

Marijuana Use among Young Women in a Primary Care Setting

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OBJECTIVE: To evaluate the prevalence of marijuana use among young women, ages 18–24, within a primary care setting.

DESIGN: From 2/05 to 12/05, women completed a brief, anonymous self-report screening instrument in two urban primary care clinics for potential participation in a randomized controlled trial of an intervention to reduce marijuana use and sexual risk-taking behavior. During the last few months of recruitment, women who completed the screening instrument were also asked to provide a urine sample to test for the presence of marijuana and other drugs.

RESULTS: Of the 607 women who completed the screening instrument, 38.6% reported lifetime marijuana use, 8.4% used marijuana at least monthly, and 1.7% reported using marijuana daily. Within this ethnically diverse sample (45% Hispanic), women who used marijuana at least monthly were more likely to smoke cigarettes (OR=2.03, 95% CI=1.04, 3.96), binge drink at least once a month (OR=2.66, 95% CI=1.34, 5.28), and to have ever used other drugs (OR=2.91, 95% CI=1.31, 6.45). Of the 67 urine samples provided, 60 (89.6%) were concordant with self-reported use, but six of the seven discordant samples were positive despite negative self-report.

CONCLUSIONS: The prevalence of marijuana use and binge drinking in this ethnically diverse sample of young, female primary care patients was lower than rates reported in national surveys. Providers should consider marijuana use as a part of a process that addresses more prevalent high-risk behaviors, bearing in mind that these behaviors may be underreported during routine screening.

KEY WORDS: marijuana use; young women; primary care.

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INTRODUCTION

Marijuana is the most widely used illicit drug among young adults, with 17% of the general population between the ages of

18 and 25 reporting use within the past month.¹ It is widely recognized that the negative effects of marijuana use are widespread, including physical injuries and poor school performance, and risky behaviors such as binge drinking^{2,3} and sexual risk-taking.⁴ Despite evidence to suggest that marijuana use is pervasive among young adults, prevalence data specific to young women is sparse, particularly for those seeking primary care (6–8). Nationally, 13% of women between 18 and 25 reported using marijuana in the past month, and 4.3% reported daily use.⁵ The prevalence of monthly marijuana use appears lower among Hispanic women in this age group compared to non-Hispanic women (6.5 vs 14.6%, respectively).⁵

For many young adults who use drugs in ways that are unsafe, primary care settings may be the only locations where youth with sub-dependent, yet potentially problematic, drug use have contact with health care providers. Previous research suggests that young women are likely to seek treatment and advice for health issues related to sexual activity from primary care providers,⁶ including Obstetrics and Gynecology practices, where providers may be less likely to screen for or discuss the use of marijuana. The current study provides a comprehensive assessment of the prevalence of marijuana use among an urban and racially diverse sample of young women in two primary care settings. Because prevalence estimates for marijuana use are largely based on self-report,⁷ we tested the validity of self-reported marijuana use among these women using a urine test for the presence of THC.

METHODS

Participants and Study Procedure

Between February 2005 and December 2005, 1,260 women, ages 18–24, attended a primary care medical appointment at one of two hospital-based outpatient clinics ($n=144$ at the MedPeds Clinic (MP) at Rhode Island Hospital and $n=1,116$ at the Women's Primary Care Center (WPCC) at Women and Infants Hospital). These two primary care sites, located within a low income (median income \$26,900 vs \$42,100 for the state; 29% incomes below poverty level) and racially diverse (46% White, 30% Hispanic, 12% Black, 12% other) neighborhood, care for the largest proportion of 18- to 24-year-old women in Providence. There are five primary care physicians at both the WPCC and MP. Approximately half of the clinicians are White, and another third are Hispanic. The majority of nonpregnancy-related visits are for family planning purposes or gynecological complaints. Most patients receive state assistance for insurance (over 70%). Research staff approached 732 (58.1%) of the 1,260

