same gender loving, straight). *Sexual attraction* was measured by asking participants “How much are you sexually attracted to males/females;” it was then recoded to create a new 3-level nominal variable: sexually attracted to males only, to females only, or to both males and females. *Disclosure* of sexuality was measured by asking participants to report how many of their family, best/closest friends, and other friends about their sexual identity, attractions, or behavior.

Social Support—The Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988) is a 12-item scale that was used to measure perceived support from family and friends. A total score was calculated by summing the items. Participants were said to have high family/peer support if they had a score less than 7 (lower 25th percentile) and high friend/peer support if they had a score less than 5 (lower 25th percentile).

Religiosity—Religiosity was measured by asking participants how religious they consider themselves (Sheeran, Abrams, Abraham, & Spears, 1993). Responses were recoded to create a dichotomized variable of religiosity: very or somewhat religious vs. not very or not at all religious.

Sexual abuse—Participants were asked if they had ever been sexually abused or assaulted, either as a child or as an adult.

Depression—Depression was measured using the 20-item Center for Epidemiologic Studies Depression (CES-D) Scale (Radloff, 1977) whereby participants were asked to report whether they had experienced depressive symptoms within the past week. A total score was calculated by summing the items, and cut-points were also created based on previous research conducted with MSM (Ryff & Keyes, 1995; Stall et al., 2001): a score of 6 to 21 was considered distressed, a score greater than 22 was considered depressed.

Stressful life events—Stressful life events were measured by asking participants if they had experienced one or more stressful events during the previous 3 months (Wills, 1986). A total score was calculated by summing the number of items checked; a score of 9 or more (top 75th percentile) was considered to be highly stressed.

Bar/club attendance—Attendance at a gay bar or club was assessed by asking participants, “How often in the last three months did you go to a gay bar or club?” (Vanable, McKirnan, & Stokes, 1998).

Alcohol and illicit drug use—Participants were asked about their lifetime, past 3-month, and past 30-day use of tobacco, alcohol, and illicit drugs; their involvement in injection drug use; and the number of days within the past 30 days that they had used each drug. Club drugs were defined to cocaine, crystal/methamphetamine, ecstasy, poppers, GHB, Ketamine, and other forms of speed. Also assessed was use of prescription drugs obtained without a physician's order, including anti-anxiety (e.g., Valium, Xanax), depressants (e.g., Nembutal, Seconal), anti-depressant/sedative, opiate/narcotic (e.g., Vicodin, Oxycontin, Codiene), and attention deficit disorder medications. Other drugs assessed included marijuana, crack, LSD, PCP, heroin, and mushrooms.

Statistical Analysis

All statistical analyses were conducted using STATA V. 9 (StataCorp, 2005). Cronbach's alphas were also computed for each scale, as reported in Table 1. Descriptive statistics, such as frequencies, percentages, means, medians and ranges, were next used to tabulate the sample

demographics. These statistics, along with apriori knowledge of the literature, were used to investigate potential cut-points for continuous variables and groupings for categorical variables to address sample size complications and to create meaningful categories. Univariate (unadjusted) and multivariate (multiple) logistic regression were used to examine the relationship between each of the theoretically relevant independent (demographic and psychosocial variables) and dependent (past 3-month club drug use) variables. For each independent variable, the odds of club drug use in the past 3 months is reported, along with 95% confidence intervals (CI), to respectively measure associations between dependent and independent variables and the precision of these estimates. Unadjusted odds ratios were calculated to test appropriate categories and cut-points of independent variables as well as to identify candidate variables for inclusion into the multivariate model. The adjusted odds ratios estimated through multiple logistic regression controlled for multiple variables simultaneously to account for potential confounded relationships.

