Prevalence and Predictors of Club Drug Use among Club-Going Young Adults in New York City

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ABSTRACT “Club drugs” encompass a diverse range of substances. Although efforts have been made to determine the extent of club drug use among the general population, it is equally important to assess patterns of use among key target populations from which drug trends typically diffuse. This paper describes the results of a survey focused upon club drug use among club-going young adults in NYC. Time-space sampling generated a sample of 1,914 club-going young adults (ages 18–29) who provided data on their use of six key club drugs: ecstasy, ketamine, cocaine, methamphetamine, GHB, and LSD, as well as data on their gender, sexual orientation, race/ethnicity, and other demographic variables. Club-going young adults report drug use at high rates—70% report lifetime illicit drug use and 22% report recent club drug use. Rates of club drug use differ by gender, sexual orientation and race/ethnicity. Male gender is predictive of ketamine, GHB, and methamphetamine use, while female gender is predictive of cocaine use. Gay/bisexual orientation and White race are predictive of the use of several club drugs. Greater health promotion efforts are warranted among this population. Intervention programs and campaigns should tailor specific drug messages to differentially target various segments of dance club patrons.

KEYWORDS Club drugs, Cocaine, Crystal Meth, Ecstasy, GBH, Ketamine, LSD.

INTRODUCTION

“Club drugs” encompass a diverse range of substances that emerged during the 1990s as major drugs of use and abuse in the United States and elsewhere. Club drugs include MDMA (methylenedioxymethamphetamine) or “ecstasy,” Crystal Meth (methamphetamine), cocaine, ketamine, LSD (d-lysergic acid diethylamide), and GHB (gamma-hydroxybutyrate) and its derivatives.^{1,2} Their unifying classificatory principle is that the use of these substances proliferated through the 1990s due to a perceived association with rave and club cultures. Depending upon the substance, club drugs may lead to a range of harms including cognitive impairment, hyperthermia, depression, sexual risk taking, coma, or death.^{2,3} Club drug use has increased dramatically in the United States and elsewhere over the past decade.⁴ Having diffused from sub-cultures, particularly the rave scene, these drugs are now

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used in multiple scenes and settings from college bars to parks to house parties to concerts.⁵

Efforts have been made through large-scale national surveys to determine the extent of the use of club drugs. The 2003 National Household Survey on Drug Abuse data shows that youth ages 18–25 have lifetime prevalence rates for the use of any illegal drug of 60.5%.⁶ The same data indicate that the lifetime use of any single club drug lies at 15% or below. The survey documented lifetime ecstasy use rates at 14.8%, lifetime LSD use rates at 14%, lifetime cocaine use rates at 15% and lifetime methamphetamine use rates at 5.2%.⁶ The Monitoring the Future Study, which assesses national drug trends amongst high school students, documented that in 2004 51.1% of 12th graders had ever used an illegal drug.⁶ More specifically, 7.5% of 12th graders had used ecstasy, 4.6% had used LSD, 8.1% had used cocaine, and 6.2% had used methamphetamine.⁴ These figures do suggest recent declines in the rates of lifetime use of club drugs among 12th graders since their peak in 2000.⁴ However, club drugs remain widely in use. Furthermore, while general population estimates are important to illustrate the dispersion of drug trends, it is equally important to identify and assess prevalence among key groups and target populations. Club drugs are titled as such because of a perceived association with club cultures, yet little systematic data exist to support these claims. Furthermore, a variety of subcultural styles and a range of conceptions of risk exist within club cultures.³ Within these club-going populations, the exploration of demographic patterns—including gender, sexuality, and race/ethnicity—of club drug use is warranted.

Gender shapes patterns of drug use in complex ways. Cultural bases of masculinity and femininity can profoundly influence the manner in which individuals practice their daily lives and engage in risk behaviors.^{7,8} Given higher rates of opportunities to use drugs, males have been found more likely to use illegal drugs than females.⁹ Yet, some studies of club drug use in the United Kingdom, Australia, and United States have shown gender equitable rates of club drug use, primarily ecstasy, amongst youth.^{10–13} Despite these suggestions of gender equity for rates of use, some studies have shown that females are more likely to report negative health consequences related to the use of club drugs—specifically ecstasy.^{14–16} One explanation posits that this gender difference is related to the more intense subjective effects of MDMA reported by women.¹⁷ These gaps in the literature illustrate the need for an exploration of the ways that gender shapes club drug use.

