Race/Ethnicity and Gender Differences in Drug Use and Abuse Among College Students

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SUMMARY

This study examines race/ethnicity and gender differences in drug use and abuse for substances other than alcohol among undergraduate college students. A probability-based sample of 4,580 undergraduate students at a Midwestern research university completed a cross-sectional Web-based questionnaire that included demographic information and several substance use measures. Male students were generally more likely to report drug use and abuse than female students. Hispanic and White students were more likely to report drug use and abuse than Asian and African American students prior to coming to college and during college. The findings of the present study reveal several important racial/ethnic differences in drug use and abuse that need to be considered when developing collegiate drug prevention and intervention efforts.

Keywords

Race/ethnicity; gender; illicit drugs; prescription drugs; drug abuse

INTRODUCTION

The use of marijuana and other illicit drugs has increased significantly among college students in the U.S. over the past decade, according to national epidemiological studies (e.g., Gledhill-

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Hoyt et al., 2000; Johnston et al., 2005a; Mohler-Kuo et al., 2003; Strote et al., 2002). American young adults between 18 to 29 years of age have the highest past-year prevalence rates of marijuana use, abuse and dependence relative to older age groups (Compton et al., 2004; Johnston et al., 2005a). In addition, American young adults 18 to 25 years of age report the highest prevalence of illicit use of prescription drugs relative to other age groups (Johnston et al., 2005a; SAMHSA, 2004a). According to the 2003 data from the *National Survey on Drug Use and Health (NSDUH)*, young adults 18 to 25 years of age report the highest rates of lifetime (60.5%), past year (34.6%) and past month (20.3%) use of any illicit drug. Most notably, the prevalence of past year illicit drug use by college students 18 to 22 years of age was comparable to their same-age peers not attending college (Johnston et al., 2005a; SAMHSA, 2005).

Although previous research has documented the general prevalence rates of drug use among college students (Bell et al., 1997; Gfroerer et al., 1997; Johnston et al., 2004; Presley et al., 1996), relatively few studies have examined possible racial/ethnic differences in the use of substances other than alcohol (Delva et al., 2004; Meilman et al., 1995; Mohler-Kuo et al., 2003). Further, while there is considerable knowledge regarding illicit *drug use* among college students (e.g., Gledhill-Hoyt et al., 2000; Johnston et al., 2004; Mohler-Kuo et al., 2003), there is limited information available regarding illicit *drug abuse* among college students.

According to the 2003 NSDUH, 38.2% of White young adults 18 to 25 years of age in the U.S. reported any illicit drug use in the past year, followed by African-American (30.6%) and Hispanic (27.5%) young adults (SAMHSA, 2004a). The same race/ethnicity patterns were observed for the past-year prevalence of marijuana use and marijuana use disorders among individuals 18 to 29 years of age according to data from the 2001–2002 National Epidemiological Survey on Alcohol and Related Conditions (NESARC; Compton et al., 2004). Further, the past-year prevalence of DSM-IV marijuana use disorders increased significantly between 1991–1992 and 2001–2002, with the greatest increases observed among Hispanic and African-American young adults. In contrast, the prevalence of DSM-IV marijuana use disorders for White young adults did not change significantly over this same time period (Compton et al., 2004).

Several investigations using data from the College Alcohol Study (CAS), a nationally representative sample of U.S. colleges and universities, examined the individual and college characteristics associated with marijuana and other drug use (e.g., Mohler-Kuo et al., 2003; Strote et al., 2002; Wechsler et al., 2002). For example, one study found that approximately three in ten American college students reported using marijuana in the past year (Mohler-Kuo et al., 2003). The study also found that the prevalence of marijuana use was highest for White college students, followed by Hispanic, Asian, and African American students. Other national studies based on the CAS data have found similar racial/ethnic differences in ecstasy use (Strote et al., 2002), heavy episodic drinking (Wechsler et al., 2002), and nonmedical use of prescription stimulants, opioids and benzodiazepines (McCabe et al., 2005a, 2005b; McCabe, 2005). In another national study, Meilman and colleagues (1995) compared illicit drug use rates between a sample of 6,129 students attending Historically Black Colleges and Universities (HBCUs) and a sample of 6,129 students attending predominantly White institutions (Meilman et al., 1995). The study found that students from HBCUs reported significantly lower rates of marijuana, cocaine, sedatives, hallucinogens, and other illicit drug use than students at non-HBCUs. Despite evidence for racial/ethnic differences in illicit drug use, there is limited information regarding racial/ethnic differences in drug abuse among college students.

