



KNOWLEDGE, ATTITUDE AND PRACTICE OF DENTAL STUDENTS ON NICOTINE REPLACEMENT THERAPY IN CHENNAI-A CROSS SECTIONAL STUDY

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ABSTRACT **Introduction** Tobacco is a foremost public health concern in the current scenario globally. Tobacco is a major risk factor for death due to cancers of the lungs, head and neck region and even colorectal regions. It is also a major cause of heart disease. Nicotine replacement therapy (NRT) reduces the consumption of tobacco it also aims to reduce physiological and psychomotor withdrawal symptoms through the delivery of nicotine. This study was conducted with the aim to know about the knowledge regarding nicotine replacement therapies among dental students. **Methods** A questionnaire was constructed to know the attitude, knowledge and practice of the dental students with respect to NRT. A total of 499 students participated in the study. Students who were in their final year and internship participated in the study. The questionnaire consisted of 16 questions. **Results** A total of 500 questionnaires were distributed but only 499 were taken for analysis. 95.6% of them were aware of the patients' tobacco history. 95.6% were aware of the Tobacco Cessation program. 89.6% of the participants advised patients on tobacco cessation p value was significant. 70.3% of the participants believed that NRT can double the chance of quitting tobacco. 67.5% responded by saying that they did not have adequate knowledge of NRT. 60.9% of the participants were not aware of the duration of NRT only 18.5% of them were aware of the 12-week duration. 36.7% of the participants were not aware which product causes fast absorption 18.2% answered nasal spray is the fastest mode of absorption. 61.7% of them were not aware of the dosage of gums to be used in heavy smokers only 16.4% of them were aware of the 4mg dosage. 63% of them did not know the duration of the nicotine patch to be used. 14.2% were aware of the 16-24hr duration. 40% of them not aware of the age for usage of nicotine patches and gums. 43.3% gave the correct age for use of NRT. 32.9% of the participants knew of the 40-60mg lethal dose of nicotine. 73.5% of them were not knowing how much the blood pressure increased with the use of NRT. 14.4% of them were aware of the 5-10mmHg increase in blood pressure. 47.55 claim that they do not recommend NRT due to lack of knowledge 95.4% of them believe that smoking cessation education should be a part of the regular curriculum. **Conclusion** Although most of dentists are aware of NRT but barriers exist in inadequacy in knowledge and handling the patients. It becomes important to provide adequate training of dentist in the institutions.

KEYWORDS : Dental students, Nicotine replacement therapies, Tobacco cessation

INTRODUCTION

Tobacco is a foremost public health concern in the current scenario globally. Tobacco is a major risk factor for death due to cancers of the lungs, head and neck region and even colorectal regions. It is also a major cause of heart disease¹. Each year 6 million people are killed worldwide. In India tobacco issues are complex due to the consumption of various smoked and smokeless tobacco products². The major active ingredient in tobacco products is nicotine which is responsible for addictive behavior³. Nicotine replacement therapy (NRT) reduces the consumption of tobacco it also aims to reduce physiological and psychomotor withdrawal symptoms through the delivery of nicotine⁴. According to 2000 public health service guidelines "brief physician advice significantly increases long-term smoking abstinence rates." They also emphasize that vigorous intervention is more effective than less intensive interventions and should be used wherever possible⁵. NRT products come in the form of gums, transdermal patches, nasal spray, oral inhalers and tablets. Sustained release is obtained in the transdermal patches and acute release is obtained in other forms. NRT provide general craving relief and breakthrough craving relief by releasing nicotine immediately⁶. Healthcare providers play a major role in motivating patients to quit tobacco. Dental surgeons are frequently approached for quitting tobacco. It is critical for dental surgeons to provide awareness about the hazards of tobacco⁷. Dental treatment requires multiple visits so initiation, reinforcement can be followed by dentist more meritoriously. This study was conducted with the aim to know about the knowledge regarding nicotine replacement therapies among dental students

METHODS

The study was conducted in Sathyabama Dental College, Chennai. Among the undergraduate students of the college. A questionnaire was constructed to know the attitude, knowledge and practice of the dental

students with respect to NRT. A total of 499 students participated in the study. Students who were in their final year and internship participated in the study. The questionnaire consisted of 16 questions. After obtaining an informed consent the questionnaire was distributed to the students. The investigator was present when the students answered the questionnaire to avoid malpractice as this may change the outcome of the study. The All questionnaires that were not complete were discarded from the study. The data were analyzed using SPSS version 22. P value was obtained and a value of 0.05 was regarded as significant.

