

**Knowledge, Attitude and Practice of Tobacco Cessation Interventions among Indian Dental Professionals in an Institutional Set up: A Pilot Study****Mansi Yalamalli<sup>1</sup>, R. Murali<sup>2</sup>, A. Shamala<sup>1</sup>, Roomani Srivastava<sup>3</sup>**<sup>1</sup>Reader, Department of Public Health Dentistry, Krishnadevaraya College of Dental Sciences, Bangalore, India;<sup>2</sup>Professor and Head, Department of Public Health Dentistry, Krishnadevaraya College of Dental Sciences, Bangalore, India; <sup>3</sup>Post Graduate Student Department of Public Health Dentistry, Krishnadevaraya College of Dental Sciences, Bangalore, India.**Address for Correspondence:**

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**ABSTRACT:**

**Background:** Effective tobacco cessation practices are the need of the hour. India has a growing dental workforce with a steady increase of dental graduates from various government aided & private dental colleges where patients are routinely seen for diagnosis and treatment. This pilot study aimed to gain a clear reflection of current practices of tobacco cessation counseling in an institutional setting by assessing the knowledge, attitude, practice and confidence levels of the teaching faculty, post graduate students and interns in a dental college and hospital.

**Methods:** A cross sectional survey conducted in January 2016, utilizing a self-administered, structured, closed ended validated questionnaire (Cronbach's Alpha = 0.80) assessed the knowledge, attitude, practice and confidence levels regarding tobacco cessation counseling of the teaching faculty, post graduate students and interns. Response rate was 60 % resulting in a sample size of 94. Data was analyzed using SPSS, percentages were calculated and differences among the sub groups were analyzed using Chi square test.

**Results:** Majority of the respondents had average knowledge and positive attitude, practice levels were low for Assess, Assist, Arrange components of the 5 A's Model. Less than 10 % had received formal training. Relationship between practice and confidence scores was statistically significant.

**Conclusion:** The study reported average knowledge, positive attitude and poor practice of tobacco cessation interventions. Implementation of evidence based teaching and patient based training in dental colleges is the way forward to improve tobacco cessation practices at the institutional level in India.

**Keywords:** Dental education, Dental Faculty, India, Tobacco, Tobacco Cessation.

**INTRODUCTION**

Tobacco use remains one of the leading causes of preventable illness, disability, and premature death in the world. It kills nearly 6 million people each year worldwide. India's tobacco problem is very complex, with a large use of a variety of smoking forms and an array of smokeless tobacco products. Many of these products are manufactured as cottage and small-scale industries using varying mixtures and widely differing processes of manufacturing.<sup>1</sup>

The Global Adult Tobacco Survey India 2009-2010 revealed that about 34.6% of the total population use tobacco of which 20.6 % use smokeless tobacco, 8.7% use Smoking tobacco

and 5.3% practice both forms. The average age at initiation of the habit of using tobacco is 17.9 years. Despite the grim scenario that was unveiled by the survey, what is encouraging is 5 in 10 smokers/smokeless tobacco chewers want to quit.<sup>2</sup>

Data suggests that most smokers are interested in quitting, clinicians and health care systems are in frequent contact with smokers, and clinicians have high credibility with smokers.<sup>3</sup> Dentists meet patients on a routine basis for dental care and interact with them at regular intervals for relatively longer periods as compared to physicians due to the pattern & nature of dental care. Thereby, in most cases,

the dentist patient relationship is genial and personal. This situation places the dentist in an advantageous position where the smoking patient is most likely going to accept the support and advice provided by the dentist even if there are no pressing and immediate smoking related health issues.

It has been reported that dentists who implement an effective smoking cessation program in their practices can expect to achieve quit rates up to 10-15 percent each year among their patients who use tobacco. These rates will rise further if additional help is harnessed for smoking cessation counseling by referral to smoker's clinics and by appropriate use of pharmacotherapy.<sup>4</sup>