To select the best set of risk variables for the multiple logistic regression model, forward stepwise regression was used including variables with a p-value of 0.15 and 0.20. This criteria is less stringent than the standard $p=0.05$ and thus has more power to detect potential confounding effects (Kleinbaum, Kupper, & Morgenstern, 1982; Rothman, 1998). After examining correlations, there appeared to be no evidence of collinearity between variables entered into the stepwise model. Overall model fit was assessed by the Hosmer-Lemeshow goodness of fit test. Automated stepwise procedures have been recommended to identify the most parsimonious set of variables to predict the outcome (e.g., drug use) (Kleinbaum, 1994). To test the selected model, a confirmatory analysis was further conducted by examining changes in the estimates and confidence intervals when manually adding candidate variables to build a multivariate model (Rothman, 1998). Using both techniques, the same set of variables was selected for the final multivariate model.

Results

Sample Demographic Characteristics

As summarized in Table 2, a total of 496 YMSM were enrolled in the study during the first eleven-months of recruitment, including 175 (35%) Caucasian, 121 (24%) African American, and 200 (40%) Latino YMSM of Mexican decent. The average age was 20.1 years, with 40% of the sample being 18-19 years of age. Eighty respondents (16%) reported having been born outside of the US, while over half (54%) of the respondents reported living at home with their family at the time of their baseline interview. Twenty-one percent reported being in school while an additional 27% reported both attending school and being employed; only 14% reported being neither in school nor employed. Forty-three percent reported being very or somewhat religious, while 57% reported not being very religious or not at all religious. Of those that reported being religious, 71% reported that they were affiliated with the same religion that they had participated in while growing up, with the vast majority being Catholic (34%) or Protestant (33%).

Given the study enrollment criteria, 83% self-identified as homosexual, gay or some other same-sex sexual identity (e.g., "same gender loving"), 16% self-identified as bisexual, and 1% self-identified as straight or heterosexual. In contrast, 70% of the sample reported being sexually attracted exclusively to males, 28% reported being sexually attracted to both males and females, and 1% reported only being sexually attracted to females. Remarkably, 20% reported having a history of sexual abuse/assault, 16% reported having traded a sexual act or favor for something, and 7% reported a history of homelessness.

Psychosocial Variables

The vast majority of respondents reported that they had disclosed their sexuality/identity to their family and friends, with only 15% reporting that none of their family members knew about their sexual orientation. Similarly, nearly all of the respondents reported that most or all of their best/close friends and other friends knew about their sexuality (91% and 71%, respectively).

Respondents reported high levels of support from both their family and friends. They also reported having had on average 7 stressful life events during the previous 3 months, with the most common stressful events being family arguments (58%), financial difficulties (49%), arguments with a partner (44%), relationship with partner ending (37%), and problems/difficulties with a close friend (49%). Additionally, 21% reported symptoms of sufficient severity to suggest depression as assessed by the CES-D, and 18% of respondents reported symptoms suggesting they were distressed.

Club and Other Illicit Drug Use

Within this sample, 69% of respondents reported having ever used an illicit drug (49% if marijuana is not included in this analyses). Of those who had ever used an illicit drug, 72% reported use within the previous 3 months and 62% within the past 30-days. As presented in Table 4, 90% of the sample reported lifetime use of alcohol, 64% reported lifetime use of marijuana, 40% reported lifetime use of club drug (23% reported use of cocaine, 20% reported use of crystal methamphetamine, 21% reported use of ecstasy), and 26% reported lifetime use of a prescription drug without a physician's order (14% reported use of an anti-anxiety, 17% reported use of an opiate/narcotic). In contrast, lifetime use of street drugs, such as crack (5%), LSD (5%), and heroin (2%) was low. Only 2% reported having ever injected a drug. The mean age of initiation of alcohol and marijuana was 16.5 and 16.8, respectively, with the mean age of initiation of any club drug being 17.8 years, the mean age of initiation of any prescription drug use without a physician's order being 17.6, and the mean age of initiation of injection drug use being 17 years.

