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Attitudes of Cairo University medical students toward smoking: the need for tobacco control programs in medical education

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Abstract

Background—Tobacco smoking rates are increasing in developing countries and so are tobacco-related chronic diseases. Reported figures from the WHO show rates of smoking in Egypt as high as 20% but limited information is available about smoking specifically among physicians and medical students.

Materials and methods—Final-year medical students of Cairo University were surveyed regarding their tobacco behavior and attitudes using a modified Global Health Professions Student Survey. We approached 220 students by randomly selecting clinical units into which they were assigned and requested completion of the survey.

Results—Ever users of some form of tobacco comprised 46.7% of students sampled, current users of cigarettes comprised 17.4%, and current users of water pipe ‘sheesha’ comprised 17.6%. The vast majority (87.7%) of students believed that smoking is a public health problem in Cairo and supported restriction of tobacco. Yet, only 58.5% stated that they were taught it is important for physicians to provide tobacco education materials to patients. Among ever users of cigarettes, 54.4% believed health professionals do not serve as health role models for patients, and only a small percentage of all students (34.2%) stated that they had received some form of training on smoking cessation in their medical curriculum to be able to instruct patients.

Conclusion and recommendations—A high rate of smoking was revealed among medical students in Cairo. Overall, approximately 23.4% of students were currently smoking cigarettes and/or sheesha, and 46.7% were ever users of some form of tobacco. A formal antitobacco program for medical students should be incorporated into their medical curriculum to change the attitudes of medical students and overcome the anticipated increase in chronic diseases in Egypt.

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Conflicts of interest

There are no conflicts of interest.

Keywords

curriculum; Egypt; medical students; tobacco

Introduction

Smoking remains a global epidemic with far-reaching health and economic implications. Although per capita rates of smoking began declining decades ago in many developed countries, other regions of the world such as the Middle East and Africa have experienced an increase in tobacco prevalence, and rates remain high [1]. Egypt in particular suffers from some of the highest smoking rates in the eastern Mediterranean region [2]. Figures vary according to different studies, but the overall smoking prevalence of the adult Egyptian population has been cited as 20% [3]. Given Egypt's population of nearly 80 million [4], this figure translates into a staggering number of active smokers and is Egypt's largest preventable cause of chronic disease, including tobacco-related malignancies, necessitating active tobacco control measures.

Egyptian healthcare providers exhibit a smoking prevalence of 51.1%, a notably higher figure than that of the general population [1,5,6]. Moreover, only 16.8% of these providers considered themselves well prepared to counsel their patients about smoking cessation [5]. The implications for such figures are concerning given that healthcare providers play a key role in antismoking intervention [7]. As physicians are promoters of health, they must advocate against tobacco, despite its widespread popularity.

The interest and concern in physicians, smoking has prompted tobacco research in medical students as well. Egypt was included as one of the 10 pilot countries that were part of the Global Health Professions Student Survey (GHPSS), a component of the Global Tobacco Surveillance System (GTSS) started by the WHO, the Centers for Disease Control and Prevention, and the Canadian Public Health Association [8,9]. Among the 10 pilot countries, a group of third-year medical students in Cairo reported a cigarette smoking prevalence of 7.9%, whereas 7.4% reported using tobacco products other than cigarettes [8]. We administered an expanded GHPSS survey to final-year (sixth-year) medical students at Cairo University and specifically focused on students' smoking status and history, usage of water pipe 'sheesha' (also known as hookah, narghile, ghaza, and hubble bubble), usage of cigars and/or chewing tobacco, students' perceptions of the roles and responsibilities of health professionals to curb patients' smoking, their tobacco education curriculum, and their attitudes regarding the restriction of smoking in public and private places.