There has been a steady increase in the number of dental graduates from the various Government aided & private dental colleges in India and the dentist population ratio has seen marked improvement in the recent years.<sup>5</sup> There is immense potential to utilize this growing dental work force to stem the habit of tobacco use among the healthy adult population in India. This can be achieved by incorporating tobacco cessation counseling into the dental curriculum and also inculcating a habit of practicing it as a chair side routine procedure with all patients by the faculty, interns, postgraduate and undergraduate students in the dental institution. Dental faculty play an important role in shaping the clinical and theoretical skills of the students and have to lead by example, in an ideal scenario. A number of studies assessing the knowledge, attitude and practice of tobacco cessation activities have been conducted in India on undergraduate dental students. However, a clear reflection of current practices of tobacco cessation counseling in an organizational setting can be better gained by assessing the existing level of knowledge, attitude and practice of cessation procedures, among the teaching faculty, post graduate students and the interns who spend more time with patients on a daily basis. Additional factors like training received in tobacco

counseling, level of confidence in provision of counseling, and perceived barriers could also have an impact on practice. Hence this pilot study aimed at assessing the knowledge, attitude, practice and confidence levels of faculty, postgraduate-students and interns regarding tobacco cessation counseling in a dental college and hospital setting in Bangalore. It also aimed to gain an insight into the perceived barriers that hindered clinical practice of tobacco cessation in the same population.

## **MATERIALS & METHOD**

A cross sectional study was conducted among all the interns, postgraduate-students and the teaching faculty from various departments excluding Department of Pedodontics in a dental institution, Bangalore in January, 2016. Ethical clearance was obtained from the Institutional Review Board (IRB Protocol no. : KCDS/1966/2015-16) and informed consent was obtained from each of the participants. A self-administered questionnaire was designed to assess the knowledge, attitudes & practice among the study subjects regarding tobacco cessation counseling. Questionnaire items were drawn from validated instruments used in prior studies to assess the knowledge, attitudes, and practice patterns of health care providers and staff in relation to smoking cessation and these were modified to suit this study.<sup>6, 7</sup> Some questionnaire items were formulated with reference to the clinical practice guidelines on treatment of tobacco use and dependence by the U.S. Department of Health and Human Services.<sup>8</sup> The questionnaire was tested on a smaller sample and required modifications were made in the questionnaire accordingly. These responses were excluded from the final analysis.

The reliability of the questionnaire was evaluated by pre-testing the questionnaire. Internal consistency measurements were carried out and the Cronbach's alpha coefficient was found to be 0.80

The final questionnaire consisted of 3 sub-sections. Section-1 included basic information of the study subjects like age, gender, designation and the department. Section-2 evaluated knowledge (26 questions) related to the harmful effects of smoking and the process & methods of smoking cessation, along with measuring attitudes (12 questions) related to smoking interventions on a five-point Likert scale ranging from strongly agree to strongly disagree. It also assessed current practices (17 questions) and factors that most often hinders provision of smoking interventions in the work setting. Section-3 assessed the confidence in providing cessation interventions, with practices being based on the 5 A's model, using a 3-point-scale 'not at all confident', 'a little confident', and 'confident'. Knowledge, attitude, practice and confidence, scores were constructed for each respondent based on responses given in the questionnaire.

All the faculty members, post graduate students and interns of the institute were included in the study except for the faculty and post graduate students from the department of pedodontics. This was done because their interaction with individuals who use tobacco is very limited or nil. This resulted in an expected sample size of 156 study participants. Permission to conduct the study was obtained from the college authorities. A list of all the teaching faculty, post graduate students and interns was obtained from the administrative office of the institution. Before administering the questionnaire, the study subjects were briefed about the objectives of the study and were informed that their participation was voluntary. The surveys were kept anonymous. The collected data were classified and tabulated in Microsoft Office Excel. Statistical Package for Social Sciences for Windows version 18 (SPSS Inc., Chicago, IL, USA) was used for statistical analysis. Responses to the questions were analyzed by calculating percentages based on the number who answered the questions. Chi-square test was used to determine any significant differences

among knowledge, attitude and confidence with practice of tobacco cessation interventions. A probability value of  $p < 0.05$  was set as statistically significant.

## **RESULTS**

Out of the 156 subjects who were approached to participate in the study, questionnaires were returned by 100 of them. The most frequently verbally cited reason for lack of participation by non-respondents was lack of time to complete the questionnaire. Of the questionnaires that were returned, 6 were grossly incomplete and were excluded from the analysis leaving 94 validly completed questionnaires, thereby yielding a response rate of 60%.

