

## RESEARCH COMMUNICATION

# Tobacco Use by Indian Medical Students and the Need for Comprehensive Intervention Strategies

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### Abstract

**Background:** Tobacco is one of the most important causes of pulmonary and cardiac diseases. Health professionals, including medical students, should ideally play an important role in the fight against tobacco use but several reports suggest that a good number of medical students are themselves addicted to tobacco. **Methods:** This is a single institutional cross-sectional survey of preclinical medical students in Moti Lal Nehru Medical College, Allahabad over a five-year period from 2003-2007. Data was collected using the WHO Global Health Professionals Survey questionnaire. **Results:** 560 students over a period of five years were included in this study. A total of 183 were tobacco users of which 83 were tobacco chewers, 59 cigarette smokers and 41 were addicted to both chewing and smoking. As health professionals, 88% knew that they should advise their patients to quit tobacco. **Conclusion:** This study showed rampant abuse of tobacco. Specific smoking cessation training is needed for medical students to develop appropriate skills and strategies.

**Keywords:** Tobacco - medical students - intervention strategies

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### Introduction

Health professionals have an important role in the fight against tobacco use. The World Health Organization (2006) recommends that they can help to educate the population about tobacco, as community members they can support anti-tobacco policies and at a societal level, they may influence national and global tobacco control efforts. (Imam et al., 2007) Hypothesized that rapid industrialization, urbanization and increased exposure to the Western life style may have contributed to the spreading of substance use, with alcohol and tobacco acting as “gateway drugs” to the use of other substances like cocaine, heroin etc. Glynn et al (2009) noted that in most developed countries where tobacco use has come down; usually doctors have led the way by being the first group to quit its use.

Physicians are in a position to lead the smoking cessation programs, give guidance and help to their patients to stop smoking (Shimkhada and Peabody, 2003). Medical students are ideally suited to provide knowledge about tobacco use. However, medical students who themselves use tobacco are unlikely to counsel patients against using tobacco (Gupta and Ray, 2003). The objective of this study was to assess the prevalence, awareness, and attitudes towards tobacco consumption amongst medical students.

### Materials and Methods

This is a single institutional cross-sectional survey of preclinical medical students in the Moti Lal Nehru Medical College, Allahabad over a five-year period from 2003-2007. Third and fourth semester students of consecutive batches were surveyed. Nearly 90-95% students of each batch were participated. Data was collected in the WHO Global Health Professionals Survey (GHPS) questionnaire after institutional ethical committee clearance. The participation was entirely voluntary. A brief introduction was given to the purpose of the study and the participants were reassured about confidentiality. Questionnaires were distributed in the class and collected after 15-20 minutes.

The collected data included age, sex and habit of smoking, type of tobacco use, tobacco use in family, awareness of tobacco and tobacco control issues etc. The determinants of tobacco use among the medical students are many and varied. Sociodemographic factors such as gender, and rural versus urban residence are related to tobacco. Factors affecting social norms were investigated including family influence and tobacco use by friends; curricular teaching; exposure to advertisements in the media and community; access and availability of tobacco products in the area of residence; concurrent alcohol and tobacco smoking; nicotine dependence; desire to quit tobacco use; levels of awareness about the harmfulness of

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tobacco and attitudes towards government tobacco control policies on access.

A total of 586 preclinical medical students participated in this study. Out of these, 564 students completed the questionnaires and 22 declined to participate, giving a total response rate of 96.2%. Four incomplete questionnaires were excluded from the final evaluation. Thus finally, 560 complete questionnaires were analyzed.

**Definitions of variables:**

**Current user:** Current user (smoker/chewer) was defined as one who had smoked/chewed tobacco products at least 2-5 or more times daily.