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women to complete a brief screening questionnaire for participation in a randomized clinical trial to reduce marijuana use and sex-risk behaviors. A total of 528 women were not approached for the following reasons: not able to speak with them during their visit ($n=368$, 29.2%); with another person and unable to provide a confidential screen ($n=73$, 5.8%); ineligible (e.g., pregnant, non-English speaking, $n=61$, 4.8%); already screened ($n=17$, 1.3%), or asked not to approach patient ($n=9$). A higher percentage of women were approached in the MP clinic (68.8%) compared to the larger WPCC clinic (56.7%). Of the 732 women approached, 57 (7.9% overall; 13 at MP (13.1%) and 44 (7.6%) at WPCC) chose not to complete the screen and 20 (2.8%) were not screened after they were approached for one of the reasons listed above. Of the 655 women screened, 607 provided complete data on marijuana use.

In addition, all women approached between July 2005 and December 2005 at the MP clinic and between November 2005 and December 2005 at the WPCC were also asked to provide an anonymous urine test. Of the 140 women asked to provide urine samples, 53 (37.9%) refused, and a sample was not obtained from an additional 20 women for reasons other than refusal (e.g., not enough time to collect the sample). A total of 67 women (47.9%) provided a urine sample.

A study research assistant approached women waiting for providers in private examination rooms and asked them to complete a 5-minute, anonymous interview about behaviors and health risk. Questions assessed demographics and health behaviors (lifetime and last 3 months). Patients asked for urine samples were assured that results would be confidential. Patients were told that the urine sample was another method for determining the rate of drug use among women their age. Participants received no compensation. The responses were reviewed for eligibility for the randomized trial immediately after the screener was completed. Study approval was obtained from the Women and Infants Hospital and Rhode Island Hospital Institutional Review Boards before study initiation.

MEASURES

Marijuana use. Women were first asked if they had ever used marijuana, if they used it in the past 3 months, and frequency

of use over the past 3 months. A dichotomous variable was created representing monthly or more frequent marijuana use.

Other substance use. Dichotomous variables were created representing daily cigarette use, monthly binge drinking (4 or more drinks in a row within a couple of hours), and lifetime use of other illegal drugs.

Urine screen. We used the Screeners[®] Dip Drug Test with the Integrated Screeners[®] Autosplit[®] KO[™] Test Cup to biologically confirm self report in a subsample of study participants. This standard urine test yields a positive result for marijuana when the concentration of THC-COOH in the urine exceeds 50 ng/mL, the suggested cutoff set by SAMHSA.⁸ Marijuana can be detected in urine for up to 2 days for one-time users and up to 1 month for routine, heavy users, which limits the ability of the test to capture use among infrequent users.

RESULTS

Women screened at the MP clinic were slightly younger (mean age = 21.2 vs 21.9 at WPCC), but did not differ in terms of race, education, or tobacco, marijuana, alcohol, and other drug use. Accordingly, we combined the data from the two sites when we calculated unadjusted and adjusted (using multivariate logistic regression) odds ratios for monthly marijuana use for each of the demographic and other substance use variables.

The mean age of the sample was 21.8 (Table 1). The majority was Hispanic (45.2%), followed by Non-Hispanic White (24.5%), Non-Hispanic Black (17.4%), and Non-Hispanic Other Race (12.9%). Most had completed high school or received a general education development (GED) (71.2%). More than a third (38.6%) reported lifetime marijuana use, and 8.4% reported using at least monthly. Only 3.8% reported using marijuana at least weekly, and 10 women (1.7%) reported daily use. In addition, 19.0% were daily cigarette smokers, 16.3% reported binge drinking at least monthly, and 7.7% had ever used other drugs. Hispanic women had a lower prevalence of monthly marijuana use (4.8%) compared to women of other race/ethnicity (10.8% of Non-Hispanic Whites, 14.3% of Non-Hispanic Blacks, and 7.7% of Non-Hispanic Other Race), but

