

RESEARCH

Attitudes of Matriculating First-Year Pharmacy Students Toward a Mandatory, Random Drug-Screening Program

Maggee Oliver, PharmD,^a Marshall E. Cates, PharmD,^a Michael D. Hogue, PharmD,^a Susan P. Alverson, DPA, MHP^a and Thomas W. Woolley, PhD^b

^aMcWhorter School of Pharmacy, Samford University, Birmingham, AL

^bBrock School of Business, Samford University, Birmingham, AL

Submitted April 14, 2012; accepted July 14, 2012; published November 12, 2012.

Objective. To determine the attitudes of incoming pharmacy students toward a mandatory, random urine drug-screening program.

Methods. This was an anonymous, voluntary survey of students at the McWhorter School of Pharmacy (MSOP) using an instrument composed of 40 items. The instrument was administered during orientation week prior to the session during which the policies and procedures of MSOP's drug-screening program were to be discussed.

Results. The survey instrument was completed by all 129 (100%) students in the class. Two-thirds of the students were aware of MSOP's drug-screening program prior to applying, but only a few felt uneasy about applying to the school because of the program. The greatest concerns expressed by the students included what would happen if a student unintentionally missed a drug screen or was busy with other matters when called for screening, how much time a drug-screening would take, and the possibility of false-positive drug screen results. The vast majority of students agreed with statements regarding the potential benefits of drug testing. Students who consumed alcohol in a typical week and those with current or past use of an illegal substance held less favorable attitudes toward MSOP's mandatory drug-screening program compared with students who did not share those characteristics.

Conclusion. Although there were definite concerns expressed regarding pragmatic issues surrounding drug screening, the first-year pharmacy students held generally favorable opinions about the school's mandatory drug-screening program.

Keywords: illicit drug testing, pharmacy students, attitudes

INTRODUCTION

Use and abuse of alcohol, prescription drugs, and illicit drugs among American college students are well-known.¹⁻³ Unfortunately, the extensive knowledge that pharmacy students possess about addicting substances does not confer protection against use of these agents.⁴ Published studies concerning the extent of alcohol and drug use among pharmacy students have accumulated over the years,⁵⁻¹² revealing some disturbing findings. McAuliffe and colleagues discovered that about two-thirds of pharmacy students had used a controlled substance without a prescription at some point in their lives, while approximately 40% had done so within the past year.⁵ Miller and colleagues found current-use rates of marijuana, amphetamines,

tranquilizers, and cocaine among pharmacy students to be approximately 14%, 7%, 4%, and 3%, respectively.⁶ Kriegler and colleagues revealed pharmacy students' past-year use of nonprescription stimulants, marijuana, sedatives, amphetamines, and opiates to be approximately 19%, 11%, 8%, 6% and 5%, respectively.⁷ Kenna and Wood discovered that the percentages of pharmacy students who engaged in monthly use of marijuana, stimulants, cocaine, and ecstasy were approximately 14%, 4%, 1%, and 1%, respectively.⁹ Lord and colleagues found that approximately 5% of pharmacy students had misused prescription opioids and another 5% had misused prescription stimulants in the past year.¹¹ Even more concerning are findings that pharmacy students exhibited troubling behaviors as a consequence of alcohol and drug use, such as going to class or work under the influence, providing patient care while under the influence, missing class or work, and stealing drugs from an employer or practice site.^{7,8,10}

Corresponding Author: Marshall E. Cates, PharmD, Samford University McWhorter School of Pharmacy, 800 Lakeshore Drive, Birmingham, AL 35229. Tel: 205-726-2457. Fax: 205-726-2669. E-mail: mecates@samford.edu

In part because of such concerns, many experiential training sites, including community pharmacies, hospitals, and other health-system settings, have started to require drug testing for pharmacy students. The response of colleges and schools of pharmacy to this requirement has been quite varied. We are aware of the following models: no official drug-screening program, with student and experiential site to coordinate testing; nonrandom drug screening for a specific purpose, as in the case of students being assigned to a site that requires such testing; random drug screening that occurs in predetermined years of the curriculum; and random drug screening that occurs throughout all years of the curriculum. Although the latter option is relatively rare among colleges and schools of pharmacy, the McWhorter School of Pharmacy (MSOP) chose to implement an extensive mandatory, random urine drug-screening program throughout the entire 4-year curriculum, beginning in the fall of 2008. Because class sizes are relatively large and introductory and advanced pharmacy practice experiences occur in each year of the curriculum, MSOP conducts an estimated 1,800 experiential courses each year. Further, based on requests from preceptors, practice sites, and students, MSOP conducts approximately 600 schedule changes each year. Thus, conducting routine random drug screening instead of continuously responding to required testing of specific students assigned to specific training sites made practical, administrative sense. The implementation and details of this program have been published elsewhere.¹³