RESULTS

A total of 500 questionnaires were distributed but only 499 were taken for analysis as one questionnaire was incomplete. Of the 499 participants, 142(28.5%) were males and 375(71.5%) were females (table 1, fig 1). Of the 499 participants 279 were in the final year and 220 were in their internship (table 2). When comparing the genders between the final year and interns the P value was 0.038 which is not significant.(table3).

In the present study of the 499 participants, 95.6% of them were aware of the patients' tobacco history. 95.6% were aware of the Tobacco Cessation program. 89.6% of the participants advised patients on tobacco cessation p value was significant. 50.7% of them recommended self quitting method and 42.5% recommended NRT and 6.8% recommended pharmacological methods. 51.7% of participants did say they did a follow up of their cases. 70.3% of the participants believed that NRT can double the chance of quitting tobacco, the P value was significant. 67.5% responded by saying that they did not have adequate knowledge of NRT. 60.9% of the participants were not aware of the duration of NRT only 18.5% of them were aware of the 12-week duration. 36.7% of the participants were not aware which product causes fast absorption 18.2% answered nasal spray is the fastest mode of absorption. 61.7% of them were not aware of the

dosage of gums to be used in heavy smokers only 16.4% of them were aware of the 4mg dosage. 63% of them did not know the duration of the nicotine patch to be used. 14.2% were aware of the 16-24hr duration. 40% of them not aware of the age for usage of nicotine patches and gums. 43.3% gave the correct age for use of NRT.32.9% of the participants knew of the 40-60mg lethal dose of nicotine.73.5% of them were not knowing how much the blood pressure increased with the use of NRT. 14.4% of them were aware of the 5-10mmhg increase in blood pressure. 47.55 claim that they do not recommend NRT due to lack of knowledge 95.4% of them believe that smoking cessation education should be a part of the regular curriculum(table 4)(fig 2-17)

Table 1: Gender Distribution

Gender	Number	Percentage
Male	142	28.5%
Female	357	71.5%
Total	499	100%

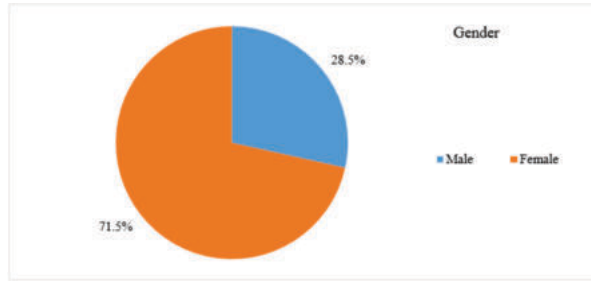


Figure 1 : Pie chart of gender in the study population (N=499)

Table 2 Year of study of participants

Year	Female	Male	Total
Final Year	210	69	279
Interns	147	73	220

Chi Square: 4.31 p-value: 0.037*

Table: Comparison of year between gender (N=499)

Year	Gender		Chi square	P value
	Female	Male		
Final Year (N=279)	210 (75.27%)	69 (24.73%)	4.315	0.038
Interns (N=220)	147 (66.82%)	73 (33.18%)		

Responses to questionnaire

Question	Yes		Total	P -Value
	Final	Intern		
Do You Come Across Patients With Tobacco Habits				0.10 ^{NS}
Yes	263 (94.2%)	214 (97.2%)	477 (95.6%)	
No	16 (5.7%)	6 (2.7%)	22 (4.4%)	
Are You Aware Of Tobacco Cessation Education Programme?				0.31 ^{NS}
Yes	269 (96.4%)	208 (94.5%)	477 (95.6%)	
No	10 (3.6%)	12 (5.5%)	22 (4.4%)	
Do You Provide Patient With Tobacco Cessation Advise?				0.019*
Yes	242 (86.7%)	205 (93.2%)	447 (89.6%)	
No	37 (13.3%)	15 (6.8%)	52 (10.4%)	
Which Tobacco Cessation Method Do You Prefer To Recommend?				0.1 ^{NS}
Nicotine replacement therapies	116 (41.6%)	96 (43.6%)	212 (42.5%)	
Pharmacological methods	25 (9.0%)	9 (4%)	34 (6.8%)	
Self quitting method	138 (49.4%)	115 (52.4%)	253 (50.7%)	
Do You Follow Up Or Keep A Record Of These Patients?				0.13 ^{NS}
Yes	136 (48.7%)	122 (55.5%)	258 (51.7%)	
No	143 (51.3%)	98 (44.5%)	241 (48.3%)	
Can Nicotine Replacement Therapies (NRTS) Double The Chance Of Success In Quitting The Habit Of Smoking?				0.04*
Yes	186 (66.7%)	165 (75%)	351 (70.3%)	
No	93 (33.3%)	55 (25%)	148 (29.7%)	