**Ex-User:** Ex-user was defined as a person who ever used tobacco in any form in his/her lifetime.

**Non-user:** Non-users was defined as those who never used tobacco in any form in his/her lifetime.

**Results**

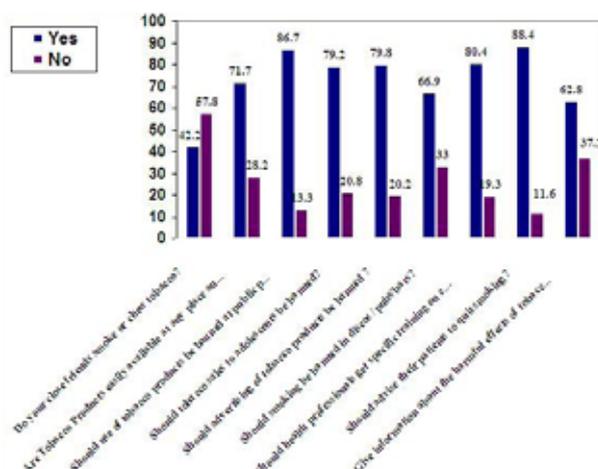
Responses from 560 students were included in the survey. Of these, 183(33%) were users and 377 (67%) participants did not have any habit i.e. never chewed tobacco nor smoked cigarettes in their life. Out of the 560 responders, 374 (66.8%) were males and 186 (33%) were females. Of these 374 males, 121(32.4%) were users and 253(67.6%) non-users. Of 186 females, 62(33.3%) were users and 124(66.7%) nonusers. Maximum participants 475 (84.8%) were between the age of 18 to 24 years. 432 (77%) students lived on-campus, of which 143 (33%) were tobacco users and 289 (67%) were non-users, while 128 (23%) lived off-campus; of which 40 (31.3%) used tobacco products and 88 (68.7%) were non-users. (Table 1). On the basis of habits, out of 183 users, 83(45.4%) were tobacco chewers, 59(32.2%) cigarette smokers and 41(22.4%) were addicted to both. Individual breakup of these participants is given in Table 1.

**Table 1. Bivariate Analysis of Tobacco Use among Medical Students**

Variables	Users	Non User	Total	
Sex	Male	121 (32.4)	253 (67.6)	374 (66.8)
	Female	62 (33.3)	124 (66.7)	186 (33.2)
Age (Years)	18 -24	165 (34.7)	310 (65.3)	475 (84.8)
	>24	18 (21.0)	67 (79.0)	85 (15.2)
Residence	On campus	143 (33.0)	289 (67.0)	432 (77.1)
	Off campus	40 (31.3)	88 (68.7)	128 (22.9)

**Table 2. Tobacco Use among Medical Students**

Use	Total (183)	Male (121)	Female (62)
<b>Tobacco Chewing</b>			
Current user	49 (59%)	28 (57.1%)	21 (42.8%)
Ex-user	34 (40.9%)	25 (73.5%)	10 (26.5%)
Total	83 (45.4%)	53 (64.0%)	30 (36.0%)
<b>Cigarettes</b>			
Current user	32 (54.2%)	19 (59.4%)	13 (40.6%)
Ex-smoker	27 (45.7%)	21 (77.7%)	6 (22.3%)
Total	59 (32.2%)	40 (67.7%)	19 (32.2%)
<b>Tobacco Chewing + Cigarettes</b>			
Current user	22 (53.6%)	17 (77.2%)	5 (22.7%)
Ex-users	19 (46.3%)	11 (57.9%)	8 (42.1%)
Total	41 (22.4%)	28 (68.2%)	13 (31.7%)



**Figure 1. Perceived Role of Medical Students Regarding Tobacco Control**

**Practice and Awareness of tobacco related products:**

A total of 236 (42.2%) participants started tobacco chewing and smoking because their close friends smoked and/or chewed tobacco. 402 (71.7 %) participants were of the view that tobacco products were easily available everywhere and this free access helped them in consuming cigarettes and chewing tobacco frequently. 486 (86.7%) agreed that it should be banned at public places. 443 (79.2%) students were of the view that sale of tobacco products to adolescents should be banned. 447 (79.8%) participants wanted that advertising of these products should be banned, while 375 (66.9 %) were of the view that tobacco products should be banned in discos/ pubs/ restaurants.

As health professionals, 495 (88.4%) knew that they should advise their patients to quit smoking and 352 (62.8%) were keen to give information about the harmful effects of tobacco products and insist on patients to quit tobacco products. 452(80.4%) participants were keen to have specific training on tobacco cessation strategies. (Figure 1).

**Limitations**

The participation rate was 96.2%. As this was a self-administrated questionnaires survey, there may be some probability of reporting and information bias. Considering the existing taboos about the tobacco use, female students are likely to under-report tobacco use.

**Discussion**

Tobacco is one of the most important causes of various diseases all over the world (WHO, 2002). Consumption of tobacco is a major challenge for health professionals and policy-planners. Warren et al recently reported that in 47 out of 80 global health professional students’ survey sites around the world, over 20% of the medical students currently smoked cigarettes; and in 29 of 77 sites, over 10% of the medical students currently used other tobacco products. 60% of health professional students recognized that they are role models in society and believed that they should receive training on counseling patients to quit the tobacco use (Warren et al., 2008). The percentage of

tobacco users in the present survey was, however, higher than the world median of 32.7%.

In this study, 560 responses of undergraduate medical students in their second year of study were analyzed. Out of these, 183 (33%) were addicted to tobacco, both smoking and smoke-free. Ramakrishna et al (2005) reported that 7% among the male first-year medical students from Orissa smoked and this increased to 16% in the fifth year. Singh et al (1989) also found that smoking rates increased from 17% to 43% between the first and fifth year while Sandell et al (1983) observed a similar trend, with lower overall prevalence rates of 4% in the first year medical students to 10% in the fourth and fifth years. However a survey of tobacco consumption in the final year students was not attempted in this study and is planned in the future. Recently, Rai et al (2008) reported that out of 2135 medical students who were surveyed at a medical festival, 6.1% used tobacco products.

