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Prevalence and Correlates of Prescription Drug Misuse among Socially Active Young Adults

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Abstract

Background—Prescription drug misuse represents an emerging global drug trend. Data indicate that young adults are misusing prescription drugs at high rates. As such, continued surveillance of the patterns of prescription drug misuse among young adults is critical, particularly for those engaged in social scenes known to accommodate drug use.

Methods—Prevalence and correlates of lifetime and recent prescription drug misuse among urban young adults recruited at nightlife venues using time-space sampling are assessed via prevalence estimates and logistic regression analyses.

Results—In a diverse sample of 1,207 young adults, 44.1% reported lifetime prescription drug misuse, and 20.3% reported misuse during the past three months. Stimulants were the most common class of drug respondents misused within the past six months (16.7%), followed by pain killers (16.5%) and sedatives (14.5%). While no gender or sexual orientation differences in misuse prevalence existed, Black youth reported the lowest prevalence of misuse. In multivariate analyses, increased age was associated with lower odds of recent misuse, females report lower odds of recent use, and Black, Asian, and Latino individuals had lower odds of recent misuse than Whites. These odds varied by prescription drug type. Negative binomial regression analyses indicate that, among prescription drug misusers, women misuse prescription drugs less frequently. Younger individuals more frequently misuse stimulants and older individuals more frequently misuse sedatives. Racial variation existed with frequency of use across classes.

Conclusions—This study illustrates the need for health promotion efforts targeting prescription drug misuse among young adults who are highly socially active. Future research should focus on motivations for and factors associated with prescription drug misuse within youth cultures. Further research may provide a fuller sense of how to reduce the impact of prescription drug misuse for nations whose prescription drug problem lags behind that of the U.S.

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Keywords

prescription drugs; youth culture; young adults; nightlife

INTRODUCTION

Patterns of prescription drug misuse

Prescription drug misuse has emerged as a major international drug trend over the past decade (Kuehn, 2007). While there is some debate about the definition of misuse, we consider patterns of misuse with regard to "any intentional use of a medication with intoxicating properties outside of a physician's prescription for a bona fide medical condition, excluding accidental misuse"(Compton & Volkow, 2006, p. S4). In some locales, young adults are now misusing prescription drugs at higher rates than illegal drugs with the exception of marijuana (SAMHSA, 2008). In 2009, 2.6 million Americans misused a prescription drug for the first time, an average of more than 7,000 new misusers per day (SAMHSA, 2010). In other nations, these trends lag behind the U.S., but recent reports indicate prescription drug misuse as a growing trend in other regions of the world, including Canada, parts of the European Union, and Asia (UN INCB, 2009)

Rates of prescription drug misuse are often highest among 18–25 year olds (Compton & Volkow, 2006; SAMHSA, 2006). About 6.3% of American 18–25 year olds reported misusing a prescription drug during the previous month (compared to 2.1% of those 26 and older), and the average age of initiation into prescription drug misuse is 21 (SAMHSA, 2010). Such 18–25 year olds misuse a broad range of prescription drugs, including pain killers, tranquilizers and stimulants (Colliver, 2006). A college-based survey found past-year rates of misuse to be 9% for prescription pain killers, 5% for prescription stimulants, 3% for prescription sedatives, and 2% for prescription sleeping pills (McCabe, Teter, & Boyd, 2006a). As prescription drug misuse spreads globally, continued surveillance of the patterns of prescription drug misuse among young adults is critical.

