

## Original Research Article

# A study of prevalence of tobacco use and related factors among medical students as per the Global Health Professions Student Survey protocol

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## ABSTRACT

**Background:** Physicians who smoke are less likely to ask patients about their smoking and initiate cessation interventions. Hence it is important to study the prevalence of tobacco use, attitude and training of health professional students. Objectives were to study prevalence and attitudes towards tobacco use and training related to tobacco cessation.

**Methods:** Armed Forces Medical college-based cross-sectional survey by anonymous, self-administered questionnaire as per Global Health Professions Student Survey (GHPSS) was conducted. Data was compiled and analyzed for various variables as per the GHPSS questionnaire.

**Results:** Forty-two percent of the students had ever smoked cigarettes and 24% were current smokers. Nearly one in five had tried their first cigarette before 20 years of age. Male gender was associated with smoking. There is a significant association between not smoking and support for smoking ban in public places. Almost all the respondents (98.1%) thought smoking should be banned in all enclosed public places. In light of 20.6% of all respondents who smoked in college buildings during past this year indicated a gap between their knowledge, attitude and behavior. There was a strong desire to quit smoking but only 42% reported receiving help/ advice to stop smoking. Only one in ten reported receiving formal training in smoking cessation techniques.

**Conclusions:** The fight against tobacco can get a boost through interventions aimed at health care professional students. Active Interventions should be made to address smoking issues among medical students. Skill based medical school curriculum should incorporate and emphasize on acquiring effective smoking cessation skills.

**Keywords:** Health professionals, Health occupations, Medical Students, Prevalence, Smoking cessation, Tobacco smoking, Tobacco use cessation

## INTRODUCTION

Tobacco is the only legally available consumer product which kills people when it is used entirely as intended. The Oxford Medical Companion (1994)

Overwhelming scientific evidence accumulated over the past six decades has conclusively linked the consumption of tobacco products with various diseases including cancer of various parts of the human body.<sup>1</sup> The debate regarding the harmful effects of tobacco use is a settled one. Tobacco use kills one person every six seconds.<sup>2</sup> In

20th century tobacco is estimated to have taken 100 million lives, and it could kill up to 1 billion people in the present century.<sup>3</sup> The number of tobacco users will continue to grow in the years to come unless concrete steps leading to effective results are taken to curb the use.<sup>4</sup> Effective implementation of sound public health measures have ensured that tobacco use has been declining in many western countries. As a case, the per capita cigarette consumption in the United States declined at an average annual rate of 3.2 percent since 1988, till 2002.<sup>3</sup> In India, although the use of tobacco has declined among males from almost 33 percent in early 1980 to 23 percent in 2012, the prevalence among females has remained constant at around 3 percent.<sup>5</sup> This is a cause of concern as it turns out to be a huge burden in terms of absolute numbers considering the rate of population growth in the corresponding period.

A long term study among British doctors showed that about 50 percent of smokers will eventually die because of their smoking habit.<sup>6</sup> Interactions with physicians have been shown to have a positive impact on the attitudes, knowledge, intentions to quit smoking and quitting behaviors of adolescents.<sup>7</sup> Physicians who smoke are less likely to ask patients about their smoking and initiate cessation interventions.<sup>8</sup>

Hence it is pertinent to study the prevalence of tobacco use, knowledge and attitudes regarding the same, exposure to environmental tobacco smoke, desire for smoking cessation and cessation training received by the medical students.

**METHODS**

Armed Forces Medical College-based cross-sectional survey by anonymous, self-administered questionnaire as per Global Health Professions Student Survey (GHPSS) was conducted from April 2016 to May 2016. The self-administered questionnaire used is a part of the GHPS under the Global Tobacco Surveillance System.

The college selected for the study is an apex central institute situated in western India admitting students from all parts of India with no reserved seats for any particular state. Thus there is a fair representation from various states and socio-economic strata. This unique representation of study participants was instrumental in conceptualisation of this study. As per the GHPSS protocol, all students attending the third year of the medical course were included in the study. The study was conducted for a period of one year and out of a total of 122 students 107 filled the questionnaire, leading to a response rate of 88%. Data was compiled and analysed for various variables as per the GHPSS questionnaire. Prior approval of the Institutional Ethics Committee was taken. In the absence of biochemical validation of tobacco use, efforts were made to ensure confidentiality to encourage correct reporting which included administration of the questionnaire at the residential

accommodation of the students mostly during off-study hours. It was ensured the students knew the questionnaire is completely anonymous.

