Global health professions student survey in Saudi Arabia

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Tobacco use is one of the main preventable causes of chronic disease and death in high-income countries, and is the second leading cause of death worldwide. The World Health Organization (WHO) projected a death toll of 5 million people a year attributed to tobacco use, and the number is expected to exceed 10 million deaths by 2020, with 70% of these deaths possibly occurring in developing countries.[1] Evidently, health professionals substantially increase smoking cessation rates by offering brief and simple counseling, but this may not be the case if they are smokers. The main objective of this Global Health Professions Student Survey (GHPSS) was to estimate the prevalence of cigarette smoking, and other tobacco use among third year medical students of 7 medical schools in the Kingdom of Saudi Arabia (KSA). Medical students other than the third year were not recruited for this survey. This survey was carried out from June to December 2006 using a core and optional questionnaire developed by the WHO. On a larger scale, WHO had piloted GHPSS in 10 member states.[2] The WHO GHPSS that uses a standardized methodology and a multi-stage cluster design for selecting participants is a medical school-based survey of students pursuing bachelor degree in one of the disciplines including Dentistry, Medicine, Nursing, and Pharmacy. In Stage 1 of GHPSS, the schools were selected with probability proportional to the third year student enrollment size, whereas in Stage 2, classes were selected randomly from the selected schools, and in Stage 3, medical students are recruited from selected schools and classes. Sampling possibilities also include classrooms chosen randomly within selected schools or census of schools, and students in countries with few health professional schools. All students in the selected classes are considered eligible for participation in the survey. A core questionnaire abstracts information regarding demographics and several interconnected perspectives of tobacco use. We have used the similar methodology in the Global Youth Tobacco Survey-2007.[3]

This Saudi GHPSS was a medical school-based survey of all third year medical students, who were enrolled in 7 medical schools. Although there are 15 medical schools, the other 8 medical schools were new, and yet to have third year medical students. The GHPSS followed an anonymous, self-administered format for data collection. The questionnaires were distributed among eligible students by 2 investigators who visited all 7 medical schools for data collection at one-week interval. With the exclusion of schoolteachers, all students were informed of the objectives of the survey, and were asked to participate voluntarily. A total of 774 students participated in the GHPSS. Those who did not participate were requested to remain seated in the class, but were reminded not to interfere in filling the questionnaire for participating students whose responses were kept anonymous and confidential.

Permission to conduct this survey was obtained from the higher authorities of all selected medical colleges, and the ethical clearance was from the internal ethical committee of the General Administration for Tobacco Control, Ministry of Health, KSA. In addition, students were requested to raise their hands for giving verbal consent to participate in this survey. Seventy percent of them consented, but only 63% of them returned the completed questionnaires. The return of the completed questionnaire is a reflection of verbal consent. The collected data was entered in the computer and the analysis was carried out by the Provisional Health Statistic Division in the WHO that used SUDAAN software package. Differences in proportions were considered statistically significant at the $p<0.05$ level assessed by non-overlapping confidence intervals. Furthermore, the results revealed that the students' response rate was 62.6% (**Table 1**). Most students were male (n=471, 60.9%), and 90% of them were from 19-24 years. Approximately 43% of students had ever smoked cigarettes, with males significantly higher than females. Approximately 59% of ever smokers initiated smoking before age 16, but with no significant gender differences. Thirty-two percent of students had ever used other tobacco products including waterpipe with statistical significant differences between males and females.

Approximately 11.7% of students currently smoked cigarettes, whereas 13.6% of participants used other tobacco products. With regard to the rate of current cigarette smoking and other tobacco products use, there were no statistical gender differences. Twenty percent of ever cigarette smokers reported that they had smoked on school premises or property, while 13.0% of participants had smoked in school buildings during the past year. Males were significantly more likely than females to have smoked on school property, but there was no significant gender differences in smoking in school buildings. A total of 59.4% of the students

Table 1 - Prevalence and pattern of tobacco use among third-year medical students.

