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Original Research Article

Knowledge, Attitude and Perception towards Tobacco use among Dental and Engineering Undergraduates: A Cross-Sectional Comparative Survey

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Abstract: Tobacco use is a serious public health problem, the prevention and control of tobacco use has become an emerging issue of global significance and of central importance to oral health and Dental care. So, health professionals have a critical role in reducing the tobacco use in which dentists play a significant role. Thus, this study was conducted to assess and compare the Knowledge, attitude and perception towards tobacco use among dental and engineering students. A self-administered structured closed ended questionnaire to 440 Undergraduates was used. The chi-squared test was used to check differences between proportions. The unpaired t-test was used to check mean differences between the groups. Majority of the students in both the group had a fair level of knowledge related to tobacco regulations. Mean knowledge score between both the groups towards ill-effects of tobacco showed that dental students had good knowledge level as compared to engineering students (P=0.000). 145 (94.8%) dental students and 243 (84.4%) engineering students expressed a positive attitude towards advising smokers to stop smoking. Among dental students, 129(84.3%) perceive that attractive packaging of tobacco products is bad as compared to 181(62.8%) engineering students. Although attitude and perception among dental students towards tobacco cessation was better than engineering students, knowledge of tobacco regulations in both the groups was not satisfactory.
Keywords: Tobacco regulations, ill-effects, dental, engineering, attitude, perception.

INTRODUCTION

Young people form precious human resources in every country. World Health Organization (WHO) defines 'adolescence' as age spanning 10 to 19 yr, "youth" as those in 15-24 yr age group and these two overlapping age groups as "young people" covering the age group of 10-24 yr [1]. Adults include a broader age range and all those in 20 to 64 yr [1]. The National Youth Policy of India (2003) defines the youth population as those in the age group of 15-35 yr. As per the National Sample Survey (NSS), (2007-08) 32.8 per cent of this group attend educational institutions and 46 per cent (2004-05) are employed [1].

As per WHO, an estimated 2.6 million young people aged 10 to 24 year die each year and a much greater number of young people suffer from illnesses caused by 'behaviours' which hinder their ability to grow and develop to their full potential [2]. The behavioural patterns established during this developmental phase determine their current health status and the risk for developing some chronic diseases in later years [3]. Nearly two-thirds of premature deaths and one-third of the total disease burden in adults are associated with conditions or behaviours initiated in their youth (*e.g.* tobacco use, physical inactivity, high risk sexual behaviours, injury and violence and others) [3].

Among all, Tobacco use is a serious public health problem, the prevention and control of tobacco use has become an emerging issue of global significance and of central importance to oral health care [4]. To have a solid system in place for prevention and control of tobacco use, data regarding the knowledge and attitude of tobacco use among the youth is important. Thus, the study was conducted to assess the knowledge related to tobacco use, its adverse effects, the regulations and attitude towards tobacco cessation among dental and engineering undergraduates.

MATERIALS AND METHODS

The present study was a questionnaire based, cross-sectional comparative survey consisting of 288 engineering and 152 dental undergraduates (total=440). Convenience sampling method was used. Sample size calculation was done using G – power 3.0.10 where, t-test was used with $\alpha = 0.05$, effect size (d) = 0.3 and power $(1-\beta) = 0.91$. All the undergraduate students who agreed to participate in the survey were included. Informed consent was obtained from the participants

before the start of the study. The ethical clearance was obtained from Institutional Review Board of Krishnadevaraya College of Dental Sciences, Bangalore. The study involved a well-designed closed ended questionnaire for the purpose of the study to the participants. Cronbach's alpha was reported to be 0.72. Questionnaire had 4 sections with a total of 24 questions. The responses to all the questions were dichotomised into yes or no. The first section included 7 questions related to knowledge of regulations on tobacco. The second section had 9 questions related to ill-effects of tobacco. The third section consisted of 2 questions related to attitude towards tobacco use. Fourth section consisted of 6 questions related to perception towards use of tobacco. The participants were asked to fill the questionnaire and an average time of 10 - 15 minutes was taken to complete each questionnaire. Anonymity of the respondents was assured and no personal information was collected. The study was conducted for a period of 3 months from March 2016 to May 2016.

Statistical analysis:

The data collected was compiled using Microsoft Excel and was subjected to statistical analysis using SPSS 20.1. Descriptive and analytical statistics were done. The chi-squared test was used to check differences between proportions. Unpaired t-test was used to check mean differences between the groups.

RESULTS

A cross-sectional comparative study was carried out among 440 undergraduates that consisted of 288 were engineering and 152 were dental undergraduates (Figure-1). Gender-wise distribution showed that 58% were females and 42% were males (Figure-2).