Table 1. Demographic Characteristics and Drug Use Prevalence Rates

Monthly marijuana use					
Variable	Total sample (n=607)	Yes (n=51)	No (n=556)	Unadjusted odds ratio (95% CI)	Adjusted odds ratio (95% CI)*
Mean age (sd)	21.8 (2.08)	21.9 (1.92)	21.7 (1.99)	1.05 (0.91, 1.22)	-
Percent high school grad/GED (%)	71.2	78.4	70.5	1.52 (0.76, 3.04)	-
Percent Hispanic (%)	45.2	26.0	46.9	0.40 (0.21, 0.76)‡	0.52 (0.26, 1.05)†
Percent daily cigarette smokers (%)	19.0	41.2	16.9	3.44 (1.89, 6.27)//	2.03 (1.04, 3.96)‡
Percent monthly binge drinkers (%)	16.3	37.3	14.4	3.54 (1.91, 6.55)//	2.66 (1.34, 5.28)§
Percent ever used other illegal drugs (%)	7.7	26.0	6.0	5.51 (2.66, 11.37)//	2.91 (1.31, 6.45)§

The multivariate model included all variables that were significant in the bivariate analyses (Hispanic, cigarette smoking, binge drinking, and illegal drug use).

*Odds ratio adjusted for other variables in the model

† $p < 0.10$

‡ $p < 0.05$

§ $p < 0.01$

// $p < 0.001$

this was not significant in the multivariate analysis. The multivariate analysis indicated that monthly marijuana users were more likely to smoke cigarettes, binge drink, and to have ever used other drugs (Table 1).

Finally, of the 67 urine samples provided, 60 (89.6%) were concordant (58 negatively concordant and 2 positively concordant) with the woman's self-report of marijuana use in the last month. Of the 7 discordant samples (10.4%), 6 were positive for marijuana use among women who reported no marijuana use in the past month, and 1 was negative for marijuana use on the urine screen for a woman who reported having used marijuana in the past month. Women who refused the urine screen ($n=53$) did not differ from the 67 women who provided a urine screen in ethnicity, education, self-reported marijuana use, alcohol use, binge drinking, or other illegal drug use. However, refusers were more likely to report daily cigarette smoking (26.4 vs 11.9%, OR=2.65, 95% CI=1.02, 6.90).

DISCUSSION

This study examined demographic characteristics and marijuana use prevalence among young women at two primary care clinics. Although the self-reported prevalence rate for lifetime marijuana use (38%) was consistent with national rates for young women in this age group, self-reported rates of monthly and daily marijuana use was lower for this sample at 8.4 and 1.7%, respectively, compared to 13 and 4.3%, respectively, in the National Survey on Drug Use and Health (NSDUH).⁷ The rate of daily cigarette smoking (19%) was comparable to the national rate of 19.5% for women in this age group, but the rate of monthly binge drinking (16.3%) was lower compared to the national rate of 32%. Consistent with national data, monthly marijuana use in this sample was lowest among Hispanic women. Thus, it is possible that the lower rate of marijuana use found in this sample may be related to the fact that the sample was predominantly Hispanic. Although national data also indicate that binge drinking is less prevalent among young Hispanic women, Hispanic women in this sample were not less likely to binge drinking compared to Non-Hispanic women (17.0% of Hispanic vs 15.9% Non-Hispanic), which suggests that the lower rate of binge drinking in the sample is not related to ethnicity.

Another explanation for the lower self-reported marijuana use and binge drinking rates is that women may have been unwilling to self-report these substance use behaviors. Consistent with past research, we found an overall high degree of concordance between self-reported use and the results of the urine screens among nonusers. However, of 8 positive urine tests, only 2 women reported marijuana use suggesting that underreporting of marijuana use may be common, at least in medical settings. This lack of concordance among users is consistent with past research indicating that marijuana and other substance use may be underreported, particularly in clinical settings^{9,10}. In contrast, past research on the validity of self-reported drug use has found greater concordance between self-report and biochemical test results among users in a general population survey¹¹. This suggests that individuals participating in national surveys may be more willing to disclose marijuana use than individuals who are seeking medical care. Because the purpose of a primary care visit is

to discuss health-related issues, young women may be reluctant to admit to engaging in problematic health behaviors.

