

# Knowledge, Attitude and Practices Regarding Pharmacological Methods of Tobacco Cessation among Dental Students and Dental Teaching Faculty in Ernakulam District, Kerala - a Questionnaire Study.

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## Abstract:

**Background:** Tobacco has been a worldwide public health threat and a cause of avoidable morbidity and mortality. Most people who use tobacco regularly are unable to quit because of nicotine's addictive properties. Overcoming addiction is difficult, even though most users express a desire to reduce the use or stop. Tobacco cessation may require both pharmacologic and behavioural treatments. It is imperative that dental professionals need to have an appropriate knowledge regarding the pharmacological interventions of tobacco cessation, that will enable them to aid in patient education, counselling, prevention, diagnosis and treatment of associated conditions.

**Methodology:** The study was a cross-sectional questionnaire-based survey. The target population was the clinical dental students, House surgeons, and teaching faculty. The questionnaire was divided into two parts. The first part consisted of questions on professional data – designation/year of study of respondents. The second part consisted of 16 questions to assess the knowledge, attitude, and practices regarding pharmacological interventions for tobacco cessation. Informed consent was obtained prior to distribution of questionnaires.

**Results:** The study was conducted among a total of 392 participants that included 328 students/house surgeons and 64 faculty members. About 95% of the respondents were interested in helping their patient's quit tobacco. Only 64.28% were aware of both pharmacological and non-pharmacological methods of tobacco cessation. About 72.95%, were aware of nicotine replacement therapy. About 35.2% of the respondents agreed that patients had sought their assistance in tobacco cessation. Over 97% believed that they need further training in pharmacological methods of tobacco cessation.

**Conclusion:** The study attributes that the dental students, house surgeons and teaching faculty members who participated in the survey had a good attitude towards tobacco cessation interventions. The knowledge and practice components were relatively weaker.

**Keywords:** Tobacco use cessation, nicotine addiction, dentist's role.

## Introduction

Tobacco has been a worldwide public health threat and a cause of avoidable morbidity and mortality. More than 8 million people a year die as a consequence of tobacco-related diseases<sup>1</sup>.

Over 1.3 billion adults are currently tobacco users with a total global prevalence of 29%.<sup>2</sup>

According to Global Adult Tobacco Survey 2 India 2016-17, 28.6% (26.7 crore) of adults aged 15 years and above use tobacco in any form. Every 5th adult (19.9 crore) uses smokeless form and every 10th adult (10.0 crore) smoke tobacco.

Most people who use tobacco regularly do so because of nicotine's addictive properties, which have been speculatively linked to arousal, mood modulation, performance enhancement, and associated analgesia. Overcoming nicotine addiction is difficult, even though most users express a desire to reduce the use or stop entirely. Tobacco cessation may require both pharmacologic and behavioral treatments.<sup>2</sup>

The country's Global Adult Tobacco Survey, 2016 (GATS-2) has reported that nearly 55% smokers and 50% smokeless tobacco users are planning or thinking to quit.<sup>3</sup>

Many studies showed that even brief or simple counselling provided by health professionals could substantially boost the quit rates of tobacco-using patients. Dentists were reported to be 'uniquely and advantageously positioned' to provide tobacco cessation counselling<sup>4</sup>. Dental surgeons are most actively consulted by tobacco-using patients, so their responsibility is more crucial towards making patients aware about the hazards and ill effects<sup>5</sup> and thus assist the patients in tobacco cessation.

Researchers have found that 59% of the patients who attend a dental clinic expected the dentists to provide tobacco-cessation services regularly. Only 3% of patients can quit tobacco use solely by their willpower, without any assistance such as counselling and pharmacotherapy. It was reported that with three minutes of advice from healthcare professionals, another 2% of tobacco-smokers would quit smoking; and with 10 minutes of advice, another 6% would cease consumption. When dentists provide long-term TCC, up to 18% of tobacco-using subjects would quit. Thus, the role of the dental team in delivering tobacco cessation advice is of great significance<sup>4</sup>.