Effects of prescription drug misuse

The misuse of prescription drugs remains a critical public health concern because of their physical and mental health consequences. While the rate of misusers who go on to become dependent or experience adverse health outcomes remains unclear, undoubtedly, dependence on prescription drugs remains a key area of concern (Cicero, Inciardi, & Muñoz, 2005; de las Cuevas, Sanz, & de la Fuente, 2003; Manchikanti, 2006). Increased rates of prescription drug misuse have contributed heavily to the treatment burden in the US. An average of a quarter of a million people per year whose primary drug of dependence was a prescription medication enrolled in drug treatment programs between 2004 and 2006, and treatment admission for prescription pain killers alone increased more than 400% between 1997 and 2007 (SAMHSA, 2009). Beyond drug dependence, studies suggest a range of negative health effects associated with prescription drug misuse, including tachycardia, acute cognitive impairment, mental health problems, overdose and organ damage (Caplan, Epstein, Quinn, Stevens, & Stern, 2007; Teter, Falone, Cranford, Boyd, & McCabe, 2010). Between 2004 and 2008 the number of Emergency Room visits involving the misuse of prescription pharmaceuticals increased 81%; for narcotic pain killers specifically, the increase was 111% (SAMHSA, 2011). In 2008, misuse of prescription drugs (not in combination with alcohol or other illicit drugs) accounted for more than one-third of all drug-related Emergency Room visits (SAMHSA, 2011).

Factors associated with prescription drug misuse

In light of the growth of prescription drug misuse and the host of negative consequences associated with it, it is critical to understand not only the prevalence of misuse but the factors associated with prescription drug misuse as well. Specifically, gender, sexual orientation, age, and race and ethnicity are all factors that may be differentially associated with prescription drug misuse. Gaining a better understanding of the nuances of the prescription drug trend will enable more refined health promotion efforts.

Some studies indicate that women are more likely than men to misuse prescription drugs (Green, Grimes Serrano, Licari, Budman, & Butler, 2009; Simoni-Wastila, Ritter, & Strickler, 2004; Simoni-Wastila & Strickler, 2004). When examined by specific prescription drug categories, McCabe, Teter, & Boyd (2006b) found that women were significantly more likely to misuse opiate pain killers, sedatives, and sleep aids, while men were significantly more likely to misuse stimulants. More recent studies found significantly higher rates of prescription opioid misuse among men (15.9% for men versus 11.2% for women), but among those who reported past year misuse, levels of dependence for men and women were equal (Back, Payne, Simpson, & Brady, 2010). In addition, a recent study of prescription drug misuse among young adults found no significant difference between men and women (Benotsch, Koester, Luckman, Martin, & Cejka, 2010). In adolescence, the percentage of girls misusing prescription pain killers is almost double that of boys; however, by the time they enter into emerging adulthood (18–25), these rates equalize as female rates decrease more dramatically than male rates (Colliver, 2006). Thus, while misuse may start out higher among females, males may have faster growing rates of misuse. Thus, the influence of gender is both complex and dynamic, suggesting the need for continued evaluation.

Beyond gender, sexual orientation may influence patterns of prescription drug misuse. Several studies have documented higher rates of drug use by gay, lesbian, and bisexual (GLB) individuals compared to their heterosexual counterparts (Corliss et al., 2010; Hughes & Eliason, 2002; McCabe, Hughes, Bostwick, West, & Boyd, 2009). Compared to peers who identified as completely heterosexual, those identifying otherwise reported greater use of marijuana, illicit drugs, and prescription drugs (Corliss et al., 2010). High levels of prescription drug misuse among gay men raises particular public health concerns because of its association with sexual risk behaviors (Benotsch, Martin, Koester, Cejka, & Luckman, 2010; Kelly & Parsons, in press). Gay men who report recent prescription drug misuse are more likely to report other illicit drug use and higher rates of unprotected casual sex (Benotsch, Martin, et al., 2010). In addition, college based studies show that young gay and bisexual men are less likely to drink than their heterosexual peers, but more likely to use other drugs (McCabe, Boyd, Hughes, & d'Arcy, 2003).

Recent research suggests different racial/ethnic groups have unique profiles of risk behavior associated with prescription drug misuse (Harrell & Broman, 2009). College population samples have found that rates of prescription drug misuse are highest among Whites (McCabe, et al., 2006a). In particular, research indicates that Whites misuse prescription stimulants at higher rates (Kroutil et al., 2006), and this may be due in part to the fact that Whites are more likely to be prescribed stimulants (McCabe, et al., 2006a). National studies indicate that past year misuse of any prescription psychotherapeutic drug was higher among Whites than Blacks, Asians, or Hispanics between 2002–2004 (Colliver, 2006). While White young adults have the highest rates of prescription drug misuse, rates among African Americans are increasing more quickly (McCabe, Cranford, & West, 2008), indicating the need for continued surveillance.