Materials and methods

Population

The population studied was composed of medical students at Kasr Al Ainy faculty of medicine of Cairo University, the oldest and largest medical school in Cairo and all of Egypt. The participants were all in their sixth and final year of study during the time of data collection in 2009, part of a total class size of 1425 students. Demographically, final-year

medical students are typically 23–24 years of age and most students at Cairo University come from the Cairo metropolitan area, although some are permanent residents of other cities in Egypt and some are from abroad. Students during the final year of medical education are administratively assigned to clinical units in various departments in groups of 25–40 students, such as internal medicine or general surgery in Kasr Al Ainy Hospital and other hospitals associated with Cairo University. Students rotate through several clinical units (pass/enter successive clinical units throughout the year) throughout the year to complete their required clinical training course.

Survey

The survey instrument used in this study was a modified GHPSS revised in January 2007 as part of the GTSS. The GTSS began in 1999 and includes school-based and household-based surveys to monitor various factors related to tobacco use worldwide [9]. The aim of the GHPSS is to assess attitudes, behaviors, knowledge, and curriculum training of tobacco use among dental, nursing, pharmacy, and medical students. The core questionnaire of the GHPSS has been published in prior literature [8,10], and more detailed information can be found at the Centers for Disease Control and Prevention website at <http://www.cdc.gov/tobacco/global/ghpss/>. The GHPSS was modified for the present study for cultural compatibility and was expanded to include additional demographic, attitude, and smoking assessment queries. The survey instrument was administered to a pilot sample of 12 medical students to assess (a) readability, (b) duration to complete, and (c) reliability. Given the survey's good face validity, formal validation assessments were not conducted. The final survey used in this study consisted of 50 questions.

Data collection

This cross-sectional study was conducted by selecting clinical units randomly using a table of random numbers. Two researchers approached each clinical unit just before administration of the students' final examinations in June–July 2009. The final examinations were attended by all students in each respective unit, ensuring maximal coverage by the researchers. A standard script describing the purposes and importance of the study was read by the two researchers, and students were invited to complete the self-administered questionnaire after their examinations. Care was taken to ensure that students understood that all surveys were anonymous and their completion was entirely voluntary, having no bearing whatsoever on their examination scores. On conclusion of the examination, written informed consent was obtained from those students who volunteered, and surveys were then distributed, requiring approximately 10–15 min to complete.

Data analysis

The distributions of demographics were described across three tobacco categories: cigarettes, sheesha, and cigars and/or chewing tobacco. As there were very few individuals in the lattermost category, further analysis was restricted to the former two categories, that is, cigarettes and sheesha. As in prior literature involving the GHPSS, ever users of a given substance were defined as those individuals who had ever used it regardless of quantity or frequency, current users were defined as those individuals who indicated using the said substance actively in the past 30 days, and never users were those who reported never

having used the substance at all [8,11]. Associations of variables related to general and medical attitudes with ever and never users of cigarettes and sheesha were explored. We further investigated key behaviors pertaining to cigarette smoking among current users. Various groups were compared using frequencies of responses. χ^2 and Fisher exact tests were used to measure the strength of associations between different variables, and *P*-values less than 0.05 were deemed statistically significant. All statistical analyses were conducted using SAS 9.2 (SAS, Cary, North Carolina, USA).

Ethics

This study was conducted with the approval of the Institutional Review Board of the University of Michigan Medical School and the Office of the Vice-President for Graduate Studies and Research of Cairo University.

Results

Out of 220 surveys that were distributed to students, 201 were returned, giving a response rate of 91.4%. Of these 201 respondents, 99 (49.3%) were female and 102 (50.7%) were male. Table 1 depicts basic demographics of ever users of three tobacco categories: cigarettes, sheesha, and cigars and/or chewing tobacco. Overall, 40.3% of participants were ever users of cigarettes, 32.8% were ever users of sheesha, and 7.5% were ever users of cigars and/or chewing tobacco. Broadly, 46.7% of all students had tried some form of tobacco, and of these 71.7% were male.

Among ever users of all tobacco categories, the proportion of male students was significantly higher compared with that of female students (74.1%, $P<0.0001$ among ever users of cigarettes, 75.4%, $P<0.0001$ among ever users of sheesha and 93.3%, $P=0.0007$ among ever users of cigars and/or chewing tobacco). Never users outnumbered ever users in all three categories for both sexes, except notably in cigarette use among male users, where 58.8% of all male students surveyed had tried smoking a cigarette. Regarding permanent residence, participants from Cairo composed 72.5% of ever users of cigarettes ($P=0.007$), 69.2% of ever users of sheesha ($P=0.01$), and 73.3% of ever users of cigars and/or chewing tobacco ($P=0.005$). Participants with friends and family who smoked had the highest rates of ever use in all tobacco categories.

