global health professions student survey

Country reports

The World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC), Atlanta, developed the Global Health Professions Student Survey to track tobacco use among health professions students across countries using a common methodology and core questionnaire. Information from the Survey is compiled within the participating country by a Research Coordinator nominated by the Ministry of Health, and technically reviewed by WHO and CDC. The content has not otherwise been edited by WHO or CDC.

All reasonable precautions have been taken by the World Health Organization to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall the World Health Organization be liable for damages arising from its use.

World Health Organization
Regional Office for the Eastern Mediterranean

CDC
Centers for Disease Control and Prevention

Tobacco Use, Exposure to Secondhand Smoke, and Cessation Counseling Among Health Professions Students: Sudan Data from the Global Health Professions Student Survey (GHPSS), 2007

Dr. Hala Elgoni

1. **Introduction**

Tobacco use is one of the major preventable causes of premature death and disease in the world [1]. A disproportionate share of the global tobacco burden falls on developing countries, where 84% of 1.3 billion current smokers reside [1]. The World Health Organization (WHO) attributes approximately 5 million deaths a year to tobacco. The number is expected to exceed 8 million deaths by 2030, with approximately 70% of these deaths occurring in developing countries [2].

Health professions students have been found to play an important role in cessation and prevention of tobacco use among their patients [3-6]. Counseling by health professions students has been shown to increase smoking cessation [3]. Despite the involvement of health professions students, as the largest group of healthcare professionals in tobacco control, only a few studies have collected information on tobacco use, exposure to secondhand smoke, and training to provide cessation counseling among health professions students. These studies used different sampling methods, questionnaires, and data collection procedures, and very few are from low or middle-income countries [7-10]. The WHO, U.S. Centers for Disease Control and Prevention, and the Canadian Public Health Association have attempted to overcome these limitations by developing and implementing the Global Health Professions Student Survey (GHPSS) [11]. The GHPSS includes surveys of dental, medical, nursing, and pharmacy students.

The data discussed in this report come from the GHPSS conducted among 3rd year medical, dental, pharmacy and nursing students in Sudan.

2. Methods

2.1 Design

The GHPSS is part of the Global Tobacco Surveillance System, which collects data through four surveys: the Global Youth Tobacco Survey, the Global School Personnel Survey, the Global Adult Tobacco Survey, and the GHPSS. The GHPSS is a school-based survey of 3rd year students pursuing advanced degrees in dentistry, medicine, pharmacy, and nursing. The GHPSS uses a core questionnaire on demographics, prevalence of cigarette smoking and use of other tobacco products, exposure to secondhand smoke (SHS), desire to quit smoking, and training received to provide patient counseling on cessation techniques. The GHPSS has a standardized methodology for selecting participating schools and uniform data processing procedures [11].

The medical, dental, pharmacy and nursing GHPSS in Sudan included a census of students and a census of schools. All dental, medical, nursing and pharmacy schools containing 3rd year students were included in the sampling frame. All students within all schools were surveyed. All schools and students had a probability of selection equal to one.

The Sudan GHPSS was conducted in schools during regular lectures and class sessions. Anonymous, self-administered data collection procedures were used. The final questionnaire was translated into Local Sudanese Language and back translated into English to check for accuracy. SUDAAN, a software package for statistical analysis of complex survey data, was used to calculate weighted prevalence estimates and standard

errors (SE) of the estimates (95% confidence intervals (CI) were calculated from the SEs) [12].

2.2 Measurement

This report includes information on current cigarette smoking, current use of tobacco products other than cigarettes, exposure to SHS at home and in public places, and the extent to which schools have official policies banning smoking in school buildings and clinics, and if the policies are enforced. In addition, attitude questions were asked regarding: health professionals as role models for their patients, whether health professionals think they should get training in patient cessation techniques, and if they have ever received formal training on such cessation counseling techniques.

3- **Results:**

3.1 Response rates:

The school response rates for the Sudan GHPSS were 100% for medical 100% for dental100% for nursing and 100% for pharmacy (Table 1). The student response rates for the Sudan GHPSS were 64.5% for dental, 83.1% for medical, 26.3% for nursing, and 71.3% for pharmacy.

Table No.1.

Overall Response Rates of Colleges and Third-Year dental, medical, nursing and pharmacy students

Sudan GHPSS, 2007

	Dental	**Medical**	**Nursing**	**Pharmacy**
Schools (%)	100	100	100	100
Schools (n)	10	4	6	5
Students (%)	64.5	83.1	56.3	71.3
Students (n)	1102	384	343	515

3.2 Student Characteristics:

The percentage of dental students who were females was 61.3% while 64.7% of medical students were females. The percentage of nursing students who were females was 80.7% where as 62.2 of pharmacy students were females. All female students were less than age 25.