Current Study

While general population studies and samples of college students have provided important information on the patterns of prescription drug misuse among young adults, other research has indicated that young adults who are socially active in urban nightlife may be at increased risk for drug use (Kelly, Parsons, & Wells, 2006). Elevated levels of other risk behaviors, such as binge drinking and sexual risk-taking have also been identified (Wells et al., 2011). Yet, it remains unclear whether or how a phenomenon like prescription drug misuse may translate to youth cultural scenes. This paper is intended to describe the patterns of prescription drug misuse among young adults who attend a range of nightlife venues in New York City (NYC). Specifically, we examine the prevalence of prescription drug misuse, including lifetime and recent misuse, among NYC young adults recruited at nightlife venues. Additionally, we assess the influence of demographic correlates on key types of prescription drug misuse among these young adults. The results describe the patterns of prescription drug misuse among socially active young adults in an urban setting.

METHODS

The field-based survey utilized in this phase of the study–phase 2 in a broader study of the contextual influences of prescription drug misuse among young adults–was intended to assess the patterns and prevalence of prescription drug misuse among young adults who are socially active in various youth cultures. The examination of socially active young adults allows us to focus our sampling methods on social venues occupied by these populations. The inclusion criteria for this study were young adults found in urban social venues ages 18 to 29 years old and residing in the New York metropolitan region.

Sampling

To generate the sample, we utilized time-space sampling. Time-space sampling was originally developed to capture hard-to-reach populations (MacKellar, Valleroy, Karon, Lemp, & Janssen, 1996; Muhib et al., 2001; Stueve, O'Donnell, Duran, San Doval, & Blome, 2001), but is also extremely useful for generating estimates of venue-based populations (Parsons, Grov, & Kelly, 2008). As a venue-based population, we can use venues as our basic unit of sampling to systematically generate a sample of socially active young adults. We captured a range of variability among socially active young adults through randomizing 1) the venues attended and 2) the days/times attending the venues.

We randomized "time" and "space" using a previously enumerated sampling frame of venues and times of operation. To construct the sampling frame, ethnographic fieldwork conducted over the previous year allowed us to ascertain "socially viable" venues for a range of youth cultures for each day of the week. A venue was deemed "socially viable" if sizeable young adult patron traffic existed at the venue on that given day of the week. We generated lists of "socially viable" venues for each day of the week across several key youth subcultures – e.g. gay, lesbian, electronic dance music (EDM), hip hop, and indie rock. These venues primarily included bars, clubs, lounges, concert halls, and other performance venues. For each day of the week, each socially viable venue was listed and assigned a number. Then, using a random digit generator program, a random number was drawn, which corresponded to a particular venue on a particular day. This process ultimately yielded our schedule of venues for each month.

Once at the venue, the recruitment team attempted to survey as many individuals as possible, aiming to achieve saturation at the venue. Each surveyor approached a potential subject, identified themselves, described the study, and requested verbal consent for participation in the anonymous brief survey. If the patron refused, the screener noted the

refusal and estimated the individual's age, gender, and ethnicity. For those who provided consent to participate, the beginning of the brief surveys were administered by trained staff (consent, age, and NYC residency) and individuals self-reported more sensitive information (race, sexual orientation, gender, prescription drug misuse) directly onto survey software on an iPod Touch®. Field staff members were trained not to administer surveys to individuals who were visibly impaired by intoxication.

Measures

Respondents were asked to state their age, a continuous variable. They were asked whether they identified as Latino, and then self-reported the racial group they most identified themselves with: White, Black, Asian, Native American, Multiracial, or Other. They self-reported gender as Female, Male, or Transgender. They also self-identified their sexual orientation–Straight, Gay/Lesbian, Bisexual, Queer, or Other–which was then recoded as either heterosexual or gay/lesbian/bisexual/queer (individuals who identified as transgender or reported "Other" sexual orientation, $n = 47$, were excluded from the present analyses due to low sample size).

