

Smoking Habits and Attitudes of Dental, Nursing and Pharmacy Students

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Abstract

Healthcare professionals are in an ideal position to educate patients about the dangers of smoking and smoking cessation. Since the ability to do this effectively depends upon their own smoking habits and attitude toward smoking, the aim of this study was to determine the smoking prevalence and smoking attitudes in the future health professionals in dentistry, nursing and pharmacy using a 7-question survey. Eighty-one of the 256 respondents (31.7%) indicated that they had smoked in the past, but only 19 were still smoking. Among these, nursing students were the largest number (10/30) (33%). This appeared to be influenced by the lack of smoking-related education in their curriculum. All smokers believed that it was a danger to their health, but not all wanted to quit. The relatively small number of smokers in the three groups indicates that they will be good anti-smoking advocates in the future. However, it also indicates the need to assure that the various curricula provide an adequate education in smoking dangers and cessation programs.

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Although smoking has decreased from 43% in adults 18 years of age or older in 1965 to 24% in 1997 and 14 % in 2020, tobacco use is still one of the major preventable causes of disease and death in the United States [1]. Healthcare professionals, as highly respected individuals, are in an ideal situation to educate patients about the dangers of smoking by anti-tobacco use counseling as well as by serving as role models [2]. However, their ability to do this effectively will depend upon their own smoking habits and attitudes toward smoking [3]. These generally become well established or modified during their professional education when they are exposed to smoking policies, general information about the dangers of smoking, and instruction on how to initiate smoking cessation programs.

Most prior studies on the delivery of smoking cessation programs and professionals as role models have focused on the medical profession. However, there is evidence that smoking cessation programs are also effective when delivered by non-physician health professionals [4]. Therefore, the aim of this study was to determine the smoking prevalence and attitudes toward smoking among a group of future dentists, nurses, and pharmacists.

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Materials and Methods

This cross-sectional study was reviewed and approved by the Institutional Review Board at Virginia Commonwealth University. An original 7-question survey was constructed by the study team (**Figure 1**). The survey included questions regarding demographics (program, age, gender) along with past and current smoking status. Those who indicated that they had smoked were asked when they started and if they currently smoke. Those who reported currently smoking were asked how often they smoke, their primary reason for smoking, and whether they wish to quit in the future. All respondents were also asked if they believe smoking is a danger to their health.

Study data were collected and managed using REDCap electronic data capture tools hosted at Virginia Commonwealth University [5]. REDCap (Research Electronic Data Capture) is a secure, web-based software platform designed to support data capture for research studies. Professional students in Pharmacy, Nursing, and Dentistry were eligible to participate in the study. School

Age _____ Gender _____ Year in School _____

1. Have you ever smoked? Yes _____ No _____
2. If Yes, when did you start? High School _____ College _____ Professional School _____
3. Do you smoke now? Yes _____ No _____
4. If Yes, how often do you smoke? Less than once a week _____
Every week, but not every day _____ Every day _____
5. Which of the following is your main reason for smoking? Habit _____
Relieve stress _____ Boredom _____ Reward for hard work _____
Pleasure _____ Depression _____ Other _____
6. Do you believe smoking is a danger to your health? Yes _____
No _____
7. Do you wish to quit smoking in the future? Yes _____ No _____

Figure 1 Smoking survey.

Table 1: Socio-demographic variables stratified by program. P-values are obtained from Analysis of Variance tests for continuous variables and Chi-Square tests for categorical variables.

Variable	Dentistry (n=94)	Nursing (n=90)	Pharmacy (n=72)	P-value
Age (mean (SD))	26.9 (4.5)	27.9 (9.5)	25.5 (4.2)	0.097
Unknown age (%)	6 (6.4)	7 (7.8)	7 (9.7)	
Gender (%)				<0.001
Male	39 (41.5)	5 (5.6)	22 (30.6)	
Female	55 (58.5)	84 (93.3)	50 (69.4)	
Other	0 (0.0)	1 (1.1)	0 (0.0)	
Year in program (%)				<0.001
0	0 (0.0)	23 (25.6)	12 (16.7)	
1	22 (23.4)	46 (51.1)	21 (29.2)	
2	36 (38.3)	11 (12.2)	24 (33.3)	
3	22 (23.4)	7 (7.8)	14 (19.4)	
4+	14 (14.9)	3 (3.3)	1 (1.4)	
Have you ever smoked (%)				0.128
No	71 (75.5)	60 (66.7)	44 (61.1)	
Yes	23 (24.5)	30 (33.3)	28 (39.9)	

Table 2: Smoking related variables for students that were classified as current smokers (n=19). P-values are obtained from Analysis of Variance tests for continuous variables and Chi-Square tests for categorical variables.

Variable	Dentistry (n=4)	Nursing (n=10)	Pharmacy (n=5)	P-value
When did you start smoking (%)				0.247
High School	0 (0.0)	3 (30.0)	3 (60.0)	
College	2 (50.0)	6 (60.0)	2 (40.0)	
Professional School	1 (25.0)	0 (0.0)	0 (0.0)	
Other	1 (25.0)	1 (10.0)	0 (0.0)	
Age (SD)	24.0 (3.6)	28.4 (3.9)	32.50 (7.8)	0.032
How often do you smoke (%)				0.111
Less than once a week	3 (75.0)	2 (20.0)	1 (20.0)	
Every week, but not every day	1 (25.0)	3 (30.0)	0 (0.0)	
Every day	0 (0.0)	5 (50.0)	4 (80.0)	
Do you want to quit (%)				0.065
No	2 (50.0)	0 (0.0)	1 (20.0)	
Yes	2 (50.0)	10 (100.0)	4 (80.0)	
Do you feel that smoking is a danger to your health (%)				--
No	0 (0.0)	0 (0.0)	0 (0.0)	
Yes	4 (100.0)	10 (100.0)	5 (100.0)	

of Pharmacy students received an email with a public link from the Associate Dean of Admissions with an invite to participate. Similarly, undergraduate nursing students were sent an email to participate with a public link by the Assistant Dean in the Office of Student Success at the School of Nursing. Within the School of Dentistry, a public link was emailed to the email listserv of all students in the dental school by the study PI (DL). Participation was voluntary and all responses were anonymous.