Regarding sexual orientation, several studies have documented differential rates of drug use by gay, lesbian, and bisexually identified people compared to their heterosexual counterparts.^{18–20} Boyd et al.¹¹ found gay, lesbian, and bisexual college students were more likely to have used ecstasy than their heterosexual classmates. Stall and Wiley found that gay and bisexual men were more likely than heterosexual men to use club drugs, specifically MDMA, hallucinogens, and amphetamines.²¹ In addition, Rosario et al.²² argued that lesbian youth are at even greater risk for substance abuse than their gay male counterparts, illustrating the importance of exploring the complexity of the interactive factors of gender and sexual orientation. Thus, the examination of sexuality and club drug use remains important to determine the extent to which prevention and education messages should be tailored to gay, lesbian, and bisexual young adults of both genders.

Similar to gender and sexual orientation, the relationship of race and ethnicity to drug use remains a complex phenomenon. Studies have shown that rates of drug use vary by race and ethnicity depending upon the drug under scrutiny.^{23–25} Despite the racial variance in overall drug use patterns, the empirical evidence suggests that

club drug use tends to occur most frequently amongst Whites.^{26,27} Fendrich et al.²⁶ found Whites to be significantly more likely to have used club drugs than African-American and Hispanic members of their Chicago based household sample. Similarly, Boyd et al.¹¹ found White college students were more likely to have used ecstasy than their African-American or Asian counterparts. Yacoubian²⁷ found a persistent pattern over time of White high school seniors being more likely to have used ecstasy than their non-white counterparts. A key remaining question is what do these racial and ethnic patterns of club drug use look like specifically amongst young adults who participate in club scenes.

This paper describes the results of a New York City-based survey focused upon club drug use among club-going young adults. We rely on time-space sampling—a novel approach to studying hard-to-reach populations—to gain a better understanding of the club drug use prevalence differences amongst club-going young adults by the three key demographic variables discussed above: gender, sexual orientation, and race/ethnicity. The novel sampling methodology allows us to generalize our findings to the population of young adults who attend dance clubs in New York City (NYC). Existing studies on this population that have explored the rates of club drug use have largely relied on convenience samples.^{28–31} The random nature of time-space sampling methodology helps to address some of the issues around the generalizability of rates of club drug use amongst this population. Our findings highlight the need for more nuanced examinations of the club drug phenomenon and to understand the complex relationships between such elements of social identity so as to better inform prevention, education, and treatment efforts.

MATERIALS AND METHODS

The Club Drugs and Health Project, broadly conceived, is a study of health issues among young adults (ages 18–29) involved in NYC dance club scenes. In particular, the project is designed to examine the patterns and contexts of club drug use and its associated risks among club-going young adults with the intent of assessing the potential for prevention and educational efforts. For this study, the specific club drugs of interest are ‘ecstasy’ (MDMA), ketamine, GHB, methamphetamine, cocaine, and Acid (LSD). Though there are other drugs classified under this framework—e.g., Rohypnol—based upon prior work, we are aware that these particular substances are the most salient club drugs in NYC.^{3,32} The survey utilized in the study was designed to capture a broader understanding of the prevalence of club drug use among club-going young adults as well as basic information on other health issues relevant to this population. The data drawn upon for this paper come from a survey collected over an eight-month period.

Sampling

To capture the sample for the survey and to subsequently identify youth to participate in an in-depth assessment, we utilized a time-space sampling methodology. Time-space sampling was originally developed to capture hard-to-reach populations.^{33–35} This methodology is also extremely useful for generating estimates of venue-based populations. For a venue-based population located at nightclubs in NYC, we can use these nightclubs as our basic unit of sampling in order to systematically generate a generalizable sample of this population.

Due to its focus upon venues as key elements of the sampling frames, the method of time-space sampling is advantageous for generating a probability sample of the

club-going young adult population. Rather than randomizing households or phone numbers as some other probability-based sampling methods do, we randomized both the times we recruited and the venues at which we recruited. Within that larger sampling effort, we also randomly sampled the young adults within those venues. Thus, we intended to capture the range of variability among club-going youth through randomizing three elements: 1) the venues attended, 2) the times attending the venues, and 3) the young adults attending the venues at those times.