A comparison of the prevalence of lifetime use reported by HYM study subjects with lifetime use reported by a nationally representative sample of high school seniors assessed as part of the Monitoring the Future (MTF) study (Johnston, O'Malley, Bachman, & Schulenberg, 2006) and a nationally representative sample of YMSM, ages 15 to 22 years, assessed as part of the Young Men's Survey (YMS) (Valleroy et al., 2000), is provided in Table 4. These comparisons provide further evidence that our study sample, like similar YMSM interviewed ten years ago, reported considerably higher rates of illicit drug use than the general population of adolescents. As presented in this table, nearly half of the HYM subjects (49%) reported lifetime use of an illicit drug other than marijuana as compared to a little over a quarter (27%) of high school seniors. Moreover, the prevalence of lifetime club drug use among HYM subjects was considerably higher than use reported among high school seniors, and yet comparable to lifetime use reported by YMSM from the YMS study.

The prevalence of recent drug use was also high, with 56% of those who had ever used a club drug reporting club drug use within the previous 3 months. Of those who reported club drug use within the past three months, most (46%) reported use of cocaine, followed by crystal, ecstasy and poppers/nitrates (39%, 33% and 26% respectively). While a high percentage of the sample reported lifetime and recent use of illicit drugs, respondents reported infrequent use during the previous 30-days: the median number of days that respondents reported drug use ranged from 1 day during the past month for some prescription drugs to 3.5 days during the past month that marijuana was used.

Univariate Analyses

Simple odds ratios demonstrating crude relationships between the independent variables and recent club drug use (i.e., past three months) are presented in Table 5. These odds ratios revealed that respondents at greatest risk for recent club drug use included those who: were older (OR=1.86, 95% CI=1.10, 3.15); had a history of homelessness (OR=3.2, 95% CI= 1.59, 6.46); had ever engaged in sex exchange (OR=4.97, 95% CI=3.0, 8.23) or had ever participated in the street economy (OR=5.08, 95% CI=3.19, 8.10); were not in school nor employed (OR=2.37, 95% CI=1.12, 4.99); and who frequented a gay bar/club several times a week (OR=1.84, 95% CI=1.09, 3.08). Moreover, respondents who lived in their own apartment (OR=1.68, CI=1.07, 2.65) or with a friend/partner (OR=2.48, CI=1.27, 4.82) were significantly more likely to report recent club drug use than respondents living at home with their family. In contrast to the literature, respondents who had disclosed their sexuality to all or most of their family members were also at greater risk for recent club drug use (OR=2.30, 95% CI=1.14, 4.63). Respondents at significantly less risk for recent club drug use were those who: were African American (OR=0.53, 95% CI=0.30, 0.93) or Latino (although not significant, there was a suggested association with an OR=0.64, 95% CI=0.40, 1.04); and who reported being very or somewhat religious (OR=0.60, 95% CI=0.39, 0.94). There was a suggested association between recent club drug use and the number of stressful life events, with respondents who reported 9 or more stressful events being more likely to report recent club drug use than respondents who reported 8 or less stressful events (OR=1.74, 95% CI=1.12, 2.69). Other variables not found to be significantly associated with recent club drug use were immigration status, sexual attraction, family support, peer support, disclosure of sexuality to peers, and history of sexual abuse/assault.

Multivariate Analyses

The final fitted model using forward stepwise procedures and adjusted for multiple independent variables is presented in Table 5. This multivariate model mutually adjusted for history of sex exchange and participation in the street economy, current place of residence, religiosity, number of family aware of their sexual identity/orientation and attendance at gay bars/clubs. Many of the same relationships identified by the univariate analyses were further supported in our multivariate approach; slight adjustments were made, however, to estimates and confidence intervals to account for confounding effects. These analyses revealed that respondents who had ever engaged in sex exchange were nearly four times more likely to have recently used a club drug as compared to respondents who never participated in sex exchange (OR=3.95, CI=2.23, 6.97). Similarly, those who reported having ever participated in street economy were also nearly four times as likely to have recently used a club drug as compared with respondents who had never participated in the street economy (OR=3.71, CI=2.19, 6.28). Respondents who lived in their own apartment were also more likely to report recent club drug use as compared with those living at home (OR=1.78, CI=1.07, 2.96), as were respondents who frequent gay clubs and bars at least once a week (OR=1.97, CI=1.10, 3.54), and respondents who reported that most or all of their family members knew about their sexual identity/orientation (OR=1.99, CI=0.93, 4.25). In contrast to the univariate regression results, the number of stressful life events was not found to be an important risk factor after adjusting for multiple variables. There was no evidence of lack of fit for this multivariate model (Hosmer-Lemeshow GOF $\chi^2=14.50$, $p=0.069$).

