

# Knowledge, attitude, and practice about barriers to tobacco intervention services among dental students in Chennai, Tamil Nadu

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## ABSTRACT

According to the World Health Organization, tobacco is the single greatest cause of preventable death globally. Current trends show that more than 8 million people will be associated with tobacco use worldwide by 2030. The previous studies show that tobacco usage is high in Chennai. Dentists can play an integral role in tobacco counselling. However, they lack confidence, and there is inadequate training for them to counsel tobacco users. Thus, a study was planned to assess dental student barriers to tobacco intervention services. The aim is to assess the knowledge, attitude, and practices regarding barriers tobacco intervention services among dental students in Chennai. This was a cross-sectional study which involved dental students from various dental colleges in Chennai. Following simple random sampling, 256 dental students were selected. A self-administered questionnaire was distributed to the selected number of dental students in Chennai, and descriptive data were analyzed using SPSS software (Version 20.0). The study sample consisted of 256 subjects, of which 50 (20%) were males and 206 (80%) were females. A statistically significant correlation was found in between the knowledge and attitude score (0.000). Conclusion: Despite having good knowledge of associated health risks with tobacco use and positive attitudes toward giving smoking cessation advice, clinical dental students perceived barriers.

**Keywords:** Dental students, tobacco, tobacco intervention services, barriers

## Introduction

Tobacco use is a serious public health challenge in several regions of the world. According to the World Health Organization (WHO), tobacco is the single greatest cause of preventable death globally. Similarly, the United States centers for disease control and prevention describe tobacco as “the single most important preventable risk to human health in developed countries and an important cause of premature death worldwide.”<sup>1</sup>

Given the consequences of tobacco use on dental and oral tissues and greater perceived dental needs of the current smokers compared to non-smokers,<sup>2</sup> dentists can play a vital role in the cessation process. Studies have shown that dentists and other

clinical members of the dental team are ideally situated to counsel patients against tobacco use and even just brief and simple advice from health professionals can substantially increase smoking cessation rates.<sup>3-6</sup>

Key factors that hinder the provision of cessation services include provider’s lack of confidence or preparedness due to lack of tobacco cessation knowledge and training.<sup>12</sup> Many health professionals emphasized the importance of tobacco cessation training in dental schools as one of the major facilitators for successful tobacco cessation services in future clinical settings.<sup>13-51</sup> Thus, there was a need to assess the barriers associated with the provision of tobacco intervention services so that effective counseling can be given.

Recent studies show that tobacco use among school children in Chennai is high. Thus, the current study assesses the dental students in Chennai regarding perceived barriers and related factors.

## Aim

The aim of this study is as follows:

- To assess the knowledge, attitude, and practices regarding barriers to tobacco intervention services among dental students in Chennai.

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## Objectives

The objective of this study is as follows:

- To assess the perceived or real barriers associated with provision of tobacco intervention services.
- To assess the attitudes of dental students toward tobacco intervention services.
- To assess the levels of practices of dental students regarding tobacco intervention services.

## Materials and Methods

The present study was designed to assess the knowledge and attitude about dental student's barriers to tobacco intervention services in Chennai. There are about 12 dental colleges in Chennai producing an estimated thousand dental graduates each year. The previous studies show tobacco usage is high in Chennai. With growing IT companies, cigarette smoking is increased among the population due to peer pressure and stress.<sup>[6]</sup> Furthermore, tobacco companies are targeting school children to increase their sales. Dentists can play an integral role in tobacco counseling. They should offer assistance to the tobacco users to quit. A list of dental colleges at Chennai registered with Dental Council of India was obtained. Following simple random sampling, 256 dental students were selected. Before the start of the study, ethical clearance was obtained from the Institutional Ethics Committee, Saveetha University. Written informed consent was obtained from the study participants. Data collection was scheduled in June 2016.

A list of dental colleges in Chennai was obtained from the directory of Dental Council of India. Following a simple random sampling, 5 dental colleges were selected, of which 50-52 students were randomly selected from each college to get a total of 256. After a brief introduction on the purpose and intent of the study with the help of information sheet, questionnaires were distributed to the dental students, and filled questionnaires were collected.

## Statistical analysis

Data were entered in Microsoft Excel spreadsheet and independent *t*-test, and one-way ANOVA and Pearson coefficient were analyzed using SPSS software (Version 20.0).

## Results

Figure 1 depicts the distribution of study subjects. The study sample consisted of 256 subjects, of which 50 (20%) were males and 206 (80%) were females.

Figure 2 depicts the comparison of mean knowledge, attitude, and practice scores among the study subjects. The mean knowledge score among males and females was 24 and 23.9, respectively. The mean attitude score was found to be high in males (32.7) when compared to females (31.78); however, the mean practice score of females (21.78) was found to be higher than males (20.06).

