Journal Homepage: -www.journalijar.com
INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)
Article DOI:10.21474/IJAR01/3127
DOI URL: http://dx.doi.org/10.21474/IJAR01/3127
ISSN NO. 2320-5407

RESEARCH ARTICLE

PROVIDING PREVENTIVE ADVICE BY DENTAL HYGIENIST, AND PREVENTIVE METHODS OF ORAL DISEASES AMONG ADULTS, IN KINGDOM OF SAUDI ARABIA.

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Manuscript Info

Manuscript History

Received: 05 December 2016
Final Accepted: 07 January 2017
Published: February 2017

Abstract

Purpose: study to assess the performance of dental hygienists for their role at providing preventive advice to patients and assess preventive methods of oral diseases among adults in kingdom of Saudi Arabia.
Methods: A self-administered questionnaire was conducted electronically through social media websites and WhatsApp application. This study include randomly selected (658) participants from all kingdom of Saudi Arabia population.
Results: 51.5% visit private dental centers. 41.5% reported that dental hygienists had never talk to them. 46% usually commitment the advices of dental hygienists related to their teeth and oral health. 44.2% agreement that using miswak obviates using toothbrush and toothpaste. 91% believe that they can't use another family member's brush. 55.3% aren't smokers. 21% suffer bad mouth smell usually. 35.5% use toothbrush for other purposes as tongue cleaning or massage their gum.
Conclusion: There is shortening by dental hygienists in providing preventive advice to patients. Moderate awareness and practice of prevention methods among adults in kingdom of Saudi Arabia.

Introduction:-

Optimal oral health care is attained when all members of the oral health care team work effectively together (1). As the public's oral health care needs change, the scope of practice in which oral health care providers can practice adapts to accommodate those changes. It is important to periodically evaluate the utilization of all members of the oral health care team to ensure the changing scope of practice is effective in providing for the public (2). Dental hygienists are highly educated professionals who complete rigorous training and meet strict standards of competency and practice (3). Dental hygienists have a specific scope of clinical procedures they provide to their patients. They assess a patient's condition in order to offer patient-specific preventative and educational services to promote and maintain good oral health.

The use of therapeutic methods assists their patients in controlling oral disease, while providing tailored treatment plans that emphasize the importance of behavioral changes (4). The complex professional role of the dental hygienist is often misunderstood other healthcare professionals (5). Furthermore, how the dental hygienist is utilized in the general dental practice is highly variable (2). Although clinical responsibilities vary based on individual state's scope of practice rules and regulations, the dental hygienists' role as a prevention specialist is constant throughout

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regions. Dental hygienists are trained to assess risk, educate and help patients manage and reduce risk for oral diseases (6).

Oral health is an integral element of general health and wellbeing. Good oral health enables individuals to communicate effectively, to eat and enjoy a variety of foods, and is important in overall quality of life, self-esteem and social confidence (7). Recent decades have witnessed improvement in the oral health status in developed countries attributable to changes in dietary habits, improved oral hygiene habits, and widespread availability and use of fluorides (8, 9). In addition, improved awareness related to oral health has been reported in developed countries and is cited as being partly responsible for better oral health (10, 11). However oral diseases, particularly dental caries and periodontal disease, remain a public health challenge (12). Changing patterns in the global diseases have been linked to changing lifestyles that include diet, use of tobacco, and consumption of alcohol. Changes in these lifestyle factors have a significant impact on oral health. Therefore, oral diseases qualify as a major public health concern (13). oral diseases affect a significant proportion of the world's population and exact a heavy toll in terms of morbidity and mortality (14). A range of diseases and conditions can be classified as oral diseases including dental caries, periodontal diseases, oral cancers, noma, dental erosion and dental fluorosis (15). It has also become clear that causative or risk factors in oral disease are often the same as those implicated in the major general diseases (16). oral disease is one of the four most expensive preventable chronic diseases, and in most cases these dental diseases are preventable (17). Inadequate knowledge of available preventive methods is related to non-adoption of preventive practices (18). Adoption of preventive practices and use of preventive modalities is a key message in most health education campaigns (11).

Given the importance of the role of dental hygienists as dental professionals, and the importance of oral diseases preventive means in maintaining the oral health and avoid oral diseases in general. Inadequate data is available about performance of dental hygienists for their role at providing preventive advice to patients and preventive methods of oral diseases among adults in KINGDOM OF SAUDI ARABIA. Researcher conducted this study to assess the performance of dental hygienists for their role at providing preventive advice to patients and assess preventive methods of oral diseases among adults in KINGDOM OF SAUDI ARABIA.