To assess lifetime consumption of drugs, participants were asked whether they ever misused a prescription drug. Misuse was defined for them in the survey as "using prescription drugs obtained from a non-medical source, using more than the prescribed dose, or using prescription drugs for a non-medical or recreational purpose," a definition derived from Compton & Volkow (2006). Those who responded "Yes", were asked how many times in the past six months they had misused each of 3 different prescription drug classes; pain killers, sedatives, and stimulants. These answers were self-reported in continuous fashion. To assess recent misuse of prescription drugs, they were asked if they had misused any prescription drugs within the past 3 months.

Data Analysis

Prevalence estimates were computed using SPSS. Chi-square analyses were conducted to examine differences in prescription drug misuse between demographic 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 prescription drug misuse in the population, specifically exploring differences between gay/bisexual men, heterosexual men, lesbian/bisexual women and heterosexual women. To adjust for the effects of all variables of interest, multivariate logistic regression analyses were conducted to evaluate the predictive nature of each of these factors on prescription drug misuse while controlling for the potentially confounding effects of the other demographic variables in the model. Finally, we ran a negative binomial regression to examine predictors of past 6-month frequency of use among those who reported ever misusing prescription drugs. Past 6-month frequency (number of days of use) was the outcome variable. Poisson regression models were used because the outcome variable constitutes a count variable and Poisson models are most appropriate (Coxe, West, & Aiken, 2009). Because initial Poisson analyses indicated significant overdispersion, a negative binomial regression model was calculated using maximum likelihood estimation with robust error estimators to estimate the dispersion parameter, see Coxe et al. (2009) and Long (1997).

Results

Sample Characteristics

During 2011, 2,531 individuals were approached at randomly sampled venues. Of these, 1,854 (73.3%) were aged 18 and older and consented to take the survey. Response rates did not differ by gender. Black individuals were more likely to decline the survey, but this

finding might be biased by measurement error related to interviewer estimation of non-responder characteristics. Among those who consented to the survey, we exclude those 30 years old and older (n=439), those who do not reside in the New York metropolitan area (n=123), those who provided an "other" gender or sexual identity (n=47), and those with missing data (n=38), for a final analytic sample of 1,207.

The average age of the young adults included in our analytic sample was 25 years (*SD*= 2.7). The proportion of males to females in the sample was approximately equivalent, and almost one-third of the sample identified as gay, lesbian, bisexual, or queer. Whites accounted for the majority (57.7%) of the sample, followed by those who reported their race as 'Mixed' or 'Other' (13.8%). Those who identified as 'Black', 'Latino', or 'Asian' comprised 9.2%, 10.7%, and 8.6% of the sample, respectively (Table 1). These proportions do not differ significantly from those of the overall sample.

Among the young adults surveyed, 44.1% of respondents reported lifetime misuse of prescription drugs, and over one-fifth (20.3%) reported having misused at least once during the past three months. Stimulants were the most common class of drug respondents reported misusing within the past six months (16.7%), followed by pain killers (16.5%) and sedatives (14.5%).

Gender, Sexual Identity and Race/Ethnicity

Stratifying our data by gender and sexual identity did not reveal any significantly different patterns of misuse across groups (Table 2). Analysis by race/ethnicity suggests that Black individuals had the lowest prevalence of misuse compared to other racial or ethnic groups. Compared to both Whites and other/multiracial respondents, Blacks reported lower prevalence of any lifetime misuse, pain-killer, stimulant, and sedative misuse during the prior 6 months, and any misuse during the past three months. Asians were similar to Blacks in their prevalence of reported misuse; however, Asians reported higher prevalence of recent stimulant misuse than Blacks. Latinos reported a higher prevalence of lifetime misuse compared to Blacks, but reported lower prevalence of lifetime misuse and recent sedative misuse compared to Whites. Whites and other/multiracial-identified respondents reported the highest prevalence of misuse in all categories and did not differ significantly from each other in their reporting patterns (Table 3).