Marijuana use disorders in the U.S. were significantly higher among men than women across all age groups in 1991–1992 and 2001–2002 (Compton et al., 2004) and several college-based national studies have also reported higher rates of marijuana use among college men than

women (e.g., Bell et al., 1997; Johnston et al., 2005a; Mohler-Kuo et al., 2003). For example, Johnston and colleagues (2005) found that 39.6% of college men as compared to 29.6% of college women reported using marijuana in the past year. In addition to gender differences in marijuana use, U.S. college men are generally more likely than college women to report illicit drug use other than marijuana; Johnston et al. (2005a) reported that 22.1% of college men as compared to 16.5% of college women used illicit drugs other than marijuana. In addition, two national studies and one single institution study showed that undergraduate college men were more likely than women to report nonmedical use of prescription stimulants (Johnston et al., 2005a; McCabe et al., 2005a; Teter et al., 2005).

To date, there is limited information available regarding racial/ethnic and gender differences in collegiate drug use behaviors. Therefore, the main objective of the present study is to examine racial/ethnic and gender differences in the prevalence of drug use and abuse among undergraduate college students.

RESEARCH METHODS

Design and Sample

Upon receiving approval from the Institutional Review Board, the study was conducted during a two-month period in January and February of 2005, drawing on a total undergraduate population of 20,138 full-time students (10,339 women and 9,799 men) at a Midwestern research university. A simple random sample of 5,389 full-time undergraduate students was drawn from the Registrar's Office. In addition, 652 Hispanic, 634 African-American and 244 Asian undergraduate students were selected using stratified random sampling in order to produce reliable prevalence estimates for these racial/ethnic groups. The entire sample was mailed a $2.00 bill enclosed with a notification letter describing the study and inviting them to self-administer the Student Life Survey (SLS) by clicking on a link to access the Web survey and using a unique password. The Web survey was maintained on an Internet site running under the secure socket layer protocol to ensure privacy and security. Non-respondents were sent up to three reminder e-mails. By participating in the survey, students became eligible for a sweepstakes that included several prizes including cash prizes, travel vouchers, field passes to athletic events, and iPods. The final response rate was 66.2%, which exceeded the average response rate for national college-based alcohol and other drug studies (Wechsler et al., 2002). The proportion of respondents who completed the entire survey was 97.4% (completion rate). Similar Web survey design and procedures are described in more detail elsewhere (McCabe et al., 2002; McCabe, 2004).

The final sample consisted of 4,580 undergraduate students and the demographic characteristics of the random sample closely resembled the characteristics of the overall student population. The proportion of women was slightly higher in the random sample than the overall undergraduate student population (55% vs. 51%) while the racial/ethnic, class year and age distributions between the random sample and the population closely resembled each other. The average age of the students in the sample was 20 years old.

Instrument and Measures

The Student Life Survey (SLS) includes items adapted from several national studies of alcohol and other drug use (e.g., Johnston et al., 2003; Wechsler et al., 1995). Demographic measures in the survey included items asking about gender, race/ethnicity, class year, living arrangement, and fraternity and sorority membership.

Illicit drug use was assessed with the following question: "On how many occasions in the past 12 months have you used the following types of drugs?" There were separate questions for

each of the following eight drugs: Marijuana or hashish, cocaine, LSD, other psychedelics, crystal methamphetamine, heroin, inhalants, and ecstasy. The response scale for each drug was (1) No occasions, (2) 1–2 occasions, (3) 3–5 occasions, (4) 6–9 occasions, (5) 10–19 occasions, (6) 20–39 occasions, and (7) 40 or more occasions.

Illicit use of prescription drugs was assessed with the following question: "On how many occasions in the past 12 months have you used the following types of drugs? Do not include drugs used under a doctor's prescription." There were separate questions for each of the following four drugs: sleeping medication (e.g., Ambien, Halcion, Restoril, temazepam, triazolam), sedative/anxiety medication (e.g., Ativan, Xanax, Valium, Klonopin, diazepam, lorazepam), stimulant medication (e.g., Ritalin, Dexedrine, Adderall, Concerta, methylphenidate) and pain medication (e.g., opioids such as Vicodin, OxyContin, Percocet, Darvocet, morphine, hydrocodone, oxycodone). The response scale for each drug was the same as for illicit drug use.