Among the 94 respondents, number of males and females was comparable. The majority of the study respondents were post graduate students and about a fourth of them had completed their Masters in various branches of dentistry (Table 1).

Table 2 categorizes the overall knowledge, attitude, practices and confidence among the three sub groups, namely, faculty, PG students and interns. The mean overall knowledge scores was 14.6 (SD= 3.6; n = 94) with maximum of the respondents (75.5%) having average knowledge score (10- 18 marks). The mean attitude score was 9.20 (SD = 2.19; n=94) with most respondents (89.4%) reporting a positive attitude (score 7 to 13). The mean practice score was 16.49. (SD= 5.8; n= 94) wherein two thirds of the participants (67.02%) attained above average practice scores (15 to 28). The differences in the scores were not statistically significant for the three sub groups

### **Knowledge**

Ten questions assessed knowledge related to harmful effects of smoking.

17% (n=16) of the respondents scored 4 and below showing poor levels of knowledge, 38.3% (n=36) scored between 5 and 7 marks, while 44.7% (n=42) obtained a good

knowledge score (8 and above). Sixteen questions assessed knowledge related to smoking intervention methods. 21% (n=19) of the respondents got a poor knowledge score (0

to 5 marks), 63.83% (n=60) obtained an average score (6- 10 marks), while only 15.96% (n=15) attained a good knowledge score (11 and above).

**Table 1: Background Characteristics**

Variable	Category	Number (%)	Total
Sex	Male	42(44.7)	94 (100%)
	Female	52 (55.3)	
Designation	Faculty	24 25.5	94 (100%)
	PG	42 44.7	
	Interns	28 29.8	
Qualification	BDS <sup>†</sup>	72 76.6	94 (100%)
	MDS	22 23.4	

All PGs considered as BDS.

**Table 2: Overall Knowledge, Attitude, Practice and Confidence Scores by Designation**

Construct	Category	Overall (n=94)	Faculty (n=24)	PG (n=42)	Interns (n=28)	p value
Knowledge	Poor (Score 0-9 )	10.6	16.7	9.5	7.1	0.225
	Average (Score 10-18)	75.5	62.5	73.8	89.3	
	Above Average (Score ≥ 19)	13.8	20.8	16.7	3.6	
Attitude	Negative	10.6	16.7	9.5	7.1	0.514
	Positive	89.9	83.3	90.5	92.9	
Practice	Below Average	32.98	33.3	31	35.7	0.917
	Above Average	67.02	66.7	69	64.3	
Confidence	Low	52.1	62.5	50	46.4	0.478
	Above Average	47.9	37.5	50	53.6	

Chi square test

**Table 3: Respondents' attitude towards provision of cessation interventions**

Attitude	Statement	Agree n (%)	Disagree n (%)
N= 94	Cessation counseling is an important part of my job	82 (87.23%)	12 (12.77%)
	Cessation counseling is an important part of my institute's mission	86 (91.49%)	8 (8.51%)
	Counseling by a clinician helps motivate smokers to quit	86 (91.49%)	8 (8.51%)
	Clinicians should advise patients to quit even if it's not the reason for the visit	88 (93.62%)	6 (6.38%)
	Clinicians should limit health education on smoking to patients with smoking related oral findings only	27 (28.72%)	67 (71.28%)
	It is not important to discuss dangers of smoking and benefits of quitting as most patients are already aware of it.	21 (22.34%)	73 (77.66%)
	Clinicians should make appointments specifically to help patients quit	66 (70.21%)	28 (29.79%)
	Smoking is a personal decision which does not concern the clinician	24 (25.53%)	70 (74.47%)
	My patients' acute oral health problems take precedence over smoking cessation counseling /advice	65 (69.15%)	29 (30.85%)
	Quitting smoking is an individual choice. It's not up to me to advice a patient to quit smoking	11 (11.70%)	83 (88.30%)

**Table 4: Relationship between knowledge, attitude, confidence levels with practice**

Knowledge level	Practice level		Total n (%)	p value
	Below average n (%)	Above average n(%)		
Poor	5(50)	5(50)	10(10.7)	0.073
Average	25(35.2)	46(64.8)	71 (75.5)	
Good	1 (7.7)	12(92.3)	13(13.8)	
Total	31(33)	63(67)	94 (100)	
<b>Attitude</b>				
Negative	6(60)	4(40)	10(10.7)	0.062
Positive	25(29.8)	59(70.2)	84(89.3)	
Total	31 (33)	63(67)	94 (100)	
<b>Confidence</b>				
Low	22(44.9)	27(55.1)	49(52.1)	0.009*
High	9(20)	36(80)	45(47.9)	
Total	31(33)	63(67)	94 (100)	