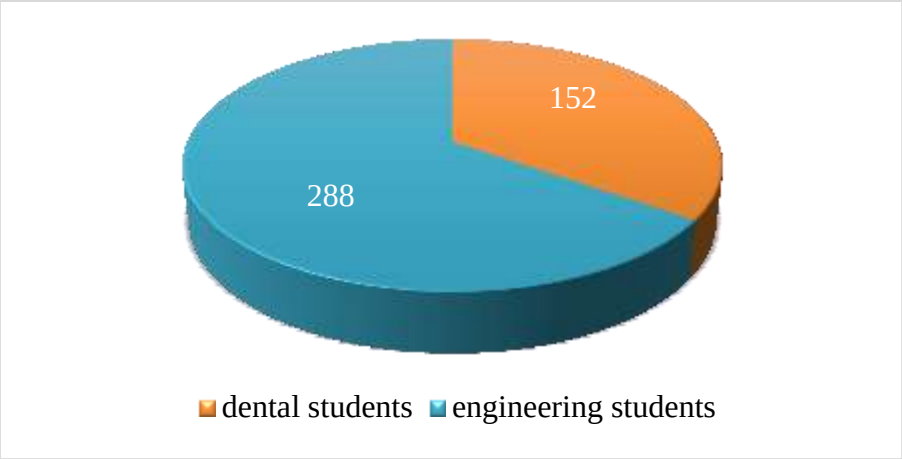

Fig-1: Distribution of Undergraduate Students

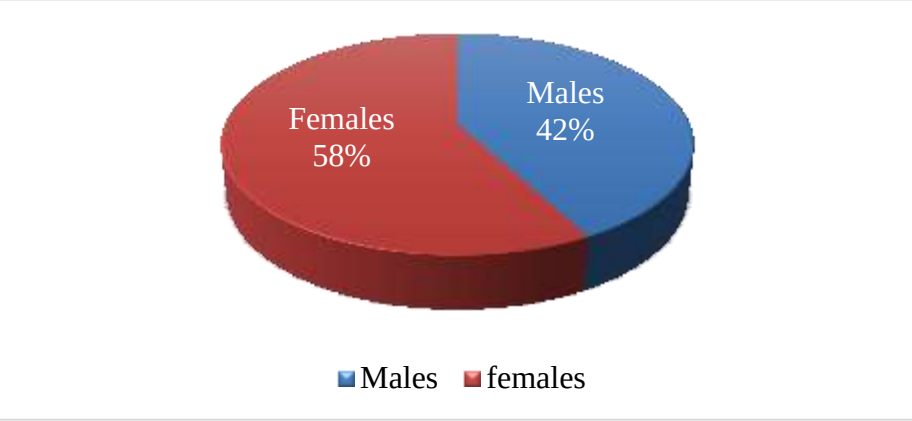

Fig-2: Gender - Wise Distribution of Students

It was seen that, engineering students were more aware regarding prohibition of selling and places. It was also observed that dental students were more aware regarding the aspects like teenagers cannot buy tobacco products directly (63.4%), warning boards of ill effects of tobacco is mandatory in public places and selling of loose cigarettes is illegal (64.7%). The differences was statistically significant. Less than 50% of the study population in both the groups had knowledge regarding presence of tobacco cessation centres. Also, more than 70% of the participants had a knowledge regarding requirement of license to sell tobacco products. (Table 1).

The comparison of responses related to knowledge of ill-effects of tobacco among engineering and dental undergraduates was assessed and it was observed that 95.4% dental students were aware about tobacco as the main cause of cancer in India as compared to 85.8% engineering students. Among dental students, 82.4% believed that smoking was the most common cause of preventable early disease and death as compared to 71.5% engineering student. It was observed that, 90.8% of dental students were aware that nicotine causes addiction as compared to 61.5% engineering students. All the differences were statistically significant. Among dental students, 96.7% were aware that more than 90 percent of cases of lung cancer are due to smoking as compared to 87.8% engineering students. This difference was statistically significant. Overall awareness among both groups was good. (Table 1). Among dental students, 71.2% had knowledge that smoking decreases the effectiveness of therapeutic drugs as compared to 90(31.2%) engineering students. This difference was statistically significant. Almost equal percentage of dental (82.4%) and engineering (81.6%) students felt that passive smoking increases the risk of heart attack. Among two groups, 142(92.8%) dental and 231(80.2%) engineering students were aware that chewing Tobacco causes oral cancer. This difference was statistically significant.