Drug abuse was assessed with a modified version of the Drug Abuse Screening Test (DAST-10), a self-report instrument that can be used in clinical and non-clinical settings to screen for abuse and dependence on a wide variety of substances other than alcohol (Skinner, 1982). The DAST is a well validated instrument developed in North America that was originally adapted from the MAST, which focuses primarily on alcohol. The two scales are very similar, and the original 28-item version and the more recent 20-item version of the DAST have almost identical psychometric properties, with a correlation of $r = 0.99$ (Skinner, 1982). In addition, the DAST has been shortened to a 10-item version (DAST-10) which has similar psychometric properties to the other two versions (Cocco & Carey, 1998).

Using Web-based skip logic, respondents who reported past year illicit use of any of the following drugs received the DAST-10 items: marijuana or hashish, cocaine, LSD, other psychedelics, crystal methamphetamine, heroin, inhalants, ecstasy, sleeping medication, sedative/anxiety medication, stimulant medication and pain medication. Respondents were instructed that the DAST-10 questions were about drugs other than alcohol and to answer "Yes" or "No" to each of the DAST-10 items. Respondents were informed that "drug" refers to use of prescription drugs not prescribed to them or in a manner not intended by the prescribing clinician or use of other drugs such as marijuana, cocaine, LSD, ecstasy, etc. The DAST-10 items used in the present study are listed in Table 3. Based on previous research, a cutpoint score of 3 or more DAST-10 items was used to indicate a moderate level of problems related to drug abuse (e.g., Bernstein et al.; French et al., 2001;Skinner, 1982).

Data Analysis

Associations between categorical variables were tested using chi-square and logistic regression analysis. Associations between continuous variables were tested using one-way analysis of variance (ANOVA) and post-hoc pairwise comparisons were conducted using Tukey's Honestly Significant Difference (HSD) to maintain an alpha level of .05. A series of multiple logistic regression analyses were conducted to assess the main and interactive effects of gender and race/ethnicity on the odds of past 12-month drug use and abuse. Analyses focused on five indicators of past 12-month drug use and abuse: (a) use of illicit or prescription drugs, (b) use of illicit drugs with marijuana, (c) use of illicit drugs without marijuana, (d) illicit use of prescription drugs, and (e) three or more positive items based on the Drug Abuse Screening Test, Short Form. The information for the 5-category race/ethnicity variable was represented with four dummy variables. For gender, the reference group was females, and for race/ethnicity we conducted analyses with African Americans as the reference group.

Procedures outlined by Jaccard (2001) were used to test the interactive effects of gender and race on the odds of past 12-month drug use. A hierarchical logistic regression analyses was

conducted with all main effects entered at the first step and all product terms for the Gender × Race interaction entered at the second step. Model fit was evaluated with the chi-square statistic. The finding that Whites and Hispanics had higher levels of illicit drug use and illicit use of prescription drugs was further examined by analyzing race and gender differences in age of onset of marijuana use. For these exploratory analyses, the age of onset variables were dummy coded as 0 = college onset and 1 = pre-college onset.

RESULTS

Prevalence of Illicit Use of Drugs

As shown in Tables 1 and 2, the 12-month prevalence rates of drug use were examined for undergraduate college students based on race/ethnicity and gender. Marijuana was the most commonly used substance followed by opioid analgesics, prescription stimulants and psychedelics. The associations between race/ethnicity and 12-month prevalence rates of substance use were examined for males and females separately using chi-square tests. Among men and women, the use of these substances tended to be higher for Hispanic and White students than for Asian and African American students. As shown in Table 1, 12-month rates of illicit drug use including marijuana were 40.0% for Hispanic women, 38.1% for White women, 20.6% for Asian women, 18.7% for African American women and 32.4% for women from other racial categories ($p < .01$). In addition, 12-month rates of illicit use of prescription drugs were 18.2% for Hispanic women, 13.8% for White women, 6.3% for Asian women, 8.4% for African American women and 11.6% for women from other racial categories ($p < .01$).

As shown in Table 2, the racial differences in drug use were similar for undergraduate men. For example, 12-month rates of illicit drug use were 45.1% for Hispanic men, 41.5% for White men, 22.8% for Asian men, 34.1% for African American men and 28.3% for men from other racial categories ($p < .01$). In addition, 12-month rates of illicit use of prescription drugs were 16.2% for Hispanic men, 13.8% for White men, 9.0% for Asian men, 8.6% for African American men and 9.9% for men from other racial categories ($p < .05$).