**RESULTS**

Total of 107 students participated in the study. All were students of third year of MBBS. All but two of them were aged 19 to 24 years. The proportion of females was 26.2%.

Prevalence of tobacco use is depicted in Table 1. A significant association was found between male gender and ever- and current-smoking status (p= 0.000).

**Table 1: Prevalence of tobacco use.**

Attribute	Proportion
Ever smoked cigarettes (Males = 51.9%, females = 14.3%)	42%
Current smokers	24.3%
Had tried their first cigarette before 20 years of age	17.8%
Ever used any form of tobacco other than cigarettes	17.8%
Currently use any form of tobacco other than cigarettes	7.5%
Ever smokers who smoked cigarettes on college premises during the past year	66.7%
Ever smokers who smoked cigarettes in college buildings during the past year	45.8%

**Table 2: Exposure to second hand smoke, attitude towards ban, behaviour towards cessation.**

Variable	Proportion
Exposed to Second Hand Smoke (SHS) at places where they live during the past week.	60.4%
Exposed to Second Hand Smoke (SHS) in public places during the past week.	67%
Reported that the college had a ban on smoking in college buildings and clinics	86%
Reported that their college enforced the ban on smoking in college buildings and clinics	67.3%
Felt there should be a complete ban of advertising of tobacco products	84.1%
Thought smoking should be banned in all enclosed public places	98.1 %
Thought tobacco sales to adolescents should be banned	90.7%
Current smokers who wanted to stop smoking	61.5%
Current smokers reported receiving help/ advice to stop smoking	42.3%
Were taught about dangers of smoking during training	81.3%

More than half of the participants had been exposed to second hand smoke at the places they lived. Less than half of the smokers received help/ advice to stop smoking (Table 2). There is a significant association between non-

smoker status and support for smoking ban, and support for health professionals' role in smoking cessation (Table 3).

**Table 3: Association of smoking status with various factors.**

		Current smoker?		Total	p value
		No	Yes		
Gender	Male	53	26	79	0.000*
	Female	28	0	28	
Should smoking be banned in restaurants?	Yes	78	21	99	0.020*
	No	3	5	8	
Should smoking be banned in bars/discos/pubs?	Yes	52	5	57	0.000
	No	29	21	50	
Do health professionals have a role in giving advice about smoking cessation to patients	Yes	80	23	103	0.044*
	No	1	3	4	
Total		81	26	107	

\*Fisher's exact significance

Only about one in ten students received formal training in smoking cessation techniques and 40% had heard of antidepressant use in cessation programs (Table 4).

**Table 4: Attitude and training of medical students.**

Variable	% (n)
Thought health professionals should get specific training on cessation techniques	96.3 (103)
Thought health professionals serve as role models for their patients	86.9 (93)
Thought health professionals have a role in giving advice about smoking cessation to patients	96.3 (103)
College has an official policy banning smoking in school buildings and clinics?	86.0 (92)
College's smoking ban is enforced	67.3 (72)
Received formal training in smoking cessation	11.2 (12)
Have heard of nicotine replacement therapy	95.3 (102)
Have heard of antidepressant use in cessation programs	40.2 (43)

**DISCUSSION**

The Agency for Healthcare Research and Quality guidelines for management of tobacco use and dependence have physician advice as a key public health intervention.<sup>9</sup> These include the “5 A’s” approach which requires physicians to ask about smoking status, advise patients to quit, assist with quitting, and arrange follow-up visits. Previous research has indicated that physician advice regarding smoking has sufficient impact among adults for it to be ranked as a high-priority preventive

