

# PREVENTIVE ORAL HEALTH KNOWLEDGE, PRACTICE AND BEHAVIOUR IN JEDDAH, SAUDI ARABIA

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## INTRODUCTION

Dental problems such as tooth decay, periodontal disease and tooth loss, constitute a major public problem, in the world today (1). In order to prevent oral health problems, the American Dental Association (ADA) and other organizations recommended that adults should thoroughly brush and floss their teeth at least once a day and get regular oral health check-ups (2,3). Large number of surveys in different parts of the world have found brushing to be one of the best way to maintain oral health (4, 5, 6). Ninety percent of Americans brush at least twice daily (7), 97 % of Koreans brush once a day (4) while in India only 69 % of the population brush their teeth (8).

Other equally important preventive measure apart from brushing include flossing, fluoride and regular dental visits (9). The need for a regular dental checkups, the use of floss and fluoride supplements, however, are not appreciated in many parts of the world (5, 6, 8, 10, 11). For example, in Singapore. Only a small portion of the population visits the dentist each year. Similar observation was found among Americans where only 50 % of the population visit the dentist yearly (12).

The lack of awareness in preventive means of dental caries can be attributed to the fact the media is not producing enough educational program for the public (4,12). In fact, awareness on prevention is important and can influence preventive dental behaviours (6).

In Saudi Arabia, many reports have shown that caries and periodontal disease are such prevalent amongst various age group (13). However, there are no published data on the oral health preventive behaviour among the population. The purpose of this study was to assess the oral health knowledge and behaviour pattern among Arabian population in Jeddah, Saudi Arabia.

## MATERIALS AND METHODS

This study includes 500 subjects that were chosen using a random sampling techniques from among

patients attending general hospitals in Jeddah, Saudi Arabia.

All subjects were above 18 year of age, to be able to understand and answer the questionnaire. Altogether, a total of 481, subjects which include 219 males and 272 females participated in the study. This sample comprised on 296 Saudis and 198 non Saudi. Missing data were excluded from the percentage (Table 2).

An average of 20 minutes was needed to answer all the questions. The questionnaire included information related to the patient's name, age, sex, marital status, nationality, income and education. The questionnaires were further categorised according to knowledge and practice on brushing, flossing and dental visit (Table 1). The data was entered in a data file using Dbase IV. Descriptive statistics were made. T-test and chi-square test were used as applicable. All analyses were done using SPSS statistical package and the P-Value was set to be < 0,05 throughout the study.

## RESULTS

In the present study, the questionnaire was given to 500 subjects. Questionnaires that were not fully answered were excluded from the study. As shown in (table2) 55 % of the cases ranged from 18 - 29 years. Fifty five percent of the subjects were females 272 subjects. Saudi represented 60 % of the studied cases 296 subjects. The highest incidence of education was in high school 46 % while the lowest was primary schools 13 %.

### Brushing

About 94,9 % of the respondents brushed their teeth regularly, (Chart 1) however only 36,8 % brushed them twice a day, 19 % once a day and 21 % more than two times a day. About 50 % used medium toothbrush and only 28 % used soft. While 93,7 % used a toothpaste with the brush, the remaining 6,3 % used other methods of cleaning (Table 6).

### Flossing

A large percentage of respondent 90,7 % did not floss

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their teeth chart (1) and only 23,6 % from the group that flossed, use it once or twice a week.

### Dental checkups

In reference to dental check up, 70 % of the subjects visited the dentist and 69 % reported that these visits were due to pain. Only 15 % of the subjects had check up every six months.

### Correlation between brushing, flossing and check up

The Venn Diagram (2) shows that only 5,1 % of the participants brush and floss and less than 1 % floss, while 30,2 % of all respondents do all 3 preventive measures. The largest group 39,6 % of people brush and have dental check-ups.

The opinion of the respondent on how to avoid caries was very promising as seen on Table 3, 28 % reported that brushing regularly is effective while 42 % were aware that brushing, minimizing sweets, visiting the dentist and the use of fluoride are all effective means of avoiding caries.

(Table 4) shows the most effective source of educating the public was TV as recommended by 30 % of the respondent and 25 % recorded that the dentist was the second educating source.

Others methods of oral hygiene were also used by the respondents. Such as Miswak 73 % toothpick 75 % and mouth wash 76,9 % having many of the subjects use a combination of methods. However 54,2 % did not practice any form of oral hygiene (Table 5).

## DISCUSSION

The largest sample consisted of 55 % adults 18-29 year of age and 55 % were females. The main purpose of this study was to assess the frequency and thoroughness of preventive oral health behaviour and knowledge. Although 60 % of the participant were Saudi and 40 % were from various Arabic speaking countries nationally is not a great concern because of the common Arabic social background.