Despite the primary benefit (ie, meeting contractual obligations) and secondary benefits (eg, detecting and aiding students with substance abuse issues and discouraging misuse of stimulants for studying purposes) of a random drug-screening program at MSOP, there were concerns about implementing such a program. How does the implementation of such an extensive program affect applicants' decisions, especially when many competitor schools do not require such testing? Are our students overly concerned about policies and procedures associated with the program? Finally, do our students perceive the drug-screening program as positive and meaningful or invasive and worthless? The objective of this study was to determine the attitudes of incoming MSOP pharmacy students toward the school's mandatory, random urine drug-screening program.

METHODS

This study was an anonymous, voluntary survey of first-year pharmacy students during their orientation week. The study was approved by the Samford University Institutional Review Board. Items were pretested in a group setting that included 3 of the investigators and 8 current

fourth-year pharmacy students. Cognitive interviewing was used to ensure that survey instrument instructions were clear, items and wording were unambiguous, and items were relevant and comprehensive.

The survey instrument included 40 items relating to demographics and knowledge, concerns, and beliefs about drug screening. Attitudinal items were scored on a Likert scale of 1 (strongly agree) to 5 (strongly disagree). The paper survey was conducted at 1 sitting prior to the orientation session concerning the policies and procedures of MSOP's drug-screening program. After explaining the anonymous and voluntary nature of the study, the investigators distributed the survey instruments, provided instructions to the class, and then left the room. Participants placed completed survey instruments in a box located at the front of the room.

Responses to survey items were described using frequency distribution tables. Statistical analyses were conducted with Minitab Statistical Software (Minitab, Inc., State College, PA). Two independent group *t* tests were used to establish significant relationships between various attitudes and demographic variables, with significance set at $p < 0.05$.

RESULTS

The survey instrument was completed by all 129 (100%) students. Demographic variables are shown in Table 1. Approximately 67% of students were female, and more than 90% had completed at least 2 years of prepharmacy work at a 4-year university. Although more than 50% of students had previously been enrolled in drug-screening programs at school or work, only about 36% had actually experienced drug testing. About 34% of students reported consuming alcohol in a typical week, and about 21% of students admitted to current or past use of an illegal substance. Only about 13% of students were currently using a prescription medication that was a controlled substance.

Responses to attitudinal items are shown in Table 2. Approximately 63% of participants were aware of MSOP's drug-screening program prior to applying, but only about 5% of students acknowledged taking the program into consideration when applying for admission, and only about 3% of those students admitted to feeling uneasy about applying to the school because of the program. The greatest concerns expressed by students included what would happen if a drug screen were missed (55.5%) or if they were busy with other matters when called for screening (48.8%), how much time it would take if they were called for screening (48.4%), and the possibility of false-positive drug screen results (45.7%). Over 70% of study participants agreed that all students

Table 1. Demographic Variables of First-Year Pharmacy Students Completing a Survey Instrument About the Drug-Screening Program at McWhorter School of Pharmacy

| Characteristic | No. (%) |
|--|----------------|
| Gender | |
| Female | 86 (66.7) |
| Male | 43 (33.3) |
| Prior academic experience | |
| ≥ 2 years at 2-year school | 9 (7.0) |
| ≥ 2 years at 4-year school | 67 (51.9) |
| Degree from 4-year school | 53 (41.1) |
| Previous work/school experience with screening program | |
| Yes | 70 (54.3) |
| No | 58 (45.0) |
| No response | 1 (0.8) |
| Previous experience with <i>actual screening</i> | |
| Yes | 47 (36.4) |
| No | 81 (62.8) |
| No response | 1 (0.8) |
| Previous drug screen where a Medical Review Officer (MRO) required proof of a valid prescription | |
| Yes | 5 (3.9) |
| No | 124 (96.1) |
| Immediate family member or close friend experience a positive random, urine drug screen | |
| Yes | 18 (14.0) |
| No | 111 (86.1) |
| Immediate family member or close friend who abuses or is addicted to alcohol, prescription drugs, or illegal drugs | |
| Yes | 40 (31.0) |
| No | 89 (69.0) |
| Consume alcohol in a typical week | |
| Yes | 44 (34.1) |
| No | 85 (65.9) |
| Current or past use of an illegal substance | |
| Yes | 27 (20.9) |
| No | 101 (78.3) |
| No response | 1 (0.8) |
| Current use of a prescription medication that is considered a controlled substance | |
| Yes | 17 (13.2) |
| No | 111 (86.1) |
| No response | 1 (0.8) |

