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RESEARCH ARTICLE

“COMPARISON OF SMOKERS AND NON-SMOKERS KNOWLEDGE AND AWARENESS OF SMOKING EFFECTS ON GENERAL and ORAL HEALTH

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Abstract

Introduction: Tobacco inhalation is inhalation of smoke from burned leaves of tobacco plant, most often in the form of cigarettes. Smokeless tobacco refers to chewing of tobacco. People may smoke casually for pleasure, habitually to satisfy an addiction, due to social pressure, etc. There is overwhelming evidence that tobacco usage produce harmful effects in the mouth.

Aim: The objective of this was to assess the differences in knowledge and awareness of dental patient to the effects of smoking on oral and general health between smokers and non-smokers.

Materials and Methods: A cross sectional analytic study using a self-administered questionnaire was be given to the patients in the dental clinics of the College of Dentistry at Taibah University.

Results: A total of 418 respondents responded to be enrolled in the study. Out of the 418 respondents, 51.9% were smokers and 48.1% were not. The comparison between smoker and non-smoker with age group, the smokers group was higher between (31-50) 57.1%, also in comparison between smokers and non-smokers in avoid reading about the hazards of smoking in newspapers, magazines and Emails smokers who totally agree was totally agree 64.5%

Conclusion: The dental patients had good knowledge about the oral and general effects of smoking. Smokers exhibited a willingness to follow the dentists' advice about quitting smoking.

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Introduction:-

Tobacco inhalation is inhalation of smoke from burned leaves of tobacco plant, most often in the form of cigarettes. Smokeless tobacco refers to chewing of tobacco. People may smoke casually for pleasure, habitually to satisfy an addiction, due to social pressure. There is overwhelming evidence that tobacco usage produce harmful effects in the mouth.¹

WHO has reported that tobacco smoking has killed 100 million people worldwide in 20th century and warned that it could kill 1 billion people globally in the 21st century.

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Smoking has been established as a risk factor for death from several systemic diseases, including lung cancer, respiratory diseases, and cardiovascular disease.^{1,2}

Smoking has also been demonstrated to affect the oral health of smokers in a variety of way ranging from cosmetic effects, such a teeth staining or discoloration, to potentially harmful life-threatening conditions such as oral cancer.^{1,3}

Some of the reported effects of smoking on oral health include increased susceptibility to periodontal disease, reduced response to both surgical and nonsurgical periodontal therapies,^{4,5}.Also there is an increased risk of dental implant failure⁶ and a higher risk for cancer and precancerous lesions.^{7,8}

In susceptible patients, the clinical effects of smoking depends on number of cigarettes smoked daily and the duration of habit.⁹

Passive smoking includes inhalation of smoke from smoker's cigarette to anther individual and it can cause increased allergic reaction against specific allergens, reduced lung function and increased asthmatic attacks in patient with asthma. Despite the above established adverse effects of smoking on oral health, few studies examining dental patient's knowledge and awareness of such effects are available.^{10,11}

Moreover, the available studies have focused mainly on oral cancer and only a very few have examined the awareness regarding other oral health aspects, affected due to smoking. The aim of this study is to assess the awareness of smoking's effects on oral and general health among smoker and non-smoker dental patients.

Study objectives:-

To assess the differences in knowledge and awareness of dental patient to the effects of smoking on oral and general health between smokers and non-smokers.

Study design:-

A cross-sectional analytic study using a self-administered questionnaire was given to patients attending the dental clinics in College of Dentistry at Taibah University.

Sample size:-

The new patients attending the dental clinics in College of Dentistry during 2015 were 11,303. Using the Roasoft sample size calculator¹. with a marginal error expected of 5%, 95% confidence level and a response distribution of 50%.Itwas calculated that the sample size would be 372 with an additional 10% expected drop out the total sample size was calculatedas 418 participants.

Patient selection:-

Systemic random sample, a list patient in ascending manner in three days a week for two months and will be chosen patient number (1-3-5-7....)

Inclusion criteria:-

Smoker and non-smoker attending to dental clinics in College of Dentistry at Taibah University

Exclusion criteria:-

1. Children (Local law defines children as anyone under age 18).
2. Students.
3. Cognitively impaired or mentally challenged subjects.

Ethical clearance form:-

1. Ethical clearance was be sought before the start of the study from the Taibah University College of Dentistry Research Ethics Committee (TUCD REC).

2. Data will be collected coded and locked in a password-protected computer at the principal investigator office to ensure confidentiality and privacy of patient data.

Statistical Analysis:-

Data entry and analyzes of results will be done using the Statistical Package for Social Sciences (SPSS) ver 21 for Windows software². Descriptive statistics such as mean and standard deviation (SD) for continuous variables and frequency and percentage for categorical variables will be determined. Inferential statistics will then be followed using parametric and non-parametric test for univariate analysis followed by multivariate analysis using logistic regression. The level of significance is set at $p < 0.05$.