Table 2 displays general attitudes regarding tobacco use among ever users and never users of cigarettes and sheesha. The majority of ever users of cigarettes (87.6%; $P=0.006$) and ever users of sheesha (86.1%; $P=0.005$) agreed that smoking is a public health problem in Cairo. Furthermore, 65.0% of ever users of cigarettes ($P=0.009$) and 60.3% of ever users of sheesha ($P=0.002$) agreed that tobacco advertising should be banned. In addition, 67.5% of ever users of cigarettes ($P=0.68$) and 65.1% of ever users of sheesha ($P=0.96$) agreed that tobacco sales should be banned for children younger than 18 years. A total of 63.8% of ever users of cigarettes ($P=0.001$) and 52.4% of ever users of sheesha ($P<0.0001$) indicated that smoking should be banned in restaurants, whereas 42.5% of ever users of cigarettes ($P=0.01$) and 35.9% of ever users of sheesha ($P=0.001$) agreed that smoking should be banned in discos/bars/pubs.

Table 2 further notes the attitudes of ever and never users of cigarettes and sheesha regarding healthcare and healthcare providers. There were no significant differences between ever and never smokers (in both cigarette and sheesha smokers' groups) regarding their agreement that health professionals should advise patients to quit smoking (78.8% of cigarettes users and 79.4% of sheesha ever users). However, 77.5% of ever users of cigarettes ($P=0.10$) and 69.2% of ever users of sheesha ($P=0.0005$) agreed that health professionals who smoke are less likely to advise their patients to stop smoking. Similarly, 54.4% of ever users of cigarettes ($P=0.88$) disagreed that health professionals serve as role models for their patients and the public at large.

Table 3 displays cigarette smoking behaviors among the 35 students (2.0% of female and 33.3% of male students) identified as current users of cigarettes. The majority of currently smoking participants (54.3%) tried their first cigarette at 17 years of age or younger. Among them, 75.0% smoke one to 10 cigarettes per day ($P=0.08$) and 47.4% smoked for 10–29 days in the past month ($P=0.20$). Of those who first smoked at a later age, that is, at 18 years or older, 53.8% smoke 11 cigarettes or more per day ($P=0.08$) and 43.8% smoke 1–9 days per month ($P=0.20$). The majority of smokers surveyed (67.8%) initiated a cigarette 60 min or less upon awakening in the morning and among them 52.6% had smoked all 30 days in the past month ($P=0.01$). The majority of daily smokers (63.6%) indicated a desire to quit smoking ($P=0.07$) and identical percentages had tried to quit in the past ($P=0.06$).

In Table 4, students' understanding of their medical school's policies and training is presented. Regarding official policy banning smoking in school buildings or clinics, 42.2% stated that there is indeed a ban in both, while 43.2% stated that there is no ban in either. The vast majority of students (86.9%) stated that they were taught the health dangers of smoking and 43.7% stated they were taught some of the reasons why people smoke. Regarding patients' care, most students (88.9%) acknowledged being taught that it is important to record tobacco use as part of a patient's history, and 58.5% stated that they were taught it is important to provide tobacco education materials such as pamphlets to patients. A relatively small proportion of students surveyed (34.2%) stated that they had received some form of formal training on smoking cessation for patients.

Discussion

This study highlighted five important aspects pertaining to tobacco use and control. First, a high rate of smoking among final-year medical students is notable. Second, the study also revealed significant sex differences in all three tobacco categories (cigarettes, sheesha, and cigars and/or chewing tobacco) with male users exceeding female users in use. Third, the vast majority of ever users of cigarettes and ever users of sheesha believed that smoking is a problem in Cairo but felt less strongly about restricting tobacco advertising or smoking in restaurants and much less strongly about smoking in discos, bars, and pubs. Fourth, although students believed that healthcare providers should receive training on smoking cessation for patients, approximately half did not believe that providers should serve as role models of health to patients. Finally, students' perceptions of their medical curriculum showed that the vast majority admitted that they were taught the dangers of smoking but far fewer students were formally taught any smoking cessation techniques.