Table-1: Comparison between responses towards Knowledge of Regulations and ill-effects of Tobacco among Engineering and Dental Undergraduates

Domain	Item	Engineering Students Correct n(%)	Dental Students Correct n(%)	χ^2 -Value	p-Value
Knowledge of Regulations of tobacco	Selling and using of tobacco products in public places is prohibited	222 (77.1)	98 (64.1)	8.522	**0.004**††
	Advertisement of all tobacco products is prohibited	179 (62.2)	76 (49.7)	6.381	**0.012**†
	Teenagers cannot buy tobacco products directly	131 (45.5)	97 (63.4)	12.839	**0.000**††
	Warning boards of ill effects of tobacco is mandatory in public places	188(65.3)	122 (79.7)	10.006	**0.002**††
	Selling of loose cigarettes is illegal	155(53.8)	99(64.7)	4.849	**0.028**†
	Tobacco cessation centres are present in Bangalore	128(44.4)	62(40.5)	0.627	0.429
	License to sell tobacco products is required	225 (78.1)	113 (73.9)	1.017	0.313
Knowledge of ill-effects of tobacco	Tobacco is the main cause of cancer in India	247(85.8)	146(95.4)	11.362	**0.003**††
	Smoking - the most common cause of preventable early disease and death.	206(71.5)	126(82.4)	6.293	**0.012**†
	Nicotine causes addiction	177(61.5)	139(90.8)	42.498	**<0.001**††
	More than 90 percent of cases of lung cancer are due to smoking	253(87.8)	148(96.7)	9.563	**0.002**††
	Tobacco smoke triggers an attack in asthmatic patients	256(88.9)	141(92.2)	1.188	0.276
	Smoking decreases the effectiveness of therapeutic drugs	90(31.2)	109(71.2)	64.535	**<0.001**††
	Passive smoking increases the risk of heart attack	235(81.6)	126(82.4)	0.038	0.845
	Smoking during pregnancy increases the chances of having a child with abnormalities	241(83.7)	138(90.2)	3.511	0.061
	Chewing Tobacco causes oral cancer	231(80.2)	142(92.8)	12.167	**<0.001**††

* chi-square test was used

† significant at $p < 0.05$; †† significant at $p < 0.01$

The comparison of knowledge score of ill-effects of tobacco between the two groups was assessed, it was seen that 87.6% of dental students displayed a good level of knowledge related to ill-effects of tobacco as compared to 59.7% of engineering students. The responses to knowledge of regulations of tobacco and ill-effects of tobacco were categorized into three for the purpose of analysis based on the scores obtained i.e. poor (0-3), fair (4-6) and good (7-9). Regarding the knowledge on regulation of tobacco, majority of the students in both the groups had a fair level of knowledge with the highest among the dental students (62.1%). The comparison of knowledge score between both the groups towards ill-effects of tobacco exhibited that, the dental students displayed better knowledge (Table 2 & Figure 3, 4).

Table-2: Comparison of Knowledge Score between the two groups

Domain	Score	Engineering Students n (%)	Dental Students n (%)
Tobacco Regulation	Poor	25(8.7)	12(7.8)
	Fair	**167(58)**	**95(62.1)**
	Good	96(33.3)	46(30.1)
Ill-effects of Tobacco	Poor	15 (5.2)	4(2.6)
	Fair	101(35.1)	15(9.8)
	Good	**172(59.7)**	**134(87.6)**