Aims:-

- To assess the performance of dental hygienists for their role at providing preventive advice to patients in KINGDOM OF SAUDI ARABIA.
- And assess preventive methods of oral diseases among adults in KINGDOM OF SAUDI ARABIA.

Material and methods:-

Across-sectional was study conducted by researchers, using a questionnaire consist of twenty seven multiple-choice questions divided in to three main domains. The first domain include demographic questions dealing with age, gender, and nationality. While second domain include questions dealing with assessing the scope to which the specialist dental duties. And the third dealing with preventive procedures that carried out by the participants to maintain their oral health. This study include (658) participants from all KINGDOM OF SAUDI ARABIA population, they were selected randomly, and answered the questionnaire electronically through social media websites and WhatsApp application.

Statistical methods:-

The statistical analysis program (SPSS v.22) was been used in the study in data entry and analysis, with the use of necessary statistical methods to achieve the objectives of the study. The following statistical methods were used:

- Frequencies.
- Percentages.
- Diagrams.
- Chi Square test.

Population & Sample of the Study:-

The study population includes all KINGDOM OF SAUDI ARABIA population, the sample was (658) randomly chosen persons, they answered the electronic questionnaire through social media websites and WhatsApp application, 87.5% of them were males, while 12.5% of them were females. Most of them were Saudi.

And according to their ages; 72.9% of their ages were between (20 -40) years old, while 24.2% of them were more than (40) years old, and 2.9% of them were less than (20) years old. The next table illustrates that.

Table (1):- Personal data for the study sample. (N= 658).

Personal Data		**Frequency**	**Percent**
Gender	Male	576	87.5
	Female	82	12.5
Age	Less than 20 year	19	2.9
	From 20 - 40 year	480	72.9
	More than 40 year	159	24.2
Nationality	Saudi	637	96.8
	Non-Saudi	21	3.2

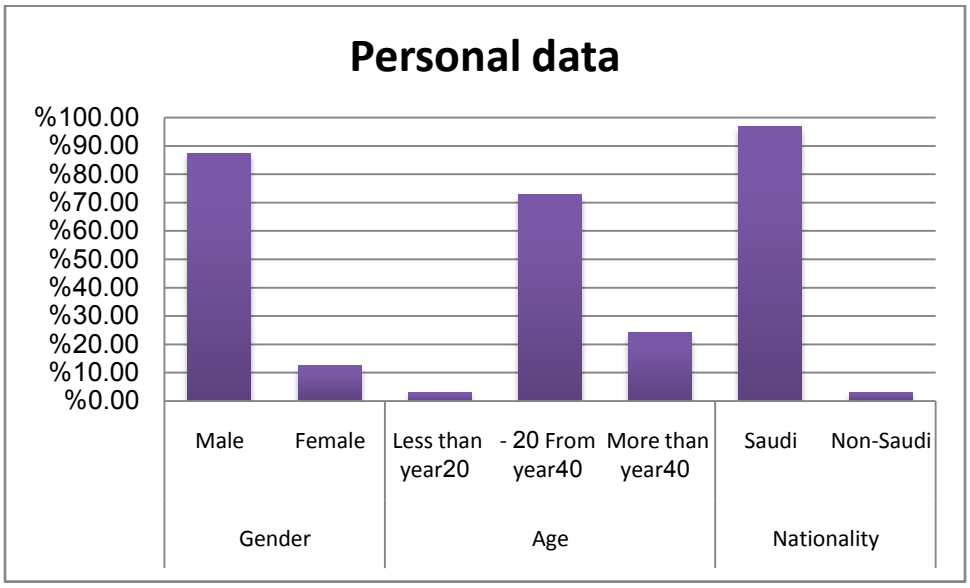


Diagram (1):- Personal data for the study sample.

Results:-

Table (2):- shows the participants' distribution according to their commitment to the visits dates of oral health to follow up gum infections.

	Frequency	**Percent**
Yes	87	13.2
No	351	53.3
Sometimes	220	33.4
Total	658	100.0

We notice that more than half of the participants don't commit to the visits dates of oral health and following gum infections.

Table (3): shows the participants distribution according to the type of the dental center they visit.

