

Awareness and Level of Confidence among the Graduate Students of Medical and Associated Faculties Towards Tobacco Cessation Therapies

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Abstract

Tobacco use is generally described as the most prevalent cause of mortality and morbidity all around the world. Tobacco consumption is currently accepted as a well-established risk factor for many oral diseases such as oral cancer and periodontal disease. *Methodology:* The study population for the study were 100 students from each faculty within the age group of 21-25 years. The colleges were randomly chosen to collect the data. *Results:* Although smoking has adverse effects on the overall body, 14.4% of students overall consumed tobacco, in which 78% was in smoking form (68%- cigarette, 21%- hookah, and 11%- combined) and 22% in smokeless form. Considerably 89.2% of overall students were well aware of the fact of serious ill effects of tobacco consumption. *Discussion:* Even though the students were well aware of the fact that, consumption of tobacco has serious effects on the body and it's long term use can lead to cancer; around 14.4% students (72/500) consumed tobacco. *Results:* All the faculties relatively considered, it was their responsibility and agreed to the fact that lack of training and time was one of the barriers in advising the patients to Tobacco Cessation Therapies. *Conclusion:* Medical professionals and social workers have been identified as having an important role to play in supporting tobacco users who desire to quit.

Keywords: Tobacco Cessation Therapies; smoking; Medical; Dental; Ayurveda; Nursing; MSW; Oral Cancer; Social Workers.

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Introduction

Tobacco use is generally described as the most prevalent cause of mortality and morbidity all around the world [1]. tobacco consumption is currently accepted as a well- established risk factor for many oral diseases such as oral cancer and periodontal disease [2]. Along with that, there has been an increase of interest towards tobacco consumption in adolescents and young adults. The habit of tobacco consumption is a major concern in all developing nations from time immemorial.

While tobacco use has decreased in developed

countries, it is increasing in developing countries like India [3,4]. The latest nationally representative Global Adult Tobacco Survey, estimated that India has 42.4% of men, 14.2% of women and 28.6% (266.8 million) of all adults currently use tobacco (smoked and/or smokeless tobacco) (2016-2017) [5,6]. Provision of smoking cessation care to patients with oral problems is a responsibility of health care professions, particularly dentists and dental hygienists as these professionals are the first ones to detect such problems.

"Optimal lifestyle," comprising abstinence from smoking, adequate physical activity, eating 5 servings of fruits and vegetables each day, and

consuming limited or no alcohol, is associated with low risk of chronic disease when unselected populations are observed for long periods of time [6]. "Peer pressure" is said to be one other cause for the younger generation to indulge and an increase of interest towards such activities. Another reason given by the students is the urge to show one more superior to the other, which according to them increases their self-esteem. Such validation to their activities is of no relevance and definitive actions are required.

According to the U.S. Public Health Service's Clinical Practice Guideline "Treating Tobacco Use and Dependence," brief tobacco dependence treatment provided by health care professionals, including dentists, is an effective way to prevent and reduce tobacco use [7].

The health professionals and dental hygienists along with the social workers have regular contact with smokers [8,9] and a great potential for helping their patients to quit smoking; yet this potential is often underutilized. It has also been suggested that the health professionals may lack sufficient awareness of their position as role models for the patients, [10] in comparison to western developed countries. As part of an effort to further promote smoking cessation activities, this study assessed smoking-related perceptions, attitudes and practices of health professionals and social workers.

Materials and Methods

The study area was focused on the Medical faculties including Medical, Dental, Ayurveda and Nursing along with MSW (Masters in Social Work) in and around the Satara district of Maharashtra. The study population for the study were 100 students from each faculty within the age group of 21-25 years. The colleges were randomly chosen to collect the data. The study was approved by the Institutional Review Board. The permission to conduct the survey and ethical clearance was obtained from the Institutional Ethical Committee of Krishna Institute of Dental Sciences & Hospital, Karad.

The sample size was estimated as 500 based on staff support and breadth of interest from previous studies. Development of the questionnaire was based on the items previously reported in various studies. Additional questions were developed and approved.

The questionnaire was distributed to students during lecture periods and retrieved immediately.

Any doubts regarding any questions in the questionnaire were clarified. The data then collected was entered in MS Excel sheet and descriptive analysis was done using SPSS Software. Descriptive analysis was conducted for all questions and frequency tables were generated. Differences were considered statistically significant at the level of $p < 0.05$.

Results

Five hundred students responded to take part in the study (100 from each faculty), out of which 58% participants were males and 42% were females. All the students participating in the survey fulfilled the age criteria i.e. their age was in the range of 21-25 years. Although smoking has adverse effects on the overall body, 14.4% of students overall consumed tobacco, in which 70% was in smoking form (61.22%- cigarette, 20.4%- hookah, and 18.36%- combined) and 30% in smokeless form.

Q2-Q6 were general questions to tobacco habits. The Medical, Dental, Ayurveda and Nursing students preferred more of the smoking form of tobacco (63%- cigarette, 26%- hookah and 11%- both). The MSW students preferred more of smokeless form as compared to all the other faculties.