Multivariate Analyses

In multivariate logistic regression analyses that controlled for all demographic factors simultaneously (Table 4), increasing age was associated with reduced odds of pain killer misuse, stimulant misuse, as well as recent misuse of any kind of prescription drug. Female gender was significantly associated with lower odds of painkiller and stimulant misuse as well as lower odds of recent prescription drug misuse. Sexual identity was not significantly associated with prescription drug misuse.

Analyses of prescription drug misuse by race/ethnicity suggest that, among socially active young adults, Asian, Black, and Latino young adults have lower odds of lifetime prescription drug misuse than Whites. Only Black young adults reported lower odds of recent pain killer misuse relative to Whites. Black and Latino young adults reported lower odds of prescription stimulant misuse relative to Whites. In addition, Black and Latino young adults reported lower odds of prescription sedative misuse relative to Whites. Lower odds of misuse within the past three months were reported for Asian, Black, and Latino young adults relative to Whites.

We examined the past 6-month frequency of use for each prescription drug class; on average, respondents reported 7.40 days of painkiller misuse (SD = 15.55), 8.69 days of

stimulant use (SD = 19.82), and 10.78 days of sedative use (SD = 30.11). To further assess the correlates of prescription drug misuse frequency, the number of days of prescription drug misuse in the last 6 months was examined using a negative binomial regression analysis, wherein the number of days of prescription drug misuse in the last 6 months was the dependent variable and age, gender, sexual identity, and race/ethnicity were entered as predictors for each class of drugs. For painkillers, the model accounted for a significant amount of variability in the number of days of painkiller misuse. Parameter estimates indicated that women were associated with less frequent misuse and individuals of either Mixed/Other or Latino race/ethnicity were associated with more frequent misuse. For stimulants, the model accounted for a significant amount of variability in the number of days of stimulant misuse. Parameter estimates indicated that women, older respondents, LGB individuals, and Black respondents were associated with less frequent misuse. For sedatives, the model accounted for a significant amount of variability in the number of days of sedative misuse. Parameter estimates indicated that older individuals and LGB individuals were associated with more frequent misuse and Asian/PI respondents were associated with less frequent misuse.

DISCUSSION

Young adults in this survey reported high rates of prescription drug misuse. With lifetime misuse at 44.1% and recent use (past 3 months) at 20.3%, rates of prescription drug misuse among young adults in nightlife venues are considerably higher than national averages, which have been recently assessed at 29.2% for lifetime misuse and 6.3% for past month misuse (SAMHSA, 2010). In this regard, urban young adults who are active in nightlife venues are a key population to target for health education and prevention efforts on prescription drug misuse. Further, the analyses identify specific groups that have increased odds of prescription drug misuse and thus highlight groups who may benefit from tailored prevention messages.

The analyses suggest that, as young adults age, they reduce their misuse of prescription drugs. Specifically, they report lower odds of misuse of pain killers and stimulants, as well as general misuse in the past 3 months for each year that they age. These patterns mirror those found for illegal drugs. In this regard, many young adults may age out of prescription drug misuse as they take on more adult roles and responsibilities. Alternatively, we may consider that this is a cohort effect for this emerging trend, and prescription drug misusers will continue to age. This may be a source of concern with regard to the growing population of misusers.

Men reported higher odds of prescription drug misuse, a finding that is consistent with the larger substance abuse literature (SAMHSA, 2010) but contrary to some findings that are specific to prescription drug misuse (Simoni-Wastila, et al., 2004; Simoni-Wastila & Strickler, 2004). These results indicate that as the prescription drug misuse trend continues to spread, its profile may begin to look more like patterns of illegal drug use. These findings illustrate the need to better understand gender differences in motivation for and access to specific prescription drugs. The processes shaping gender differentials among socially active young adults merit further examination. For example, given that young men have been shown elsewhere to misuse prescription stimulants in part because of prescribing practices and accessibility (McCabe, Knight, Teter, & Wechsler, 2005), this may spill over into higher levels of stimulant misuse to stay up late partying. Given the high prevalence of misuse, further examinations as to how these gender differentials play out in nightlife scenes are warranted.