Discussion

In this study, we found that YMSM recruited from gay-identified venues are a heterogeneous population, with nearly all youth reporting use of alcohol and a sizable percentage reporting lifetime and recent use of illicit drugs, particularly club drugs. While these findings provide further evidence that YMSM are at high risk for illicit drug use, there are a number of limitations

of this study to be acknowledged. The findings rely on self-reported behaviors, which cannot be independently verified. Self-report data regarding respondents' use of alcohol and drugs may have underestimated the true prevalence given that many of these behaviors are illegal and socially undesirable, although we expect that the use of CAI may have minimized the underreporting in these behaviors. The data are cross-sectional and therefore do not contain information about the temporal relationship between some of the demographic, psychosocial, and drug use variables explored in this study. Thus, no statements can be made about the causal relationship between these variables. Finally, although this sample is likely to be representative of YMSM who can be recruited through gay-identified venues, this sample is not representative of the larger YMSM population. Indeed, alcohol and drug use behaviors may be elevated within this segment of the YMSM population given that they were primarily recruited from gay bars and clubs where they might have increased access to illicit drugs.

Despite these limitations, this study provides clear evidence that the prevalence of drug use (lifetime and recent) is high among YMSM who are recruited from gay-identified venues, and that particular segments within this population are at especially high risk for use of club drugs. Although we cannot make a causal link with the data reported here, findings potentially suggest that attendance at gay clubs/bars and assimilation into the gay community may be what first introduces YMSM to club drugs. The findings from this research also suggest that a number of demographic and psychosocial variables may put some YMSM at increased risk for club drug use. In this sample, young men were at increased risk if they were older, Caucasian, frequented a gay bar/club more than once a week, had previously been homeless ever exchanged sex for something, and/or if they were involved in the street economy. Young men were less likely to report recent club drug use if they lived at home with their family and/or considered themselves to be somewhat or very religious. Multivariate analyses that controlled for intercorrelation among these variables further revealed that YMSM who frequently attend gay bars/clubs, have a history of homelessness, have ever exchanged sex, and who live in their own apartment or are precariously housed are significantly more likely to report recent use of club drugs. In contrast, YMSM who live with their family, considered themselves to be religious, and who had disclosed their sexual identity/orientation to fewer family members were less likely to report recent club drug use.

The findings from this research are significant for a number of reasons. First, they provide very clear evidence that YMSM warrant special attention, separate from their heterosexual peers and from older MSM. As reported in this paper, our study sample of YMSM was considerably more likely to report lifetime use of tobacco, alcohol, any illicit drug, any illicit drug other than marijuana, cocaine, methamphetamine, and numerous other drugs as compared to a nationally representative sample of high school seniors. There are numerous reasons why YMSM may be at greater risk than heterosexually-identified youth. Most YMSM will experience some form of rejection, isolation, and/or discrimination because of their same-sex sexual attractions/relationships. In their effort to define themselves with respect to their sexuality, YMSM will often spend increasing amounts of time in gay-identified venues such as bars, clubs, and other social settings, as they try to learn more about the gay culture and what it means to be gay. This may bring increased risk and exposure to illicit drugs. In addition, as YMSM sort through and reconcile their different selves – i.e., their role and place within their family, at school or in the workplace, with their friends, and with respect to race, ethnicity, and culture – many will experience a range of conflicting emotions, from excitement and enthusiasm to apprehension and fear. Drugs may be one way to manage this fear and anxiety.