Q7 and Q8 was based upon the awareness of ill effects of tobacco and its lesions associated with the oral cavity. Considerably 89.2% of overall students were well aware of the fact of serious ill effects of tobacco consumption. A higher number of Medical and Dental students had more awareness than other faculties towards the ill effects. Only the dental students (93%) had the highest amount of knowledge as compared to the other faculties. The lowest amount of knowledge was in MSW students (7%) which proved that there is a critical need to increase the knowledge among these students.

When the dental faculty was asked about white lesions (Q10), they had comparatively much more knowledge about white lesions in the oral cavity than the other faculties, while the MSW students had very less amount of knowledge. We didn't get enough positive response from the nursing (61%) and the Ayurveda (62%) faculty students respectively scope to advice patients to stop using tobacco, yet more awareness is required among all the faculties.

The current scenario in the MSW faculty is 16% towards the professional responsibility to educate or encourage patients. Considerable positive

response was seen in the dental (96%), nursing (88%), medical (76%), and Ayurveda (72%) faculty students, but more awareness is required. Most of the MSW (17%) faculty students did not know what to do in such encounters (Q12) as compared to the other faculties which had a much more specific response.

Based on our results (Q13), most of the Ayurveda students (38%) considered it not to affect the relationship followed by the medical (16%) and dental (3%) faculties. Highest positive response

was seen by the dental students (77%) [Q14] and least was observed in the MSW students (36%), yet again alarming.

All the faculties do not have adequate amount of knowledge about NRT therapies and are to be enforced in the curriculum (Q15).

Significance values

*- higher significance (<0.05- >0.0001)

** - highest significance (<0.0001)

Sr No.	Questions	% Medical	% Dental	% Nursing	% MSW	% Ayurveda	p Value
1.	Do you consume tobacco in smoking or non-smoking form?	19%	17%	10%	14%	15%	
2.	If yes, in what form do you consume tobacco?	Smoking form (cigarette & hookah):				61.22%	
		cigarette -				20.4%	
		hookah-				18.36%	
		combination-				30%	
		Smokeless form (ghutka):					
		More than 3:				42.85%	
		2-3 times:				21.42%	
		One time:				14.28%	
		Occasionally:				21.42%	
3.	How many times do you consume tobacco in a day?						
4.	How many years have you been consuming tobacco?						
		More than 3 years:				45.71%	
		1-3 years:				11.4%	
		Less than 1 year:				42.85%	
5.	What time of consumption would you dislike to give up the most?						
		First one in the morning:				61.4%	
		All the other ones in the day:				38.6%	
6.	Have you ever undergone any therapy to quit?						
		Yes:				25.8%	
		No:				74.2%	
7.	Are you aware of the fact that, consumption of tobacco has serious effects on the body and it's long term use can lead to cancer?	YES- 94%	YES- 97%	YES- 87%	YES-77%	YES- 91%	0.04*
		NO- 1%	NO- 2%	NO- 8%	NO-12%	NO- 3%	
		DW- 5%	DW- 1%	DW- 5%	DW-11%	DW- 6%	
8.	Are you aware that tobacco leads to oral mucosal lesions (white lesions, xerostomia [IE Dry mouth], diseases of tongue, pre malignant lesions)?	YES- 47%	YES- 93%	YES- 44%	YES- 7%	YES- 41%	<0.0001**
		NO- 42%	NO- 4%	NO- 35%	NO- 57%	NO- 42%	
		DW- 11%	DW- 3%	DW- 21%	DW- 36%	DW- 17%	
9.	Do you consider it is your professional responsibility to educate or encourage patients to quit tobacco consumption?	YES- 76%	YES- 96%	YES- 88%	YES- 16%	YES- 72%	<0.0001**
		NO- 16%	NO- 3%	NO- 8%	NO- 41%	NO- 21%	
		DW- 8%	DW- 1%	DW- 4%	DW- 43%	DW-7%	
10.	Would you consider sending a patient to a dentist if you observe a white lesion in the oral cavity?	YES- 64%	YES- 92%	YES- 87%	YES- 73%	YES- 78%	<0.0001**
		NO- 17%	NO- 5%	NO- 8%	NO- 17%	NO- 14%	
		DW- 19%	DW- 3%	DW- 5%	DW- 11%	DW- 8%	
11.	Is it within your professional scope to advice patients to stop using tobacco?	YES- 68%	YES- 88%	YES- 61%	YES- 44%	YES- 62%	<0.0001**
		NO- 18%	NO- 5%	NO- 24%	NO- 28%	NO- 21%	
		DW- 14%	DW- 7%	DW- 15%	DW- 36%	DW- 17%	
12.	Is lack of training and time a barrier to tobacco cessation advice?	YES- 49%	YES- 39%	YES- 39%	YES- 17%	YES- 53%	<0.0001**
		NO- 26%	NO- 52%	NO- 15%	NO- 27%	NO- 41%	
		DW- 25%	DW- 9%	DW- 46%	DW- 56%	DW- 7%	
13.	Do you consider that counseling may lead to disturbance in relation with the individual?	YES-16%	YES- 3%	YES- 48%	YES- 26%	YES- 38%	0.00153*
		NO- 76%	NO- 96%	NO- 48%	NO- 31%	NO- 51%	
		DW- 8%	DW- 1%	DW- 4%	DW- 43%	DW- 11%	
14.	Do you believe that, it is not easy to quit tobacco consumption because many tobacco consumers are addicted to nicotine?	YES- 28%	YES- 63%	YES- 52%	YES- 20%	YES- 62%	<0.0001**
		NO- 49%	NO- 26%	NO- 35%	NO- 61%	NO- 18%	
		DW- 23%	DW- 11%	DW- 13%	DW- 18%	DW- 20%	
15.	Are You Aware of NRT'S (nicotine replacement therapies- nicotine gums, nicotine patches, etc.) ?	YES- 64%	YES- 77%	YES- 74%	YES- 36%	YES- 34%	<0.0001**
		NO- 20%	NO- 14%	NO- 12%	NO- 25%	NO- 45%	
		DW- 16%	DW- 9%	DW- 14%	DW- 39%	DW- 21%	