\*Statistically significant  
Chi square test

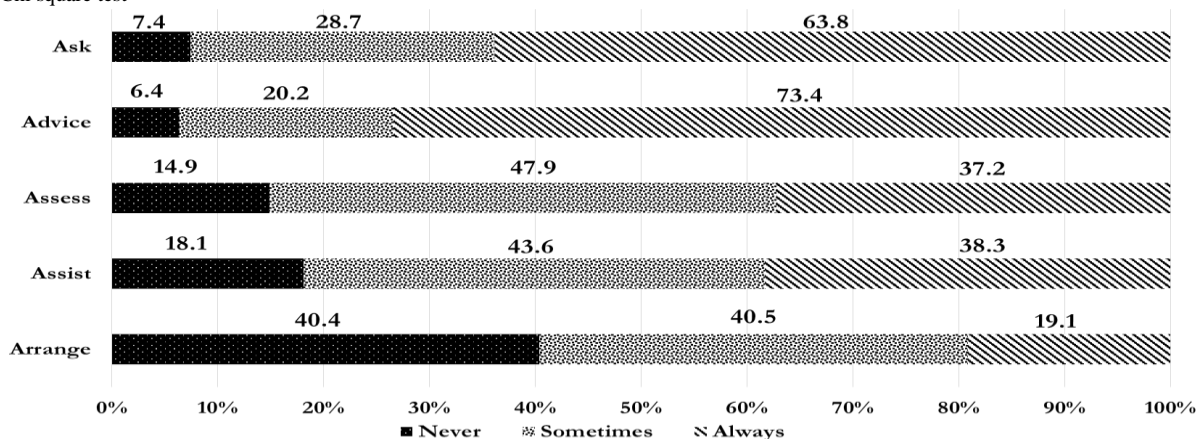


Figure 1: Respondents' reported frequency of use of the 5A Tobacco cessation guidelines

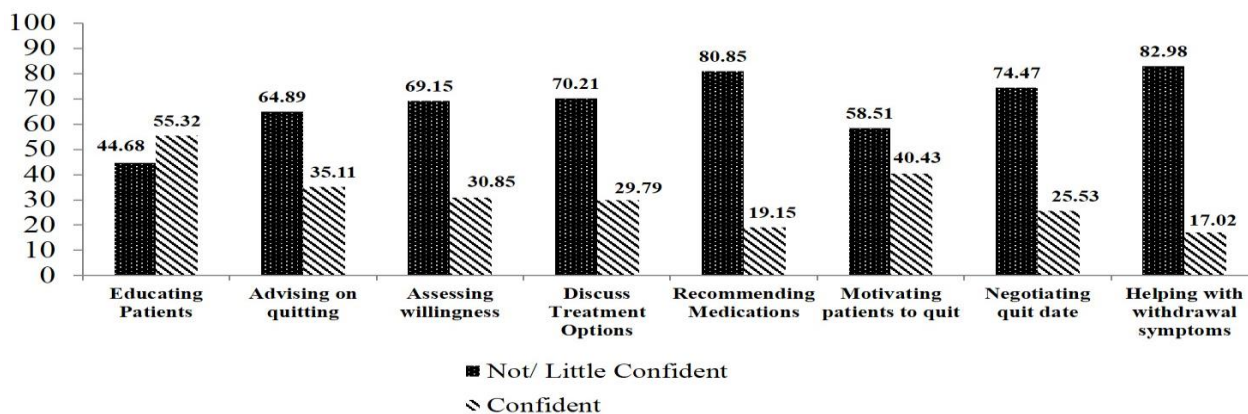


Figure 2: Respondents' Confidence in providing smoking cessation interventions



### **Attitude**

Most of the statements that assessed attitude garnered a positive response. Majority of the respondents believed that cessation counseling was an important part of their individual duties (87.23%) and their institute's mission (91.49%). Many agreed that counselling helps and anti-smoking advice should be given to all patients alike and 86.17% were interested in updating their skills for the same. However, 69.15% felt that the patients' acute oral health problems were of higher priority as compared to smoking cessation advice (Table 3) and 10.64% believed that more than 40 % of patients will be successful in their quit attempts.