Do You Have Adequate Knowledge About NRTs?				0.64 ^{NS}
Yes	93 (33.3%)	69 (31.4%)	162 (32.5%)	
No	186 (66.7%)	151 (68.6%)	337 (67.5%)	
Nicotine Replacement Therapy (NRT) Is Designed To Use For ?				0.57 ^{NS}
4 weeks	32 (11.5%)	28 (12.7%)	60 (12%)	
12 weeks	47 (16.8%)	45 (20.5%)	92 (18.5%)	
16 weeks	27 (9.7%)	16 (7.3%)	43 (8.6%)	
Do not Know	173 (62%)	131 (59.5%)	304 (60.9%)	
Which Product Is Absorbed Faster ?				0.9 ^{NS}
Nicotine Nasal Spray	50 (17.9%)	41 (18.6%)	91 (18.2%)	
Nicotine Gum	71 (25.4%)	61 (27.7%)	132 (26.5%)	
Nicotine skin patch	53 (19.0%)	40 (18.2%)	93 (18.6%)	
Do not Know	105 (37.6%)	78 (35.5%)	183 (36.7%)	
How Much Dose Of Nicotine Gum Should Be Advised To A Heavy Smoker ?				0.024*
4 mg	36 (13%)	46 (21%)	82 (16.4%)	
6 mg	42 (15.1%)	26 (11.8%)	68 (13.6%)	
8 mg	29 (10.4%)	12 (5.5%)	41 (8.2%)	
Do not know	172 (61.6%)	136 (61.8%)	308 (61.7%)	
Nicotine Skin Patch Should Be Worn For ?				0.21 ^{NS}
8-10 hrs	45 (16.1%)	28 (12.7%)	73 (14.6%)	
16-24 hrs	45 (16.1%)	26 (11.8%)	71 (14.2%)	
24-48 hrs	19 (6.8%)	22 (10%)	41 (8.2%)	
Do not know	170 (61%)	144 (65.5%)	314 (63%)	
Nicotine Patch And Inhaler Or Not Recommended Up To Which Age Group?				0.8 ^{NS}
< 10 years	23 (8.2%)	22 (10%)	45 (9.0%)	
< 15 years	21 (7.5%)	15 (6.8%)	36 (7.2%)	
< 18 years	118 (42.3%)	98 (44.5%)	216 (43.3%)	
Do not know	117 (42.0%)	85 (38.6%)	202 (40.5%)	
Acute Lethal Dose Of Nicotine Is ?				0.29 ^{NS}
20-30 mg	69 (24.7%)	71 (32.3%)	140 (28.1%)	
30-50 mg	64 (23%)	42 (19.1%)	106 (21.2%)	
40-60 mg	94 (33.7%)	70 (31.8%)	164 (32.9%)	
80-100 mg	52 (18.6%)	37 (16.8%)	89 (17.8%)	
NRTS Have The Potential To Increase The Blood Pressure By ?				0.01*
0-5 mm Hg	17 (6.1%)	12 (5.5%)	29 (5.8%)	
5-10 mm Hg	49 (17.6%)	23 (10.4%)	72 (14.4%)	
10-15 mm Hg	23 (8.2%)	8 (3.6%)	31 (6.2%)	
Do not know	190 (68.1%)	177 (80.5%)	367 (73.5%)	
Hesitation Towards Recommending NRTS For Smoking Cessation To Patients Is Due To ?				0.35 ^{NS}
Lack Of Knowledge About NRTS	126 (45.2%)	111 (50.5%)	237 (47.5%)	
NRTS Have Hazardous Side Effects	15 (5.4%)	10 (4.5%)	25 (5.0%)	
NRTS Are Not Helpful To Quit Smoking	19 (6.8%)	8 (3.6%)	27 (5.4%)	
All of the above	119 (42.7%)	91 (41.4%)	210 (42.1%)	
Should Smoking Cessation Education Be A Part Of The Core Curriculum Of The Basic Training Of All Health Professionals?				0.03*
Yes	271 (97.1%)	205 (93.2%)	476 (95.4%)	
No	8 (2.9%)	15 (6.8%)	23 (4.6%)	