Discussion

Even though the students were well aware of the fact that, consumption of tobacco has serious effects on the body and its long term use can lead to cancer; around 14.4% students (72/500) consumed tobacco. All the faculties relatively considered, it was their responsibility and agreed to the fact that lack of training and time was one of the barriers in advising the patients to Tobacco Cessation Therapies.

More amount of knowledge must be implemented about the NRT's (Nicotine Replacement Therapy) among the MSW students as only 11% knew about it.

Based on a study conducted in San Diego, Dental vs. Medical Students' Comfort with Smoking Cessation Counseling [9]; stated that, "medical students comparatively had less knowledge than that of the dental students", while according to our study we tried to make a comparison between five faculties in which dental students had considerably more amount of knowledge as compared to other faculties, thus trying to make an improvement in the educational system and focusing on the importance of tobacco cessation therapies.

Another study conducted: Saito A, Nishina M, Murai K, et al. [10]; stated that even dental students did not have satisfactory amount of knowledge which further differentiates our results. Thus, considering the previous studies, there is spare amount of research considering tobacco cessation; we tried to improve our study by including the knowledge among the other faculties as well.

Conclusion

Medical professionals and social workers have been identified as having an important role to play in supporting tobacco users who desire to quit. Evidence based guidelines provide a clear way forward for all health professionals to become engaged in this important area of prevention. The main barriers reported by students in my survey included lack of time and remuneration, lack of training and little chances of success.

Recommendations

It is recommended that, the students should be trained at the primary and community health care levels in the treatment of tobacco dependence, as most people in India cannot afford to go to a

specialist tobacco cessation counseling centers nor can the government afford to run them on large scale.

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Conflicting Interest

(If present, give more details): Nil

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Antibacterial Effect of Gum Arabic on Streptococcus Mutans in Vitro

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Abstract

Background: Nowadays a great need for an anti-bacterial agent can be used on a daily basis without side effects of antimicrobial chemicals as chlorhexidine. This study aims to evaluate the microbiologic effect of Gum Arabic against streptococcus cultures. **Materials and Methods:** Aqueous of Gum Arabic Hashab (Acacia Senegal) and Talha (Acacia Seyal) with different concentration (10%-100%) were used to evaluate the antimicrobial activity by the agar well diffusion method. *Streptococcus mutans* was placed on the agar. Gum Arabic solution was propelled in the wells made in the agar, after incubation at 37°C - for 24 hours in anaerobic incubator. The diameter of inhibition zones formed around wells were measured and compared with control (chlorhexidine 2%). Minimum inhibitory concentration for Hashab and Talha was determined. **Results:** No significant difference was found between Gum Arabic and chlorhexidine. The antimicrobial effect of Gum Arabic Hashab and Talha was similar to that of chlorhexidine (p-value > 0.05). Gum Arabic Hashab and Talha had same effect against *Streptococcus mutans* (p-value > 0.05). Minimum inhibitory concentration was 7% for Gum Arabic Hashab and 8% for Gum Arabic Talha. **Conclusion:** Gum Arabic inhibited the growth of *Streptococcus mutans*. It highly recommended to be used as preventive measure for cariogenic process.

Keywords: Antibacterial; Gum Arabic; Streptococcus Mutans; Dental Caries.

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Introduction

Dental caries is one of the most prevalent oral diseases worldwide. It affects the majority of individuals in all age groups during lifetime and characterized by the colonization and accumulation of oral microorganisms on dental surfaces, resulting in the formation of dental plaque (or bacterial biofilm) and demineralization of the tooth structure [1].

Dental caries is a disease that progresses when carbohydrates fermented by bacteria produce acid and lead to tooth demineralization [2].

Several bacteria have been described in association with the cariogenic process, especially the acidogenic and acid uric bacteria. *Streptococcus mutans* is the most important agent capable of demineralizing enamel. It possesses many virulent properties that support the role in the caries procedure and become pathogenic under certain conditions which lead to frequent and prolonged acidification of the dental plaque. *Streptococcus mutans* adapt to the low pH environment. Acid production rate increases and plaque PH decreases resulting in a cariogenic plaque [3].

Over the last decades, the uses of natural products as complementary for prevention and