The present study indicated that 17.4% of final-year medical students at Cairo University were current users of cigarettes, 17.6% were current users of sheesha, 23.4% were current users of cigarettes or sheesha, and 11.9% were current users of cigarettes and sheesha. Overall, 46.7% were ever users of some form of tobacco. These figures are comparable to the general Egyptian population's smoking rate of 20% [3]. However, these figures are greater than those reported in the pilot study by the Global Tobacco Surveillance System Collaborative Group, which indicated rates of cigarette smoking for third-year medical students in Cairo as 7.9% and 7.4% for usage of tobacco products other than cigarettes [8]. The discrepancy may be due to the fact that third-year students are younger than final-year students. Another study conducted by Mostafa and Shokeir [12] on fourth and fifth-year medical students in Alexandria, Egypt, indicated that 17.5% of students were currently smoking cigarettes and 41.1% were smoking sheesha. The discrepancies in figures between our study and the previous studies may be due to older students engaging in more cigarette smoking perhaps from increasing workload stress or to perceived associations of smoking with maturity and social status [13]. Given the high rates of sheesha ever usage (49.0% of male users and 16.3% of female users) and the relatively low rates of cigars and chewing tobacco ever usage (13.7% of male users and 1.0% of female users), we suggest that social reasons may explain to a large extent why Cairo medical students smoke, as sheesha is considered to be a far more social form of smoking and is perceived as being less harmful to health compared with other forms of tobacco [14–16]. The higher prevalence of smoking sheesha seen in Alexandrian students is possibly due to differences in local custom between Cairo and Alexandria, with sheesha smoking seemingly more popular in the latter city [12]. Regarding behaviors noted in Table 3, in the present study current cigarette smokers among medical students tended to smoke within 60 min of waking and nearly a third smoked daily, indicating notable nicotine dependence.

Compared internationally with other studies using the GHPSS questionnaire, Cairo University medical students appear to smoke less than their European counterparts but more than their East Asian counterparts. For instance, La Torre *et al.* [17] noted that current smokers comprise 28% of German medical students and 31.3% of Italian medical students, and in a convenience cohort of medical students from Malaysia, India, Pakistan, Nepal, and Bangladesh the prevalence of current smokers was 13.1%. Reasons for the differences in smoking rates are likely cultural, as other Arab countries such as Tunisia, where 16.7% of final-year medical students are current smokers, demonstrate rates of smoking similar to that of Egypt [18].

Strong sex effects are seen, which are also comparable to those of the general population. For instance, in the broader Egyptian population, 37.7% of men but only 0.5% of women are current smokers, whereas in the present study 33.0% of male medical students and 2.0% of female medical students are current smokers [3]. The higher prevalence of female smoking among medical students compared with the broader population may be again due to stress or social influences. In a study by Labib *et al.* [19], in which they reported that 27% of Egyptian female university students smoked cigarettes, the researchers explained that pleasure, curiosity, and peer influences were major reasons for smoking among young female students.

Significant sex disparity is typically seen in the smoking prevalence of Middle Eastern and African countries. For instance, 58% of Tunisian men but only 7% of Tunisian women are current smokers, as are 31% of Israeli men and only 18% of Israeli women, 35% of Pakistani men and only 7% of Pakistani women, and 25% of United Arab Emirates men and only 3% of United Arab Emirates women [1,20]. Women in the countries of the eastern Mediterranean region generally smoke less because of cultural taboo [6]. However, in the population of medical students, traditional taboo may be less pervasive and smoking among female students may be viewed as offering a socially mature and modernized image [19].