in all pharmacy colleges and schools should undergo random drug screening and that random drug screening has the potential to decrease illegal substance use among pharmacy students. Over 90% of students agreed that it is important to detect a substance-abuse problem in pharmacy

students, and over 90% were in agreement with or neutral about the statement, “I am glad MSOP has a random drug-screening program.” Approximately 95% of students felt that they understood the reasons why the school implemented a mandatory drug-screening program, but about 70% incorrectly identified the primary purpose of the program as detecting and helping students with substance abuse problems.

There were numerous significant associations between demographic variables and attitudes toward the drug-screening program. (Statistical findings can be obtained from the corresponding author.) Students who had previously been enrolled in drug-screening programs at school or work or who had actually experienced drug testing felt they were more knowledgeable about drug screening and the substances detected by drug screening compared with those who did not share those characteristics. Students who consumed alcohol in a typical week and those with current or past use of an illegal substance expressed less favorable attitudes in several areas compared with students who did not share those characteristics. Specifically, these students were more likely to have felt uneasy about applying to the school because of the drug-screening program, to be concerned about which substances can be detected by urine drug screening, and to believe that that drug screening is an invasion of their privacy. They were also less likely to be glad the school has a drug-screening program.

DISCUSSION

To our knowledge, this is the first published report documenting the attitudes of pharmacy students toward drug screening during pharmacy school. Matriculating first-year pharmacy students were chosen as participants in this survey for 2 key reasons: they had recent exposure to the pharmacy school application process and thus were more likely to provide meaningful data concerning the impact of the drug-screening program on their decisions to apply to MSOP; and they were an ideal group to determine first impressions of the drug-screening program with respect to both initial concerns about policies and procedures as well as potential benefits of the program. The ideal response rate and the pretested survey instrument were strengths of the study. However, given that our pharmacy school is a private, religiously affiliated institution that admits students primarily from the southeastern United States, there is no way to determine whether comparable results would be seen at dissimilar institutions.

MSOP’s drug-screening program did not appear to have had much of an effect on the decision of study participants to apply to the school. Obviously, since the survey instrument was given to students who had matriculated to

Table 2. Attitude Items on a Survey Instrument About the Drug-Screening Program at McWhorter School of Pharmacy (MSOP)^a