### **Practice**

The respondents' reported frequency of practice of 5A's model for tobacco cessation showed that 63.8 % of the respondents almost always asked about the tobacco use status of the patient and 73.4% advised the patient about the harmful effects of tobacco and the benefits of quitting. However, only 37.2% could assess the patient's willingness to quit and 38.3 % were able to assist patients to set a quit date with referrals and support, on a regular basis. The proportion of respondents who arranged for a follow up visit to review progress on a regular basis further fell to a 19.1%. (Figure 1a).

### **Barriers to provision of smoking cessation intervention**

Lack of interest in receiving smoking cessation information was the most common barrier with 64.8% of the respondents agreeing to it. Other barriers reported were non-compliance by patients (54.2%), lack of education material (52.1%), insufficient knowledge/training (47.8%), lack of time (43.6%) and awareness of smoking cessation guidelines (41.1%), other immediate health problems (37.2%) and lack of smoking cessation specialists for referral (28.7%). The least common barrier was 'felt

uncomfortable talking to patients about smoking' (8.5%).

### **Training & Confidence in Provision of Smoking Cessation Interventions**

Only 9.7% of the respondents had received any kind of specialized training on smoking cessation. 55.3% of the population reported being confident in educating patients on smoking risks. However when it came to prescribing medications or assessment of withdrawal symptoms, very few reported to be confident of doing so. Most individuals were not confident of advising on quitting, assessing willingness to quit, or motivating to quit (Figure 1b).

### **Relationship between Respondents' Knowledge, Attitude and Confidence with Practice**

Table 4 reports the relationship between knowledge, attitude and confidence with practice levels. It was seen that no statistically significant relationship existed between Knowledge and Attitude with Practice of Smoking Cessation Interventions. However a statistically significant relationship existed between practice and confidence scores ( $p = 0.009$ ) suggesting that those with higher levels of confidence had above average practice of cessation interventions.

## **DISCUSSION**

The aim of this study was to determine the knowledge, attitude and practices related to smoking cessation interventions among the teaching faculty, post graduate students and interns in a dental college and hospital setting. Information was also collected about perceived barriers that impeded practice, the training received and level of confidence in providing smoking cessation interventions. More than half of the respondents had an average level of knowledge on smoking cessation interventions while a majority had a positive attitude towards the provision of smoking cessation interventions. However,

despite the positive attitude, two-fifths of the population reported below average practice of smoking cessation interventions to their patients. More than half of the respondents also reported low confidence in their skills as tobacco cessation counselors.

Overall, majority of the respondents had average knowledge scores. The respondents fared better at knowledge related to harmful effects of smoking as compared to their knowledge of smoking intervention methods with 44.7% attaining a good knowledge score in the section related to harmful effects of smoking and only 15.96% attaining good knowledge scores in the section covering knowledge related to smoking cessation interventions. The reason for this could be that the dental curriculum in India covers the effects of tobacco on general health & oral health, however tobacco cessation counseling training isn't a part of the curriculum as yet. Only 46.81% of the respondents were aware of the 5A's model and amongst them only 31.91% were familiar with the content of these guidelines. 89.36% correctly identified counseling and medication can help patients with tobacco cessation. Two third of the population were aware of nicotine replacement therapy to overcome dependence, but, only 6.38 % of them were aware of other medications like Varenicline. Only 24.47 % were familiar with cold turkey method of quitting and an even lesser number (15.96 %) were aware that all smokers regardless of their desire to quit smoking, cannot be forced to commit to a quit date, which indicated that a majority of the respondents were not aware of how to assist patients with different levels of motivation to quit.

Most of the respondents had a positive attitude towards their role in provision of smoking cessation interventions. This was in tandem with other studies conducted among dental professionals.<sup>9,10,11,12</sup> However, two third of the population surveyed revealed that their patient's acute oral health problems took precedence over smoking related counseling.

This could be a reflection of the general perception of prioritizing clinical time for the patient's actual chief complaint and expressed need over counseling about tobacco use.

