KNOWLEDGE, ATTITUDE AND PERCEPTION OF POST-GRADUATES AND INTERNS OF A MEDICAL INSTITUTION TOWARDS NICOTINE REPLACEMENT THERAPY: A CROSS-SECTIONAL SURVEY IN BANGALORE CITY, KARNATAKA

Dental Science

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ABSTRACT

AIMS & OBJECTIVE: The main objective of this survey was to assess knowledge, attitude and practices of post-graduates and interns of a medical institution towards nicotine replacement therapy and provide baseline data for future research towards nicotine replacement therapy.

METHODOLOGY: A descriptive cross-sectional survey was carried over a period of 3 months among 200 Post-graduates and Interns from Rajarajeshwari Medical College & Hospital in Bangalore, Karnataka. Data was collected using a 24-item closed ended self-administered questionnaire, subdivided into four (categories:-demographic details, assessment of nicotine replacement therapy (NRT) knowledge, assessment of attitude, assessment of practice and barriers. Data was subjected to statistical analysis).

RESULT: Among the 200 participants, 91.5% of the students had heard about NRT, 52% (n=104) of the participant knew about the different forms of delivering NRT. More than one half of the participants 67% (n=134) of the participants were not aware of the duration of use of nicotine replacement therapy (NRT) nearly 93.7% of the participant were unaware about the dosage of NRT. This was statistically significant as per obtained ($p < 0.001$). About 73.5% (n=145) of the participants were not aware about the side-effects of NRT. The attitude towards nicotine replacement therapy (NRT) should be included in the present academic curriculum is positive as 87% (n=174) responding it should include in the academic curriculum. This was statistically significant as per obtained ($p < 0.001$).

CONCLUSION: The results indicates that lack of detailed knowledge regarding nicotine replacement therapy (NRT) reduces the chance of practicing inspite of having a positive attitude among institutionally attached health practitioners. It is recommended to have training programme on tobacco cessation counselling among medical professions.

KEYWORDS

Tobacco, Nicotine replacement therapy, medical institution, Knowledge, Addiction.

INTRODUCTION

Tobacco is one of the leading yet preventable causes of non-communicable diseases and is the second major cause of death globally. In spite of the increasing awareness regarding the health hazards associated with tobacco consumption, a large number of tobacco users are still existing only due to addiction to the tobacco products.¹ Tobacco use is also a primary cause of many oral diseases and condition, ranging from mild conditions, like stained teeth and restoration, taste derangements, halitosis, periodontal diseases, poor wound healing to life threatening diseases such as oral precancerous lesions and oral cancer.² Tobacco use and its hostile effects are known medical, dental and social concerns of global significance. Its use is also a barrier to economic development in low-income countries due to morbidity-associated impairment of productivity and health-care costs.³ Nicotine 1-methyl-2-(3-pyridyl) pyrrolidine, a highly addictive psychoactive drug found in tobacco plants, is mainly responsible for the withdrawal symptom among habitual tobacco users attempting to quit after successful psychological counseling¹.

Nicotine replacement therapy (NRT) products are licensed for the relief of withdrawal as an aid to smoking cessation. The rationale is that nicotine replacement therapy (NRT) eases withdrawal symptoms by providing an alternative source of nicotine. The attempt to stop smoking is broken into two stages. Initially the smoker continues with a reduced dose and speed of nicotine supply while overcoming the loss of the behavioural side of the dependence. Subsequently the smoker breaks the nicotine dependence by stopping using the nicotine replacement therapy (NRT) product.⁴ Several recent publications have highlighted the role and need for the medical professional to get involved with tobacco intervention. Medical professional are in a better position to find this addiction and habits as oral changes occur earlier than systemic changes. Hence, a dental professional has higher chances to help patients and guide them. Moreover, for this, they should have a sound and proper knowledge about the various methods

of tobacco cessation (pharmacological and non-pharmacological) with a positive attitude and healthy practice for the society's wellbeing.¹ Hence, this study aimed at assessing and comparing the knowledge, attitude, and perception of institutionally attached post-graduate students and interns students toward NRT.

MATERIALS AND METHODS

The present study was conducted among post-graduates and interns students of a Rajarajeshwari Medical College & Hospital Bangalore, Karnataka during period necessary permission was obtained from the medical college before starting the study. The ethical approval were obtained from institutional ethical review board from Rajarajeshwari dental college, Bangalore Karnataka. The participants were contacted directly in their respective departments of the institution, after obtaining necessary permission from authority. A brief introduction was given to all the participants about the study and its objectives before obtaining written consent. After clarifying all the queries, the questionnaire was handed over and were collected within an hour. A minimum number of two repeated visits were made to account for absentees on the day of the survey. Total enumeration method was employed to include all the participants.