The importance of regular brushing as a means of prevention is well documented (4,5,8). According to the ADA and others (5,6,7,16) more than 90 % of their study group brush their teeth. In this study 94,9 % of the participant brushed their teeth. This conflicts with another Saudi Study (4), where only 1/3 of all adults

used a toothbrush and 80 % of those aged 65 - 74 did not clean their teeth. This conflict may be related to the age difference. In this study 22 % of the population were above 40 years of age. A common finding in the study was the fact that more than half of the population used Miswak (Table 5). Evidence in the literature suggests that there is a general lack of use of flossing as a preventive measure by the various population of the world (6,7,9). A great percentage 90,7 % of the participants in this study did not use the floss. The importance of flossing. It appears that brushing is the primary means for oral health, as evidenced by the fact that 93,8 % of the group that brushed did not floss. The importance of regular dental check up is needed all over the world. Majority of the subjects in this study 69 % consult the dentist only when they were in pain.

This is due to lack of awareness of the role of the regular dental visits in the prevention of dental disease. The correlation of knowledge between the three major mean of prevention as analysed in the Venn Diagram (2) showed that only a small percentage 30,2 % of the participants perform the three major prevention procedures. This also supported by the population knowledge on how to avoid caries were 42 % mentioned brushing, minimizing sweets and visiting the dentist and fluoride are all together the best methods of avoiding caries (Table 3).

It appears that the best source of education is T.V. Our result agreed with a Malaysian (12) and Korean (4) studies that showed T.V. to be the best source of information as it is watched by all the members of the family.

This study showed that the majority of the participants knew about brushing as a primary means for good oral health but they lacked knowledge of other preventive measure. It is imperative that media should be utilized to educate and spread knowledge of proper dental care and prevention of dental disease.

## CONCLUSION

The results of this study show limited knowledge on prevention and preventive dental behaviour. Brushing of teeth by 94,9 % of population is the most commonly practiced method about 9,3 % use the floss and 70 % visited the dentist regularly. Only 36 % brushed their teeth twice a day, 30 % of the participants performed all 3 means to maintain good oral health. The T.V. and the dentist were the two best sources to educate the public.

Table 1 : Questionnaire

Item	Question	Response Categories
Brushing	Do you brush your teeth ?	1. Yes 2. No
Brushing Frequency	How many time do you brush your teeth ?	3. I don't brush my teeth 4. Less than once a month 5. 1 - 2 times a month 6. 1 - 2 times a week 7. Once every 2 days 8. Once a day 9. Twice a day 10. More than 2 times a day
Brush	What type of brush do you use ?	1. Soft 2. Medium 3. Hard 4. Natural bristle 5. Don't Know
	What do you use with your toothbrush ?	1. Toothpaste 2. Powder 3. Sodium Bicarbonate 4. I don't use anything 5. Others
Flossing	Do you floss ?	1. Yes 2. No
Flossing frequency	How many times do you use the floss ?	1. I don't use it 2. Less than once a month 3. 1 - 2 times a month 4. 1 - 2 times a week 5. Once every 2 days 6. Once a day 7. Twice a day 8. More than 2 times a day
Visiting the dentist	Do you visit the dentist ?	1. Yes 2. No
	When do you visit the dentist ?	1. When I am in pain 2. Every 6 months 3. Regularly for check-up 4. I don't go
	Other methods to clean your teeth ?	1. Brush 2. Miswak 3. Toothpick 4. Mouthwash 5. Don't use anything
Educating the public	From what source do you get information get information about health of teeth ?	1. Dentist 2. Medical Dr. 3. Newspaper 4. Magazine 5. Television 6. Radio 7. Friends & Family 8. Nurses 9. Books 10. Schools 11. Pamphlet
	What are the ideal ways of avoiding caries ?	1. Brush regularly 2. Visit the dentist 3. Use fluoride 4. Minimize sweet consumption 5. All of the above 6. I don't know

**Table 2 : Demographic Characteristics of the Sample**

	No. of answered cases	Grouping	Number	Percentage
Age	488	18 - 29 years	269	55 %
		30 - 39 years	114	23 %
		40 or above	105	22 %
Gender	491	Male	219	45 %
		Female	272	55 %
Nationality	494	Saudi	296	60 %
		Non - Saudi	198	40 %
Education	491	Primary	65	13 %
		High School	225	46 %
		College	201	41 %

**Table 3 : The Percentage of Different Patients' Opinions in the Way to Avoid Caries**

	Number	Percentage
Brush regulary	170	28 %
Minimize sweets	80	13 %
Visit the dentist	59	10 %
Uses fluoride	20	3 %
All of the above	254	42 %
Don't know	19	3 %