Somewhat surprisingly, considering that previous research has demonstrated high rates of prescription drug misuse among MSM (Benotsch, Martin, et al., 2010; Kelly & Parsons, 2010), we did not find differences in prescription drug misuse by sexual orientation. This finding is interesting within the broader context of the substance use literature, which has suggested that sexual minorities use and abuse drugs and alcohol at higher rates than their heterosexual counterparts (Corliss, et al., 2010; Hughes & Eliason, 2002; McCabe, et al., 2009). This may be another instance in which the prescription drug misuse phenomenon differs from patterns of illicit drug use. However, as seen with the gender differences, these phenomena may converge to some degree, particularly as stigma associated with prescription drug misuse escalates. In addition, it may be that heterosexual young adults involved in nightlife behave more like their sexual minority peers than those who do not participate. There may also be factors particular to major global cities that render such young people more similar to one another. Further research may determine such factors.

Our findings support other research showing racial and ethnic distinctions in prescription drug misuse (Harrell & Broman, 2009; McCabe, et al., 2006a). In our sample, Whites were most likely to misuse prescription drugs both during their lifetime and recently. Though these and others' findings indicate that White young adults may currently benefit most from prevention and intervention efforts, other data shows that, while White young adults have the highest current levels of prescription drug misuse, misuse among African Americans is increasing more quickly (McCabe, et al., 2008). As such, further research that delves deeply into racial and ethnic differences may clarify whether this is a product of other health disparities–such as differences due to disparities in access to health care and medication access–and further highlight whether these patterns are changing.

Many of those who misuse prescription drugs tend to be infrequent users or "dabblers" as the data indicate mean frequencies ranging from 7.4 to 10.8 days of misuse within the past 6 months. However, the standard deviations suggest that the range of use patterns vary quite considerably, with some misusing prescription drugs rather heavily. Overall, women were associated with less frequent misuse of prescription drugs. This pattern reflects the broader gendered pattern for drug and alcohol use with males having heavier patterns of substance use. The influence of age led to younger individuals more frequently misusing stimulants, while older individuals were more likely to misuse sedatives. This pattern may be related to the issue of medication access since stimulants are more highly prescribed for younger individuals, while individuals may gain access to benzodiazepines for sleep and anxiety as they age. There was also racial/ethnic variation in the frequency of misuse across various prescription drug classes, which highlights that not only do differences in the prevalence of prescription drug misuse exist across racial/ethnic lines, but even that there are differences in patterns of misuse among those who engage in these drug practices.

Conclusions

These findings move beyond college student samples to better understand prescription drug misuse across a spectrum of socially active young adults. While compelling, some limitations should be considered. The survey needed to be brief, thus limiting the information collected from individuals. For example, additional information on illicit drug use may have further situated these patterns of prescription drug misuse. In addition, although subjects were asked to self-report behaviors on a secure device, the public setting may have introduced social desirability biases in the report of some behaviors. However, if such social desirability biases were to occur, we might infer that these high rates of prescription drug misuse are underestimates. The measurement of misuse is also complex given the varying nature of its definition. As such, the definition of misuse in this research may differ from the parameters defined by others (Compton & Volkow, 2006). Beyond these limitations, since we sampled from NYC nightlife venues with a time-space sampling

method, we may have oversampled people who are more frequent nightlife participants. It is also important not to infer conclusions about all urban youth from this socially active sample. In addition, while the sample includes those living in suburban areas, we cannot determine patterns of prescription drug misuse in social venues in these suburbs. We must also consider regional differences in prescription drug misuse as others have found differences in these patterns among high risk youth on the East and West Coasts of the U.S. (Lankenau et al., 2012). Yet, our use of time-space sampling (TSS) addresses concerns about generalizability as it provides a systematic approach to sampling this venue based population. Though our findings do not generalize to all young adults, they strongly represent young adults in NYC who are involved in nightlife scenes.