Data Collection Tool

Self-structured 25-item questionnaire pretested closed ended used in the study. A pilot survey was carried out among 30 members of a medical college Bangalore city, who were not included in the final survey, to test the self-administered questionnaire for comprehensibility, acceptance and time required per person. Required changes to the questionnaire were made before actual use. Data collection were done maintaining anonymity and confidentiality by not recording the names of the participants on the questionnaire.

Statistical Analysis:

Statistical Package for Social Sciences [SPSS] for Windows,

Version22.0. Released in 2013. Armonk, NY: IBM Corp., was used to perform statistical analyses. Descriptive analysis includes expression of all the explanatory variables in terms of frequency and proportions. Chi-Square Goodness of Fit test was used to compare the distribution of participants responses to study questionnaire. Chi-Square test was used to compare between PGs and Interns responses to the study questionnaire. The level of significance [P-Value] was set at P<0.05.

RESULTS:

Table 1. Shows The Distribution Of Gender And Year Of Study Among The Study Participants.

Distribution of gender and year of study among study participants			
+Variables	Category	n	%
Gender	Males	73	36.5%
	Females	127	63.5%
Year of Study	Interns	98	49.0%
	PG 1st Yr.	44	22.0%
	PG 2nd Yr.	33	16.5%
	PG 3rd Yr.	25	12.5%

Total number of the study participants were $n = 200$ of them majority were female 63.5% ($n = 127$) and males 36.5% ($n = 73$); of the total participants $n=200$; 49% ($n=98$) were interns and 51% ($n=102$) were postgraduate students responded. [Table 1]

Table 2. Shows Comparison Of Distribution Of The Study Participants Using Chi-square Goodness Of Fit Test.

Comparison Of Distribution Of Responses Of The Study Participants Using Chi Square Goodness Of Fit Test					
Questions	Responses	n	%	χ^2 Value	P-Value
Heard about the term NRT	Yes	183	91.5%	137.780	<0.001*
	No	17	8.5%		
NRT's are effective to help smokers quit	Yes	167	83.5%	231.190	<0.001*
	No	29	14.5%		
	Don't know	4	2.0%		
Know about different forms of delivering NRT	Yes	104	52.0%	56.590	<0.001*
	No	19	9.5%		
	Don't know	77	38.5%		
Forms of NRT's are available	Patch gums / Lozenges	61	30.5%	99.400	<0.001*
	Inhalator, Nasal Sprays, tab	99	49.5%		
	Both a & b	38	19.0%		
	None	2	1.0%		
Most effective way for smokers to quit	Chewing Gums	98	49.0%	73.800	<0.001*
	Transdermal Patch	54	27.0%		
	Nasal Spray	21	10.5%		
	Don't know	27	13.5%		
Aware about the duration of NRT	Yes	65	32.5%	24.500	<0.001*
	No	135	67.5%		
Aware about the Dosages of NRT	Yes	14	7.0%	147.920	<0.001*
	No	186	93.0%		
NICOTINE REPLACEMENT THERAPY (NRT)gums / patch lead to side effects	Yes	38	19.0%	178.360	<0.001*
	No	154	77.0%		
	Don't know	8	4.0%		
Tapering of NRT's is needed	Yes	117	58.5%	88.690	<0.001*
	No	74	37.0%		
	Don't know	9	4.5%		
Adhesive transdermal patches can be applied to	Trunk	19	9.5%	93.480	<0.001*
	Upper arm	26	13.0%		
	Both a & b	106	53.0%		
	Don't know	49	24.5%		
Which has higher rate of success	NRT	1	0.5%	366.440	<0.001*
	Counselling	27	13.5%		
	Both a & b	166	83.0%		
	Don't Know	6	3.0%		
Heard about E cigars	Yes	138	69.0%	28.880	<0.001*
	No	62	31.0%		