**Table 4 : The Percentage on the Effective Sources of Oral Health Information**

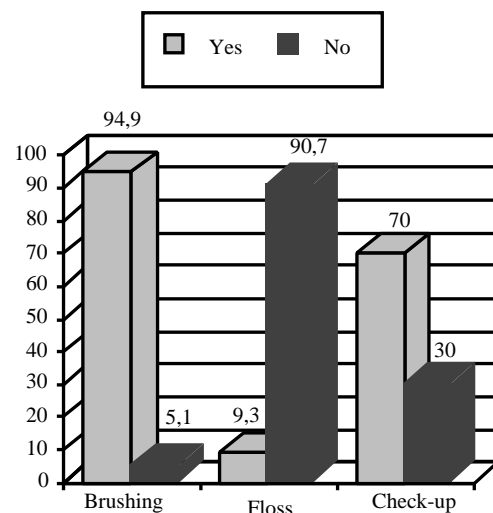
	Number	Percentage
T.V.	281	30 %
Dentist	216	25 %
Magazine	133	15 %
Newspaper	95	11 %
Friends and Family	83	9 %
Radio	41	5 %
Medical Doctor	15	2 %
Nurses, Books, School, pamphlets	34	4 %

Some subjects received this information from more than one source.

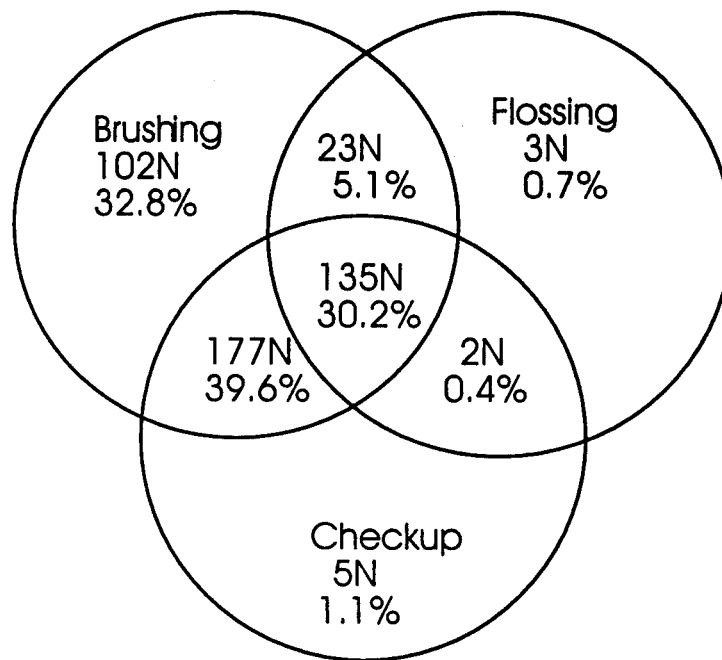
**Table 5 : Incidence of Other Methods Used for Oral Hygiene**

	Percentage
Toothpaste	93,7 %
Mouthwash	76,9 %
Tooth pick	75,9 %
Miswak	73,1 %
Don't use anything	54,2 %

Many of the subjects use a combination of methods.

**Chart 1 : Percentage of the major Preventive Means**

Venn diagram 2 : Distribution of patients according to dental care



All subject N = 447

### RÉSUMÉ

Trois mesures préventives ont été recommandées par l'ADA. Les adultes doivent brosser leurs dents, employer la soie floche au moins une fois par jour et visiter régulièrement leur dentiste.

Cette étude est faite pour évaluer la santé orale en Arabie Saoudite. Cinq cents personnes (moins de 18 ans) ont répondu au questionnaire. On a trouvé que 94 % brossent leur dents, 10 % emploient la soie floche, 70 % visitent régulièrement leur dentiste et 30 % utilisent les trois mesures préventives. Le meswaque a été utilisé dans 73 % des cas. L'étude a aussi prouvé que la télévision (30 % des personnes) est la plus importante source d'éducation du public.

### ABSTRACT

Three preventive measures have been recommended by the ADA that adult should thoroughly brush and floss their teeth at least once a day and get regular oral health check-ups. This study is to assess the oral health knowledge and behaviour pattern among Saudi Arabian population. Five hundred subjects were randomly selected to answer a questionnaire. They were above 18 years of age. The behaviour of subject 94,9 % brushed their teeth regularly, only 36 % brushed them twice a day, 9,3 % flossed their teeth, and 70 % visited the dentist regularly. About 30 % of all respondent did the three preventive measure. The Miswak was used by 73 % of the respondent. The study also showed that the most effective source of educating the public was T.V. as recommended by 30 % of the group.

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