Results:-

The present study was a cross-sectional descriptive study conducted to assess perception of dental patients visiting Dental College and Hospital about comparison of smokers and non-smokers awareness of smoking effects on oral health as a part of oral health care delivery. All 418 subjects completed the questionnaire, with response rate of 100%. of 418 subjects, 51.9% were smoker, 48.1% were non-smoker.

A cross-sectional analytic study using an online anonymous self-administered participant filled in the appropriate responses. The study was conducted among patients attending the Dental clinics at Taibah University in Al-Medina Al-Munawarah.

A total of 418 respondents responded to be enrolled in the survey. Out of the 418 respondents, 51.9% were smokers and 48.1% were not (Table 1).

The comparison between smoker and non-smoker with age group, the smokers group was higher between (31-50) 57.1%, also as compared between smokers and non-smokers in avoid reading about the hazards of smoking in newspapers, magazines and Email smokers who totally agree was totally agree 64.5% (Table 2).

The difference in knowledge between participants about the background on the diseases that may result from smoking. 82.4% of smokers stated yes while 63.5% of non-smokers stated yes (Table 3).

The difference in knowledge between participants about the smoking causes lung cancer. 88.4% of smokers stated yes while 94% of non-smokers stated yes (Table 3).

The difference in knowledge between participants about the smoking causes heart disease. 90.7% of smokers stated yes while 89.5% of non-smokers stated yes (Table 3).

The difference in knowledge between participants about the smoking causes discoloration of the teeth. 89.8% of smokers stated yes while 94% of non-smokers stated yes (Table 4).

The difference in knowledge between participants about the smoking causes a foul odour of the mouth. 67.8% of smokers stated yes while 94.5% of non-smokers stated yes (Table 4).

The difference in knowledge between participants about the smoking causes tooth decay. 52.1% of smokers stated yes while 69.7% of non-smokers stated yes (Table 4).

The difference in knowledge between participants about the smoking causes gum disease. 47% of smokers stated yes while 91% non-smokers stated yes (Table 4).

The difference in knowledge between participants about the smoking causes cancer diseases, including oral cancer. 63.9% of smokers stated yes while 90% of non-smokers stated yes (Table 4).

¹ IBM SPSS Statistics IBM North America, 590 Madison Avenue, New York, NY 10022. United States, E-mail: www.ibm.com

Table 1:- Percent of smokers and non-smokers

	Frequency	Percent
Yes	217	51.9
No	201	48.1

Table 2:- Age groups

Age							
Do you smoke?		18-24	25-31	31-50	Greater than 51	X ¹	P-value
	Yes	47 21.7%	36 16.6%	124 57.1%	10 4.6%	104.34	0.000
	No	138 68.7%	28 13.9%	30 14.9%	5 2.5%		
Smoker avoid reading about the hazards of smoking in newspapers, magazines, and Emails							
Do you smoke?		Agree	Disagree	Sometimes	I totally agree	X ¹	P-value
	Yes	19 8.8%	25 11.5%	33 15.2%	140 64.5%	80.44	0.000
	No	41 20.4%	72 35.8%	43 21.4%	45 22.4%		

Table 3:- Knowledge of participants regarding general health about smoking

Do you have a background on the diseases that may result from smoking						
Do you smoke?		Yes	No	Basic knowledge	X ¹	P-value
	Yes	178 82.4%	4 1.9%	34 15.7%	19.12	0.000
	No	127 63.5%	6 3%	67 33.5%		
Do you think that smoking causes lung cancer						
Do you smoke?		Yes	No	I do not know	X ¹	P-value
	Yes	190 88.4%	15 7%	10 4.7%	7.53	0.023
	No	188 94%	3 1.5%	9 4.5%		
Do you think that smoking causes heart disease						
Do you smoke?		Yes	No	I do not know	X ¹	P-value
	Yes	196 90.7%	13 6%	7 3.2%	9.1	0.011
	No	179 89.5%	4 2%	17 8.5%		

Table 4: Knowledge of participants regarding oral health about smoking

Do you think that smoking causes discoloration of the teeth						
Do you smoke?		Yes	No	I do not know	X ¹	P-value
	Yes	193 89.8%	13 6.0%	9 4.2%	7.69	0.021
	No	189 94%	2 1.0%	10 5.0%		
Do you think that smoking causes a foul odor of the mouth						
		Yes	No	I do not know	X ¹	P-value
	Yes	145	8	61	48.66	0.000

Do you smoke?	No	67.8%	3.7%	28.5%		
		190	3	8		
		94.5%	1.5%	4.0%		
Do you think that smoking causes tooth decay						
Do you smoke?		Yes	No	I do not know	X ¹	P-value
	Yes	113 52.1%	28 12.9%	75 34.6%	14.70	0.002
	No	140 69.7%	13 6.5%	48 23.9%		
Do you think that smoking causes gum disease						
Do you smoke ?		Yes	No	I do not know	X ¹	P-value
	Yes	101 47%	40 18.6%	74 34.4%	95.07	0.000
	No	183 91%	2 1.0%	16 8.0%		
Do you think that smoking causes cancer diseases, including oral cancer						
Do you smoke ?		Yes	No	I do not know	X ¹	P-value
	Yes	138 63.9%	55 25.5%	23 10.6%	55.21	0.000
	No	181 90%	2 1.0%	18 9.0%		

Discussion:-

In Saudi Arabia, the use of tobacco is a common in the form of cigarettes and shisha. Cigarettes smoking affects oral health in a variety of ways ranging from staining to various serious conditions like oral cancer. Between these two extremities, there are various effects of smoking on oral health which thought not as a severe oral cancer still present potential for significant oral health morbidity and tooth mortality⁽¹⁾.