Hence, it is imperative that dental professionals need to have appropriate knowledge regarding the pharmacological interventions of tobacco cessation, that will enable them to aid in patient education, counselling, prevention, diagnosis and treatment of associated conditions.

This study was conducted with an objective of assessing the Knowledge, Attitude and Practices regarding pharmacological methods of tobacco cessation among dental students, house surgeons and teaching faculty members in Ernakulam District, Kerala.

## Methodology

The study was a cross-sectional questionnaire-based survey. The target population was the clinical dental students (Third year and Final Year undergraduate students), House surgeons, and teaching faculty of a dental teaching institution in Ernakulam district of Kerala, India. A questionnaire was fabricated, and validity tested for use, based on previous studies<sup>4,7</sup>.

The questionnaire was divided into two parts. The first part consisted of questions on professional data – designation/year of study of respondents. The second part consisted of 16 questions to assess the knowledge, attitude and practices regarding pharmacological interventions for tobacco cessation. The questionnaire was fabricated in English language. The questionnaires were distributed by the house surgeons posted in the Department of Public Health Dentistry of the institutions. The respondents filled the answers in the questionnaire on their own and were asked to return the filled questionnaires immediately. A voluntary informed consent was obtained from each participant prior to distribution of questionnaires.

Necessary ethical clearance for the study was obtained from the Institutional Ethical Committee prior to the start of the study.

## Statistical Analysis

All returned questionnaires were coded and analysed. Results were expressed as number and percentage of respondents for each question and were analysed using the SPSS Version 17 software. Chi-square test was performed to compare the response in relation to designation; and the level of significance was set at  $p=0.05$ .

## Results

The study was conducted among a total of 392 participants that included 328 students/interns and 64 faculty members. About 95% (n=376) of the respondents were interested in helping their patient's quit tobacco. Only 64.28% (n=252) were aware of both pharmacological and non-pharmacological methods of tobacco cessation. About 72.95% (n=286), were aware of nicotine replacement therapy. Only 9.18% (n=36) had advised pharmacological therapies to their patients. Of them, 94.44% (n=34) had advised nicotine replacement therapy and 41.66% (n=15) had advised varenicline/bupropion. All the 34 respondents who prescribed nicotine replacement therapy had prescribed nicotine chewing gums. Among the 36 respondents who had advised pharmacological methods of tobacco cessation intervention, 77.77% (n=28) assessed nicotine addiction status in patients prior to intervention. About 63.88%

(n=23) reported follow up of cases. About 51% of the total number of respondents were willing to prescribe pharmacological options for their patients. Among the 191 who were not willing to prescribe, 84.81% (n=122) cited the lack of awareness to be the reason for not prescribing pharmacological intervention. All respondents felt that dentists can play a major role in tobacco cessation. About 35.2% of the respondents agreed that patients had sought their assistance in tobacco cessation. Only 5.84% (n=23) had knowledge on dosage, indications and contraindications of varenicline and bupropion drugs. About 48% felt that the present dental curriculum sufficiently covers the topic of pharmacological methods of tobacco cessation. Over 97% believed that they need further training in pharmacological methods of tobacco cessation. The faculty/practitioners had a higher knowledge and practice scores while there was no significant difference observed in the attitude scores.

**Table 1: Profile of the respondents**

	Category	n (%)
Designation	Student/Intern	328 (83.6%)
	Faculty	64 (16.4%)
Year of study (for students/house surgeons)	III year BDS	80
	Final year BDS	121
	House surgeons	127

**Table 2: Response to Knowledge and attitude related questions regarding pharmacological tobacco cessation interventions**

Question	Options	Response	Chi square Faculty Vs Students/interns
As a practitioner, will you be interested in helping your patients quit tobacco?	Yes	376 (95.91%)	p = 0.677
	No	16 (4.09%)	
Which of the following methods of tobacco cessation assistance you are aware of ?	Behavioral	68 (17.34%)	p = 0.047*
	Pharmacological	26 (6.64%)	
	Both	252 (64.28%)	
	None	46 (11.74%)	