In this study, 33% students, who were tobacco users, lived on-campus while 31.3% students who used tobacco lived off-campus. Thus there was minimal difference between the tobacco users who lived on-campus and off-campus and residential status did not make any difference in starting or continuing the habit. In this study, 42.2% students, who were addicted to tobacco, admitted that they were initiated into the habit because their close friends also used tobacco in any form. 79.8% students surveyed favored banning advertisements of tobacco in any form. Nawaz et al (2007) from Pakistan concurred with these findings and concluded that advertisements should be banned and the price of tobacco products should be increased. In this study, participants consumed tobacco both in smoking and smokeless forms (Paan, Gutka etc). On the other hand, in a similar study from neighboring Pakistan, chewing tobacco (Naswar) was found to be the most common form consumed (Imam et al., 2007). This could possibly be due to the fact that smoking tobacco is relatively socially unacceptable in a Muslim society, unlike a multi-cultural society like India.

In this study, out of 183 users, 53 (64%) male and 30(36%) female responders were tobacco chewers. On the other hand, a report from Calcutta showed that 49% male and 28% female medical students were current tobacco users (Naskar and Bhattacharya, 1999). Higher number of males as compared to females was also reported by Imam from Pakistan (Imam et al., 2007). Lei et al (1999) reported that in China, smoking among women medical students (1.8%) was much lower than in men (21.5%). In this study, 59.4% males and 40.6% females were current smokers while 77.7% males and 22.3% females were ex smokers. Stanikas et al (2005) also reported, in their study from Lithuania, that 19.4% males and 4.2% females were current smokers, while 15.9% males and 10.4% females were ex smokers.

The availability of tobacco products in attractive, inexpensive colored pouches on every road corner, including the college and associated hospitals, made accessibility of these products much easier. Ahmed et al reported similar findings (2006). In this study, 79% medical students were of the view that sale of tobacco products to adolescents should be banned and 86.7% were

in favor of banning the use of these products in public places.

Gupta et al (2003) suggested that doctors who themselves use tobacco are unlikely to counsel patients against using it. In this study, 88.4% students were of the view that health professionals served as role models for their patients and they should give advice and information regarding the harmful effects of tobacco. 80.4% of them were of the opinion that health professionals should get specific training in tobacco cessation program. Similarly, Prochaska et al (2007) from San Francisco reported that 74% of the medical students surveyed by them were ready to advise patients to quit tobacco product for health benefits and suggested the need of additional training and integration of cessation counseling into clinical rotations.

Stanikas (2005) reported that knowledge and extent of the tobacco problem in undergraduate medical students was not sufficient. Teaching about tobacco and related issues is generally ignored in the undergraduate medical course. It might be expected that the medical schools would provide an environment where students who are smokers would be motivated to give it up and those who are non-smokers would remain so. However, evidence from their study was found to be contrary. Schkrohowsky et al (2007) highlighted the need for medical schools to place greater emphasis on developing the knowledge base and skills required for future physicians to effectively guide their nicotine-dependent patients to stop smoking. A recent study from Kerala, South India also suggested that tobacco education program should be incorporated into the medical education curriculum (Mohan et al., 2006).

Positive student attitudes towards their role in tobacco chewing and smoking cessation were found in this study. There was an almost universally held view that doctors can have a significant impact on reducing tobacco chewing and smoking levels. Although most students perceived smoking intervention to be a worthwhile activity, they remained pessimistic about the ease with which patients smoking behavior could be changed. Positive smoking cessation knowledge changes may be readily achieved through training. However, specific smoking cessation training is needed for medical students to develop appropriate skills and strategies. Roche et al (1996) suggested that specific training in smoking cessation techniques is necessary to increase the intervention skills of medical students. Traditional teaching methods are ineffective in developing smoking cessation intervention skills. Enhanced teaching, of an appropriate nature, at undergraduate and postgraduate levels is needed. (Roche et al., 1996) Tobacco use in India, specially smokeless tobacco, has been on the rise vis-à-vis the more developed countries and the future physicians being exposed to the same social milieu, cannot be spared (Jandoo and Mehrotra, 2008). Physicians occupy a key position in the society and may lead smoking cessation program in the community. Urgent steps are required to be taken to educate medical students about tobacco usage so that they can serve as role models to their non-medical peers. It is vital that medical students - the future medical practitioners - have adequate knowledge of smoking related diseases and skills in smoking cessation.

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