

# Tobacco Use – Prevalence, Exposure, Attitudes, Behaviour/Cessation, Curriculum among Health Professional Students in Mangalore City, Karnataka, India

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**Background:** Tobacco use is one of the leading preventable causes of premature death, disease and disability around the world. Medical and Dental graduates have an important role to play in tobacco cessation and prevention. Hence, the present study was undertaken to assess the tobacco use prevalence, practice, attitudes towards policy making and curriculum in medical and dental interns (house surgeons).

**Methods:** A cross sectional questionnaire based survey was carried out among interns in all the medical and dental colleges of Mangalore city. Global Health Professional Students Survey (GHPSS) questionnaire given by the Center for Disease Control (CDC) was modified and adopted.

**Results:** In the present study among 512 interns, 263 and 249 interns belonged to dental and medical fraternity respectively. The prevalence of current smokers of cigarette was significantly higher among medical interns (32.1%) than the dental interns (20.2%), whereas no significant difference was evident amongst the dental (44.9%) and medical (41.8%) interns under the ever smokers category. A significant difference ( $p < 0.001$ ) in the attitude of dental and medical college interns was observed towards tobacco use, policy making and their knowledge about the curriculum.

**Conclusion:** This study shows health professionals lacking specific training in tobacco counseling, all of which indicate a need for including a standardized syllabus to train health professionals in medical and dental schools related to tobacco its ill-effects, cessation and policy making.

**Key Words:** Tobacco, Behaviour, Healthcare professionals, Mangalore city

## INTRODUCTION

Tobacco use is one of the leading preventable causes of premature death, disease and disability around the world. The detrimental effects of tobacco use on oral health are extensively documented in studies focusing on changes in the oral mucosa and periodontal tissues [1]. An estimated 4.9 million deaths occurring annually can be attributed to tobacco use. The 2013 World Health Assembly called on governments to reduce the prevalence of smoking by a third

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by 2025, which would prevent more than 200 million deaths from tobacco during the remainder of the century [2]. Prestigious health institutions, such as the International Union Against Cancer, the office of the Surgeon General of the United States of America, and the Royal College of Physicians in London, have stated clearly that health professionals, and physicians in particular, can have a significant influence (positive or negative) on the smoking habits of a community. Doctors who take their professional role seriously have the opportunity and responsibility to act on various levels to combat smoking, acting as role models, educators, therapists, and anti-smoking advocates [3].

Health professional can play a pivotal role in smoking cessation. Simple interventions, such as advising a smoker to quit, and more intensive interventions, such as counseling or pharmacological therapy, increase the odds of a smoker quitting the habit. Physicians can also serve as role models for healthy behaviors by not smoking. Smoke-free hospitals are important for the health of patients and health care workers, and can help with smoking cessation [4].

College life is an important transition period during which young adults begin to explore tobacco use. Many studies have reported that tobacco smoking is rising in young adult between the ages of 18-24 years as they are legal targets of tobacco industry marketing and increased the prevalence of smoking among college students. The study conducted in Asian countries like Pakistan, China and India also showed there was high prevalence of tobacco smoking among college students. These studies showed several factors like smoking habits of parents and friends, age, sex, socio-economic status, living with or without family members, father's occupation, faculty (medical and other subjects) etc attributed to cigarette smoking among the college students. Also the numbers of tobacco smokers are increasing rapidly because of the availability of cheap tobacco products, lack of strong tobacco control regulations, and weak enforcement of existing regulations [5]. A comprehensive education for doctors on the subject of smoking dependence is imperative, and the best possible time for this training is when they are students [6]. Hence aim of the study was to assess the tobacco use prevalence, exposure, attitudes, behaviour/cessation among medical and dental college interns in Mangalore city.

## MATERIALS AND METHODS

A cross sectional questionnaire based survey was carried out among interns in all the medical and dental colleges of Mangalore city, India. All participants were volunteers who gave informed consent. Permission to conduct the study was obtained from respective deans of all the dental and medical colleges. Ethical approval was obtained from ethics committee of Yenepoya University.

The study population comprised of medical and dental college interns aged between twenty one and twenty five years of age. To determine the prevalence, exposure, attitude, behavior among the dental and medical interns to within  $\pm 5\%$  with a 95% confidence interval along with 80% power for the study, it was estimated that a final sample must consist of at least four hundred and fifty subjects, additional 20% (90 subjects were added to compensate for non response). Except for one medical and one dental college which were relatively new and did not house the interns yet, rest of the medical and dental colleges was included in the study.

In this study Global Health Professional Students Survey (GHPSS) questionnaire given by the Center for Disease Control and Prevention (CDC) was modified and adopted. Thereafter the questionnaire was modified and a total of twenty six questions were included, its content validity of the questionnaire was done using Lawshe technique [7]. Pre-testing of the questionnaire was carried out on seventy subjects (10% of the study population). Those who were included at the pilot stage were not included for the main study. The questionnaires were self administered and collected after a period of three working days in each of the colleges by the principal investigator. Those interns who were not present during distribution and collection of the questionnaire were excluded from the study.