Which of the following pharmacological options of tobacco cessation you know?	Nicotine Replacement therapy	286 (72.95%)	p = 0.271
	Medications mimicking nicotine effects	124 (31.63%)	
	Nicotine antagonists	98 (25%)	
	None of the above	0	
Have you advised any pharmacological methods for your patients?	Yes	36 (9.18%)	p = 0.001*
	No	356 (90.82)	
If yes, what drugs have you prescribed?	Nicotine Replacement Therapy	34 (94.44%)	p = 0.001*
	Varenicline	12 (33.33%)	
	Bupropion	03 (8.33%)	
	Clonidine	0	
	Nor-tryptiline	0	
	Others	0	
What form of Nicotine Replacement Therapies have you prescribed?	Chewing gums	34 (100%)	p = 0.036*
	Lozenges	2 (5.88%)	
	E Cigarettes	0	
	Transdermal patches	5 (14.70%)	
	Tablets	0	
Do you assess the nicotine addiction levels before prescription?	Yes	28 (77.77%)	p = 0.001*
	No	8 (22.22%)	
Have you followed up any of your cases?	Yes	23 (63.88%)	p = 0.021*
	No	13 (36.11%)	
Are you willing to prescribe pharmacological methods of tobacco cessation to your patients routinely?	Yes	201 (51.27%)	p = 0.003*
	No	191 (48.73%)	

If No, what prevents you from prescribing pharmacological options?	Lack of knowledge	162 (84.81%)	p = 0.221
	Ineffective	8 (4.18%)	
	Cost of products	12 (6.28%)	
	Side effects	6 (3.14%)	
	Absence of long term evidence	0	
	Doubtful patient acceptance	12 (6.28%)	
	Any other reason	0	
What other options are you willing to give to your patients?	Advise	289 (73.72%)	p = 0.625
	Counselling	224 (57.14%)	
	Referral to psychologist	89 (22.70%)	
	Referral to other dentists / medical practitioners	36 (9.18%)	
	None of the above	0	
Do you think a dental practitioner can play a major role in tobacco cessation?	Yes	392 (100%)	-
	No	0	
Have your patient's sought assistance in tobacco cessation	Yes	138 (35.20%)	p = 0.001*
	No	254 (64.80%)	
Do you feel the present dental curriculum sufficiently covers the topic of pharmacological methods of tobacco cessation?	Yes	186 (47.44%)	p = 0.091
	No	206 (52.56%)	
Do you know the dosage, indications and contraindications of varenicline and bupropion drugs?	Yes	23 (5.84%)	p = 0.036*
	No	369 (94.13%)	
Do you need further training in pharmacological methods of tobacco cessation?	Yes	384 (97.75%)	p = 0.642
	No	08 (2.05%)	

## Discussion

The present study was conducted with an objective of assessing the Knowledge, Attitude and Practices regarding pharmacological methods of tobacco cessation among dental students and teaching faculty. Dental professionals have an important role to play in tobacco cessation. Counselling and pharmacotherapy are the evidence based approaches in tobacco cessation.<sup>8</sup> Dentists have been recognized as professionals, 'ideally positioned to counsel against the use of cigarettes and smokeless tobacco products. Dentists are one of the health professionals who are more frequently in contact with the general population and are hence, the first to see the effects of tobacco in mouth. They are as effective in providing smoking cessation counselling as any other health care professional.'<sup>6</sup>

According to Dolan et al., worldwide, up to half of all dental surgeons advise patients to quit tobacco and also explain about the methods of quitting. Contrary to this, in India, most dentists or health care professionals in the field do not ask or suggest methods to quit tobacco.<sup>9</sup>

The study targeted dental teaching institutions in Ernakulam district of Kerala. The study showed that about 95% (n=376) of the respondents were interested in helping their patient's quit tobacco. The attitude shown by the respondents is similar to the results of the study conducted among dental practitioners in Ernakulam city in 2011<sup>10</sup>. A study conducted in Raipur in 2013 reported that about 24% of the participants reported Tobacco cessation counselling to be waste of time.<sup>7</sup>