In our sample we found that a sizable percentage of respondents did perceive their friends and parents to be supportive. As a result, family and peer support were not found to be associated with recent club drug use. However, a sizable percentage of the sample did report being depressed or distressed, experiencing a sizable number of recent stressful life events, and

having ever been homeless. In this case, all of these psychosocial stressors – i.e., feeling distressed, increased number of stressful life events, and a history of homelessness -- were found to be significantly associated with recent club drug use. Being “out” to most or all family and friends, frequent attendance at a gay bar/club, involvement in sex exchange, and participation in the street economy were also found to be associated with recent club drug use. Because late adolescence and early adulthood is a period of time when behavioral patterns – both positive and negative – are established and reinforced, it is particularly important that early interventions be targeted to build on protective influences, bolster resiliency, and reduce YMSM's risk for poor health outcomes.

The findings from this research help to fill some of the gaps in the literature that exist regarding YMSM and their risk for drug use, but clearly more research is needed to further characterize risk and protective factors associated with drug use and associated health problems, including HIV transmission. To be sure, more research is needed to further explore the complex lives of these young people, and the range of individual, familial, social and community influences that ultimately impact the health, well-being, and development of YMSM. More research is also needed to clarify the different types of interventions that might need to be developed to meet the specific needs of YMSM who are at high risk for drug use and abuse – e.g., primary and secondary prevention interventions, linkage to treatment services – as well as intervention intended to prevent negative health outcomes – e.g., HIV prevention interventions, linkage to HIV testing and treatment services, etc. Finally, future research is needed to more fully characterize behavioral differences between different segments of the YMSM population, particularly with respect to behavioral risk and health profiles. Attempts to replicate these findings in other urban settings would also be of interest.

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Table 1
Survey Scales, Sample Question, Response Options, and Cronbach's Alphas

Scale/Construct & Source	# Items	Sample Question	Response Options	Cronbach's α
Sexual attraction to males (Original)	1	How much are you sexually attracted to males?	5-point scale: 1= very strongly, 2=somewhat strongly, 3=not very strongly, 4=not at all attracted to males/females, and 5=don't know	-
Sexual attraction to females (Original)	1	How much are you sexually attracted to females?	5-point scale: 1= very strongly, 2=somewhat strongly, 3=not very strongly, 4=not at all attracted to males/females, and 5=don't know	-
The Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988)	12	My family really tries to help me.	4-point scale: 1=strongly agree, 2=agree, 3=disagree, 4=strongly disagree	0.900
Religiosity (Sheeran, Abrams, Abraham, & Spears, 1993)	1	How religious do you consider yourself to be?	4-point scale: 1=very religious; 2=somewhat religious; 3=not very religious; and 4=not at all religious	-
Center for Epidemiologic Studies Depression (CES-D) Scale (Radloff, 1977)	16	During the past seven days how often did you feel this way, "I was bothered by things that usually do not bother me."	4-point scale: 0=less than 1 day or never; 1=1-2 days; 2=3-4 days; and 3=5-7 days	0.902
Stressful life events (Wills, 1986)	43	During the past three months did you experience...family arguments; your relationship with your partner ended; you have had financial problems?	Yes/No	0.746
Bar/club attendance (Venable, McKimman, & Stokes, 1998)	1	How often in the last three months did you attend a gay bar?	5-level ordinal variable: 1=never, 2=once a month, 3=several times a month, 4=once a week, and 5=several times a week	-

Note: For one-item scales, there is no Cronbach's alpha.