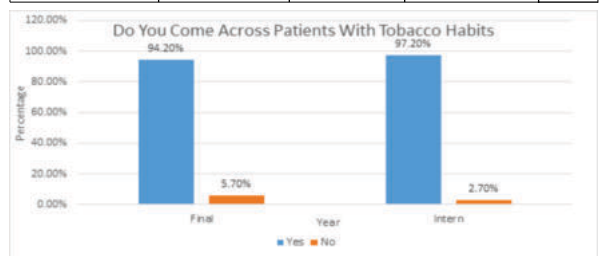


Figure 2: Do You Come Across Patients With Tobacco Habits

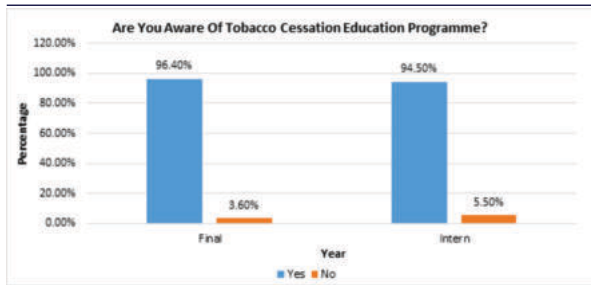


Figure 3: Are You Aware Of Tobacco Cessation Education Programme?

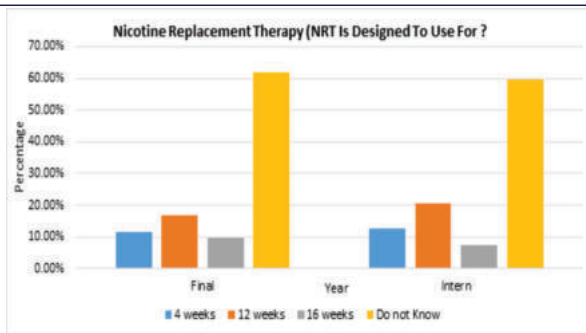


Figure 9: Nicotine Replacement Therapy (NRT Is Designed To Use For ?

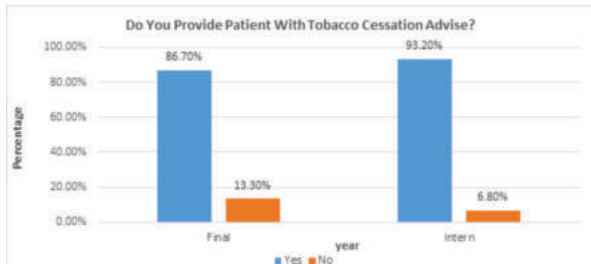


Figure 4: Do You Provide Patient With Tobacco Cessation Advise?

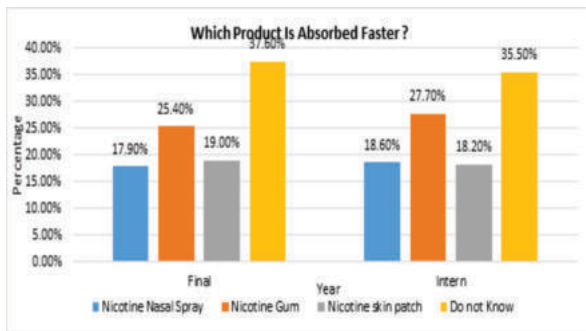


Figure 10: Which Product Is Absorbed Faster ?

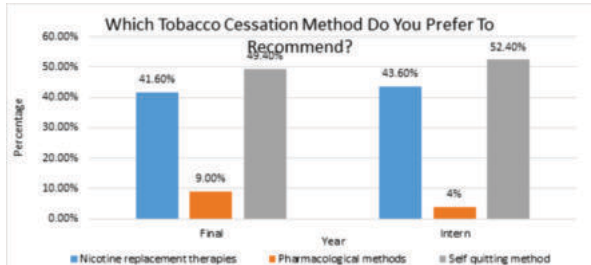


Figure 5: Which Tobacco Cessation Method Do You Prefer To Recommend?