Prevalence of Drug Abuse

As illustrated in Tables 3 and 4, the 12-month prevalence of DAST-10 items was examined based on race/ethnicity and gender. Similar to drug use, the prevalence of DAST-10 items tended to be higher for Hispanic and White undergraduate students than for Asian and African American undergraduate students. The associations between race and 12-month prevalence rates DAST-10 items were examined for males and females separately using chi-square tests. Results showed significant associations between race and DAST-10. For example, rates of experiencing three or more DAST-10 items were 14.4% for Hispanic men, 14.1% for White men, 6.1% for African American men, 4.9% for Asian men, and 6.6% for men from other racial categories ($p < .01$). In addition, rates of experiencing three or more DAST-10 items were 10.2% for Hispanic women, 9.1% for White women, 3.3% for Asian women, 4.2% for African American women and 6.1% for women from other racial categories ($p < .01$).

Main and Interactive Effects of Gender and Race/Ethnicity on Illicit Use of Drugs

Results from multiple logistic regression analysis for past 12-month illicit use of prescription or illicit drugs revealed that after controlling for race, there was no statistically significant effect of gender (see Table 5). With respect to race, results using African Americans as the reference group showed that, controlling for gender, the odds of past 12-month drug use were statistically significantly higher among Whites (OR = 1.86, $p < .01$) and Hispanics (OR = 2.14, $p < .01$). Additional analyses with Hispanics as the reference category indicated that the odds of past

12-month drug use were slightly lower among Whites compared to Hispanics, but the difference was not statistically significant (OR = .87, *ns*).

As described in the data analysis section, interactive effects of gender and race on the odds of past 12-month drug use were tested. The chi-square for the main effects model was 112.15 (df = 5), and the chi-square for the interaction effects model was 121.70 (df = 9). The difference between the two χ^2 was 121.70 − 112.15 = 9.55 (df = 4, *p* < .05), which suggests the presence of a statistically significant interaction effect between gender and race. Results showed that the odds ratio for gender was significantly stronger for African Americans compared to Whites (OR = 1.59, *p* < .05) and for African Americans compared to Other Races (OR = 2.44, *p* < .01). Indeed, the effect of gender on past 12-month drug use was statistically significant among African Americans (OR = 1.70, *p* < .01), but not among any of the other racial groups.

Results from multiple logistic regression analysis (see Table 5) for past 12-month use of illicit drugs including marijuana revealed that after controlling for race, there was a significant effect of gender, and the adjusted odds were higher among males compared to females (OR = 1.20, *p* < .01). Results also indicated a main effect for race using African Americans as the reference group. Controlling for gender, the odds of past 12-month drug use were statistically significantly higher among Whites (OR = 2.12, *p* < .01), Hispanics (OR = 2.37, *p* < .01), and Other Races (OR = 1.35, *p* = .05) compared to African Americans. Additional analyses with Hispanics as the reference category showed that the odds of past 12-month illicit drug use were slightly but not significantly lower among Whites compared to Hispanics (OR = .90, *ns*).

Results from a hierarchical logistic regression analyses showed that the chi-square for the main effects model was 135.5 (df = 5), and the chi-square for the interaction effects model was 147.5 (df = 9). The difference between the two χ^2 was 147.5−135.5 = 12.0 (df = 4, *p* < .05), which suggests the presence of a statistically significant interaction effect between gender and race. Results showed that the odds ratio for gender was significantly stronger for African Americans compared to Whites (OR = 1.96, *p* < .01), for African Americans compared to Hispanics (OR = 1.83, *p* < .05), for African Americans compared to Asians (OR = 1.97, *p* < .05), and for African Americans compared to Other Races (OR = 2.74, *p* < .01). No other statistically significant interaction effects were observed.

Results from multiple logistic regression analysis (see Table 5) for past 12-month use of illicit drugs *not* including marijuana revealed that after controlling for race, there was a significant effect of gender, and the adjusted odds ratio were higher among males compared to females (OR = 1.80, *p* < .01). Results also indicated a main effect for race using African Americans as the reference group. Controlling for gender, the odds of past 12-month illicit drug use (not including marijuana) was significantly higher among Whites (OR = 3.13, *p* < .01), Hispanics (OR = 3.57, *p* < .01) and Other Races (OR = 2.82, *p* < .01) compared to African Americans. Results from a hierarchical logistic regression analyses showed that the chi-square for the main effects model was 63.71 (df = 5), and the chi-square for the interaction effects model was 65.30 (df = 9). The difference between the two χ^2 was 65.30 − 63.71 = 1.59 (df = 4, *ns*), which does not support the hypothesis that the effect of gender on past 12-month illicit drug use (not including marijuana) is moderated by race.