The study revealed that about 64% of the participants were aware of both pharmacological and behavioral interventions in tobacco cessation and about 17% and 6% were aware of behavioral and pharmacological approaches alone, respectively. Majority of those who were unaware of the interventions were dental undergraduate students. More than 72% were aware of Nicotine Replacement Therapy. The observation is similar to study conducted in Raipur in 2013<sup>7</sup>, Davangere in 2020<sup>11</sup> and North India in 2021<sup>9</sup>. A study conducted in Davangere in 2019<sup>5</sup> showed the awareness to be less than 12%. The study however, included only dental undergraduate and post graduate students. Less than 10% of all the participants reported that they had advised pharmacotherapy to their patients. Considering the number of practitioners/faculty (n=64), more than 56% of the practitioners advised pharmacotherapy for

their patients. Among them, 95% prescribed Nicotine Replacement Therapy. The practice scores among the dental practitioners is better than the results of study in North India where the corresponding figure was 17%<sup>9</sup>.

It is noteworthy that only 77% of those who prescribe pharmacotherapy including nicotine replacement therapy assess nicotine dependence prior to the intervention. Interventions towards tobacco cessation must be targeted towards dealing with the physical addiction to nicotine, the psychological reliance on the effects of nicotine, and the behavioral aspects of tobacco use. Without this comprehensive approach, the rate of relapse to smoking remains high, demonstrating the strong addictive nature of nicotine.<sup>12</sup> The study indicates that among the nicotine replacement therapy methods, chewing gum is the most prescribed compared to other methods. With over the counter and ease of availability of chewing gums, this mode of delivery remains most prescribed method.

It was noted that 84.4% of the study participants not willing to prescribe pharmacological interventions cited lack of awareness to be the reason. The results were similar to the studies conducted in Davangere 2019<sup>5</sup> and Raipur in 2013<sup>7</sup>, in which 78% and 80%, correspondingly, reported the same reason. A study conducted among dental practitioners in Hyderabad in 2015<sup>13</sup> reported that barriers were insufficient reimbursement (48.1%), lack of tobacco-related self-help material/pamphlets for patients (46.5%) and lack of patient motivation to receive tobacco cessation counseling (43.6%).

About 73% and 57% of the respondents were willing to give advice and counselling respectively as behaviour/non-pharmacological interventions. This indicates the preference and increased confidence in non-pharmacological interventions compared to pharmacological interventions. This can be attributed to the fact that in India, no separate education or training in pharmacological interventions is given to dental professionals during their course for helping individuals to quit tobacco.<sup>9</sup>

All the participants opined that dental practitioner can play a major role in tobacco cessation. About 16% of the participants in study conducted in an online survey conducted across north India disagreed or strongly disagreed to the statement.<sup>9</sup>

Only 47% felt that present dental curriculum sufficiently covers the topic of pharmacological interventions. Over

97% opined that they require more training in the subject. This indicates the need to revising the dental curriculum to enhance the competence of the dental professionals in providing tobacco cessation interventions.

Literature affirms that the dental clinic is the ideal place as dental professionals have various opportunities to provide tobacco cessation interventions. With dental treatment usually requiring multiple visits, a provision for initiation, reinforcement, support and follow up of tobacco cessation activities can be provided<sup>7</sup>. It is noteworthy that, about 63% of the participants who are involved in tobacco cessation intervention followed up the patients.

Despite of the potential, not many dentists are motivated in providing tobacco cessation interventions. Barriers that have been associated, as analyzed by various studies include lack of time, absence of monetary benefits, lack of professional training along with anticipated negative feedback from patients, lack of confidence in their ability and skills to provide effective counselling.<sup>7</sup>

Therefore, in terms of tobacco cessation interventions, the study participants demonstrated a high attitude but relatively low knowledge and practice. The skewed distribution of dental faculty/practitioners and students/house surgeons could be the reason for this observation. However, a positive attitude, coupled with increasing knowledge regarding the same effectively through curricular changes can encourage a sense of professional responsibility and enhance the practice scores.

## Conclusion

The study attributes that the dental students, house surgeons and teaching faculty members who participated in the survey had a good attitude towards tobacco cessation interventions. Considering that the sampling frame had a higher representation from dental students and house surgeons compared to faculty/practitioners, the knowledge and practice components were relatively weaker.

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