Fewer than 2% used marijuana daily. Most women who used marijuana used it at levels unlikely to place them at high risk for later abuse or dependency.¹² A recent review of the research on health risks associated with marijuana use found evidence suggesting that health risks were associated with chronic use, not with infrequent use, which was characteristic of this sample.¹³ Prioritizing discussion topics has become increasingly important for PCPs given the brief duration of the average outpatient appointment.¹⁴ The low prevalence of frequent marijuana use relative to cigarette smoking or binge drinking suggests that marijuana use should be included as part of a discussion that focuses primarily on these other, more prevalent health risk behaviors. Marijuana users were significantly more likely to smoke cigarettes, binge drink, and use other illegal drugs.^{2,3} These results suggest that PCPs may want to take into account the apparent clustering of substance use behaviors in their approach.

There were some limitations. Although only a small percentage of women refused to complete the screener, the percentage with an appointment that were approached for screening was somewhat low due primarily to confidentiality concerns and accessibility issues resulting from the patient flow in the clinics. In addition, the measures were part of a brief screening instrument. As such, the substance use measures assessed only frequency of use, not duration of use or associated problems. Furthermore, urine screens were obtained for a fraction of women, most of whom reported no marijuana use. Finally, the sample was drawn from two large, urban primary care clinics whose patients tend to be young and ethnically diverse, warranting caution in generalizing to other primary care settings or populations.

We found lower prevalence rates for both marijuana use and binge drinking than previously reported in national samples and rare daily use of marijuana. These behaviors may be underreported in primary care settings. With limited time available for patient education, marijuana use may be best considered as one component of discussion between PCPs and their young patients that includes other health risk behaviors.

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REFERENCES

- Centers for Disease Control, Health, United States, 2005. 2005, DHHS Publication No. 2005-1232.
- Gledhill-Hoyt J, Lee H, Strothe J, Wechsler H. Increased use of marijuana and other illicit drugs at US colleges in the 1990s: results of three national surveys. *Addiction*. 2000;95:1655-67.
- Turner C, Russell A, Brown W. Prevalence of illicit drug use in young Australian women, patterns of use and associated risk factors. *Addiction*. 2003;98:1419-26.
- Poulin C, Graham L. The association between substance use, unplanned sexual intercourse and other sexual behaviors among adolescents students. *Addiction*. 2001;96:607-21.

5. US Dept. of Health and Human Services, S., OAS, National survey on drug use and health, 2003 [Computer file]. ICPSR04138-v2. 2004, Ann Arbor, MI: Research Triangle Institute [producer].
6. **Ziv A, Boulet JR, Siap GB.** Utilization of physician offices by adolescents in the United States. *Pediatrics.* 1999;104:35-42.
7. Office of Applied Studies. Results from the 2003 National Survey on Drug Use and Health: National findings. NSDUH Series H-25 2004 [cited DHHS Publication no. SMA-043964 April 27, 2006]; Available from: <http://www.oas.samhsa.gov>.
8. SAMHSA (2001) Federal standards for urine drug testing cutoff concentrations.
9. **Ashling K, Gross AH, Coghlin DT, Sweeney PJ.** Prevalence of positive urine drug screens in a prenatal clinic: Correlation with patients' self-report drug use. *RI Med.* 1994;77:371-3.
10. **McNagny SE, RM Parker.** High prevalence of recent cocaine use and the unreliability of patient self-report in an inner-city walk-in clinic. *JAMA.* 1992;267(8):1106-8.
11. **Fendrich M, Johnson T, Wislar J, Hubbell A, Spiehler V.** The utility of drug testing in epidemiological research: results from a general population survey. *Addiction.* 2004;99:197-208.
12. **Swift W, Copeland J, Hall W.** Choosing a diagnostic cut-off for cannabis dependence. *Addiction.* 1998;93(11):1681-92.
13. **Hashibe M, Straif K, Tashkin DP, Morgenstern H, Greenland S, Zhang Z-F.** Epidemiologic review of marijuana use and cancer risk. *Alcohol.* 2005;35(3):265-75.
14. **Braddock CH, Snyder L.** The doctor will see you shortly: the ethical significance of time for the patient-physician relationship. *J Gen Intern Med.* 2005;20:1057-62.