| Survey Items | Strongly Agree, No. (%) | Agree, No. (%) | Neutral, No. (%) | Disagree, No. (%) | Strongly Disagree, No. (%) |
|---|-------------------------|----------------|------------------|-------------------|----------------------------|
| In general, I have an extensive knowledge about random urine drug screening. | 18 (14.0) | 27 (20.9) | 40 (31.0) | 36 (27.9) | 8 (6.2) |
| In general, I have an extensive knowledge about which substances are detected by random urine drug screens. | 8 (6.2) | 37 (28.7) | 28 (21.7) | 48 (37.2) | 8 (6.2) |
| I was adequately aware of MSOP's random urine drug screening program before applying to the program. | 48 (37.2) | 33 (25.6) | 15 (11.6) | 21 (16.3) | 12 (9.3) |
| I took MSOP's random urine drug screening program into consideration when applying. | 3 (2.3) | 4 (3.1) | 14 (10.9) | 40 (31.3) | 67 (52.3) |
| I felt <u>better</u> about applying to MSOP because of its required, random urine drug screening program. | 16 (12.5) | 26 (20.3) | 54 (42.2) | 20 (15.6) | 12 (9.4) |
| I felt <u>more uneasy</u> about applying to MSOP because of its required, random urine drug screening program. | 0 | 4 (3.1) | 32 (24.8) | 33 (25.6) | 60 (46.5) |
| I understand the reasons why MSOP requires random urine drug screening of all students. | 75 (58.1) | 47 (36.4) | 3 (2.3) | 3 (2.3) | 1 (0.8) |
| I am concerned about the cost associated with MSOP's random urine drug screening process. | 9 (7.0) | 18 (14.0) | 56 (43.4) | 35 (27.1) | 11 (8.5) |
| I am concerned that I will be called for random urine drug screening when I am busy with other matters, such as needing to go to work, study for examinations, etc. | 20 (15.5) | 43 (33.3) | 38 (29.5) | 23 (17.8) | 5 (3.9) |
| I am concerned about the amount of time that it will take when I am called for random urine drug screening. | 8 (6.3) | 54 (42.2) | 32 (25.0) | 25 (19.5) | 9 (7.0) |
| I am concerned about how students are selected for random urine drug screening. | 5 (3.9) | 16 (12.4) | 50 (38.8) | 39 (30.2) | 19 (14.7) |
| I am concerned about how students are notified about being selected for random urine drug screening. | 9 (7.0) | 17 (13.2) | 51 (39.5) | 36 (27.9) | 16 (12.4) |
| I am concerned about the frequency with which I will be called for random urine drug screening. | 7 (5.4) | 27 (20.9) | 46 (35.7) | 34 (26.4) | 15 (11.6) |
| I am concerned that the procedure used for obtaining a sample will compromise my privacy. | 11 (8.7) | 16 (12.7) | 33 (26.2) | 49 (38.9) | 17 (13.5) |
| I am concerned about not being able to produce a urine sample when I am called for random urine drug screening. | 11 (8.5) | 27 (20.9) | 23 (17.8) | 46 (35.7) | 22 (17.1) |
| I am concerned about accidentally missing my random urine drug screen (eg, not realizing I had been called, forgetting I had been called, etc.). | 16 (12.4) | 42 (32.6) | 35 (27.1) | 28 (21.7) | 8 (6.2) |
| I am concerned about what will happen if I miss my random urine drug screen. | 21 (16.4) | 50 (39.1) | 28 (21.9) | 23 (18.0) | 6 (4.7) |

Table 2. (Continued)

| Survey Items | Strongly Agree, No. (%) | Agree, No. (%) | Neutral, No. (%) | Disagree, No. (%) | Strongly Disagree, No. (%) |
|--|-------------------------|----------------|------------------|-------------------|----------------------------|
| I am concerned about being in situations in which showing up for random urine drug screening, if I am called, would be difficult to impossible (eg, being out of town, sick in bed, etc.). | 12 (9.3) | 43 (33.3) | 34 (26.4) | 29 (22.5) | 11 (8.5) |
| I am concerned about which substances can be detected by the random urine drug screen. | 4 (3.1) | 16 (12.4) | 31 (24.0) | 47 (36.4) | 31 (24.0) |
| I am concerned about having a false-positive random urine drug screen. | 15 (11.8) | 43 (33.9) | 25 (19.7) | 33 (26.0) | 11 (8.7) |
| I am concerned about the consequences should I test positive during a random urine drug screen. | 15 (11.8) | 27 (21.3) | 25 (19.7) | 36 (28.4) | 24 (18.9) |
| I believe random urine drug screening should be conducted in all students at all pharmacy schools. | 48 (37.8) | 44 (34.7) | 28 (22.1) | 6 (4.7) | 1 (0.8) |
| I believe pharmacy students should have the option to decline random urine drug screening. | 4 (3.2) | 13 (10.2) | 30 (23.6) | 53 (41.7) | 27 (21.3) |
| I believe that random urine drug screening is an invasion of my privacy. | 4 (3.2) | 16 (12.6) | 21 (16.5) | 55 (43.3) | 31 (24.4) |
| I believe it would be easy for someone to generate a false-negative random urine drug screen. | 7 (5.5) | 23 (18.1) | 41 (32.3) | 43 (33.9) | 13 (10.2) |
| I believe random urine drug screening has the potential to decrease illegal substance use among pharmacy students. | 42 (33.1) | 57 (44.9) | 21 (16.5) | 7 (5.5) | 0 |
| I believe that it is important to detect a substance use problem in a <u>pharmacy student</u> . | 65 (51.6) | 53 (42.1) | 6 (4.8) | 2 (1.6) | 0 |
| I believe that it is important to detect a substance use problem in a <u>pharmacist</u> . | 86 (67.7) | 34 (26.8) | 7 (5.5) | 0 | 0 |
| I believe that the <u>primary</u> reason that MSOP has a random urine drug-screening program is to detect and help those students with substance use problems. | 37 (29.1) | 52 (40.9) | 21 (16.5) | 10 (7.9) | 7 (5.5) |
| I am glad that MSOP has a random urine drug-screening program. | 34 (26.8) | 41 (32.3) | 40 (31.5) | 11 (8.7) | 1 (0.8) |

MSOP, those students would be expected to be relatively unconcerned about the drug-screening program; however, there may well have been potential candidates who chose not to apply to or accept offers to attend our school based on concerns about our drug-screening program.