Attitude assessment of the medical students showed that all students, regardless of smoking status, believed that smoking is a public health problem in Cairo, that tobacco sales to persons under 18 years should be restricted, that smoking advertising should be banned, and smoking in public places such as restaurants should be prohibited. Furthermore, virtually all students agreed that health professionals should be trained in smoking cessation techniques, should advise patients to quit smoking, and that patients are more likely to succeed in cessation with a physician's help. This indicates that students were generally aware of the vast smoking epidemic in Egypt and at least nominally support restrictions and physician intervention. However, students were confused as to tobacco policy within their own institutions, with 42.2% of students stating that there is a smoking ban in both school buildings and clinics, whereas a similar percentage (43%) attested that there is no such ban in either. Especially notable for tobacco control efforts, we observe that most students believe that health professionals who smoke are less likely to advise patients to quit smoking, and the majority of students (53.8%) disagree that health professionals serve as role models of health for patients. This is contrary to the results from European medical students who displayed a higher overall prevalence of current smokers (29.3%), but two-thirds believed that health professionals do serve as role models for patients [17].

Most students further state that they were taught the dangers of smoking during medical school and that they understand that it is important to record tobacco use as part of a patient's history. These figures agree with previous findings [8] that medical students believe that health professionals have a role in curbing patients' smoking. However, students reported that the importance of providing educational materials about smoking to patients and formal training in cessation techniques were not taught in their medical school curriculum.

As smoking rates continue to cause widespread public health consequences [21], medical students should be increasingly targeted for tobacco control measures by virtue of their roles as the vanguards of health. Given the smoking prevalence among Cairo medical students and their confessed lack of training in smoking cessation techniques, and given similar results in other countries such as those by Raupach *et al.* [22] in Germany and the UK and Smith and Leggat [23] in their international review of India, the US, Australia, Japan, Pakistan, Turkey, the UK, and other countries, we recommend the formation of a formal antitobacco program tailored for medical students. Guidelines from the WHO have globally advocated for a code of practice for healthcare providers that includes discouragement of tobacco to patients and smoking cessation for doctors who smoke [24]. As an extension of such guidelines, the WHO or other authoritative institutions should develop medical

education curriculum guidelines that specifically focus on tobacco awareness and cessation among students. Rising global smoking rates and unprepared future physicians who smoke necessitate implementation of such a program.

The present study has several notable strengths. First, we approached students in their final year of medical school when students have had the most training and have interacted with the most number of patients. To the authors' knowledge, this is the only study on Egyptian medical students to execute this task. Second, the GHPSS questionnaire used as the base survey has been used in previous literature and was modified for the present study to encompass broader smoking-related behaviors and attitudes [8]. Furthermore, the response rate of 91.4% and the procedure of randomly selecting clinical units ensure a representative sample of the final-year class. Finally, we delved into not only the general but also health profession-related attitudes of those medical students, about which there is a notable scarcity of information in the present literature.

With regard to limitations, we note that, although participants were randomly selected by their clinical unit, the sample size of 201 is modest. Second, the core questionnaire of the GHPSS has not been subject to reliability assessments. Finally, students were surveyed during their month of final examinations and may have been smoking more during this period because of the anxiety that generally comes from such tests. Future efforts should assess Egyptian medical students' environmental tobacco smoke exposure, perform Fagerstrom tests for nicotine dependence, and further promote implementation of antismoking programs in medical education.

Conclusion and recommendations

A high rate of smoking was revealed among medical students in Cairo. Overall, approximately 23.4% of students were currently smoking cigarettes and/or sheesha, and 46.7% were ever users of some form of tobacco. A formal antitobacco program for medical students should be incorporated into their medical curriculum to change the attitudes of medical students and overcome the anticipated increase in chronic diseases in Egypt.