	Frequency	**Percent**
Private	339	51.5
Governmental	129	19.6
Private & Governmental	190	28.9
Total	658	100.0

We notice that more than half of the participants have the oral health care in private centers, while 19.6% of them visit governmental centers.

Table (4):- shows the participants' distribution according to whether the oral health specialist have talked to them or not.

	Frequency	Percent
Yes	205	31.2
No	273	41.5
Sometimes	180	27.4
Total	658	100.0

We notice that 41.5% of the participants haven't talked to their specialist about their oral health, while the others have talked to their oral health specialist about that. The next table shows the participants (who had a talk with their oral health specialist about some cases which it is supposed to be spoken by a specialist oral and dental health of the patient, and the extent of doing so) distribution.

Table (5):- shows the participants' distribution according to having a talk with their oral health specialist about some cases which it is supposed to be spoken by a specialist oral and dental health of the patient, and the extent of doing so. (N = 385)

The question	Yes		No		Sometimes		P-value
	#	%	#	%	#	%	
Did your oral health specialist explain the causes of gum infections and how they relate to following the different methods of keeping oral health in a good case?	179	46.5	96	24.9	110	28.6	0.000**
Do your oral health specialist teach you the right and suitable way to brush your teeth?	178	46.2	134	34.8	73	19.0	0.000**
Do your oral health specialist explain the impact of smoking and tobacco types on the oral and dental health?	176	45.7	157	40.8	52	13.5	0.000**
Do your specialist teach you the necessity and how to use the dental floss?	114	29.6	208	54.0	63	16.4	0.000**
Do your oral health specialist explain the role of fluoridated toothpaste to keep the oral health in a good case?	131	34.0	168	43.6	86	22.3	0.000**
Do your oral health specialist explain the impact of oral diseases on your body and your heart?	108	28.1	229	59.5	48	12.5	0.000**

** Chi square test significant at the 0.01 level.

We conclude from the previous table that 46.5% of the participants who had a talk with their oral health specialist, he explained the causes of gum infections and how they relate to following the different methods of keeping oral health in a good case, and 46.2% of them were taught about the right and suitable way to brush your teeth, 45.7% of them said that the impact of smoking and tobacco types on the oral and dental health was explained to them by the specialist.

While we find that 43.6% of the cases weren't taught the right and suitable way to brush their teeth, and 54% of them weren't told by their oral health specialist about the necessity and the way to use the dental floss, also 59.5% of them didn't have the impact of oral diseases on their body and heart explained.

Diagram (2):- shows the participants commitment extent in following the specialist's advices related to their teeth and oral health.

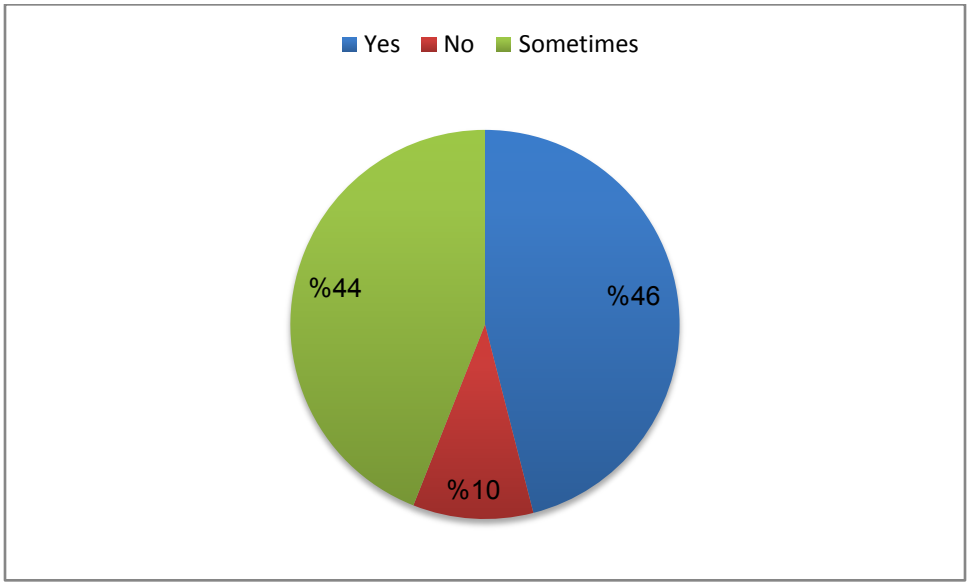


Table (6):- shows the participants distribution according to whether their dentists advised them with special toothpaste for teeth sensitivity if it happened after cleaning.