Given the remarkably high prevalence of prescription drug misuse found within this population, this study illustrates the need for health education and prevention efforts targeting prescription drug misuse among young adults who are highly socially active. Nightlife scenes are of interest as they have been shown to house previous waves of drug use - e.g. club drugs (Kelly, et al., 2006). Policy makers should aim to cultivate policies that promote healthy behaviors within these youth cultural environs, accounting for both prevention efforts and harm reduction. A “healthy settings” approach to policy may also be useful in addressing the needs of young adults who are currently misusing prescription drugs in these scenes as such an approach has shown promise with the club drug phenomenon (Bellis, Hughes, & Lowey, 2002). In addition, given the norms and resources that inhere within youth cultures as communities, policies that promote the emergence of “intraventions” may allow these young communities to promote health from within, rather than being intervened upon from beyond (Friedman et al., 2004).

With the host of negative consequences associated with prescription drug misuse coupled with the high rates of misuse, additional research should address motivations for misuse within youth subcultures, the potential for emerging drug markets in these nightlife scenes, and additional factors that are associated with misuse among young adults. As this remains an emerging drug trend globally, further research will provide a fuller sense of how to reduce the impact of prescription drug misuse and that of future medication epidemics, particularly for those nations whose prescription drug problem lags behind that of the U.S.

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Table 1

Descriptive Statistics of Demographics

	n	Mean (SD)
Age	1,207	25.0 (2.7)
Gender	**n**	**%**
Male	584	48.4
Female	623	51.6
Sexuality		
Gay/Lesbian/Bisexual/Queer	401	33.2
Heterosexual	806	66.8
Race/Ethnicity		
White	697	57.7
Black	111	9.2
Latino	129	10.7
Asian/Pacific Islander	104	8.6
Mixed/Other	166	13.8

Table 2

Prescription Drug Prevalence by Gender and Sexual Orientation with Stratification

	Total Sample (n=1,207)	Heterosexual Men (a) (n=395)	Gay/Bisexual Men (b) (n=189)	Heterosexual Women (c) (n=411)	Lesbian/Bisexual Women (d) (n=212)
	Prevalence	Prevalence	Prevalence	Prevalence	Prevalence
Any Rx Drug Misuse Ever	44.1%	46.8%	41.8%	40.9%	47.2%
Recent Pain Killer Misuse	16.5%	19.7%	17.5%	13.1%	16.0%
Recent Stimulant Misuse	16.7%	18.0%	20.1%	15.1%	14.6%
Recent Sedative Misuse	14.5%	15.9%	14.3%	12.2%	16.5%
Any Rx drug misuse last 3 mo	20.3%	22.5%	24.3%	16.8%	19.3%

Note: No significant differences to highlight

Table 3

Prescription Drug Prevalence by Race/Ethnicity

	Total Sample (n=1,207)	White (a) (n=697)	Black (b) (n=111)	Latino (c) (n=129)	Asian/Pacific Islander (d) (n=104)	Mixed/Other (e) (n=166)
	Prevalence	Prevalence	Prevalence	Prevalence	Prevalence	Prevalence
Any Rx Drug Misuse Ever	44.1%	49.4%^{bcd}	20.7%^{ace}	38.0%^{abe}	30.8%^{ae}	50.6%^{bcd}
Recent Pain Killer Misuse	16.5%	17.4%^{bd}	8.1%^{ae}	16.3%	9.6%^{ae}	22.9%^{bd}
Recent Stimulant Misuse	16.7%	18.7%^{b}	5.4%^{ade}	12.4%^{e}	13.5%^{b}	21.7%^{bc}
Recent Sedative Misuse	14.5%	17.2%^{bcd}	6.3%^{ae}	10.1%^{a}	9.6%^{a}	15.1%^{b}
Any Rx drug misuse last 3 mo	20.3%	23.4%^{bd}	8.1%^{ae}	16.3%	12.5%^{ae}	23.5%^{bd}

Note: All reported differences at $p \leq .05$:

^{a}= sig diff from White;

^{b}= sig diff from Black;