Variables	Total	Female	Male
		% (95% confidence interval)	
Prevalence of tobacco use among third-year medical students			
Ever smoked cigarettes	45.3 (42.8 - 47.9)	36.8 (32.8 - 40.9)	51.2 (48.0 - 54.4)*
Ever smokers who initiated smoking before age 16	59.3 (55.3 - 63.1)	60.1 (52.3 - 67.3)	58.5 (53.8 - 63.0)†
Ever used chewing tobacco, snuff, cigars, or waterpipes	32.1 (29.8 - 34.5)	28.1 (24.4 - 32.2)	34.5 (31.5 - 37.6)†
Current cigarette smoking	11.7 (10.2 - 13.4)	8.4 (6.2 - 11.4)	13.4 (11.4 - 15.6)†
Current other tobacco use	13.6 (12.0 - 15.5)	10.4 (7.9 - 13.7)	15.3 (13.2 - 17.6)†
Smoked cigarettes on school property in the past year	21.1 (17.4 - 25.4)	10.3 (5.9 - 17.2)	25.6 (20.8 - 31.0)*
Smoked cigarettes in school buildings in the past year	13.0 (10.1 - 16.6)	10.5 (5.9 - 17.8)	14.3 (10.8 - 18.6)†
Students who believed their college has an official policy banning smoking in college buildings and clinics	59.4 (57.0 - 61.9)	36.0 (32.0 - 40.1)	73.9 (71.2 - 76.5)*
Colleges that had an official policy banning smoking in school buildings and clinics that enforced it	77.8 (74.7 - 80.7)	83.2 (76.5 - 88.2)	75.9 (72.3 - 79.3)†
Exposure to second hand smoke in public places and attitudes toward banning tobacco use			
Exposed to smoke in public places during the past week	59.4 (56.9 - 61.7)	45.1 (40.9 - 49.3)	68.4 (65.5 - 71.2)*
Students who thought smoking should be banned in restaurants	90.6 (89.0 - 91.9)	90.8 (88.2 - 92.8)	90.4 (88.4 - 92.2)†
Students who thought smoking should be banned in all enclosed public places	89.8 (88.3 - 91.2)	88.7 (86.0 - 90.9)	90.5 (88.5 - 92.2)†
Students' responses regarding counseling patients on smoking and cessation and training needs			
Thought health professionals have a role in giving advice or information regarding smoking cessation to patients	97.7 (96.9 - 98.3)	97.3 (95.5 - 98.3)	98.0 (97.0 - 98.6)†
Thought a patient's chances of quitting smoking increases if a health professional advises him/her to quit	87.4 (85.6 - 89.0)	84.6 (81.3 - 87.4)	89.1 (86.9 - 91.0)†
Thought health professionals should get specific training on cessation techniques	87.0 (85.3 - 88.5)	90.6 (88.1 - 92.5)	85.0 (82.6 - 87.0)†
Learned cessation approaches to use with patients	6.7 (5.6 - 8.1)	6.7 (4.8 - 9.3)	6.7 (5.4 - 8.4)†

*Significant, †non-significant gender differences

reported that their schools have policy to ban smoking in school buildings and clinics, but this knowledge gap was significant between the 2 genders. Of the schools with a policy, 77.8% of students reported the policy was enforced in school buildings and clinics. Notably, 59.4% of medical students were exposed to second-hand smoke (SHS) in public places during the past week with significant preponderance of males over female students. Approximately 91% of students supported banning smoking in restaurants with no statistical differences between males and females. Likewise, 89.8% of students also supported a ban on smoking in all public places with no statistical gender differences. Most students (97.9%) believed that health professionals have a role in disseminating advice or information in smoking cessation to their patients, but with no statistical differences between males and females. Eighty-seven percent of medical students believed a patient's chances of quitting increases if a health professional advises him/her to stop smoking. Another 87% of students thought health professionals should get training in cessation techniques, and this is with statistical gender differences. However, only 6.7% of medical students reported that they had received training on smoking cessation approaches, and this has no statistical difference between male and female students.