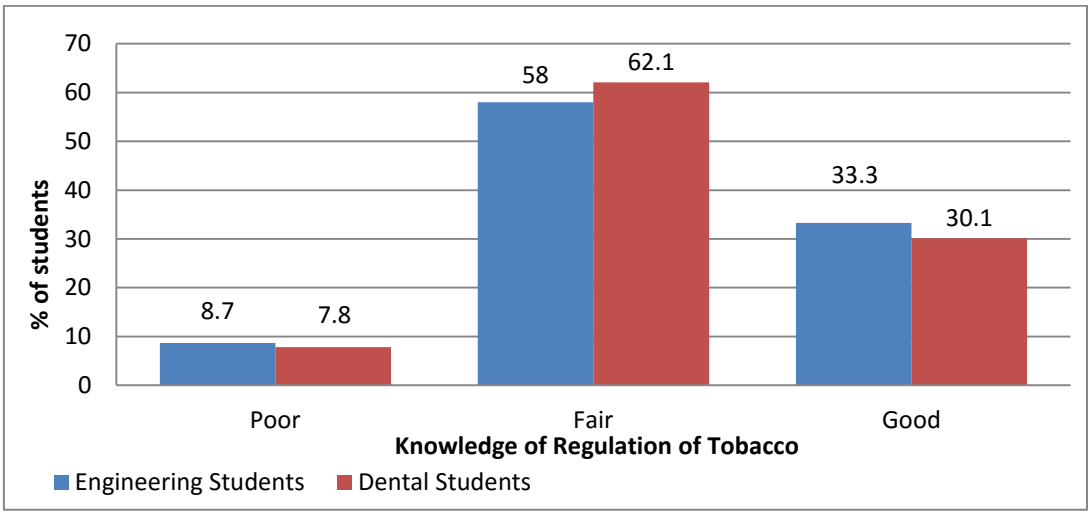

Fig-3:Comparision of Knowledge of Regulation of Tobacco between the two groups

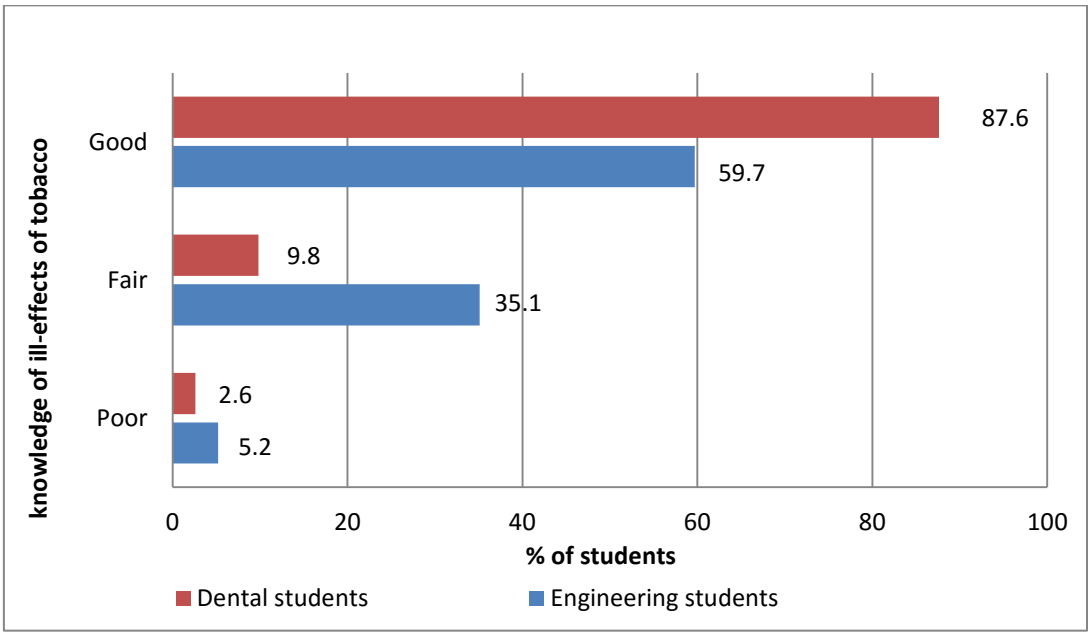

Fig-4:Comparison of Knowledge of Ill-Effects of Tobacco between the two groups

The comparison of attitude towards tobacco use between the two groups was assessed and it was observed that 94.8% dental students and 84.4% engineering students expressed a positive attitude towards advising smokers to stop smoking. Also, it was seen that majority of both the study populations 87.6% dental students and 73.3% engineering students expressed a positive attitude towards participating actively in anti- tobacco programs at community level. This difference was statistically significant (Table 3).

Table-3: Comparison of Attitude towards Tobacco use between the two groups

Questions	Positive Attitude		χ^2 Value	P-Value*
	Engineering Students n (%)	Dental Students n (%)		
1. Advise smokers to stop smoking	243(84.4)	145(94.8)	10.213	**0.001**††
2. Participating actively in anti-tobacco programs at community level	211(73.3)	134(87.6)	12.028	**0.001**††

When the comparison of perception towards tobacco use between the two groups was assessed, it was observed that 84.3% of dental students perceive that smoking neither helps to concentrate better nor enhance social communication as compared to 60.8% of engineering students. Among dental students, 84.3% perceive that attractive packaging of tobacco products is bad as compared to 62.8% engineering students. The differences were statistically significant. Almost equal percentage of students in both the groups consider that stoppage of illegal trade of tobacco products is the need of the hour and also contents of tobacco products and tobacco smoke should be regulated and ingredients should be disclosed (Table 4).