3.3 Tobacco Use

Among dental students 11.4% currently smoked cigarettes (Table 2). The prevalence for current cigarette smoking among medical students is 7.7%, 4.8% for nursing, and 9.9% for pharmacy students.

Among dental students 4.9% currently used tobacco products other than cigarettes (Table 2). The prevalence for other tobacco use among medical students is 3.1%, 3.7% for nursing, and 5.0% for pharmacy students.

Table No. 2.

Lifetime and Current Prevalence of Tobacco Use among Third-Year dental, medical, nursing and pharmacy Students

Sudan GHPSS, 2007

	All Respondents			**Current Use**	
	Ever smoked cigarettes	Ever smokers who initiated daily cigarette smoking before age 16 years	Ever used chewing tobacco, snuff, cigars, or pipes	Cigarettes	Chewing tobacco, snuff, cigars, or pipes
	ESMOKER **% (CI)**	**INITIATION16** **% (CI)**	**EOTOB** **% (CI)**	**CSMOKER** **% (CI)**	**COTOB** **% (CI)**
Dental Students					
Total	54.8 (49.0 - 60.4)	NA	54.1 (48.3 - 59.8)	11.4 (8.1 - 15.8)	4.9 (3.0 -8.0)
Women	44.2 (37.1 - 51.5)	NA	45.7 (38.6 - 53.0)	2.4 (1.0 -5.9)	2.2 (0.9 -5.4)
Men	72.0 (62.6 - 79.7)	NA	67.5 (58.1 - 75.7)	26.9 (19.0 - 36.6)	9.5 (5.3 - 16.4)
Medical Students					
Total	45.8 (43.2 - 48.3)	NA	39.8 (37.3 - 42.4)	7.7 (6.4 -9.1)	3.1 (2.3 -4.0)
Women	33.4 (30.4 - 36.5)	NA	24.1 (21.5 - 26.9)	1.3 (0.8 -2.2)	0.4 (0.2 -1.0)

Men	68.1 (63.9 - 72.0)	NA	68.3 (64.2 - 72.2)	19.6 (16.4 - 23.3)	8.0 (6.0 - 10.5)
Nursing Students					
Total	29.4 (27.3 - 31.7)	NA	34.1 (31.8 - 36.4)	4.8 (3.9 -5.9)	3.7 (2.9 -4.7)
Women	20.5 (18.5 - 22.8)	NA	25.1 (22.8 - 27.5)	0.9 (0.5 -1.5)	1.3 (0.8 -2.0)
Men	66.3 (60.7 - 71.4)	NA	70.9 (65.6 - 75.8)	21.6 (17.4 - 26.4)	12.4 (9.2 - 16.4)
Pharmacy Students					
Total	38.6 (35.8 - 41.5)	NA	36.0 (33.3 - 38.9)	9.9 (8.3 - 11.8)	5.0 (3.9 - 6.5)
Women	27.8 (24.6 - 31.3)	NA	22.9 (20.0 - 26.1)	2.0 (1.2 -3.4)	1.5 (0.8 – 2.7)
Men	56.5 (51.7 - 61.2)	NA	58.0 (53.2 - 62.6)	23.0 (19.2 - 27.2)	10.9 (8.3 - 14.2)

3.4 Exposure to Secondhand Smoke (SHS)

Among dental students, 44.9% reported that they had been exposed to SHS in their home in the past 7 days. Similarly, 40.6% of medical students reported SHS exposure at home, 35.2% among nursing students, and 38.7% among pharmacy students (Table 3).

Among dental students, 70.1% reported that they had been exposed to SHS in public places in the past 7 days. Similarly, 68.5% of medical students reported SHS

exposure in public places, 55.4 among nursing students, and 68.8% among pharmacy students.

The proportion of dental students reporting their schools have an official policy banning smoking in school buildings and clinics was 37.3%, 18.3% of medical students, 37.3% of nursing students, and 29.1% of pharmacy students (Table 3). The proportion of students reporting that such policies are enforced ranged from 83.3% among the dental students to 68.3% among the medical students.

Table No.3.