Results from multiple logistic regression analysis (see Table 5) for past 12-month illicit use of prescription drugs revealed that after controlling for race, there was no effect of gender. Results also indicated a main effect for race using African Americans as the reference group. Controlling for gender, the odds of past 12-month illicit use of prescription drugs was statistically significantly higher among Whites (OR = 1.73, *p* < .01) and Hispanics (OR = 2.25, *p* < .01) compared to African Americans. Additional analyses indicated that the odds of past 12-month illicit prescription drug use was significantly higher among Hispanics compared to

Whites (OR = 1.30, *p* < .05), Asians (OR = 2.52, *p* < .01), and Other Races (OR = 1.76, *p* < .01).

Results from a hierarchical logistic regression analyses showed that the chi-square for the main effects model was 39.22 (df = 5), and the chi-square for the interaction effects model was 41.36 (df = 9). The difference between the two χ^2 was 41.36 − 39.22 = 2.14 (df = 4, *ns*), which does not support the hypothesis that the effect of gender on past 12-month illicit prescription drug use is moderated by race/ethnicity.

Main and Interactive Effects of Gender and Race/Ethnicity on Drug Abuse

Multiple logistic regression analyses were conducted to examine the main and interactive effects of gender and race/ethnicity on reporting three or more DAST-10 items. Results for past 12-month illicit use of prescription drugs revealed that, controlling for race/ethnicity, there was a statistically significant effect for gender, and the odds of reporting three or more drug use-related problems in the past year were higher among males compared to females (OR = 1.55, *p* < .01). Results also indicated a main effect for race/ethnicity using African Americans as the reference group. Controlling for gender, the odds of reporting three or more DAST-10 items was significantly higher among Whites (OR = 2.40, *p* < .01) and Hispanics (OR = 2.57, *p* < .01) compared to African Americans. Analyses with Whites as the reference category showed that the odds of reporting three or more DAST-10 items was not significantly different between Hispanics compared to Whites (OR = 1.07, *ns*). Results from a hierarchical logistic regression analyses showed that the chi-square for the main effects model was 79.3 (df = 5), and the chi-square for the interaction effects model was 80.1 (df = 9). The difference between the two χ^2 was 80.1 − 79.3 = 0.8 (df = 4, *ns*), which does not support the hypothesis that the effect of gender on reporting three or more DAST-10 items is moderated by race/ethnicity.

Our data indicated that the majority of lifetime marijuana users (67.8%) reported using marijuana prior to college. Furthermore, results from multiple logistic regression analyses indicated that the odds of pre-college onset of marijuana use were higher for Whites (OR = 1.44, *p* < .05) and Hispanics (OR = 1.54, *p* < .05) compared to African Americans. Further, the odds of pre-college onset of marijuana use were higher for Whites (OR = 1.75, *p* < .01) and Hispanics (OR = 1.87, *p* < .01) compared to Asians.

DISCUSSION

The present study found higher rates of drug use and drug use related problems among Hispanic and White students relative to their African American and Asian college peers. Indeed, the highest rates of drug use and drug use related problems were generally among Hispanic students. Our data support earlier research that found Hispanic college students have higher rates of marijuana use as compared to Asian and African-American college students (Bell et al., 1997; Gledhill-Hoyt et al., 2000; Mohler-Kuo et al., 2003). The findings of the present study are also in line with past research that has shown White students have higher rates of illicit drug use than African American and Asian college students including marijuana (Bell et al., 1997; Meilman et al., 1995; Mohler-Kuo et al., 2003), ecstasy (Boyd et al., 2003; Strote et al., 2002), and several classes of prescription drugs (McCabe, 2005; McCabe et al., 2005a, 2005b).

We discovered considerable racial differences in *drug abuse* among college students that have not been well-studied to date. Because racial differences in *drug use* among college students do not necessarily reflect racial differences in *drug abuse*, future work is needed to elucidate the underlying causes for the higher rates of drug abuse among Hispanic and White college students. The continued examination of racial differences among young adults is especially important based on the recent increases in past-year prevalence of DSM-IV marijuana use

disorders among Hispanic young adults 18 to 29 years of age in the U.S. (Compton et al., 2004).

The illicit use of prescription drugs was second only to marijuana use across both genders and all racial groups; our findings are consistent with an emerging national trend in this age group (e.g., Johnston et al., 2004; McCabe et al., 2007; Mohler-Kuo et al., 2003). In addition, our higher drug use rates among male college students, relative to female college students, support previous work that revealed higher rates of illicit drug use such as marijuana (Bell et al., 1997; Gledhill-Hoyt et al., 2000; Johnston et al., 2004), LSD and other psychedelics (Johnston et al., 2004), inhalants (Johnston et al., 2004), and prescription stimulants (McCabe et al., 2005a) in this population.