	Frequency	Percent
205	31.2	205
453	68.8	453
658	100.0	658

We notice that 60% of the participants' dentists didn't describe them special toothpaste for teeth sensitivity if it happened after cleaning.

Table (7):- the participants' distribution according the dentist advice about the number of time they should brush their teeth a day.

	Frequency	Percent
Once before sleeping	41	6.2
Twice, when getting up and before sleeping	286	43.5
After every meal	129	19.6
He didn't advise me to do that	202	30.7
Total	658	100.0

We notice that 43.5% of the participants were advised to brush their teeth twice a day, once before sleeping and once after getting up.

Table (8):- the participants' distribution according the dentist advice about the time they should replace their toothbrushes.

	Frequency	Percent
When the bristles begin to fade out	62	9.4
After 3-6 months of use	135	20.5
After flue infection or any infectious disease	20	3.0
He didn't tell me about that	441	67.0
Total	658	100.0

We notice that 67% of the participants weren't told about the suitable time to replace their toothbrushes, while 20.5% of them were advised to replace it after (3- 6) months of using it.

Table (9):- shows the participants distribution according to their agreement that using siwaak obviates using toothbrush and toothpaste.

	Frequency	Percent
Yes	291	44.2
No	265	40.3
I don't know	102	15.5
Total	658	100.0

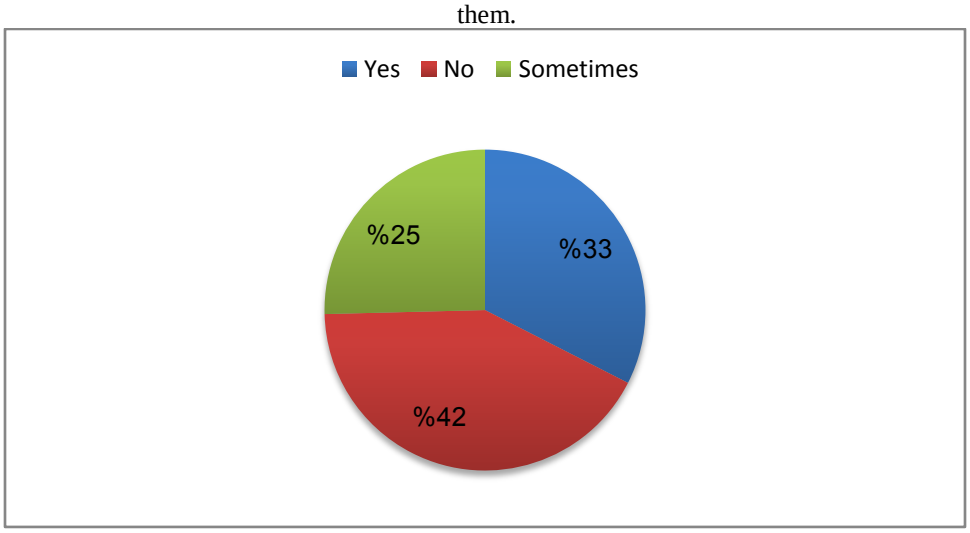
We notice that 44.2% of the participants belief that using swiaak obviates using toothbrush and toothpaste, while 40.3% of them didn't believe so.

Table (10):- shows the participants distribution according to whether they believe that they can use another family member's brush in the case of losing theirs.

	Frequency	Percent
Yes	21	3.2
No	599	91.0
I don't know	38	5.8
Total	658	100.0

We find that 91% of them told that they believe that it is wrong to use others toothbrushes in case they lost theirs.

Diagram (3):- shows the participants' distribution according to whether the suffer teeth sensitivity after cleaning them.



We notice that 42% of the participants don't suffer teeth sensitivity after cleaning them, while 33% of them suffer from that, and 25% of them sometimes suffer from that.

Table (11):- shows the participants' distribution in terms of doing some special oral hygiene and preventive measures.