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Table 1

Demographic characteristics of ever use of tobacco among final-year medical students in Cairo^a

	Ever users of cigarettes			Ever users of sheesha			Ever users of cigars and/or chewing tobacco		
	Yes (n=81; 40.3%) N (%)	No (n=120; 59.7%) N (%)	P-value	Yes (n=65; 32.8%) N (%)	No (n=133; 67.2%) N (%)	P-value	Yes (n=15; 7.5%) N (%)	No (n=184; 92.5%) N (%)	P-value
Sex									
Males	60 (74.1)	42 (35.0)	<0.0001	49 (75.4)	51 (38.3)	<0.0001	14 (93.3)	88 (47.8)	0.0007
Females	21 (25.9)	78 (65.0)		16 (24.6)	82 (61.7)		1 (6.7)	96 (52.2)	
Current age in years									
20-21	2 (2.5)	2 (1.7)	0.01	3 (4.7)	1 (0.8)	0.02	2 (13.3)	2 (1.1)	0.004
22-23	48 (60.8)	83 (69.8)		34 (52.3)	94 (72.2)		6 (40.0)	123 (68.0)	
24-25	28 (35.4)	33 (27.7)		27 (41.5)	34 (26.2)		7 (46.7)	54 (29.8)	
26-27	1 (1.3)	1 (0.8)		1 (1.5)	1 (0.8)		0 (0)	2 (1.1)	
Residence									
Cairo	58 (72.5)	69 (58.0)	0.007	45 (69.2)	80 (61.1)	0.01	11 (73.3)	115 (63.2)	0.005
Other Egypt	8 (10.0)	34 (28.5)		6 (9.3)	35 (26.7)		0 (0.0)	41 (22.5)	
Non-Egypt	14 (17.5)	16 (13.5)		14 (21.5)	16 (12.2)		4 (26.7)	26 (14.3)	
Smokers among family and friends									
Both friends and family	43 (54.4)	40 (33.6)	<0.0001	39 (60.0)	42 (32.3)	0.0008	9 (60.0)	74 (40.8)	0.005
Only family	10 (12.7)	34 (28.6)		8 (12.3)	35 (26.9)		1 (6.7)	41 (22.7)	
Only friends	23 (29.1)	20 (16.8)		14 (21.5)	29 (22.3)		4 (26.6)	39 (21.6)	
Neither family nor friends	3 (2.8)	25 (21.0)		4 (6.2)	24 (18.5)		1 (6.7)	27 (14.9)	

^aNote that up to seven responses were missing.

Table 2

General and health-related attitudes toward tobacco among ever-smoking and never-smoking final-year medical students in Cairo

Attitude	Ever users of cigarettes		Ever users of sheesha		P-value
	Yes (n=81) N (%)	No (n=120) N (%)	Yes (n=65) N (%)	No (n=133) N (%)	
Smoking is a public health problem in Cairo					
Yes	71 (87.6)	117 (97.5)	56 (86.1)	129 (97.0)	0.005
No	10 (12.4)	3 (2.5)	9 (13.9)	4 (3.0)	
Tobacco sales to persons younger than 18 should be banned					
Yes	54 (67.5)	77 (64.7)	41 (65.1)	87 (65.4)	0.96
No	26 (32.5)	42 (35.3)	22 (34.9)	46 (34.6)	
There should be a ban on tobacco advertising					
Yes	52 (65.0)	96 (81.4)	38 (60.3)	107 (81.1)	0.002
No	28 (35.0)	22 (18.6)	25 (39.7)	25 (18.9)	
Smoking should be banned in restaurants					
Yes	51 (63.8)	99 (83.9)	33 (52.4)	114 (86.4)	<0.0001
No	29 (36.2)	19 (16.1)	30 (47.6)	18 (13.6)	
Smoking should be banned in discos/bars/pubs					
Yes	34 (42.5)	72 (60.5)	23 (35.9)	80 (60.6)	0.001
No	46 (57.5)	47 (39.5)	41 (64.1)	52 (39.4)	
Health professionals should be trained on smoking cessation					
Yes	64 (79.0)	111 (93.3)	47 (73.4)	125 (94.0)	<0.0001
No	17 (21.0)	8 (6.7)	17 (26.6)	8 (6.0)	
Health professionals serve as role models for patients and the public					
Yes	36 (45.6)	56 (46.7)	30 (46.2)	62 (47.3)	0.88
No	43 (54.4)	64 (53.3)	35 (53.9)	69 (52.7)	
Health professionals should advise patients to quit smoking					
Yes	63 (78.8)	108 (92.3)	50 (79.4)	120 (91.6)	0.02
No	17 (21.2)	9 (7.7)	13 (20.6)	11 (8.4)	
Patients have more chance of quitting smoking if a health professional advises them					
Yes	63 (77.8)	99 (83.9)	51 (78.5)	110 (84.0)	0.34
No	18 (22.2)	19 (16.1)	14 (21.5)	21 (16.0)	