In the current study, the awareness among patients about the difference in knowledge between participants about the smoking causes lung cancer. 88.4% of smokers stated yes while 94% of non-smokers stated yes. Was good in comparison with the study of Poonam Sood, Ridhi Narang, 82.8% of smokers stated yes, and 91.4% of non-smokers stated yes. However less compared with M. Terrades, 97.2% of smokers stated yes, and 99.2% of non-smokers stated yes ^{(2),(3)}.

The knowledge about relationship of smoking and heart diseases, 90.7% of smokers stated yes, and 89.5 of non-smokers stated yes. Was also higher in comparison with the study of Poonam Sood, Ridhi Narang, 71.7% of smokers stated yes, and 73.6 of non-smokers stated yes. However less compared with M. Terrades, 92.3% of smokers stated yes, and 95% of non-smokers stated yes ^{(2),(3)}.

The higher knowledge may be because many campaigns and advertisements have focused on smoking causative factors for lung cancer and heart diseases

The difference in knowledge between participants about the smoking causes discoloration of the teeth. 89.8 of smokers stated yes while 94% of non-smokers stated yes. Was good in comparison with the study of Poonam Sood, Ridhi Narang, 80.8% of smokers stated yes, and 84.16% of non-smokers stated yes. However less compared with M. Terrades, 93,1% of smokers stated yes and 99.2% of non-smokers stated yes ^{(2),(3)}.

The difference in knowledge between participants about the smoking causes a foul odor of the mouth. 67.8% of smokers stated yes, while 94.5% of non-smokers stated yes. Was less in comparison with the study of Poonam Sood, Ridhi Narang, 89.8% of smokers stated yes, and 95% of non-smokers stated yes . also less compared with M. Terrades, 87.5% of smokers stated yes, and 99.2% of non-smokers stated yes ^{(2),(3)}.

The difference in knowledge between participants about the smoking causes tooth decay. 52.1% of smokers stated yes while 69.7% of non-smokers stated yes. When this association has never been proved. Only 29.4% correctly

answered that there is no such association. It was good in comparison with M. Terrades, only 10.5% correctly responded that there is no such association^{(2),(3)}.

The difference in knowledge between participants about the smoking causes gum disease. 47% of smokers stated yes while 91% non-smokers stated yes. It was good in comparison of non-smokers with M. Terrades, 85.1% stated yes and the study of Poonam Sood, Ridhi Narang 67.7% stated yes. While less in comparison of smokers with M. Terrades, 74.6% stated yes and the study of Poonam Sood, Ridhi Narang 58.5% stated yes ^{(2),(3)}.

The difference in knowledge between participants about the smoking causes cancer diseases, including oral cancer. 63.9% of smokers stated yes while 90% of non-smokers stated yes. It was good in comparison of non-smokers with M. Terrades, 89.3% stated yes and the study of Poonam Sood, Ridhi Narang 82.5% stated yes. While less in comparison of smokers with M. Terrades, 78.9% stated yes and the study of Poonam Sood, Ridhi Narang 67.6% stated yes ^{(2),(3)}.

This study suggests that smoking cessation should be stressed upon to improve periodontal health and reduce tooth loss among smokers. Dental health campaigns must run awareness programs on the well-proved association of smoking and periodontal diseases Reference. Moreover, dental practitioners should play a crucial role regarding advising and supporting the patients in quitting during regular dentist visits.

The dental team could identify the patients willing to stop smoking and guide them to specialist smoking cessation advice centers. It is recommended to conduct further surveys among the general population covering different age groups and comparative studies in other populations to determine the validity of these results.

Limitations:-

The present study reflects the perceptions of patients attending a dental hospital, so the results should be interpreted carefully as it may not reflect the perceptions of the general populations. Also, hospital setups encourage one to respond favorably. The presence of friends and relatives can have an effect on responses. The patients may not admit their actual smoking status in the presence of relative or friends
The favorable responses may social desirability bias.

Conclusion:-

It can be concluded from this study that

1. The dental patients had a sound knowledge about the general and oral effects of smoking.
2. Smokers exhibited a willingness to follow the dentists' advice about quitting smoking.

Recommendations:-

1. It is recommended to conduct such surveys among general population covering different age groups.
2. Dentist should inform their patients about the effects of smoking and strongly advice and help them in quitting and take up a more active role in such activities.

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