The findings of this survey indicate that medical students had high rates of lifetime smoking, current cigarette smoking, and other tobacco products use. The revealed current prevalence of cigarette smoking was comparable to adult Saudi males (14.4%), but the prevalence of smoking among female students was 1.7 times higher than that of adult Saudi females (4.9%),[4] the latter finding connotes that tobacco use is rising in young female medical students that reflects a potentially dangerous trend. However, the global current smoking rate reported in a pilot GHPSS of 10 countries was more than 20%.[5] The highest rate was 47.1% among Albanian pharmacy students, and the lowest rates were 0.5% among Ugandan nursing, and 2.8% among medical students.[5] In a study from India, dental (9.6%),

medical (11.6%), and pharmacy (13%) students were reported smoking significantly as compared to nursing students (3.3%). Cigarette smoking was mainly a male domain across the 4 disciplines, but with no significant gender differences in current cigarette smoking.[6] In contrast to the rate of ever smoking, there were no significant differences in the current cigarette smoking rate between male and female students in agreement with other studies.[6] This finding is however inconsistent to the finding of a pilot study, in which in all countries except Serbia, male students were significantly more likely than female students to currently smoke cigarettes.[5] According to this survey, participants were found to have high rate of other tobacco products use among male (ever [34.5%] and current [15.3%]), and female (ever [28.1%] and current [10.4%]) students with gender differences. In a survey, pharmacy students (10.6%) were found to currently use other tobacco products more than their medical (3.7%), dental (5.4%), and nursing (4.5%) counterparts.[6] Overall, Saudi medical students (15.3%) were using other tobacco products approximately 4 times more than Indian medical students (3.7%). The reverse trend, that is, use of other tobacco products more than cigarette smoking revealed in this survey could be explained by sample characteristics and social factors. Evidently, the use of tobacco through waterpipe by both genders is conflicting, but this habit is definitely coupled with serious adverse health problems. The related findings in the use of other tobacco products in our study is inconsistent with several studies,[7,8] which have found Shisha smoking to be more common among females, as compared to their male counterparts. However, some studies have reported water pipe smoking being evenly distributed between both genders,[9] but other researchers criticize this finding.[10] This contradictory finding needs a duplicate study with a larger, heterogeneous sample of pharmacy, nursing, and dental third-year students.

Obviously, tobacco use by participants in school property and buildings, and other public places was rampant. Furthermore, the revealed data tentatively point to a contradiction in terms of effective, and efficient implementation of policy and its continuing appropriate regulation. Approximately 64% of the participants reported that their school has an official policy banning smoking in college buildings and clinics, however despite this, 22% of colleges did not implement this policy. In addition, 21% of smokers reported to smoke at medical school premises during the past year, and 13% smoked in school buildings. Almost 60% of students were exposed to SHS with significant gender differences, with males being more exposed to SHS compared to females. Most students (90%) supported a ban on smoking in all public places including restaurants. There is a further need to call for strengthening tobacco control programs in all medical schools.

In agreement with other studies ([87-99%],[5] [74%][6]), another important finding of this survey was that almost all students (98%) recognize that health professionals have a definite role in giving advice to patients regarding quitting smoking. Most importantly, 87% of student thought a patient's chances of quitting smoking increases if a health professional advises him/her to quit. Like in other studies (90.3-99.0%),[5] another 87% of students stated that they want to receive training in cessation techniques to help patients quit tobacco use. All these findings reflect healthy attitudes of students who might be effective professionals in giving cessation help to tobacco users in the future. Unlike in a study (22.3%),[6] only a small number of medical students (6.7%) had received training in tobacco use cessation approaches. In the WHO pilot study, data on receipt of formal cessation training ranged from 10.3% among Albanian medical students to 32.6% among Republic of Serbia medical students.[6] In general, tobacco related questionnaires used in targeted populations worldwide were not standardized by WHO, and hence, these were criticized for their reliability and validity issues.[5] That is the only limitation of this survey, as well. However, the wide acceptance of core and optional questionnaire in tobacco surveys with consistent findings across nations nullifies those issues.

In summary, the findings in this study indicate a high prevalence of current tobacco use among the third year medical students of both genders. There is an urgent need to reverse this epidemiological trend by effective implementation of tobacco control programs in all medical schools. Tobacco use has the potential not only to cause great personal harm, but also affects adversely others health, and also known to reduce considerably the ability of health professionals to effectively counsel their patients to stop tobacco use. All medical schools should also develop formal training curriculum in tobacco control approaches for the purpose of teaching medical students.

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Related topics

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