The World Health Organization (WHO), Centers for Disease Control and Prevention (CDC), and the Canadian Public Health Association (CPHA) developed the original questionnaire for Global Health Professional Survey (GHPS) in 2004 which consists of forty questions spread across six subheadings such as prevalence, exposure, attitudes, behavior/cessation, curriculum/training and demographics. This questionnaire was adopted with changes to accommodate for

regional variation and in total twenty six questions was framed under the above mentioned subheadings; information on demographic details like age; duration and course were also included in the questionnaire. Among the prevalence related seven questions, two of the questions enquiring about smoking within university campus were excluded from questionnaire since the COTPA (Section 6) act given in the year 2003 mandates ban of smoking in college (COTPA, 2003) university, and institutional premises and has been strictly implemented. Two questions on use of water-pipe (Narguileh) were replaced by enquiring about use of other tobacco related products such as guthka, snuff, bidi and cigar, abuse of which is highly prevalent in this part of the world [8]. All the four questions which formed part of assessing exposure to second hand smoke were included, among this one question assessed the awareness of health professionals about implementation of ban on smoking in college buildings and clinics. Of the ten questions pertaining to attitude four questions were combined, two of them pertaining to ban in smoking in public places which intended to elicit the same (*should smoking be banned in discos/bars/pubs? and should smoking be banned in restaurants?*) and the other two, health professionals role on advice (*should health professionals routinely advice their patients who smoke to quit smoking?, should health professionals routinely advice their patients who use other tobacco products to quit using these products?*). Among the eight questions related to behavior/cessation, four questions were combined, two of which are based on health professionals who smoke or use other tobacco products (*Are health professionals who smoke less likely to advice patients to stop smoking? Are health professionals who use other to-*

*bacco products less likely to advice patients to stop smoking?*). Curriculum/Training consisted of seven questions of which five questions were included in the study (as these questions satisfied the content validity ratio).

Data entry and statistical analysis was carried out in SPSS v17 software. Chi-Square test, paired t-test were the statistical test used.

## RESULTS

Completed questionnaires were received from 512 interns, representing a 73.4% response rate. Table 1 show the demographic profile of the interns who responded for the questionnaire, among the respondents 263 and 249 interns belonged to dental and medical fraternity respectively. The mean age of the interns was found to be  $23 \pm 0.7$  years.

Table 2 shows the prevalence of cigarette smoking and use of other tobacco products (bidi, ghutka, cigar etc) among the dental and medical college interns. The ever users of tobacco consists of those who have smoked a puff of cigarette or used other tobacco products at least once in life time. Current users of tobacco consist of those who continued to smoke cigarette or use other tobacco products at least once in last 30 days. The prevalence of current smokers of cigarette was significantly higher among medical interns (32.1%) than the dental interns (20.2%), whereas no significant difference was evident amongst the dental (44.9%) and medical (41.8%) interns under the ever smokers category, though the percentage of ever smokers was found to be higher among the dental interns. However, there wasn't any significant difference in the current prevalence and ever use of other tobacco, when compared

**Table 1.** Demographic status of the study subjects

	n	Mean	SD	Min	Max	%
Demographics:						
1) Age		23	$\pm 0.7$	22	25	
2) Dental interns	263	512				
3) Medical interns	249					
4) Dental interns	Male	71				26.9
	Female	192				73.1
5) Medical interns	Male	156				62.7
	Female	93				37.3

**Table 2.** Tobacco use prevalence among medical and dental college interns

Cigarette smokers prevalence:			
Current-cigarette smoking	YES	NO	Chi-square value, 9.541
Dental interns	53 (20.2%)	210 (79.8%)	p = 0.001
Medical interns	80 (32.1%)	169 (67.9%)	p < 0.05
Ever-cigarette smoking	YES	NO	Chi-square value, 0.500
Dental interns	118 (44.9%)	145 (55.1%)	p = 0.240
Medical interns	104 (41.8%)	145 (58.2%)	p > 0.05
Other tobacco products use prevalence:			
Current users- other tobacco products users (bidi, ghutka etc)	YES	NO	Chi-square value, 2.304
Dental interns	38 (14.4%)	225 (85.6%)	p = 0.065
Medical interns	25 (10.0%)	224 (90%)	p > 0.05
Ever users - other tobacco products (bidi, ghutka etc)	YES	NO	Chi-square value, 1.560
Dental interns	50 (19.0%)	213 (81%)	p = 0.107
Medical interns	37 (14.9%)	212 (85.1%)	p > 0.05

**Table 3.** Comparison of dental and medical interns (house surgeons) with respect to attitudes towards tobacco use and policy making and knowledge about curriculum in training scores by t-test

Qualification	Knowledge	
	Means	Std.Dev.
Dental	7.34	1.47
Medical	6.36	1.85
Total	6.87	1.74
t-value	6.6551	
p-value	p < 0.001**	

amongst the medical and dental interns (p > 0.05).