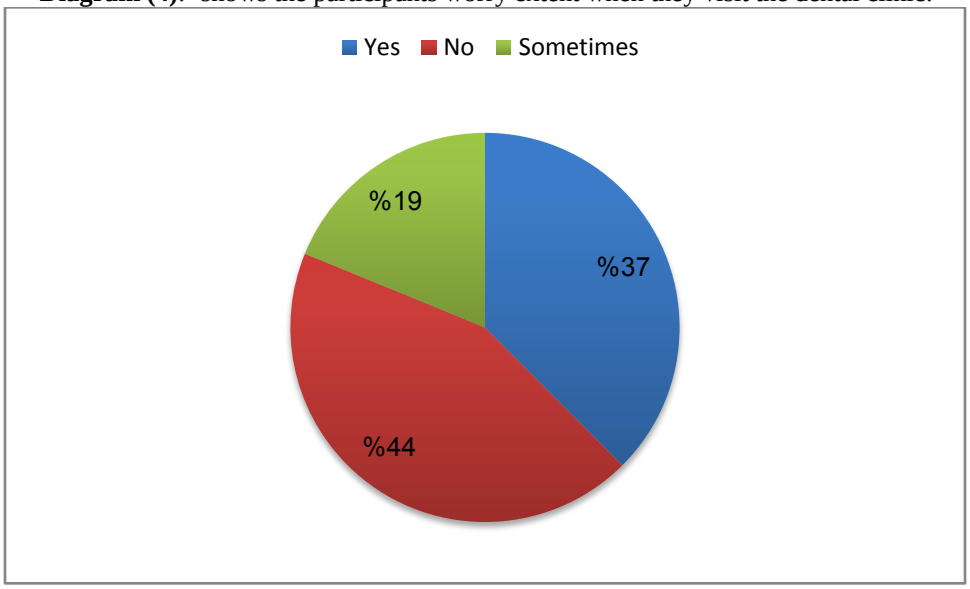
The question	Yes		No		Sometimes		P-value
	#	%	#	%	#	%	
Do you use special toothpastes for sensitivity?	169	25.7	361	54.9	128	19.5	0.000**
Do you periodically check your gum's health state (inflammation, bleeding and inflation or landing that causes tooth sensitivity?	114	17.3	383	58.2	161	24.5	0.000**
Do you follow the specialist instructions to use mouth rinse or antiseptic oral solution?	224	34.0	229	34.8	205	31.2	0.481

** Chi square test significant at the 0.01 level.

We conclude from the previous table that 54.9% of the participants don't use special toothpastes for sensitivity, 58.2% of them don't periodically check their gum's health state (inflammation, bleeding and inflation or landing

that causes tooth sensitivity, also we notice that 34.8% of them don't follow the specialist instructions to use mouth rinse or antiseptic oral solution, while 34% of them do, and 31.2% of them rarely follow the specialists instructions to do that.

Diagram (4):- shows the participants worry extent when they visit the dental clinic:



We notice that 44% of the participants don't feel worried when visiting the dental clinic, while 34% of the do, and 19% of them sometimes feel worried when visiting the dental clinic.

Table (12):- shows the participants' distribution in terms of smoking and mouth cleaning habits.

The question	Yes		No		Sometimes	
	#	%	#	%	#	%
Do you smoke or use any tobacco types?	249	37.8	364	55.3	45	6.8
Do you suffer any bad mouth smell?	138	21.0	284	43.2	236	35.9
Do you use toothbrush for other purposes as tongue cleaning or massage your gum?	230	35.0	320	48.6	108	16.4

We notice that 55.3% of the participants are not smokers and don't use any other types of tobacco, also we conclude that 43.2% of them don't suffer any mouth bad smell, while 35.9% of them sometimes suffer from bad mouth smell, and 21% of them already suffer from bad mouth smell.

Also we notice that 48.6% of the participants don't use their toothbrushes for other purposes, while 35% of them do.

Discussion:-

Oral health is an integral part of overall health and well-being. And oral disease is one of the four most expensive preventable chronic diseases (17). Dental hygienists are trained to assess risk, educate and help patients manage and reduce risk for oral diseases (6). So dental hygienists, as the primary preventive specialists of the dental team (20).In these topics data is rather scarce, especially in Saudi Arabia. Accordingly, the study was conducted to assess the performance of dental hygienists for their role at providing preventive advice to patients and assess preventive methods of oral diseases among adults in KINGDOM OF SAUDI ARABIA.

The majority of participants at this study were males. While the bulk of the participants ranged in age from 20 - 40 year old. And the most common nationality was Saudi. More than half of participants visit private dental center. This is a point we need to stop and then find out the cause of direction of most dental patients towards private sector. If there is a failure in the government sector must be dealt with.