A significant number of students expressed various concerns about the practical and logistic aspects of drug testing. Because we sought to obtain their baseline attitudes about drug screening, the survey instrument was administered prior to the orientation session about the drug-screening program. The orientation session may well have allayed some of their concerns. Once students have been through the drug-screening process 1 or more times, their concerns may diminish. We are planning future studies to ascertain this information.

More than 20% of the students admitted to current or past use of illegal substances. Despite this finding and the anonymous nature of the survey, we question whether the students' self-reported uses of alcohol and illegal substances were entirely truthful. While the overall results of the survey are quite heartening, students who consumed alcohol in a typical week and students with current or past use of illegal substances held less favorable attitudes toward our drug-screening program.

On the latter part of the survey instrument, the vast majority of students expressed positive beliefs about drug testing in general. We were relieved and encouraged that the students considered a mandatory drug-screening program significant and meaningful, even though many of the potential benefits of the program were secondary reasons for its implementation. We believe these findings bode well for other colleges and schools of pharmacy that have been hesitantly contemplating drug-screening programs of their own.

CONCLUSIONS

First-year pharmacy students held generally favorable opinions about the school's mandatory drug-screening program, although there were definite concerns expressed regarding pragmatic issues surrounding drug screening. There were several important areas in which students who

consumed alcohol in a typical week and those with current or past use of an illegal substance held less favorable attitudes toward MSOP's mandatory drug-screening program than did students without those characteristics.

REFERENCES

1. Slutske WS. Alcohol use disorders among US college students and their non-college-attending peers. *Arch Gen Psychiatry*. 2005;62(3):321-327.
2. McCabe SE, Knight JR, Teter CJ, Wechsler H. Non-medical use of prescription stimulants among US college students: prevalence and correlates from a national survey. *Addiction*. 2005;100(1):96-106.
3. Mohler-Kuo M, Lee JE, Wechsler H. Trends in marijuana and other illicit drug use among college students: results from 4 Harvard School of Public Health College Alcohol Study surveys: 1993-2001. *J Am Coll Health*. 2003;52(1):17-24.
4. Baldwin JN. The addicts among us. *Am J Pharm Educ*. 2009;73(7):Article 124.
5. McAuliffe WE, Santangelo SL, Gingras J, et al. Use and abuse of controlled substances by pharmacists and pharmacy students. *Am J Hosp Pharm*. 1987;44(2):311-317.
6. Miller CJ, Banahan BF, Borne RF. A comparison of alcohol and illicit drug use between pharmacy students and the general college population. *Am J Pharm Educ*. 1990;54(1):27-30.
7. Kriegler KA, Baldwin JN, Scott DM. A survey of alcohol and other drug use behaviors and risk factors in health profession students. *J Am Coll Health*. 1994;42(6):259-265.
8. Murawski MM, Juergens JP. Analysis of longitudinal pharmacy student alcohol and other drug use survey data. *Am J Pharm Educ*. 2001;65(1):20-29.
9. Kenna GA, Wood MD. Substance use by pharmacy and nursing practitioners and students in a northeastern state. *Am J Health-Syst Pharm*. 2004;61(9):921-930.
10. Baldwin JN, Scott DM, Agrawal S, et al. Assessment of alcohol and other drug use behaviors in health professions students. *Subst Abus*. 2006;27(3):27-37.
11. Lord S, Downs G, Furtaw P, et al. Nonmedical use of prescription opioids and stimulants among student pharmacists. *J Am Pharm Assoc*. 2009;49(4):519-528.
12. English C, Rey JA, Schlesselman LS. Prevalence of hazardous alcohol use among pharmacy students at nine US schools of pharmacy. *Pharm Pract*. 2011;9(3):162-168.
13. Cates ME, Hogue MD. Experience with a drug screening program at a school of pharmacy. *J Am Coll Health*. 2012;60(6):476-480.