Over half of the respondents felt less than 10% of the patients who were counseled and assisted would be able to successfully quit the habit over a period of 6 months. This perception of limited effectiveness of tobacco cessation counseling may constrict dentists' practice of tobacco cessation counseling in a clinical setting. A similar low perception of effectiveness was seen in other studies among dental students in India, Australia and Greece.<sup>13,14,15</sup>

The actual reported tobacco cessation trials in dental settings reveal successful quit rates ranging from 2.4% - 44.4% over periods extending from six weeks to one year.<sup>4</sup>

Although over two thirds of the respondents attained above average practice scores, when practice was broken down into components of the 5 A's: Ask Advice, Assess, Assist and Arrange, it was found that practice rates progressively fell over the 'assess', 'assist' and 'arrange' components.

Over two thirds of the study population asked about the tobacco use status of patients they encountered and also advised about the ill effects of smoking and the benefits of quitting. Conversely, only one third of the study population assessed the patient's willingness to quit and assisted them with a quit date and offered other support on a regular basis. Less than one third of the respondents arranged for a follow up visit to review progress, challenges and relapses.

Similar trend was seen in other studies conducted among dentists and dental students in India and abroad.<sup>13,16,17</sup>

An assessment of barriers that restrict practice can help uncover the reason behind the self-reported low rates of practice. The most often reported barriers by the respondents were patients' lack of interest in receiving information as well as the lack of compliance to instructions and advice. This was similar to

the findings as reported in other studies conducted among dentists in India.<sup>9, 13, 16,18</sup> However opinions contrary to this have also been reported in India<sup>19, 20</sup> and elsewhere<sup>21, 22</sup> i.e. patients actually harbor a positive perception about the role of dentists in smoking cessation activities and expect them to ask, advice and assist in smoking cessation. Other commonly reported barriers were lack of patient education materials, insufficient knowledge & training on smoking cessation interventions and a lack of awareness of smoking cessation guidelines. Lack of time and priority to the patient's other pressing oral health problems were also cited. All the above cited barriers have been time and again, stated by the dental fraternity as the chief factors that prevent them from counseling against tobacco use in their practice as researched by various other studies in the world.<sup>4, 23</sup> Determining these perceived barriers is essential in order to address them adequately.

This study revealed very low rates of formal training on smoking cessation interventions (9.57%), as compared to another study that was conducted among general dentists in California, Pennsylvania, and West Virginia (42%).<sup>17</sup> There is an obvious need for formal training in smoking cessation. It is noteworthy that 86.17 % of the respondents expressed their willingness in updating their smoking cessation skills and majority reported low scores in knowledge of smoking cessation intervention methods. Similar findings were reported in another study among dental interns conducted among 5 dental colleges in Karnataka where 76.5 % of the participants were not confident about suggesting nicotine replacement therapy to their patients.<sup>9</sup>

This presses on the fact that there is a void in training and thereby, knowledge which inevitably impacts practice. This lack of training also translated into poor self-reported confidence among the respondents in recommending medications (19.15%), assisting the patients with withdrawal symptoms (17.02%) and also for the 'assess',

'assist' and 'arrange' components of the 5A's model. Training of health care providers on smoking cessation has been proven to improve the level of knowledge, confidence and performance of smoking cessation interventions by health care providers and thereby is the need of the hour.<sup>24</sup>

The overall results revealed that individuals with average and good knowledge did not always report high level of practice. It also suggested that a positive attitude towards smoking cessation among professionals, does not always lead to good practice. This may be due to certain barriers faced while implementing the available knowledge and translating the positive attitude towards actual practice in the clinical scenario. Most of the respondents with high confidence reported better practice; this finding emphasizes that high confidence is an obvious catalyst for better practice of cessation interventions. Further studies including multiple institutes will provide more insight on organizational practice of tobacco cessation interventions in India.

## **CONCLUSION**

The present study reported average knowledge but poor practice of smoking cessation practice in the institutional set up. However the willingness among dentists to update their skills is encouraging. An implementation of evidence based teaching including hands-on and patient based training in tobacco cessation interventions is the need of the hour for dental education in India. Alongside with the training in tobacco cessation interventions, a practice protocol in the organizational set up must also be encouraged.

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