Attitude	Ever users of cigarettes			Ever users of sheesha		
	Yes (n=81) N (%)	No (n=120) N (%)	P-value	Yes (n=65) N (%)	No (n=133) N (%)	P-value
Health professionals who smoke are less likely to advise patients to stop smoking						
Yes	62 (77.5)	102 (86.4)	0.1	45 (69.2)	116 (89.2)	0.0005
No	18 (22.5)	16 (13.6)		20 (30.8)	14 (10.8)	

Table 3

Behaviors related to cigarette usage among currently smoking final-year medical students in Cairo

	Number of days smoked in the past 30 days				Average cigarettes smoked per day			
	1-9 (n=12) N (%) ^a	10-29 (n=12) N (%) ^a	All 30 (n=11) N (%) ^a	P-value	1-10 (n=21) N (%) ^a	11 (n=12) N (%) ^a	P-value	
Age at which first cigarette was smoked								
17 years or less	5 (26.3) (41.7)	9 (47.4) (75.0)	5 (26.3) (45.4)	0.20 ^c	15 (75.0) (71.4)	5 (25.0) (41.7)		0.08 ^c
18 years or more	7 (43.8) (58.3)	3 (18.7) (25.0)	6 (37.5) (54.6)		6 (46.2) (28.6)	7 (53.8) (58.3)		
Time after awakening before first cigarette is lit								
60 min or less	2 (10.5) (40.0)	7 (36.9) (58.3)	10 (52.6) (90.9)	0.01 ^c	9 (45.0) (52.9)	11 (55.0) (91.7)		0.03 ^c
More than 60	3 (33.3) (60.0)	5 (55.6) (41.7)	1 (11.1) (9.1)		8 (88.9) (47.1)	1 (11.1) (8.3)		
Desire to quit smoking cigarettes								
Yes	3 (20.0) (60.0)	5 (33.3) (41.7)	7 (46.7) (63.6)	0.07 ^c	8 (50.0) (47.1)	8 (50.0) (66.7)		0.30
No	2 (15.4) (40.0)	7 (53.8) (58.3)	4 (30.8) (36.4)		9 (69.2) (52.9)	4 (30.8) (33.3)		
Actively attempted to quit in the past								
Yes	4 (25.0) (66.7)	5 (31.2) (41.7)	7 (43.8) (63.6)	0.06 ^c	10 (58.8) (55.6)	7 (41.2) (58.3)		0.88
No	2 (15.4) (33.3)	7 (53.8) (58.3)	4 (30.8) (36.4)		8 (61.5) (44.4)	5 (38.5) (41.7)		

^aRow percent.^bColumn percent.^cFisher exact test used.

Table 4

Knowledge and understandings of curriculum and policies during medical education among final-year medical students in Cairo^a

Knowledge and understandings of curriculum and policies	N (%)
Our school has an official policy banning smoking in school buildings and/or clinics	
Yes, for school buildings only	15 (7.6)
Yes, for clinics only	14 (7.0)
Yes, for both school buildings and clinics	84 (42.2)
No official policy exists	86 (43.2)
During medical school, students are taught the dangers of smoking	
Yes	172 (86.9)
No	26 (13.1)
During medical school, students are taught the reasons people smoke	
Yes	87 (43.7)
No	112 (56.3)
During medical school, students are taught it is important to record tobacco use as part of patient history	
Yes	177 (88.9)
No	22 (11.1)
During medical school, students receive formal training in smoking cessation for patients	
Yes	67 (34.2)
No	129 (65.8)
During medical school, students are taught that it is important to provide educational materials on smoking to patients	
Yes	114 (58.5)
No	81 (41.5)

^aNote that up to eight responses were missing.