Table 2**Sample Characteristics**

Variables	Categories	n (%)
Age	18 - 19 yrs	197 (40)
	20 - 21 yrs	182 (37)
	22+ yrs	117 (24)
Race/ethnicity	Caucasian	175 (35)
	Mexican descent	200 (40)
	African-American	121 (24)
Immigration	Born in other country	80 (16)
	Family	266 (54)
	Own place/apartment	181 (36)
Residence	With friends/partner	33 (7)
	No regular place/other	16 (3)
Employment	In school	105 (21)
	In school, employed	134 (27)
	Employed, not in school	190 (38)
Sexual identity	Not employed, not in school	67 (14)
	Gay	369 (74)
	Other same-sex identity	44 (9)
Sexual attraction	Bisexual	80 (16)
	Straight	3 (1)
	Males only	349 (70)
Religiosity	Males and females	138 (28)
	Females only	5 (1)
	Neither, don't know, missing	4 (1)
Attend gay bar/club (3 mo)	Very religious	43 (9)
	Somewhat religious	167 (34)
	Not very religious	86 (17)
Current mental health status	Not religious/Don't know	200 (40)
	Less than once a week	272 (55)
	Once a week	118 (24)
Stressful life events	Several times a week	106 (21)
	Not depressed CES-D score < 16	301 (61)
	Distressed CES-D score 16-21	91 (18)
Sexual assault (ever)	Depressed CES-D score 22+	104 (21)
	< 75th percentile w/score ≥ 8	340 (69)
	≥ 75th percentile w/score ≥ 9	156 (31)
Sex exchange (ever)		96 (20)
Street economy (ever)		81 (16)
Homeless (ever)		108 (22)
		35 (7)

Table 3

Distribution of Drug Use

Substance	Lifetime use n (%)	Use past 3 months* n (%)	Use past 30 days* n (%)	Mean Age Initiation (yrs)	Median # days used in past 30 days
Tobacco	325 (66)	263 (81)	249 (77)	16.7	12
Alcohol	448 (90)	423 (94)	414 (92)	16.5	5
Marijuana	315 (64)	202 (64)	174 (55)	16.8	3.5
Club Drugs:	200 (40)	112 (56)	86 (40)	17.8	
Cocaine	116 (23)	51 (44)	37 (32)	18.2	3
Crystal/methamphetamine	99 (20)	44 (44)	34 (34)	18.1	2.5
Ecstasy	105 (21)	37 (35)	28 (27)	17.9	1.5
GHB	26 (5)	8 (31)	7 (27)	19.0	1
Poppers, nitrates	75 (15)	29 (39)	22 (29)	18.7	2.5
Ketamine	32 (6)	6 (19)	6 (19)	18.4	3.5
Other forms of speed	46 (9)	8 (17)	8 (17)	17.4	2
Prescription Drugs:					
Viagra	128 (26)	53 (41)	46 (36)	17.6	1
Anti-anxiety (Valium, Xanax)	27 (5)	8 (30)	7 (26)	19.2	1
Anti-depressants/sedatives	71 (14)	23 (32)	19 (27)	18.0	1
Depressants (Nenbutal, Seconal)	26 (5)	3 (12)	1 (4)	17.4	**
Opiates/narcotics (Vicodin, Oxycontin, Codeine)	37 (7)	7 (19)	5 (14)	17.2	5
Attention Deficit Disorder	84 (17)	29 (35)	25 (30)	17.7	2
Crack	50 (10)	14 (28)	10 (20)	17.5	2.5
LSD	25 (5)	5 (20)	3 (12)	18.2	3
PCP	26 (5)	3 (12)	3 (12)	16.6	1
Mushrooms	8 (2)	2 (25)	2 (25)	17.3	1
Heroin	75 (15)	15 (20)	11 (15)	18.0	1
Other Inhalants (NO2, paint)	8 (2)	4 (50)	4 (50)	18.4	2.5
Rohypnol	52 (10)	13 (25)	11 (21)	16.8	2
Other drugs	3 (1)	2 (67)	2 (67)	20.0	7
Injection drug use	29 (6)	11 (38)	7 (24)	17.0	7

* The denominator is lifetime drug user.