We first randomized “time and space” using a sampling frame of previously enumerated clubs and time periods of operation. Once at the venue, we randomized the individuals approaching or entering the venue. The first process of time-space sampling involves the creation of a sampling frame. To construct the sampling frame, preliminary fieldwork was conducted to ascertain the “socially viable” venues for each day of the week. A venue can be deemed “socially viable” if a certain threshold of patron traffic existed at the venue on that given day of the week, i.e., a minimum of 10 “age eligible” individuals per recruitment hour per shift. Just because a club has its doors open on a certain night does not mean it should be included in the sampling frame. For example, if a club is open on Thursdays but only three young adults usually show up or it caters to an “over 40” crowd, it is not considered a “socially viable” venue on Thursday evenings. We generated lists of “socially viable” venues for each day of the week, a total of 71 venues. For each day of the week, every socially viable venue was listed and assigned a number. Then, using a random digit generator program, a random number was drawn for each recruitment day of that month. Each random number drawn corresponded to a given venue. This process ultimately yielded our schedule of venues for each month.

Given that certain nights of the week—namely Friday and Saturday—are bigger “party” nights of the week, we weighted “weekend” recruitment days by sampling additional venues and adding additional recruitment shifts on these “weekend” days. All Fridays and Saturdays were considered “weekend days”. Also, during the year certain other days may be assigned “weekend” status depending on the specifics of those dates. For example, a Sunday night on a holiday weekend would be assigned “weekend” status, even though most Sunday nights were not considered “weekend” nights.

Once at the venue, the three members of each recruitment team were structured into separate responsibilities: one “counter” and two “screeners.” To achieve randomization once at the venue, the counter tracked and counted every individual attending the venue. Every *n*th person was selected for the survey. Thus, once a certain number in the count had been reached, the counter assigned a screener to the individual selected at random. To match the level of patron traffic, the number in the count for random assignment was designated by the status of the night, whether it was considered “weekend” or “weeknight”, which corresponded to patron traffic flow. The consideration of traffic flow allowed for individuals attending smaller venues and on “off nights” to be adequately represented in the sample. For the duration of each recruitment shift, the counter continued to count and assign the screeners at random to the young adults attending the venue. The screeners approached the assigned individual immediately, identified themselves, and requested verbal consent for participation in the anonymous brief survey. After obtaining verbal consent, the brief surveys were administered by trained staff onto survey software on a Palm Pilot PDA. If the patron refused, the screener noted their refusal and estimated their age, gender, and ethnicity. Field staff members were trained not to administer surveys to individuals who were visibly intoxicated.

Measures

Staff survey screeners identified the gender presented by the respondent, either male or female. Respondents to the survey were asked to state their age, which was a continuous variable, and to self-identify their sexual orientation, which was then categorized as either heterosexual or gay/lesbian/bisexual. They were also asked to self-identify their race/ethnicity, which was then categorized as White, Black, Latino, Asian/Pacific Islander, and Mixed/Other.

To assess lifetime consumption of drugs, participants were asked whether they had ever used any illegal drug as well as whether they ever used any of the following club drugs: ecstasy, ketamine, GHB, cocaine, Crystal Meth, and Acid. To assess recent use of club drugs, they were asked if they had used “any of these six club drugs” within the past 3 months. All responses were dichotomized “Yes” or “No.”

Analyses

Prevalence estimates were computed using SPSS. Chi-square analyses were conducted to look for differences between groups defined by gender, sexual orientation, and race/ethnicity. Stratified chi-square analyses were carried out to explore the effects of gender and sexual orientation on club drug use in the population, specifically exploring differences between gay/bisexual men, straight men, lesbian/bisexual women and straight women. To control for the competing effects of the variables of interest, multivariate logistic regression analyses were conducted to evaluate the predictive nature of each of these variables while controlling the potentially confounding effects of other demographic variables in the model.

RESULTS

Sample Characteristics

During the specified period of time-space sampling, 5,175 individuals were approached at NYC clubs and lounges and 2,603 individuals ages 18 and older consented to the survey for which they received no incentive. Of those surveyed, 1,914 were young adults between the ages of 18 and 29. The average age of these young adults was 24 years old. The remaining 689 individuals were adults ages 30 and older, who were excluded from the analyses to maintain the focus on young adults. Our response rate was 50.3%.

Of the 1,914 club going young adults, 53.2% were male and 46.5% female. There was no significant gender difference between the people we approached but did not consent and those who consented to the intercept survey. Unlike the gender estimate of those who did not take the survey, it was impossible for us to estimate the sexual orientation of those who were approached but were not surveyed. Whites accounted for 55.6% of the sample, and the non-white breakdown of the sample indicated that Latinos were the second largest group found at clubs, followed by Blacks and Asians/Pacific Islanders. People of mixed heritage or other ethnicities accounted for 10.9% of the sample. The estimated gender and estimated race/ethnicity of those refusing the survey did not differ from those consenting to the survey (Table 1).