Figure 3 depicts students intending to provide tobacco intervention services in the future. About 180 students (70%) were planning to

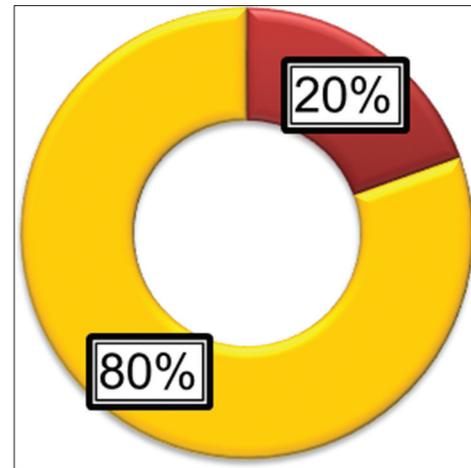


Figure 1: Distribution of study subjects



Figure 2: Comparison of mean knowledge, attitude, and practice scores

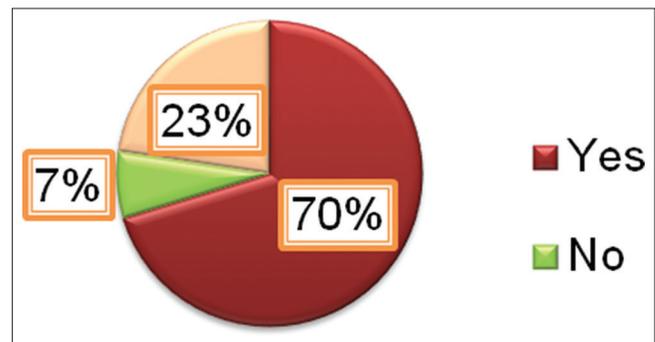


Figure 3: Students intending to provide tobacco intervention services in future

provide tobacco intervention services in the future, 18 students (23%) were not planning, and 58 students (7%) remain undecided.

Table 1 depicts the correlation between knowledge, attitude, and practice of barriers to tobacco intervention services among dental students. A statistically significant correlation was found between the knowledge and attitude score (0.000).

Table 2 depicts a comparison of mean knowledge, attitude, and practice based on year of the study. It was found that the mean knowledge of 3<sup>rd</sup> years is 18, final year is 24.5, intern is 23.7,

respectively, mean attitude of 3<sup>rd</sup> year is 33, final year is 31, intern is 32.7, respectively, and mean practice of 3<sup>rd</sup> year is 24.4, final year is 20.8, and intern is 21.8, respectively.

Table 3 depicts mean scores of knowledge attitude and perception between the genders. The mean knowledge score of males and females was 24 and 23.9, respectively, and it was not found to be statistically significant *P* value (0.047).

The mean attitude score of males and females was 32.7 and 31.7, respectively, and it was not found to be statistically significant *P* value (0.47).

The mean practice score of males and females was 20 and 21.7, respectively, and it was found to be statistically higher in females *P* value (0.002).

**Table 1: Correlation between knowledge, attitude, and practice of barriers tobacco intervention services among dental students**

Variable	Knowledge score	Attitude score	Practice score
Knowledge score			
Correlation		0.37	0.101
<i>P</i> value		0.000	0.108
Attitude score			
Correlation	0.37		0.016
<i>P</i> value	0.000		0.8
Practice score			
Correlation	0.101	0.016	
<i>P</i> value	0.108	0.8	

\*Pearson's correlation, Significant *P*<0.05

**Table 2: Comparison of mean knowledge, attitude, and practice according to year of the study**

Year	Knowledge	Attitude	Practice
Third			
Mean	18.6	33	24.4
N	5	5	5
SD	±5.6	±3.3	±5.4
Final			
Mean	24.5	31.04	20.8
N	114	114	114
SD	±3.7	±4.7	±6.3
Intern			
Mean	23.7	32.7	21.8
N	137	137	137
SD	±3.4	±5.1	±6.2
Total			
Mean	23.9	31.9	21.4
N	256	256	256
SD	±3.7	±5.01	±6.2

SD: Standard deviation

**Table 3: Comparison of mean scores of knowledge, attitude, and practice between genders**

Variable	Mean	F	Significance
Knowledge	23.98±3.73	7.02	0.001
Attitude	31.97±5.01	3.60	0.029
Practice	21.44±6.29	1.21	0.299

Table 4 depicts a comparison of mean scores of knowledge, attitude, and practice between years of the study. The mean knowledge of students between years of the study was 23.9 ± 3.7, and it was found to be statistically significant *P* value (0.001), respectively.

The mean attitude score of students between years of the study was 31.9 ± 5.01, and it was found to be statistically significant *P* value (0.029), respectively.