The present study was unique in that we explored possible racial differences in the age of initiation of illicit drug use; we found some evidence that the racial differences in illicit drug use were present before college with marijuana use being more prevalent among White and Hispanic students prior to college. Similar racial differences have been observed among secondary school students in the U.S. (Delva et al., 2005; Johnston et al., 2005b); studies have found that the 12-month prevalence of marijuana and cocaine use is significantly higher among Hispanic 8th grade students when compared to non-Hispanic youth. Hispanic students in the present study were found to be at increased risk for severe consequences associated with several drug use behaviors, particularly simultaneous polydrug use (e.g., Cone et al., 2004; SAMHSA, 2004b; Watson et al., 2004). College administrators should be made aware of these racial/ethnic differences and be prepared to offer appropriate screening, referral and treatment options that are racially and ethnically sensitive.

The findings of the present study should be considered in the context of its strengths and limitations. Most notably, a strength is that racial minorities were oversampled enabling calculation of reliable estimates of drug use and drug use related problems for African American, Asian, and Hispanic undergraduate students. Many college-based efforts have lacked the necessary sample sizes of racial minorities to examine drug use and drug use related problems separately across racial categories. Another strength lies in our extension of previous college-based studies to feature the DAST-10 brief screening instrument to detect potential drug abuse. And finally, the present study focused on drug use and drug use related problems for substances (other than alcohol) which represent an understudied topic among college students.

Interpretations of our findings are also constrained by several limitations. First, the findings of the present study may not generalize to other college and non-college populations. Although the demographic characteristics from the sample closely resembled the demographic characteristics of 4-year U.S. colleges and universities nationally (Wechsler et al., 2002), previous research has found rates of illicit drug use vary across U.S. colleges and universities (e.g., Bell et al., 1997; McCabe et al., 2005a, 2005b). Second, the present study did not examine differences between ethnic subgroups (e.g., Cuban American, Mexican American, Puerto Rican) and previous research has found differences in drug use between ethnic subgroups among secondary school students (Delva et al., 2005). Future collegiate studies need to examine possible differences between ethnic subgroups in drug use, especially when considering the higher rates found among Hispanic students. Third, although the DAST-10 has been found to be culturally appropriate in diverse populations, further work should examine the validity of this brief screening instrument for adolescents and across various racial/ethnic groups. Finally, with a response rate of 66%, a non-response bias may have affected our findings. In an effort to assess the possible impact of non-response bias, we conducted a brief telephone survey with a randomly selected sample of students who did not respond to the original survey. A total of 159 students responded to the follow-up effort and we found no significant differences in the

rates of alcohol and other drug use for those who responded to the short survey compared to students who completed the original web survey.

Despite these limitations, the present study provides strong evidence from one university that Hispanic and White undergraduate students were at increased risk for drug use and abuse. The heightened risk among Hispanic students is of particular concern when considering the low retention and enrollment rates among Hispanic students in U.S. secondary and postsecondary institutions (U.S. Department of Education, 2003a, 2003b). Institutions of higher education are encouraged to assess illicit drug use on their own campuses while paying particular attention to possible racial/ethnic and gender differences and to consider such differences in the development of prevention and intervention efforts.

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TABLE 1

Race/Ethnicity Differences in 12-month Illicit Drug Use or Illicit Use of Prescription Drugs, Women

	Women					
	Asian n = 310 %	African-American n = 416 %	Hispanic n = 281 %	White n = 1346 %	Other n = 152 %	Chi-square p-value
Illicit or prescription drug[a]	22.9	24.9	44.0	41.8	37.2	**
Marijuana	20.0	18.7	39.9	38.2	32.4	**
Cocaine	0.7	0.7	4.4	3.0	1.4	**
LSD	0.0	0.0	0.4	0.5	0.0	
Other psychedelics	1.3	0.5	2.2	2.9	3.4	*
Crystal methamphetamine	0.3	0.0	0.0	0.3	0.7	
Inhalants	0.7	0.5	1.5	1.4	1.3	
Ecstasy	1.7	0.7	1.5	1.9	1.4	
Heroin	0.0	0.0	0.0	0.2	0.0	
Illicit drug with marijuana[b]	20.6	18.7	40.0	38.1	32.4	**
Illicit drug without marijuana[c]	3.3	1.7	7.3	5.8	6.8	**
Pain medication (opioid)	3.3	6.4	9.8	8.2	6.8	*
Stimulant medication	3.0	0.7	8.0	6.6	2.0	**
Sleeping medication	2.0	1.5	4.0	3.1	4.1	
Sedative/anxiety medication	1.3	1.2	2.9	2.8	2.7	
Any prescription drug[d]	6.3	8.4	18.2	13.8	11.6	**

[a] Includes marijuana, cocaine, LSD, other psychedelics, crystal methamphetamine, inhalant, ecstasy, heroin, pain medication, sedative/anxiety medication, sleeping medication, stimulant medication.