Club Drug Use

About 70% of the club-going young adults had ever used any illicit drug. Ecstasy was the primary club drug used amongst the sample, followed by cocaine, LSD,

TABLE 1. Descriptive statistics of demographics

	N	Mean (SD)
Average age	1,914	24.0 (2.92)
Gender	N	Percent (%)
Male	1,019	53.2
Female	890	46.5
Sexuality		
Gay/lesbian/bisexual	951	49.7
Heterosexual	954	49.8
Race/ethnicity		
White	1,064	55.6
Black	181	9.5
Latino	324	16.9
Asian/Pacfc Islndr	135	7.0
Mixed/other	207	10.9

ketamine, Crystal Meth, and GHB. Almost one out of every four people we surveyed could be classified as active club drug users—meaning that they had used club drugs within the past 3 months (Table 2).

Through stratifying by gender and sexual orientation, we are able to examine and compare specific subsets of club-going young adults: gay/bisexual men, heterosexual men, lesbian/bisexual women, and heterosexual women. The results showed that lesbian/bisexual women and heterosexual men were significantly more likely than gay/bisexual men and heterosexual women to have used drugs during their lifetimes. Heterosexual women were significantly less likely than the other

TABLE 2. Club drug prevalence by gender and sexual orientation with stratification

	Total sample (n = 1,914)	Heterosexual men (a) (n = 449)	Gay/bisexual men (b) (n = 560)	Heterosexual women (c) (n = 496)	Lesbian/ bisexual women (d) (n = 385)
	Prevalence (%)	Prevalence (%)	Prevalence (%)	Prevalence (%)	Prevalence (%)
Any drug ever	70.0	73.5 ^{b,c}	65.5 ^{a,d}	67.5 ^{a,b,d}	75.8 ^{b,c}
Ecstasy ever	45.2	46.8 ^c	46.9 ^c	38.1 ^{a,b,d}	50.0 ^c
Ketamine ever	21.0	24.8 ^c	24.8 ^c	14.0 ^{a,b}	19.7 ^c
GHB ever	11.1	11.7 ^c	15.1 ^{c,d}	7.2 ^{a,b}	9.2 ^b
Cocaine ever	41.0	42.3 ^c	43.2 ^c	34.4 ^{a,b,d}	44.7 ^c
Crystal meth ever	15.3	13.2 ^{b,c}	21.5 ^{a,c,d}	9.8 ^{b,d}	15.5 ^{b,c}
LSD/acid ever	25.5	32.6 ^{b,c}	20.7 ^{a,d}	20.7 ^{a,d}	30.5 ^{b,c}
Club drug use last 3 months	22.0	23.0 ^c	25.0 ^c	17.3 ^{a,b,d}	23.4 ^c

All reported differences at $p \leq 0.05$:
a = sig diff from heterosexual men.
b = sig diff from gay/bisexual men.
c = sig diff from heterosexual women.
d = sig diff from lesbian/bisexual women.

groups to have used ecstasy during their lifetimes. Men were more likely to use ketamine than their female counterparts, and lesbian/bisexual women were more likely to have used ketamine than heterosexual women. Further, the stratification suggests that all men were more likely to use GHB than heterosexual women, but only gay/bisexual men differ significantly from lesbian/bisexual women in their use of the drug. Similar to ecstasy, heterosexual women were significantly less likely than all other groups to have used cocaine during their lifetimes. Rates of cocaine use among the others did not differ. Gay/bisexual men were more likely to have used methamphetamine than any other group. Lesbian/bisexual women and straight men were more likely to use methamphetamine than heterosexual women. Heterosexual men and lesbian/bisexual women were more likely to have used LSD than gay/bisexual males and heterosexual females. Finally, the stratified analyses show that heterosexual females had significantly lower rates of recent club drug use compared to all men, as well as to lesbian and bisexual women.