Policy and Exposure to Secondhand Smoke among Third-Year dental, medical, nursing and pharmacy Students

Sudan GHPSS, 2007

	All Respondents					
Schools	Smoked on college premises/property during the past year	Colleges with an official policy banning smoking in college buildings and clinics	Colleges that had an official policy banning smoking in school buildings and clinics that enforced the ban	Exposure to smoke at home during the past week	Exposure to smoke in public places during the past week	have a role in giving advice about smoking cessation to patients
Dental Students	45.3 (33.2 - 57.9)	37.3 (31.8 - 43.1)	83.3 (75.3 - 89.1)	44.9 (39.2 - 50.8)	70.1 (64.4 - 75.2)	97.6 (94.9 - 98.9)
Medical Students	47.8 (41.3 – 54.4)	18.3 (16.4 – 20.4)	68.3 (62.4 (73.6)	40.6 (38.1- 43.1)	68.5 (66.0 – 70.8)	97.9 (97.0 –

						98.5)
Nursing Students	34.5 (26.5 – 43.5)	21.4 (19.5 – 23.5)	78.7 (73.9 – 82.8)	35.2 (32.9-37.5)	55.4 (53.0 – 57.8)	98.9 (98 – 99.4)
Pharmacy Students	46.1 (38.7 – 53.8)	29.1 (26.5 – 31.9)	76.3 (71.3 – 80.8)	38.7 (35.9-41.6)	68.8 (66.0 – 71.5)	95.8 (94.6 – 96.8)

3.5 Health Professional Roles and Training

Over 97.6% of the dental students, 97.9% of the medical students, 98.9% of the nursing students, and 95.8% of the pharmacy students thought health professionals have a role in giving advice about smoking cessation to patients (Table 4). Over 99.3% of the dental students 97.5% of the medical students, 98.3% of the nursing students, and 97.1% of the pharmacy students thought health professionals should get specific training on cessation techniques. The percentage of health professions students reporting that they had ever received some kind of formal training in their professional school on cessation approaches to use with their patients ranged from 5.8% among pharmacy students to 56.3among nursing students.

Table No. 4.

Cessation, Education and Perception of Responsibility to Counsel Patients among Ever Smokers, Third-Year dental, medical, nursing and pharmacy Students

Sudan GHPSS, 2007

	Current Cigarette Smokers who want to quit smoking cigarettes now	Current Users of Other Tobacco Products who want to quit using other tobacco products now	**Percentage Answering "Yes"**		Learned cessation approaches to use with patients
			Do health professionals serve as role models for their patients and the public?	Should health professionals get specific training on cessation techniques?	
	CESS_CIGS **% (CI)**	**CESS_OTOB** **% (CI)**	**TOT_CORE20** **% (CI)**	**TOT_CORE19** **% (CI)**	**CORE36** **% (CI)**
Dental Students	68.9 (46.9 – 84.7)	*	62.2 (56.4 – 67.6)	99.3 (97.3 – 99.8)	28.1 (23.4 – 33.3)
Medical Students	92.1 (82.6 – 96.6)	40.2 (25.8 – 56.7)	68.8 (66.4 – 71.1)	97.5 (96.6 – 98.2)	31.6 (29.3 – 34.1)
Nursing Students	*	*	75.9 (73.8 – 77.9)	98.3 (97.5 – 98.9)	56.3 (51.2 – 56.0)
Pharmacy Students	79.2 (67.8 – 87.2)	91.1 (77.3 – 96.9)	63.4 (60.6 – 66.1)	97.1 (96.0 – 97.9)	5.8 (4.5 – 7.3)

*CELL SIZE IS LESS THAN 10

4. Discussion

Findings from the Sudan GHPSS showed that dental students had the highest prevalence 11.4% of current cigarette smoking. The prevalence of current cigarette smoking was lowest among nursing students. Use of tobacco products other than cigarettes was highest among pharmacy students. Tobacco use endangers the health of health professions students and negatively influences the future health professions workforce to deliver effective anti-tobacco counseling when they start seeing patients [9]. The tobacco control community should target tobacco users among health professions students to overcome this situation. Educational institutions training health professions students should help their students quit using tobacco by providing encouragement and information to students who are considering quitting and providing assistance to students who are motivated to quit.

Over half of health professions students in Sudan reported they were exposed to SHS in public places. More than one third of the students reported their schools have an official policy banning smoking in school buildings and clinics. Educational institutions training health professions students should be encouraged to provide smoke free work and study areas by banning smoking in their buildings and clinics. A smoke free work environment has been shown to improve air quality, reduce health problems associated with exposure to tobacco smoke, support and encourage cessation attempts among smokers trying to quit, and receive high levels of public support from people who spend time in the area [15]. Furthermore, the creation of smoke free areas by health education

institutions sends a clear message to educators, students, patients, and clinicians about negative impact of tobacco [16].

Health professions students should be trained to provide effective, accurate, and accessible advice to patients on all aspects of health. The Sudan GHPSS data showed that over 75.9% of nursing students but only 62.2% of dental students recognize that they are role models in society. Almost all of the surveyed students think that they should receive training on counseling and treating patients to quit using tobacco. However, only few of them have received formal type of such training.