** Based on only 1 case, median not computed

Table 4

**Comparison of Lifetime Drug Use Between the Study Sample and MTF High School Seniors and Young Men's Survey
YMSM 15-22 years of age**

Substance	HYM YMSM N=496 (%)	MTF H.S. Seniors N=15,400 (%)	YMS N=3492 (%)
Tobacco	(66)	(50)	--
Alcohol	(90)	(75)	(93)
Any illicit drug	(69)	(50)	(76)
Any illicit drug other than marijuana	(49)	(27)	--
Marijuana	(64)	(45)	(71)
Cocaine	(23)	(8)	(31)
Crack	(5)	(4)	(10)
Crystal/methamphetamine	(20)	(5)	(28)
Ecstasy	(21)	(5)	(27)
Heroin	(2)	(2)	(8)
LSD	(5)	(4)	(33)

Table 5
Univariate and Multivariate Analyses for Club Drug Use Past 3 Months

Variable	Cases (%)	Univariate Comparisons			Multivariate Model*		
		OR	95% CI	p-value	OR**	95% CI	p-value
Age							
18-19 yrs	38 (19)	1					
20-21 yrs	38 (21)	1.1	0.67-1.83	0.70			
22+ yrs	36 (31)	1.86	1.10-3.15	0.02			
Race/ethnicity							
Caucasian	50 (29)	1					
African American	21 (17)	0.53	0.30-0.93	0.03			
Mexican American	41 (21)	0.64	0.40-1.04	0.07			
Residence							
Living with family	47 (18)	1			1		
Own apartment	48 (27)	1.68	1.07-2.65	0.03	1.78	1.07-2.96	0.03
Living with friend, partner, other	17 (35)	2.48	1.27-4.82	0.01	1.3	0.60-2.81	0.50
Education/employment status							
In school only	16 (15)	1					
Employed	76 (23)	1.7	0.94-3.08	0.08			
Not in school, employed	20 (30)	2.37	1.12-4.99	0.02			
Religiosity							
Not very, not at all religious	75 (26)	1			1		
Very, somewhat religious	37 (18)	0.6	0.39-0.94	0.02	0.64	0.39-1.05	0.07
Mental health status (CES-D)							
Not depressed CES-D score < 16	59 (20)	1					
Distressed CES-D score 16-21	26 (29)	1.64	0.96-2.81	0.07			
Depressed CES-D score 22+	27 (26)	1.44	0.85-2.43	0.17			
Stressful life events							
< 75th percentile w/score ≤ 8	66 (19)	1					
≥ 75th percentile w/score ≥ 9	46 (29)	1.74	1.12-2.69	0.01			
Number of family that knows sexuality							
No family members know	11 (14)	1					
Some family members know	34 (19)	1.38	0.66-2.88	0.40	1	0.57-2.88	0.55
All/most family members know	67 (28)	2.3	1.14-4.63	0.02	1.99	0.93-4.25	0.08
Attendance at gay bars, clubs							
Less than once a week	50 (18)	1			1		
Once a week	31 (26)	1.58	0.95-2.64	0.08	1.97	1.10-3.54	0.02
Several times a week	31 (29)	1.84	1.09-3.08	0.02	1.98	1.11-3.57	0.02
Sex exchange							
No history sex exchange	71 (17)	1			1		
Ever engaged in sex exchange	41 (51)	4.97	3.00-8.23	<0.001	3.95	2.23-6.97	<0.001
Street economy							
Never participated in street economy	60 (15)	1			1		
Ever participated in street economy	52 (48)	5.08	3.19-8.10	<0.001	3.71	2.19-6.28	<0.001
Homeless							
No history	96 (21)	1					
Ever history of homelessness	16 (46)	3.2	1.59-6.46	<0.001			

* Hosmer-Lemeshow GOF chi2=14.50, p=0.0697

** Multiple Logistic Regression Mutually Adjusted for variables included in the model