The mean practice score of students between years of the study was 21.4 ± 6.2, and there is no statistical difference in the mean practice score between year groups *P* value (0.299).

## Discussion

Dentists are the essential health-care providers of tobacco intervention services. A dentist who recognizes a patient as a smoker has a duty to inform the patient of the options available to them. Tobacco use impacts on oral and dental tissues, greater perceived need of current smokers compared to non-smokers, and increased duration and frequency of patient visit allow dentists to provide cessation services consistently. Furthermore, dentists should be able to anticipate smoking-associated risk factors in adolescents and provide necessary preventive services to children and parent. The dentist should use a three-step approach of Ask, Advice and refer to quit lines after assessing willingness. Numerous studies have been undertaken in developed countries to assess dentist knowledge and attitude regarding barriers to tobacco intervention services. Effective tobacco cessation counseling is possible only when the barriers to the intervention services were identified and removed. Hence, a study was conducted to assess the knowledge, attitude, and practice among dental students regarding their barriers to tobacco intervention services. This questionnaire study was carried out to highlight the level of knowledge and practices regarding barriers to tobacco intervention services among dental students in Chennai. After getting prior permission from the head of the institutions, 256 dental students were randomly selected from five dental colleges, and after brief introduction about the intent of the study and inform consent, questionnaire forms were distributed. Of these, 50 (20%) were males and 206 (80%) were females.

180 students (70%) were planning to provide tobacco intervention services, 18 students (23%) were not planning, and 58 students (7%) had not yet decided. 12 (4.7%) students spend <1 min, 54 (21.1%) spend 2 min, 69 (27%) spend 3 min, and 121 (47.3%) spend 4 or more minutes 26 (10.2%) students suggested web-based learning,

**Table 4: Comparison of mean scores of knowledge, attitudes and practice between years of the study**

Variable	Gender	N	Mean	<i>P</i> value
Knowledge score	Male	50	24	0.473
	Female	206	23.9	
Attitude score	Male	50	32.7	0.471
	Female	206	1.7	
Perception score	Male	50	20.06	0.002
	Female	206	21.7	

70 (27.3%) students suggested computer-based training and learning, 124 (48.4%) suggested objective structured clinical examination, and 36 (14.1%) suggested didactic lectures. 175 (68.4%) students never used tobacco, 49 (19.1%) were current users of tobacco, and 32 (12.5%) were formal users.

A statistically significant correlation was found in between the knowledge and attitude score (0.000); there was a significant difference in attitude depending on the level of belief in effectiveness ( $P < 0.05$ ). In fact, the more students believe in the effectiveness of tobacco cessation programs, the more likely they are to have positive attitudes toward these programs. It is all the more reason why the effectiveness of tobacco programs should be emphasized in the dental curriculum. The mean knowledge score of males and females were 24 and 23.9, respectively, and it was not found to be statistically significant  $P$  value (0.047). The mean attitude score of males and females was 32.7 and 31.7, respectively, and it was not found to be statistically significant  $P$  value (0.47). The mean practice score of males and females was 20 and 21.7, respectively, and it was found to be statistically higher in females  $P$  value (0.002).

There is a statistical significance in the mean knowledge score between year groups ( $P = 0.001$ ). There is also statistical significant difference in the mean attitude between year groups ( $P = 0.029$ ). There is no statistical difference in the mean practice score between year groups ( $P = 0.299$ ). There is significance ( $P = 0.001$ ) in the knowledge between 3<sup>rd</sup> year and final year and also significance ( $P = 0.006$ ) in the knowledge between 3<sup>rd</sup> year and intern. There is significance ( $P = 0.024$ ) in the attitude between intern and final year. These results were found to be similar with a study conducted by Clareboets *et al.*<sup>[7]</sup> among 181 clinical dental students at Cardiff University School of Dentistry. About 89% of students responded. Students had good knowledge of the associated health risks with tobacco use. Students with greater clinical experience had higher attitude in providing counseling  $P$  value (0.03). Furthermore, similar results were observed in a study conducted by Horowitz *et al.*<sup>[8]</sup> who surveyed about 163 students from the Medical University of

South Carolina. About 89% of students agreed that dentists should be trained to provide tobacco cessation education. A significant association was observed in the study between attitude score and year of study.

## Conclusion

Despite having good knowledge of associated health risks with tobacco use and positive attitudes toward giving smoking cessation advice, clinical dental students perceived barriers. The challenge is therefore to address motivation and concern that govern student's behavior. Studies evaluating tobacco counseling intervention recommend a combination of pharmacotherapy with behavioral interventions. Pharmacotherapy has been shown to double or triple quit rates. Expansion of tobacco counseling program needs to be implemented along several lines.

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