A significant difference (p < 0.001) in the attitude of dental and medical college interns was observed towards tobacco use, policy making and their knowledge about the curriculum (Table 3).

When exposure to secondary smoke was compared among dental and medical interns 40.3% of dental interns reported no exposure, as compared to 24.9% of medical interns. Among those exposed, when the number of days of exposure in a week where they live, was assessed, majority (24%) dental interns reported an exposure during all 7 days where as medical interns (26.5%) reported an exposure for 5-6 days. Similarly when exposure to secondary smoke outside of where they live was compared, majority (35.7%) of the dental interns reported an exposure during all 7 days, where as majority (29.7%) of medical interns reported having been exposed for 3-4 days in a week (Table 4).

## DISCUSSION

The World Health Organization (WHO), Centers for Disease Control and Prevention (CDC), and the Canadian Public Health Association (CPHA) developed the Global Health Professional Survey (GHPS) (World Health Organization, 2004) to collect data on tobacco use and cessation counseling among health professional students. Tobacco use among health professionals is of particular interest in the area of tobacco related surveillance since they are not only responsible for primary health care and education for tobacco related issues such as cessation and exposure to second-hand tobacco smoke, but are also role models in the community.

Findings of the study show that prevalence of current smokers among the medical and dental interns were 32.1% and 20.2% respectively, which is in line with previous studies that have been reported whereas the percentage of ever smokers in both the groups of interns were relatively higher; ever smokers among dental interns and medical interns being 44.9% and 41.8% respectively [4,9]. Tobacco use not only endanger the health of medical students, but is also known to negatively influence the health professionals to deliver effective anti-tobacco counseling when they start seeing patients [10]. The current use of other tobacco products by medical and dental interns was found to be low (10% and 14.4% respectively) compared to use of other tobacco products reported in previous studies [4].

Medical schools/colleges should be encouraged to provide

**Table 4.** Comparison of dental and medical interns (house surgeons) with respect to exposure to tobacco

Place of exposure	Course wise interns	0 days	1-2 days	3-4 days	5-6 days	All 7 days
Exposure to secondary smoke where they live	Dental (263)	106 (40.3%)	47 (17.9%)	40 (15.2%)	7 (2.7%)	63 (24.0%)
	Medical (249)	62 (24.9%)	21 (8.4%)	51 (20.5%)	66 (26.5%)	49 (19.7%)
Chi-square = 71.901, p < 0.00001						
Exposure to secondary smoke outside	Dental (263)	61 (23.2%)	51 (19.4%)	39 (14.8%)	18 (6.8%)	94 (35.7%)
	Medical (249)	43 (17.3%)	20 (8.0%)	74 (29.7%)	64 (25.7%)	48 (19.3%)
Chi-square = 67.866, p < 0.00001						

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 [11].

In the present study (19.7%) medical and (24%) dental interns reported exposure to secondhand smoke at place where they live, for all seven days, whereas 19.3% medical and 35.7% dental reported exposure to secondhand smoke outside, which was found to be low, compared to previous reports on exposure [9].

In the present study only about 65.6% of the interns supported a ban on smoking in restaurants/pubs and discos, which is comparatively less considering the previous studies [4]. About 84% of the interns reported a need for health professionals to routinely advice on quitting for patients who smoke, the findings of which are in line with existing studies [4,12]. Surprisingly, only 57.6% of respondents in this study found health professionals to play role model for patients and public, which was low in comparison to previous studies reason for which could not be ascertained [9]; just over half the interns 52.1% responded affirmatively to having received specific training on cessation techniques. Patients quitting smoking on advice of a health professional was agreed upon by 74.8% of the interns who responded.

India is a key battleground in the fight against the burden of global tobacco epidemic, with the incidence of oral cancer being highest in this part of the world [13]. India became a party to Framework Convention on Tobacco Control (FCTC) on 27th February 2005 and since has adopted many tobacco control policies and measures. India indigenously came up with a policy frame work (Act) prior to ratifying

with FCTC, Cigarettes and Other Tobacco Products Act (COTPA) 2003, to curb the tobacco related disease burden in the country, Section 4 and Section 6 of the act specifically emphasize on ban on smoking in public and educational institutions respectively. Doctors play a major role in influencing the patients to quit tobacco use as well as create awareness among the general public [14]. However previous studies have noted that a lack of tobacco related material in medical school curricula and physicians reporting difficulty delivering tobacco cessation care to patients due to lack of time, reluctance to get involved in personal issues and failure to use evidence based methods with patients. The medical GHPSS has shown global gaps in medical school training to provide effective patient tobacco cessation counseling to their future patients [9]. This study shows health professionals lacking specific training in tobacco counseling, all of which indicate a need for including a standardized syllabus to train health professionals in medical and dental schools related to tobacco its ill-effects, cessation and policy making.

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