In terms of race and ethnicity, the results suggest that White people generally had the highest rates of club drug use amongst all groups. Table 3 shows the prevalence rates for other racial and ethnic groups with Whites as the reference group. Whites had significantly higher rates of lifetime illegal drug use than the rest of the racial and ethnic groups with Black young adults having the lowest. Despite the raw higher rates of club drug use amongst Whites, not all of the differences were statistically significant. Whites had significantly higher lifetime or recent rates of ecstasy and ketamine use compared to only Black and Latino young adults. Whites also had significantly higher lifetime rates of cocaine and LSD use than Blacks, Latinos, and Asians. Rates of GHB and methamphetamine use were not significantly lower for non-White young adults when compared to Whites. Only Blacks significantly differed from Whites with respect to rates of club drug use within the past three months.

These demographic variables, along with age, were also included in the logistic regression models to assess these characteristics as predictors of club drug use, while controlling for the other variables. Table 4 shows the Odds Ratios for these analyses. They suggest that women were significantly less likely to use ketamine, GHB, and Crystal Meth during their lives. However, women appeared to be more likely to use

TABLE 3. Club drug prevalence by race/ethnicity (Whites as reference group)

	White (<i>n</i> = 1,061)	Black (<i>n</i> = 181)	Latino (<i>n</i> = 317)	Asian/ Pacific Islander (<i>n</i> = 135)	Mixed/ Other (<i>n</i> = 204)
	Prevalence (%)	Prevalence (%)	Prevalence (%)	Prevalence (%)	Prevalence (%)
Any drug ever	77.2	59.0***	62.0***	64.4***	71.6
Ecstasy ever	50.4	29.5***	37.1***	42.9	45.6
Ketamine ever	24.2	8.6***	15.6***	20.9	23.3
GHB ever	11.9	7.5	9.5	8.2	14.1
Cocaine Ever	48.2	23.0***	31.4***	24.6***	45.1
Crystal meth ever	15.6	10.9	14.1	14.2	19.4
LSD/acid ever	30.4	10.9***	17.1***	18.2**	30.6
Club drug use last 3 months	23.5	15.5*	21.9	17.0	24.2

Significance: † ≤ 0.10; * *p* ≤ 0.05; ** *p* ≤ 0.01; *** *p* ≤ 0.001.

TABLE 4. Predictors of club drug use among club-going young adults

	Any drug	Ecstasy	Ketamine	GHB	Cocaine	Crystal meth	LSD	Recent use
Gender								
Male	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Female	1.15 (0.93–1.42)	0.94 (0.78–1.14)	0.64*** (0.51–0.82)	0.61** (0.45–0.84)	1.28* (1.05–1.56)	0.73* (0.55–0.95)	0.99 (0.79–1.23)	0.81† (0.65–1.02)
Sexual identity								
Heterosexual	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Gay/bisexual	1.01 (0.82–1.25)	1.27* (1.04–1.54)	1.23† (0.97–1.55)	1.33† (0.98–1.80)	1.28* (1.05–1.56)	1.79*** (1.37–2.35)	0.89 (0.71–1.11)	1.26* (1.01–1.58)
Race/ethnicity								
White	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Black	0.31*** (0.22–0.43)	0.44*** (0.30–0.62)	0.31*** (0.18–0.54)	0.64 (0.35–1.18)	0.33*** (0.23–0.48)	0.69 (0.41–1.15)	0.31*** (0.19–0.51)	0.60* (0.39–0.93)
Latino	0.45***	0.60***	0.58**	0.80	0.49***	0.88	0.52***	0.90
Asian/P.I.	0.54** (0.37–0.80)	0.75 (0.51–1.09)	0.82 (0.41–0.82)	0.66 (0.52–1.23)	0.36*** (0.37–0.64)	0.94 (0.60–1.28)	0.50** (0.38–0.73)	0.69 (0.66–1.22)
Mixed/other	0.76 (0.54–1.06)	0.84 (0.62–1.15)	0.95 (0.66–1.37)	1.23 (0.79–1.94)	0.89 (0.66–1.21)	1.35 (0.91–2.01)	1.04 (0.74–1.45)	1.05 (0.74–1.49)

Significance: † $p \leq 0.10$; * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$.
Estimates reported are Odds Ratios (95% confidence intervals).

cocaine over the course of their lives. The regression analyses also suggest that gay/lesbian/bisexual young adults were significantly more likely to use ecstasy, cocaine, and methamphetamine over the course of their lives, as well as to be active users of club drugs, in comparison to heterosexual peers. White club-going young adults were found to be more likely to use any illegal drug during the course of their lives than their Black, Latino, and Asian peers. In addition, they were more likely to use cocaine and LSD than Black, Latino, and Asian peers. White club-going youth were more likely to use ecstasy and ketamine than only their Black and Latino peers. Only Black club-going young adults were more likely to differ from Whites with respect to being active club drug users.