Table-4: Comparison of Perception towards Tobacco use between the two groups

Sl.No	Questions	Engineering Students Correct n(%)	Dental Students Correct n(%)	χ^2 Value	P-Value*
1.	Smoking does not helps to concentrate better and enhance social communication	175(60.8)	129(84.3)	25.876	**<0.001**††
2.	Tobacco cessation centres helps in quitting tobacco	224(77.8)	129(84.3)	2.672	0.102
3.	Tobacco counselling is effective tool in quitting tobacco	248(86.1)	139(90.8)	2.088	0.148
4.	Attractive packaging of tobacco products is bad	181(62.8)	129(84.3)	22.050	**<0.001**††
5.	Stoppage of illegal trade of tobacco products is the need of the hour	216(75)	121(79.6)	0.925	0.336
6.	Contents of tobacco products and tobacco smoke should be regulated and ingredients should be disclosed	244(84.7)	125(81.7)	0.668	0.414

DISCUSSION

The present study was conducted to compare the knowledge related to regulations on tobacco use, ill-effects of tobacco, attitude towards tobacco use and perceptions among Engineering and dental students towards tobacco use. It is believed that tobacco industry aims at college students with targeted marketing efforts and special promotions in the surroundings of college campuses [5]. In the present study, the awareness regarding regulations of tobacco use was assessed among engineering and dental undergraduates and the mean knowledge score was compared, as literature has revealed paucity in this aspect. It was observed that both the groups had almost fair knowledge about the legislation of tobacco use (Table 1). This is in corraboration with the study conducted by Vadvadgi *et al*. [5] and Chaudhary *et al*. [6]. According to the World Health Organization, tobacco kills more than five million people in the world, which is more than the mortality due to tuberculosis, HIV/AIDS, and malaria combined. In India, it is estimated that one million deaths occur due to tobacco every year. If left unchecked, it is projected that the mortality due to tobacco consumption will rise to 1.5 million by 2020 [7]. In the present study, when the awareness regarding ill effects of tobacco was assessed, it was observed that dental students had better knowledge when compared to engineering students (Table 1). This may be due to the

interaction of dental students with the patients suffering from adverse effects of tobacco during their curriculum. This finding was similar to a study conducted by Jajja *et al*. [8] and Awan *et al.* [9]. However, it was in contrast with the study conducted by Alexopoulos EC et al [10], where the comparison was done between medical and non-medical students. In the present study, the attitude of engineering and dental students towards advising the smokers to stop the habit and towards participating actively in anti-tobacco programs was assessed. It was found that, 94.8% of dental students and 84.4% engineering students were willing to advise smokers to stop the habit (Table 3). This was in corraboration with the study conducted by Murugaboopath *et al*. [11]. 87.6% of dental students exhibited positive attitude to participate actively in anti-tobacco programs (Table 3) as compare to the study conducted by Vanobbergen *et al*. [12]. In the present study, 84.3% of dental students consider that tobacco cessation centres helps in quitting tobacco as compared to 77.8% of engineering students. 90.8% of dental students perceive that tobacco counselling is an effective tool in quitting tobacco as compared to 86.1% engineering students (Table 4). The finding was in contrast with the study conducted by Murugaboopathy *et al*. [11], where 68.9% of dental undergraduates believed that tobacco counselling is effective in quitting tobacco. Research exploring young people's perceptions of tobacco packaging found that youth appear to be attracted to tobacco packaging design. Branded packaging presented positive user imagery and functional and emotional benefits to young people. Conversely plain cigarette packaging was perceived as unattractive, reduced emotional attachment to the packaging and enforced negative smoking attitudes among young people [13]. In the present study, it was found that 84.3% of dental students perceive that attractive packaging of tobacco products is bad as compared to 62.8% engineering students (Table 4). This difference was statistically significant. To mark World No Tobacco Day 2015, the theme was "Stop Illicit Trade of Tobacco. According to WHO, illlicit tobacco products hook young people into tobacco experimentation and use because they are more affordable. Such illicit products also mislead young tobacco users by not displaying health warnings and sometimes involving children in illegal selling activities. In the present study, almost equal percentage of students in both the groups consider that stoppage of illegal trade of tobacco products is the need of the hour and also contents of tobacco products and tobacco smoke should be regulated and ingredients should be disclosed (Table 4). Certain limitations must be considered when interpreting the results. The questionnaire was limited to few strategies of tobacco in order to increase compliance and hence could not cover all aspects. Youth sets the stage for a healthy life and reduces the likelihood of health problems in future. Therefore, awareness regarding the regulations and adverse effects of tobacco ought to be created through health education programmes.

CONCLUSION

In the present study, although attitude and perception among dental students towards tobacco cessation was better than engineering students, knowledge of tobacco regulations in both the groups was not satisfactory. Dental students had a better knowledge related to ill effects of tobacco as compared to engineering students.

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