[b] Includes marijuana, cocaine, LSD, other psychedelics, crystal methamphetamine, inhalants, ecstasy, heroin.

[c] Includes cocaine, LSD, other psychedelics, crystal methamphetamine, inhalants, ecstasy, heroin.

[d] Includes pain medication, sedative/anxiety medication, sleeping medication, stimulant medication.

* p < 0.05 based on chi-square goodness-of-fit test with df = 4.

** p < 0.01 based on chi-square goodness-of-fit test with df = 4.

TABLE 2

Race/Ethnicity Differences in 12-month Illicit Drug Use or Illicit Use of Prescription Drugs, Men

	Men					
	Asian n = 297 %	African-American n = 168 %	Hispanic n = 282 %	White n = 1108 %	Other n = 220 %	Chi-square p-value
Illicit or prescription drug[a]	28.3	36.0	48.0	43.3	29.1	**
Marijuana	22.4	33.5	45.6	41.5	27.8	**
Cocaine	1.7	1.8	6.5	5.1	5.7	*
LSD	0.0	0.0	0.4	1.8	0.0	**
Other psychedelics	2.4	1.8	6.5	7.4	4.2	**
Crystal methamphetamine	0.0	0.0	0.4	0.4	0.0	
Inhalants	0.7	0.6	1.4	2.5	1.9	
Ecstasy	1.0	1.8	2.2	2.1	0.9	
Heroin	0.0	0.0	0.0	0.3	0.0	
Illicit drug with marijuana[b]	22.8	34.1	45.1	41.5	28.3	**
Illicit drug without marijuana[c]	4.8	4.3	11.2	10.6	8.5	**
Pain medication (opioid)	4.5	4.9	8.7	8.5	6.6	*
Stimulant medication	3.8	4.9	9.0	7.6	4.7	
Sleeping medication	1.7	1.2	2.5	1.8	2.3	
Sedative/anxiety medication	0.7	0.6	2.9	2.9	2.3	
Any prescription drug[d]	9.0	8.6	16.2	13.8	9.9	*

[a]Includes marijuana, cocaine, LSD, other psychedelics, crystal methamphetamine, inhalant, ecstasy, heroin, pain medication, sedative/anxiety medication, sleeping medication, stimulant medication.

[b]Includes marijuana, cocaine, LSD, other psychedelics, crystal methamphetamine, inhalants, ecstasy, heroin.

[c]Includes cocaine, LSD, other psychedelics, crystal methamphetamine, inhalants, ecstasy, heroin.

[d]Includes pain medication, sedative/anxiety medication, sleeping medication, and stimulant medication.

*
p < 0.05 based on chi-square goodness-of-fit test with df = 4.

**
p < 0.01 based on chi-square goodness-of-fit test with df = 4.

TABLE 3

Race/Ethnicity Differences in the Drug Abuse Screening Test, Women

			Women			
Drug Abuse Screening Test items	Asian n = 301 %	African-American n = 406 %	Hispanic n = 275 %	White n = 1325 %	Other n = 151 %	Chi-square p-value
Have you used more than one drug at a time?	3.3	3.4	7.6	8.0	6.8	**
Have you used drugs other than those required for medical reasons?	13.3	13.8	33.5	30.3	27.7	**
Are you always able to stop using drugs when you want to?	4.3	5.2	5.5	5.1	6.1	**
Have you had blackouts or flashbacks as a result of drug use?	1.7	0.7	5.8	4.9	2.0	**
Have you ever felt bad or guilty about your drug use?	7.0	5.4	13.8	12.2	8.8	*
Have family members ever complained about your involvement with drugs?	1.0	0.7	2.9	3.0	1.4	
Have you stayed away from your family because of your use of drugs?	0.7	0.7	3.3	2.7	2.0	*
Have you engaged in illegal activities in order to obtain drugs?	2.3	1.5	4.4	4.5	1.4	*
Have you had medical problems as a result of your drug use?	0.3	0.2	1.1	1.7	1.4	
Have you ever experienced withdrawal symptoms when you stopped taking drugs?	1.3	1.0	1.8	2.0	2.7	
One or more positive DAST-10 items	17.6	18.2	38.2	34.2	32.4	**
Two or more positive DAST-10 items	8.6	6.9	21.5	18.8	15.5	**
Three or more positive DAST-10 items	3.3	4.2	10.2	9.1	6.1	**

*
p < 0.05 based on chi-square goodness-of-fit test with df = 4.