Training for health professions students should include courses detailing the harmful health effects of tobacco use and exposure to secondhand smoke, and training in counseling on tobacco cessation techniques [4-7, 17-18]. Curricula should include a course or supplements to existing courses specifically relevant to tobacco issues. If administrators are resistant to making changes in the core curricula, schools should be encouraged to incorporate tobacco-related modules within existing courses.

The majority of evaluation research conducted on tobacco-related curricula has been conducted in high income countries. Relatively little information about the process of teaching health professions students in low and middle-income countries about smoking prevention and cessation is accessible to the international tobacco control community. Efforts should be made to assess and share the content of tobacco control components within the formal training curricula and continuing education courses for health professions students. Further research should be carried out to assess the impact of existing tobacco control-related materials and training provided in health professions

schools in Sudan. The products from such research could form a base of “best practices” of patient counseling for training health professions students relevant to countries with a broad spectrum of health resources and infrastructures.

5. Conclusions

Educational institutions, public health organizations, and education officials should discourage tobacco use among health professions students and work together to design and implement programs that train health professions students in effective cessation-counseling techniques. Sudan GHPSS has shown significant unmet need for cessation assistance among health professions students as well as gaps in professional training to provide similar effective assistance to their future patients. Sudan GHPSS is helpful in evaluating the behavior and attitudes regarding tobacco among health professions students, but additional research is necessary to improve the evidence base for effective tobacco-related curricula, especially materials that are appropriate for a range of cultural and economic settings. If the goal of the tobacco control community is to reduce substantially the use of tobacco products, then resources should be invested in improving the quality of education of health professions students with respect to tobacco control.

References

1. Jha P, Chaloupka FJ. Tobacco control in developing countries. Oxford, UK: Oxford University Press; 2000.
2. World Health Organization. MPOWER: A policy package to reverse the tobacco epidemic. Geneva: World Health Organization; 2008.
3. Rice VH, Stead LF Nursing interventions for smoking cessation. Cochrane Database Syst Rev. 2008 Jan 23;(1):CD001188.
4. Sarna L, Danao LL, Chan SS, Shin SR, Baldago LA, Endo E, Minegishi H, Wewers ME. Tobacco control curricula content in baccalaureate nursing programs in four Asian nations. Nurs Outlook. 2006; 54(6):334-44.
5. Preechawong S. Thai Nurses and Tobacco Cessation Activities in Clinical Practice. Thai J Nurs Res. 2007; 11(1):62-71.
6. Chan SS, Sarna L, Danao LL. Are nurses prepared to curb the tobacco epidemic in China? A questionnaire survey of schools of nursing. Int J Nurs Stud. 2008; 45(5):706-13.
7. Barta S, Richard D. The effects of a theory-based training program on nurses' self-efficacy and behavior for smoking cessation through counseling. J Contin Ed Nurs 2005; 36:117–23.
8. Jenkins, K., & Ahijevych, K. Nursing students' beliefs about smoking, their own smoking behaviors, and use of professional tobacco treatment intervention. Applied Nursing Research. 2003; 6(3):164-172.
9. Lenz BK., Beliefs, knowledge, and self-efficacy of nursing students regarding tobacco cessation,Am J Prev Med. 2008; 35(6 Suppl):S494-500.
10. Durkin A, Promoting smoking cessation among nursing students: how faculty can help, Nurs Educ Perspect. 2007; 28(3):150-4.
11. Warren CW, Jones NR, Chauvin J, Peruga A. Tobacco use and cessation counseling: Cross-country data from the Global Health Professions Student Survey (GHPSS), 2005-7. Tob Control. 2008; 17:238-247.
12. Shah, B.V., Barnwell, B.G., Bieler, G.S. Software for the statistical analysis of correlated data (SUDAAN): User's Manual. Release 7.5. 1997 (software documentation). Research Triangle Park, NC: Research Triangle Institute; 1997.
13. Hinkle DE, Wiersma W, Jurs SG. Applied statistics for the behavioral sciences. 5th ed. Boston, MA: Houghton Mifflin Co.; 2003.
14. Donner A and Klar N. Design and analysis of cluster randomization trials in health research. New York, NY: Qxford University Press Inc.; 2000.
15. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Office on Smoking and Health (1996). *Making your Workplace Smoke-Free: A Decision Maker's Guide*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Office on Smoking and Health.
16. U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Division of Nutrition, Physical Activity, and Obesity. Implementing a Tobacco-Free Campus Initiative in Your Workplace. Available at http://www.cdc.gov/nccdphp/dnpa/hwi/toolkits/tobacco/index.htm

17. Fiore MC, Jaén CR, Baker TB, et al. *Treating Tobacco Use and Dependence: 2008 Update.* Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service. May 2008.
18. Lancaster T, Stread L, Silagy C, et al. Effectiveness of interventions to help people stop smoking: findings from the Cochrane Library. BMJ 2000; 321:355-8.