E cigar help to quit tobacco as compared to NRT's	Yes	114	57.0%	72.280	<0.001*
	No	70	35.0%		
	Don't know	16	8.0%		
NRT's recommended for occasional smokers	Yes	53	26.5%	117.670	<0.001*
	No	135	67.5%		
Can a pregnant smoker undergo NRT	Don't know	12	6.0%		
	Yes	64	32.0%	25.920	<0.001*
Aware about the contraindication of NRT	No	136	68.0%		
	Don't know	0	0.0%		
Aware about the side-effects of NRT	Yes	67	33.5%	21.780	<0.001*
	No	133	66.5%		
Is NICOTINE REPLACEMENT THERAPY (NRT)available at your institute	Yes	53	26.5%	44.180	<0.001*
	No	147	73.5%		
Separate cell at institute for counselling Nicotine users	Yes	27	13.5%	36.670	<0.001*
	No	80	40.0%		
	Not sure	93	46.5%		
Aware of any organisations helping patients to quit	Yes	54	27.0%	42.320	<0.001*
	No	146	73.0%		
Aware of CDC guidelines for treating Nicotine dependent patients	Yes	46	23.0%	9.640	0.008*
	No	76	38.0%		
	Not Completely	78	39.0%		
NICOTINE REPLACEMENT THERAPY (NRT)should be included in the present academic Curriculum	Yes	54	27.0%	40.900	0.13
	No	69	34.5%		
	Not Completely	77	38.5%		
NICOTINE REPLACEMENT THERAPY (NRT)should be included in the present academic Curriculum	Yes	174	87.0%	109.520	<0.001*
	No				

*P<0.05 significant, chi-square test, NRT=Nicotine replacement therapy

Of the total participants ($n=200$), 91.5% of the students had heard about nicotine replacement therapy (NRT) and only meagre (8.5%) parts of the participants were not aware of it. This was statistically significant as per obtained ($p<0.001$ *). When asked about this awareness about nicotine replacement therapy (NRT) as a tobacco quit ($n=200$), 83.5% of the students responded that NRT's are effective to help smokers to quit. 52% ($n=104$) of the participant knew about the different forms of delivering nicotine replacement therapy (NRT) were 48% ($n=98$) of participants were unaware about it, and it is statistically significant as per obtained ($p<0.001$ *). Of the total participants ($n=200$), 30.5% ($n=61$) of the participants were heard that the nicotine replacement therapy (NRT) can be delivered in the form of patch gums/ lozenges and 49.5% ($n=99$) of the participants knows that nicotine replacement therapy (NRT) available in the form of inhalator, nasal sprays and tablets, this difference was statistically significant ($p<0.001$ *). Majority 49% ($n=98$) said chewing gum are the most effective way for smokers and more than one fourth of the respondent 27.0% ($n=54$) agreed to transdermal patches. More than one half of the participants 67% ($n=134$) of the participants were not aware of the duration of use of nicotine replacement therapy (NRT) nearly 93.7% of the participant were unaware about the dosage of NRT. This was statistically significant as per obtained ($p<0.001$ *). The awareness about the side effects of nicotine replacement therapy (NRT) gum/ patches among the participants was very less only a meagre 19% ($n=38$) has knowledge of the same. More than half of the participants 58.5% ($n=117$) acknowledge the tapering of the dosage when using replacement therapies. 53% ($n=106$) of the participants were aware of the site of use of transdermal patches but only 0.5% of the participants relied on nicotine replacement therapy (NRT) alone for having high success rate for quitting tobacco were 13.5% ($n=27$) said counselling and 83% of the population acknowledge both nicotine replacement therapy (NRT)

& counselling as an effective way for quitting tobacco. Regarding e-cigar 69% of the participants responded that they heard about it and out of the total participants 57% (n=114) believes that E-cigar help to quit tobacco as compare to the NRT. 67% (n=134) of the participants responded that NRT's should not recommended to the occasional smoker's and 68% (n=136) responded that nicotine replacement therapy (NRT) is contraindicated in pregnant women. Of the total participants 66.5% (n=133) were not aware about the contraindications of the NRT. About 73.5% (n=145) of the participants were not aware about the side-effects of NRT. Out of the total participants 86.5% (n=173) of the participants were not aware about the status nicotine replacement therapy (NRT) availability at their institute. 73% (n=146) of the participants did not agree to have separate cell at the institute for counselling Nicotine users. Treating nicotine dependents CDC guideline 38.5% (n=77) participants were not aware about the same, which was statistically significant. The attitude towards inclusion of nicotine replacement therapy (NRT) in the present academic curriculum was positive as 87% (n=174). [Table 2]