Based on our results the dental hygienists didn't their required duty at providing advices to their patients, and provide them with preventive methods to avoid oral diseases. Whereas 41.5% of participants reported that dental hygienists had never talk to them. While only 27.4% reported that dental hygienists talk to them sometimes.

Despite increased access to water fluoridation, widespread use of fluoride toothpaste, and health-promotion efforts, periodontal disease, remain a public health challenge(12).And many previous epidemiological studies estimated that the prevalence of adult gingivitis varies from approximately 50-100% for dentate patients (21). We found from participants whose reported that dental hygienists talk to them about 24.9% reported that dental hygienists didn't explain the causes of gum infections and how they relate to following the different methods of keeping oral health in a good case for them.

Despite dental professionals should encourage patients' self-confidence to brush and floss at recommended levels and discuss strategies that combat barriers to performance(22).from the participants who had spoken to dental hygienists, 34.8% reported that dental hygienists didn't teach them the right and suitable way to brush their teeth. While more than half reported that dental hygienists didn't teach them the necessity and how to use the dental floss. From the participants who had talk to dental hygienists, 40.8% reported that dental hygienists didn't explain the impact of smoking and tobacco types on the oral and dental health for them. Although the Smoking is a risk factor for poor oral health and oral diseases (23).

Daily tooth brushing with fluoridated toothpastes is important for preventing dental caries (24). However 43.6% reported that dental hygienists didn't explain the role of fluoridated toothpaste to keep the oral health in a good case. A large number of publications have suggested that oral infection, especially periodontitis, are a potential contributing factor to a variety of clinically important systemic diseases (25). its mean that good oral health is important not only to prevent oral disease but also to maintain good general health. However 59.5% reported that dental hygienists didn't explain the impact of oral diseases on their body and heart.

Generally only 10% didn't follow the specialist's advices related to their teeth and oral health.

Given that these percentages mentionedpreviously referto part from the participants who had spoken to dental hygienists not from all participants, If compared with the total number of participants, it will show the extent of the negligence of dental hygienists in providing advice to patients. Ghasemiet al., reported at their study in Iran that dentists' knowledge of and attitudes towards prevention should be improved and updated to enable and encourage them to provide their patients with preventive care (26).

Concerning awareness of prevention methods. Adequate awareness is a necessary enabling factor for self-care which can prevent and/or control many oral diseases (27). The results showed moderate and awareness practice of prevention methods among participants. While Al-Ansari found that preventive methods is not prevalent among Saudi adults.

44.2% of the participants belief that using miswak obviates using toothbrush and toothpaste. When used properly, the miswak is reported to be as effective as a toothbrush (29,30).The mode of transmission of cariogenic bacteria appears to be contact, either direct or indirect. Direct contact is commonly by kissing, so that oral flora is transmitted in saliva; indirect contact occurs via objects such as a cup, utensils, toothbrush, or even shared toys, which are contaminated with cariogenic bacteria (31,32,33).In this study the vast majority believe that they can use another family member's brush in the case of losing theirs.

34% of the participants feel worried when visiting the dental clinic, this finding close to Al-Dosari who found that 35% with dental fear in KINGDOM OF SAUDI ARABIA (34). In Australia, High dental fear affects approximately one in six Australian adults (35).

Smoking is a risk factor for poor oral health and oral diseases (23).One of the reports published about smoking status in Saudi Arabia suggests a wide range for the prevalence of smoking (2.4–52.3%) (36). In the present study, 37.8%were found to be currently smoking. This value is on the higher side of the range mentioned. Oral and dental health care of non-smokers has been found to be better than that of smokers (37).A direct correlation was found to exist between oral hygiene practices and oral hygiene conditions associated with halitosis (38). 21% of the participants suffer any bad mouth smell.

Conclusion:-

Dental hygienists didn't their required duty at providing advices to their patients, and provide them with preventive methods to avoid oral diseases. The results showed moderate awareness and practice of prevention methods among adults in KINGDOM OF SAUDI ARABIA.

Recommendations:-

- Conduct training for dental hygienists about the importance of and how to provide preventive advice to patients.
- Study the cause of the failure of the dental hygienists, in turn, to provide preventive advice to patients.
- Need to increase the awareness of smoke-related problems and target the smokers group with smoke cessation programs.

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