**
p < 0.01 based on chi-square goodness-of-fit test with df = 4.

TABLE 4

Race/Ethnicity Differences in the Drug Abuse Screening Test, Men

Drug Abuse Screening Test items	Men					
	Asian n = 288 %	African-American n = 164 %	Hispanic n = 277 %	White n = 1087 %	Other n = 214 %	Chi-square p-value
Have you used more than one drug at a time?	7.3	6.1	15.2	12.4	8.5	**
Have you used drugs other than those required for medical reasons?	17.7	24.4	37.5	33.7	24.4	**
Are you always able to stop using drugs when you want to?	3.8	5.5	5.8	7.0	3.3	
Have you had blackouts or flashbacks as a result of drug use?	2.1	1.8	5.1	4.8	4.2	
Have you ever felt bad or guilty about your drug use?	6.6	11.0	18.4	16.7	9.4	**
Have family members ever complained about your involvement with drugs?	1.0	3.7	7.2	4.8	1.9	**
Have you stayed away from your family because of your use of drugs?	2.4	1.8	1.8	3.8	0.5	*
Have you engaged in illegal activities in order to obtain drugs?	2.1	4.9	5.8	7.5	2.3	**
Have you had medical problems as a result of your drug use?	0.3	1.2	1.1	1.5	0.5	
Have you ever experienced withdrawal symptoms when you stopped taking drugs?	1.7	1.8	3.2	1.8	0.5	
One or more positive DAST-10 items	21.9	31.7	44.0	39.0	26.8	**
Two or more positive DAST-10 items	13.5	16.5	26.7	24.5	15.5	**
Three or more positive DAST-10 items	4.9	6.1	14.4	14.1	6.6	**

*
p < 0.05 based on chi-square goodness-of-fit test with df = 4.

**
p < 0.01 based on chi-square goodness-of-fit test with df = 4.

TABLE 5

Multiple Logistic Regression Analysis of Gender and Race/Ethnicity as Correlates of Drug Use and Abuse

	Use of illicit drugs or prescription drugs		Illicit drug use (including marijuana)		Illicit drug use (not including marijuana)		Illicit use of prescription drugs		Three or more positive DAST-10 items	
	AOR[a]	95% CI[b]	AOR[a]	95% CI[b]	AOR[a]	95% CI[b]	AOR[a]	95% CI[b]	AOR[a]	95% CI[b]
Female	—[c]		—[c]		—[c]		—[c]		—[c]	
Male	1.12	0.99 – 1.26	1.20**	1.06 – 1.37	1.80**	1.41 – 2.27	1.00	0.84 – 1.20	1.55**	1.27 – 1.91
African-American	—[c]		—[c]		—[c]		—[c]		—[c]	
White	1.86**	1.52 – 2.27	2.12**	1.71 – 2.62	3.13**	1.80 – 5.43	1.73**	1.26 – 2.39	2.40**	1.60 – 3.61
Hispanic	2.14**	1.66 – 2.74	2.37**	1.83 – 3.08	3.57**	1.95 – 6.55	2.25**	1.55 – 3.25	2.57**	1.62 – 4.10
Asian	0.84	0.65 – 1.09	0.89	0.67 – 1.17	1.49	0.76 – 2.92	0.89	0.58 – 1.37	0.78	0.44 – 1.37
Other	1.19	0.89 – 1.59	1.35	1.00 – 1.82	2.82**	1.46 – 5.45	1.28	0.81 – 2.00	1.20	0.67 – 2.13

[a] AOR = Adjusted odds ratios from multiple logistic regression analyses with gender and race/ethnicity as predictors of past 12-month (a) use of illicit drugs or prescription drugs, (b) use of illicit drugs including marijuana, (c) use of illicit drugs not including marijuana, (d) illicit use of prescription drugs, (e) three or more positive items based on the Drug Abuse Screening Test (DAST-10).

[b] 95% CI = 95% confidence interval for the adjusted odds ratio.

[c] Reference group.

*
p < .05.

**
p < .01.