DISCUSSION

Use of tobacco has a devastating effect on the health and well-being of the public. By 2030, tobacco is expected to be the single biggest cause of death worldwide, accounting for about 10 million deaths a year. The present study has revealed a stimulating array of issues in relation to tobacco cessation activity and nicotine replacement therapy (NRT) among interns and PGs in medical colleges. To our knowledge, very few studies have reported about the tobacco cessation and nicotine replacement therapy (NRT) related knowledge, attitude, and perception of medical students. The participants in this study are students from medical college. The findings of the present study shows that 91.5% of the postgraduate students and interns students claim that they heard about the term nicotine replacement therapy (NRT) along with their tobacco cessation counseling. In spite of that, only 52% of participants have detailed knowledge regarding the about different forms of delivering NRT, duration and doses of NRT. Their insufficient knowledge regarding the prescription of nicotine replacement therapy (NRT) could be achieve by appointing pharmacists at the medical colleges and trained medical professionals who knows about tobacco cessation medications and provide instructions regarding these medications. If the students are taught about the nicotine replacement therapy (NRT) medications, they will feel more confident in prescribing these medications to their patients who are willing to quit^[7]. Medical institutions provide a very good platform to educate budding medical practitioner to inculcate the habit of tobacco cessation counseling as regular practice during patient management from the beginning of their clinical career. In the present study, almost 90% of the study participants reported to be familiar with nicotine replacement therapy (NRT) which is very high in comparison to study conducted among undergraduate students in Karnataka where 75% of participants were unaware of the term nicotine replacement therapy (NRT)^[7]. The global awareness assessment for nicotine replacement therapy (NRT) conducted among 3rd-year dental students in 43 countries in 2014 reported that 37% (Mongolia) to 97% (Slovakia) of the respondent sever heard of NRT, though in India it has been reported to be 63%^[6]. The authors attributed this disparity of knowledge to several factors such as socioeconomic status of the country, tobacco intervention policy of the country, importance of tobacco education in Bachelor of Dental Surgery curriculum, exposure to various tobacco intervention initiatives, or free access to pharmacotherapy for nicotine dependence to all smokers who visit a health-care setting^[6]. In the present study, participants being postgraduates are expected to have profound knowledge than undergraduate students regarding nicotine replacement therapy (NRT) as observed in the study. This study showed a positive attitude of the participants toward nicotine replacement therapy (NRT). The findings of the present study also show that 92% of participants had heard about NRT, in contrast- only 52% of the participants claim to know about the different forms of NRT. Although this percentage is comparatively high in comparison to other studies by –Wyne et al, Singla et al, Sharma et al, Murugaboopathy et al, Applegate et al and Abdullah et al as 9.8%^[16], 12.5%^[12], 18.1%^[5], 19%^[14], 33.4%^[13], and 41.14%^[15] respectively. It is well expected that with increase in knowledge, confidence increases which may influence the practicing behavior and attitude. However, there is a disparity between the detailed knowledge of nicotine replacement therapy (NRT) and practice of prescribing NRT. According to present study 61% participants claimed to have the proper knowledge regarding different forms of NRT, including the brand names and availability nearby, but only about 14% of

participants have proper knowledge about the dosage of nicotine replacement therapy (NRT). Hence, their practice might be confined to prescription of nicotine gum as and when required, because 90% of participants knew about it. The result varies might be because of the outcome of social desirability bias. There can be several limitations of this investigation. A sample size of 200 from a single medical institution in Bangalore might reduce the generalizability of the findings. The present study assessed self-reported knowledge of participants, rather than exact knowledge toward NRT, so chances of introduction of social desirability bias cannot be ruled out. As the study was a quantitative one, related to the behavioural aspect of health professional, the outcomes might not be adequate to explore various barriers inhibiting the institutionalized health professionals to prescribe such an important pharmacotherapeutic agent. Hence, a cross-sectional study using a mixed methodology approach and a larger sample size is suggested, which may help the policy maker to strengthen the tobacco control policy of India, though the tobacco control policies of India are not so strongly implemented. So, there is a strong need for implementation of tobacco control policy in India.

CONCLUSION

Having the advantage of working in an academic environment, the postgraduate and Intern student lack a detailed knowledge about nicotine replacement therapy (NRT) restricting them to practice it whenever required though they report a strong positive attitude toward this pharmacotherapy. Hence, there is a strong need for implementation of tobacco control policy in India, making repeated training on tobacco cessation counseling giving importance to NRT, to all the students of the medical institutions of this country where tobacco-related problems are highly prevalent.

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