intervention.<sup>10</sup> Similarly physician interventions have the potential to be key public health intervention in the smoking prevention and cessation programs among adolescents. Physician interaction was associated with better knowledge of health risks, less belief in the social value of smoking, fewer intentions to smoke, more intentions to quit, and more quit attempts.<sup>11</sup> Brief physician advice was found to increase adult quitting rates by 1% to 3% above the unassisted quitting rates.<sup>12</sup> Physician advice has a significant effect on tobacco smoking and quitting behaviours of both adults and adolescents. Clinical tobacco-cessation counselling is one of the three most important and cost-effective preventive services (the other two being influenza immunization and mammography) that can be offered in medical practice.<sup>10</sup> The attractiveness of physician intervention as a smoking prevention and cessation measure lies in its accessibility, time efficiency, and cost efficiency.<sup>7,9,10</sup> There is a need to assess the factors which influence physicians' advice to their smoker patients. Studies among adolescent smokers have shown that they favour cessation programs having interpersonal contact rather than those relying more on technology, such as web-based programs or those delivered by e-mail. Previous studies have shown that health professionals are not yet maximizing their opportunities to counsel their smoker patients.<sup>15</sup> Physicians were more likely to give advice to smoker patients who made multiple visits and were heavy smokers, reflecting a mindset oriented towards tertiary rather than primary or secondary prevention.<sup>13</sup>

**Prevalence of tobacco use**

In the present study the prevalence of current use of tobacco is 24.3% which is similar to a study conducted but higher than the country figure of 11.6%.<sup>14,15</sup> The

current use of any form of tobacco other than cigarettes is 7.5%, compared to 5.4% in Indian medical students.<sup>14</sup> In the study in 2009 this figure was 11.6%.

Nearly one-sixth (17.8%) of respondents had tried their first cigarette before reaching age of 20 years. A significant association is found between male gender and ever-smoker status (Exact Significance 2-sided = 0.001). Similarly, significant association was found between male gender and current-smoker status.

A majority of ever smokers (66.7%) had smoked on college premises/ property during the past year, indicating a lack in enforcement of smoking ban.

### **Factors influencing tobacco use**

About 67% of respondents were exposed to second-hand smoke in public places during the past week, again indicating ineffective implementation of smoking ban. This is lower than corresponding figure of 73.8% for India.<sup>16</sup>

Awareness of existence of a smoking ban in college buildings and clinics was 86%, whereas 67.3% reported the implementation of this ban. In the 2009 study 53% reported enforcement of the ban.<sup>14</sup> Almost all the respondents (98.1%) thought smoking should be banned in all enclosed public places. In light of 20.6% of all respondents who smoked in college buildings during past year this indicates a gap between their knowledge, attitude and behaviour. Attitudes are the hardest to improve as compared to knowledge and behaviour.<sup>15</sup>

A large majority (90.7%) were in favour of ban on tobacco sales to adolescents, indicating support for current government policy. There is a desire to quit smoking, as fathomed by 61.5% of current smokers who want to quit smoking. However 42.3% of current smokers reported receiving help/ advice to stop smoking, indicating an unmet need in reaching out to them.

There is a significant association between current smoking status and the agreement with smoking ban in restaurants, discos/bars/pubs, with more non-smokers agreeing to such bans. Significantly more non-smokers think that health professionals have a role in giving advice about smoking status to patients.

### **Cessation training**

Awareness of the use of cessation techniques was high (95.3%) for nicotine replacement therapy and low (40.2%) for anti-depressant use.

Statistically 96.3% of respondents thought health professionals should get specific training on cessation techniques. Only 11.2% of respondents reported receiving formal training in smoking cessation approaches during MBBS training, hence the pressing

need to update the current curriculum. This is almost half of the country figure of 22.3%.<sup>16</sup>

This study has provided important insight into the following areas:

- One-sixth (17.8%) of the students had tried their first cigarette puff before reaching age 20 years.
- Majority (67%) of students were exposed to second-hand smoke in public places in the past week.
- Even though 98.1% of all respondents favoured a ban on smoking in enclosed public places, 20.6% of them smoked in college buildings in the past year.
- Unmet need for smoking cessation intervention in the current smokers (61.5% wanted to quit smoking, only 42.3% received help/ advice regarding the same).
- Significant association between non-smoker status and agreement with smoking ban in restaurants and discos/bars/pubs.
- Significant association between non-smoker status and view that health professionals have a role in giving advice about smoking cessation to patients.
- Low awareness about use of anti-depressants in tobacco cessation.
- Lack of formal training in smoking cessation techniques during MBBS course.