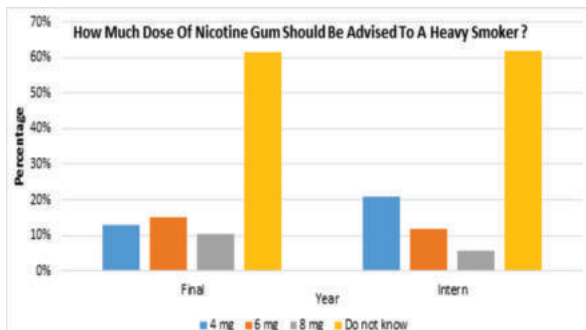


Figure 11: How Much Dose Of Nicotine Gum Should Be Advised To A Heavy Smoker ?

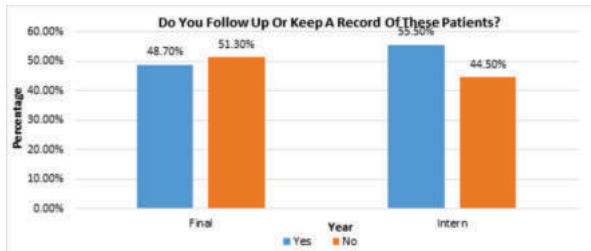


Figure 6: Do You Follow Up Or Keep A Record Of These Patients?

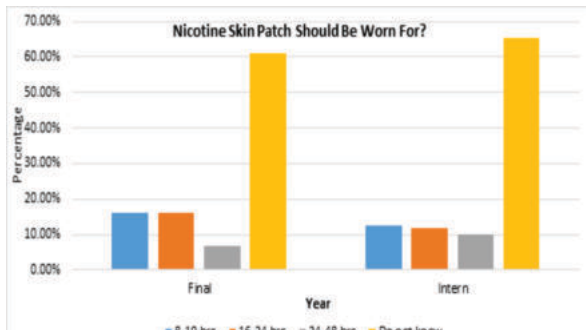


Figure 12: Nicotine Skin Patch Should Be Worn For?

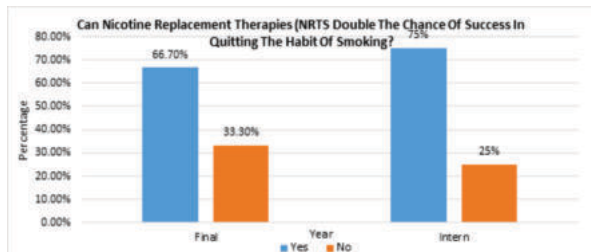


Figure 7: Can Nicotine Replacement Therapies (NRTs Double The Chance Of Success In Quitting The Habit Of Smoking?

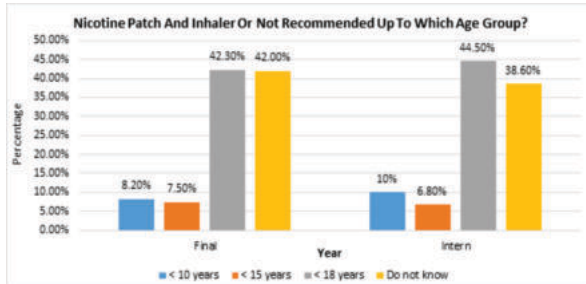


Figure 13: Nicotine Patch And Inhaler Or Not Recommended Up To Which Age Group?

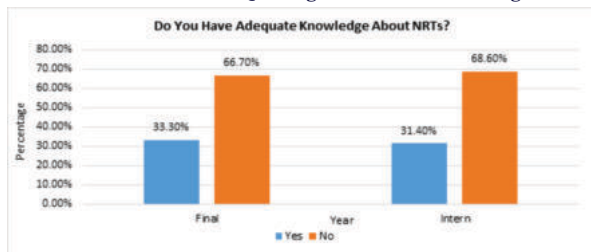


Figure 8: Do You Have Adequate Knowledge About NRTs?

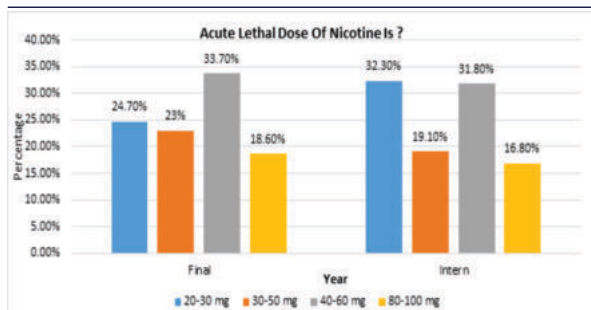


Figure 14: Acute Lethal Dose Of Nicotine Is ?