DISCUSSION

High rates of club drug use were reported by club-going young adults in NYC. In comparison to national prevalence estimates, this data verifies that club-going populations in NYC are indeed more likely to be using these drugs than the general population samples of young adults.^{4,6} For this reason, club-going young adults are indeed key populations to target with prevention and education campaigns. Yet, while lifetime rates of use are very high, these young adults do not always remain active users of these drugs after initiation despite continued participation in the club scene. Their patterns of club drug use may ebb and flow, which is something that warrants further investigation.

While some have suggested that club environments level the differences in exposure to certain drug using opportunities between genders, the stratified data revealed that this is not the case when sexual orientation is introduced into the equation. Heterosexual women indeed have the lowest rates of ecstasy use among the four subsets. Gender equity did not exist for lifetime rates of ecstasy use between heterosexual men and women. Overall, heterosexual women had significantly lower rates of club drug use than the other three subgroups.

The evidence of females being less likely to use club drugs is mixed. As the regression model showed, being male was not predictive of ecstasy use, which confirms other studies.^{10–13} However, female club goers may even be more likely to use cocaine during their lives. Taken as a whole, men are more likely to be users of club drugs further on the fringe such as ketamine, GHB, and methamphetamine than their female counterparts. It is crucial to further explore how gender is situated within certain contexts that shape this pattern. Prevention experts should consider tailoring gender-specific messages concerning these drugs in order to differentially target men and women.

The stratified analyses confirmed the assertion by Rosario et al.²² that lesbians indeed may be more inclined to use illegal drugs in general than their gay male counterparts, yet they largely do not differ with respect to club drug use. It also revealed that lesbian and bisexual women use club drugs in higher rates than heterosexual females. Lesbians and bisexual women have been ignored in many health campaigns. Our data suggests that club drug campaigns should be directed towards lesbian and bisexual women in such a way so as to attend to the current unmet need in this community.

The highest proportion of Crystal Meth use was amongst gay men, where 21.5% reported lifetime use. Much attention in the public health community has centered on methamphetamine use among men who have sex with men.³⁶ Despite this, lifetime rates of methamphetamine use amongst lesbian and bisexual women

was 15.5% and 11.5% for heterosexuals. This indicates that although rates are significantly higher among gay/bisexual men, methamphetamine use is not simply a problem among gay/bisexual men in NYC. Furthermore, the use of methamphetamine cuts across racial and ethnic lines amongst club-going young adults. Club-going young adults in NYC, regardless of gender, race/ethnicity, and sexual orientation, appear to be an important population to receive prevention and education messages about methamphetamine.

Our evidence supports previous research indicating that White young adults are more likely to use club drugs than young adults of other races and ethnicities.^{11,26,27} However, only Black club-goers appear to differ significantly from Whites with regard to the recent use of any club drug. While originating primarily amongst White populations, club drugs may continue to diffuse to communities of color. In effect, young adults of color may be catching up with their White counterparts. Through existing surveillance mechanisms, these trends should be closely monitored and prevention efforts should also target young adults of color.

Our use of time-space sampling helped to address some of the issues around generalizability of rates of club drug use amongst this population. Despite a response rate lower than that typically experienced with convenience sampling, we believe the data are more reliable and representative than convenience sampling given the robustness of the random nature of the sampling methodology. Furthermore, the response rate did improve with warmer weather without significant changes to the rates of club drug use. However, several limitations restrict the full representative nature of the findings. Given the probability method of subject selection, those individuals who attend clubs more often are more likely to be sampled. It is possible, and indeed perhaps likely, that young adults more heavily involved in club subcultures are more likely to use club drugs. Furthermore, while young adults who patronize clubs and lounges primarily catering to an “over 40” crowd may differ from clubs aimed at younger adults, our experience with this population leads us to believe that such youth are outliers and are unlikely to greatly influence the rates of club drug use to one degree or another.

It is clear that club drugs are widely used amongst young adults in the NYC club scene. Further research is warranted to more fully assess the predictors and correlates of club drug use and to more fully explicate the negative health effects experienced by these users. However, it remains apparent that since many young adults involved in club and rave subcultures remain active users of club drugs, a range of health promotion activities—including prevention, education, and intervention efforts—are warranted. Public health professionals must find ways to engage this key population at individual, subcultural, and structural levels in order to more fully support health promotion among young adults.

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