This knowledge has brought a keen appreciation of how far we are from the potential that can be achieved in fight against tobacco use by interventions aimed at health professionals.

### **Recommendations**

There is a need for strict implementation of smoking ban in medical colleges. Skill acquisition and evaluation for Smoking Cessation intervention needs to be made part of the medical undergraduate curriculum. Medical college education needs to lay emphasis on various modalities of cessation that are available so that future doctors can offer this specific prevention to their tobacco user patients.

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### **REFERENCES**

1. World Health Organization. WHO report on the global tobacco epidemic, 2013: enforcing bans on tobacco advertising, promotion and sponsorship. World Health Organization; 2013.
2. World No Tobacco Day 2016. www.who.int. 2016. <http://www.who.int/mediacentre/news/releases/2016/world-no-tobacco-day/en/>. Accessed 11 December 2019.

3. Peto R, Lopez AD. Future worldwide health effects of current smoking patterns. In: Koop CE, Pearson CE, Schwarz MR, eds. *Critical issues in global health*. San Francisco, Wiley (Jossey-Bass), 2001:154–161.
4. Guindon GE, Boisclair D. Past, current and future trends in tobacco use. Washington DC, World Bank, 2003.
5. Ng M, Freeman MK, Fleming TD, Robinson M, Dwyer-Lindgren L, Thomson B et al. Smoking prevalence and cigarette consumption in 187 countries 1980-2012. *JAMA*, 2014 Jan 8;311(2):183-92.
6. Doll R, Peto R, Wheatley K, Gray R, and Sutherland. Mortality in relation to smoking:40 years' observations on male British doctors. *BMJ*. 1994;309:901-11.
7. Pipe A, Sorensen M, Reid R. Physician smoking status, attitudes towards smoking, and cessation advice to patients: an international survey. *Patient Educ Couns*. 2009 Jan;74(1):118-23.
8. Fiore MC, Jaén CR, Baker TB, Bailey WC, Benowitz NL, Curry SJ, et al. Treating tobacco use and dependence: 2008 update. Rockville, MD: US Department of Health and Human Services. 2008 May 27.
9. Solberg LI, Maciosek MV, Edwards NM, Khanchandani HS, Goodman MJ. Repeated tobacco-use screening and intervention in clinical practice: health impact and cost effectiveness. *Am J Prev Med*. 2006;31(1):62-71.
10. Hum AM, Robinson LA, Jackson AA, Ali KS. Physician communication regarding smoking and adolescent tobacco use. *Pediatrics*. 2011 Jun 1;127(6):e1368-74.
11. Stead LF, Buitrago D, Preciado N, Sanchez G, Hartmann-Boyce J, Lancaster T. Physician advice for smoking cessation. *Cochrane Database of Systematic Reviews* 2013, Issue 5. Art No.: CD000165.
12. Hum AM, Robinson LA, Jackson AA, Ali KS. Physician communication regarding smoking and adolescent tobacco use. *Pediatrics*. 2011 Jun 1;127(6):e1368-74.
13. Centers for Disease Control and Prevention (CDC). Physician and other health-care professional counselling of smokers to quit. *Morb Mortal Wkly Rep*. 1993;42(44):854-7
14. Surani NS, Pednekar MS, Sinha DN, Singh G, Warren CW, Asma S, Gupta PC, Singh PK. Tobacco use and cessation training in India-data from the Global Health Professions Students Survey, 2005-09. *Indian J Cancer* 2012;49:425-30.
15. Bruvold WH. A meta-analysis of adolescent smoking prevention programs. *Am J Public Health*. 1993;83(6):72-880
16. India Global Health Professional Students Survey (GHPSS), 2006 Factsheet. Available at: [http://www.mohfw.nic.in/WriteReadData/1892s/file\\_22-23368831.pdf](http://www.mohfw.nic.in/WriteReadData/1892s/file_22-23368831.pdf) Accessed 05 December 2018.

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