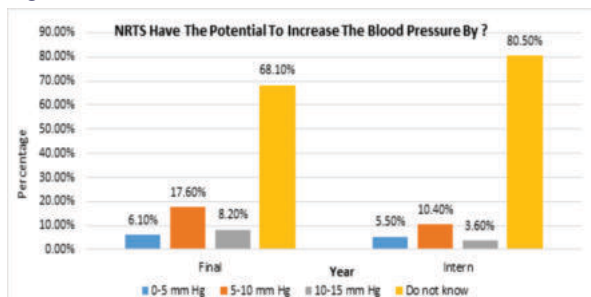


Figure 15: NRTS Have The Potential To Increase The Blood Pressure By ?

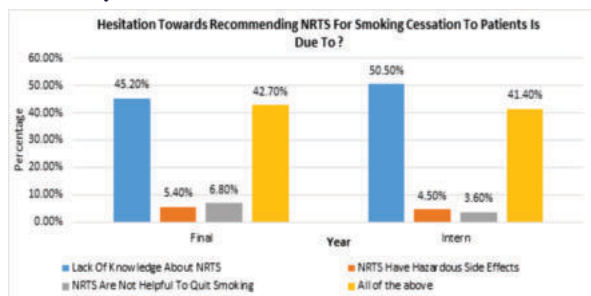


Figure 16: Hesitation Towards Recommending NRTS For Smoking Cessation To Patients Is Due To ?



Figure 17: Should Smoking Cessation Education Be A Part Of The Core Curriculum Of The Basic Training Of All Health Professionals?

DISCUSSION

All forms of tobacco use are harmful to oral health and general health. Quitting tobacco is difficult for people using it when done without the help of professionals⁸. Dentists play a major role in helping patients quit tobacco as they visit dentists are able to identify the patient who uses tobacco and as patients come for multiple sitting in the dental office it is easy to monitor and keep the patient under observation. There are five major steps (the “5 As”) for intervention in the primary care setting. Priorly the Dental care provider would “ask” the patient if he or she uses tobacco then “Advice” him or her to quit the habit and later “assess” willingness to make an attempt to quit, “Assist” the patient and “arrange” for follow-up contacts for preventing relapse⁹. Although not specifically addressed in any guideline, professional education institutions, including dental and dental hygiene schools, need to identify tobacco use among all patients¹⁰. In the present study, it was noted that 95% of the population was aware of the tobacco usage of their patients. In the present study, 95.6% of participants were aware of the Tobacco Cessation program. This will help in better patient

education and motivation for quitting tobacco. We also see in our study that 89.6% of them actually advised their patients to quit tobacco in a study by Warnakulasuriya¹¹ et al it was seen that nearly half of all dental surgeons advise their patients and suggest methods to quit tobacco consumption. In the present study 50.7% of them recommended self quitting method and 42.5% recommended NRT and 6.8% recommended pharmacological methods. As only 42.5% of them are aware of NRT it becomes important to educate the dental professionals about it. 70.3% of the participants believed that NRT can double the chance of quitting tobacco In a study by Rajashekhara Bhari Sharanasha et al¹² in their study showed that About 74.4% of participants were aware of NRT nearly 50% of students think motivating about NRT is a waste of time. About 65.2% of the students think it is difficult to quit smoking. This is not in accordance with our study. In our study, we see the participants who are aware of duration of NRT was only 18.5% of the were aware of the 12-week duration. 36.7% of the participants were not aware which product causes fast absorption 18.2% answered nasal spray is the fastest mode of absorption. From our study we see that participants were aware of NRT but more training was needed on nicotine dosage and duration and type of NRT in our study 95.4% of them believe that smoking cessation education should be a part of the regular curriculum In a study by Clareboets et al A majority of students perceived barriers in providing patients with tobacco cessation. Those who provided advice were more likely to have positive attitudes and reported feeling adequately prepared. Therefore, a need to provide such training of the health care professionals is mandatory.

CONCLUSION

Dentist play an important role in tobacco cessation programs. Although most of dentists are aware of NRT but barriers exist in inadequacy in knowledge and handling the patients. It becomes important to provide adequate training of dentist in the institutions .

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