Results

A total of 256 students responded to the survey (**Table 1**). The response rate of the respondents was 24% for dentistry (n=94), 13% for pharmacy (n=72), and 32% for nursing (n=90). The average age was 26.9 (SD=4.5), 25.5 (SD=4.2), and 27.9 (SD=9.5) for dentistry, pharmacy, and nursing, respectively. A majority of the nursing students had completed 1 year of schooling (51.1%), while most dental and pharmacy students were in their second year (33.3% and 38.3%, respectively).

Eighty-one of the 256 respondents (31.7%) indicated that they had smoked in the past (dentistry–23/94, 24%; pharmacy–28/72, 39%; nursing–30/90, 33%). There was no significant difference in age among the 3 groups of smokers, but there was a significantly greater proportion of females in the nursing group than in the other 2 groups (**Table 1**). Most had started smoking in high school or college (**Table 2**). Only 1 started while in professional school.

Only 19 of the 81 past smokers were now still smoking (dentistry–4/23 (18%); pharmacy–5/28 (18%); nursing– 10/30 (33%). Nursing students who smoked were on average younger than non-smokers (24.0 (3.6) vs 27.9 (9.5), but pharmacy and dental students who still smoked were older 28.4 (3.8) vs 25.5 (4.2) and 32.5 (7.7) vs 26.9 (4.5), respectively. No student in dentistry and only 4 in pharmacy and 5 in nursing smoked every day. The reasons stated for smoking are shown in **Table 3**. Except for stress noted by the nursing students, there was no generally focused reason given by the other groups. All the smokers believed that smoking was a danger to their health. However, whereas all 10 nursing students wished to quit, only 4/5 pharmacy students and 2/4 dental students wanted to stop smoking (**Table 3**).

Discussion

A relatively large number of respondents indicated that they

Table 3: Evaluating the reason for smoking among students that were still considered smokers. The p-value is obtained from a Chi-Square test.

	Dentistry (n=4)	Nursing (n=10)	Pharmacy (n=5)	P-value
Reason for smoking (%)				0.114
Habit	0 (0.0)	1 (10.0)	2 (40.0)	
Relieve stress	0 (0.0)	6 (60.0)	1 (20.0)	
Boredom	2 (50.0)	0 (0.0)	0 (0.0)	
Reward for hard work	1 (25.0)	0 (0.0)	1 (20.0)	
Pleasure	1 (25.0)	1 (10.0)	1 (20.0)	
Depression	0 (0.0)	1 (10.0)	0 (0.0)	
Other	0 (0.0)	1 (10.0)	0 (0.0)	

were previously smokers (31.7%). Based on the fact that most started smoking in high school or college (age 16 or older), this was a considerably greater percentage than the 19.3% reported in the general population by the Centers for Disease Control for their approximate school year (2010), especially since smoking is generally reported to be less in persons with higher education level [6].

The number of initial smokers who continued to smoke in 2020 was greatly reduced in the dental and pharmacy groups, but not the nursing students, although the percentage of smokers in all groups was still more than the national average for that year (14%). A review of the smoking-based information in the curriculum in the three schools provides a possible explanation for this difference. Whereas, both dentistry and pharmacy provide lectures on the adverse effects of smoking and the need for smoking cessation programs, this is not included in the nursing curriculum. Since all health professional education programs are accredited and therefore have relatively the same basic curriculum, one would expect a similar situation in other universities.

The trend seen in these health professional students is also mimicked in the populations of practicing health professionals, with nurses demonstrating higher rates of smoking than other health professionals, and even higher rates than the general population [7]. This further stresses the importance of increased curriculum regarding smoking in nursing school.

Based on the relationship between stress and smoking among professional students previously reported in the literature one would expect that this is the reason for the overall greater percentage of smokers in the respondents compared to the general population [8-10]. However, although the relief of stress was reported as the reason by 60% of the nursing students who currently smoke, this was not true for those in dentistry or pharmacy.

Because this study was based in one university, the relative numbers of respondents was small, and this could have led to the difference in percentages found in comparison to those in national surveys. However, the significance of these data lies in the trends that they display. In this regard, two factors stand out. The first is that, although there is always room for improvement, the number of professional students who smoke is relatively small. Thus, they are in a good position to serve as future role models and educators. The second is the relationship between the anti-smoking curricular content and the smoking habits of the students. There is a need for all professional schools to evaluate their curriculum in this area to be sure that the students receive adequate information. This will not only help assure that these students are less likely to smoke, but also upon graduation it will allow them to play an important part in helping to further reduce the smoking habits of others.

Conclusion

Relatively few dental, nursing and pharmacy students are smokers

and they should serve as good future anti-smoking role models and public educators. Encouraging those who are still smokers

to quit will add to this pool. Professional schools need to assure that their curricula provide the proper background education and training for this to occur.

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