^{c}= sig diff from Latino;

^{d}= sig diff from Asian/Pacific Islander;

^{e}= sig diff from Mixed/Other

Table 4

Demographic Predictors of Prescription Drug Use Prevalence among Socially Active Young Adults (n=1,207)

	Lifetime Rx Drug Misuse	Recent Pain Killer Misuse	Recent Stimulant Misuse	Recent Sedative Misuse	Any Rx drug misuse last 3 mo
Age	0.997	0.920 **	0.895 ***	0.977	0.938 *
	(0.955, 1.041)	(0.868, 0.975)	(0.844, 0.948)	(0.920, 1.038)	(0.889, 0.990)
Gender					
Male	1	1	1	1	1
Female	0.914 (0.723, 1.156)	0.651 ** (0.476, 0.891)	0.691 * (0.506, 0.944)	0.850 (0.613, 1.178)	0.673 * (0.504, 0.898)
Sexual Identity					
Heterosexual	1	1	1	1	1
Gay/bisexual	1.000 (0.782, 1.280)	1.022 (0.737, 1.416)	1.058 (0.764, 1.463)	1.097 (0.782, 1.540)	1.124 (0.833, 1.515)
Race/Ethnicity					
White	1	1	1	1	1
Asian/P.I.	0.457 *** (0.293, 0.711)	0.507 (0.256, 1.005)	0.681 (0.374, 1.240)	0.517 (0.261, 1.023)	0.473 * (0.257, 0.871)
Black	0.268 *** (0.165, 0.435)	0.400 * (0.196, 0.816)	0.231 *** (0.099, 0.539)	0.321 ** (0.146, 0.709)	0.279 *** (0.138, 0.566)
Latino	0.625 * (0.425, 0.920)	0.861 (0.516, 1.437)	0.562 * (0.320, 0.987)	0.529 * (0.288, 0.971)	0.602 * (0.364, 0.995)
Mixed/Other	1.052 (0.750, 1.477)	1.395 (0.921, 2.113)	1.178 (0.774, 1.792)	0.850 (0.532, 1.359)	0.996 (0.666, 1.488)

Significance:

* $p \leq .05$;

** $p \leq .01$;

*** $p \leq .001$

Note; Estimates reported are Adjusted Odds Ratios (95% confidence intervals)

Table 5

Negative Binomial Regression Test of the Predictors of Past 6-month Frequency of Prescription Drug Misuse among Young Adults who Report Any Lifetime Prescription Drug Misuse (n=584)

	6-mo Painkiller Use		6-mo Stimulant Use		6-mo Sedative Use	
	B	**95% CI**	**B**	**95% CI**	**B**	**95% CI**
Intercept	1.16	−1.13–3.44	5.46***	3.60–7.31	−2.17	−4.63–.280
Age	−.013	−.106–.079	−.149***	−.220–−.079	.116*	.015–.217
Gender						
Male	--	--	--	--	--	--
Female	−.697**	−1.16–−.234	−.816**	−1.36–−.275	−.195	−.775–.385
Sexual Identity						
Heterosexual	--	--	--	--	--	--
Gay/bisexual	.036	−.479–.551	−.545*	−1.03–−.060	.657*	.020–1.29
Race/Ethnicity						
White	--	--	--	--	--	--
Asian/P.I.	−.093	−1.14–.951	−.385	−1.31–.543	−1.10*	−1.94–−.252
Black	1.21	−.084–2.51	−1.25**	−2.12–−.392	.633	−.630–1.90
Latino	1.10*	.067–2.13	−.569	−1.32–.180	.936	−.208–2.08
Mixed/Other	1.05**	.277–1.83	−.439	−.968–.091	.572	−.381–1.52
	Likelihood Ratio $\chi^2(7) = 25.09$, $p = .001$		Likelihood Ratio $\chi^2(7) = 32.03$, $p < .001$		Likelihood Ratio $\chi^2(7) = 26.08$, $p < .001$	

Significance:

* $p \leq .05$;

** $p \leq .01$;

*** $p \leq .001$