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"GLOBAL ORAL HEALTH KNOWLEDGE, ATTITUDE AND PRACTICE AMONG PILGRIMS VISITING MADINAH"–A CROSS–SECTIONAL STUDY

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ABSTRACT

Introduction: Global Oral health is an integral component in the general health of an individual and has become a major public health issue with a substantial social impact. In order to plan successful public health awareness it is essential to evaluate three domains related to oral health at the population level, namely knowledge, attitudes and practice **Objective:** To assess the level and aspects of knowledge, attitudes, and practice related to oral health among Pilgrims Visiting Madinah. **Methodology:** A cross-sectional analytical study was conducted among 628 pilgrims. Participant's convenience selected in Madinah city center and prince Mohammed Bin Abdul-Aziz airport. The pilgrims will be divided into five groups; Saudi Arabia, other Arab countries, Asians, Africans, Europeans. Each group consist of **100** participants (**65** males and **35** females). Pre-tested structured closed-ended questionnaire comprising of 28 multiple choice questions **were** self-administered to investigate by means their knowledge, attitude, and practices toward oral hygiene Results: A total of 628 pilgrims were included in the study; 407 (64.8%) males and 221 (35.2%) females ,among the study group 30.7% reported brushing their teeth twice daily using a toothbrush and toothpaste .Those pilgrims from Europe had the highest prevalence of twice daily tooth brushing whilst Saudi males had the lowest frequency of tooth brushing. Almost 70.2% reported to use both tooth brush to clean their teeth while 21.3% reported to use Miswak (tooth stick) .Almost 90.2% reported to use both tooth paste while 91.6% reported to use mouth wash as means to clean teeth. Regarding the knowledge about the benefits of fluoride in preventing dental caries, 80% Europeans knew the correct answer while African pilgrims had the least amount of knowledge regarding fluoride. The majority of respondents (55%) reported to visit the dentist only when experiencing pain. The most common reasons for not visiting the dentist were fear (22%) and high cost (14%) The prevalence of tobacco use was 17% and most of the smokers were males and females from Africa (31%). Europe pilgrims had the least amount of using Tobacco. The relationship between knowledge and practice showed that when knowledge increases practice also increases. **Conclusion:** The overall knowledge regarding oral health was acceptable. In general, respondents from developed countries showed a greater level of oral health knowledge compared to the others. Pilgrims from Europe showed the greatest knowledge regarding oral health behavior and practices. Oral health promotion programs may be needed to improve oral health knowledge, attitude, and practices among developing countries.

KEYWORDS: Attitude, Knowledge, Oral hygiene.

INTRODUCTION

Oral health is an integral part of an individual's general health and over all well-being.[1-3] Maintaining good oral hygiene is one of the most important things for healthy teeth and gums. Good oral health not only enables a person to look and feel good, it is equally important in maintaining oral functions.[4,5]

In spite of the great triumphs in oral health, burden of oral health diseases remains high all over the world, especially in Saudi Arabia where there are a high levels of caries because of their diet habits and lifestyle. Because of the lack of acceptance of healthy oral habits that are crucial in controlling the most common oral diseases like, dental caries and periodontal disease which are mainly considered as behavioral disease.[6] Countries where the oral disease preventive programs have not been implemented still remain in the shadow of high prevalence of dental caries.it is evident that sociobehavioral and environmental factors play an important role in maintaining good oral health.[7] This includes nutritional status, tobacco smoking, alcohol, hygiene, stress, systemic conditions, etc.[8,9] Since the mouth is regarded as the mirror of the body, it is very important to have a good oral health for maintaining a good general health.[10,11] Madinah is the second holiest city after mecca where millions of pilgrims visit every year globally. SO the study Oral Health Knowledge and Practice will be carried among Pilgrims Visiting Madinah in order to plan and sustain dental services for visitors and citizen with baseline data obtained.

AIMS AND OBJECTIVES

1- To determine global oral health knowledge and practice amongst pilgrims visiting Madinah.
2- To compare global knowledge and practice amongst the different pilgrims.

Methodology: A cross-sectional analytical study was conducted among 628 pilgrims. Participant's convenience selected in Madinah city center and prince Mohammed Bin Abdul-Aziz airport.

The pilgrims **were** divided into five groups; Saudi Arabia, other Arab countries, Asians, Africans, Europeans. Each group **were** consist of **100** persons (**65** males & **35** females).

Pre-tested structured closed-ended questionnaire comprising of 28 multiple choice questions **were** self-administered to investigate by means their knowledge, attitude, and practices toward oral hygiene. The questionnaire consisted of demographic information (sex, age, degree of education, resource of health knowledge, and economic statues), oral health attitude (8 questions) and oral health practice (14 questions).

The questionnaire **was** translated into six languages (Arabic, English, Urdu, French, Turkish, and Persian). On the basis of the responses received through questionnaires, the data on knowledge and attitude **was** analyzed according to age, gender, marital status, nationality, financial status and perceived oral health. The data **was** processed by SPSS (version 22). Analysis of variance (ANOVA) **was** used for evaluation of the statistical significance. All of the knowledge answers **was** summarize by giving equal weight (1) for each of the correct answers. The mean values **was** then compared against the background factors and oral health behavior.

The study **was** approved by the ethical committee at Taibah university dental college. Results **were** communicated to respondents and relevant institutions.

RESULTS

A cross-sectional analytical study was conducted among 628 pilgrims to assess global oral health knowledge and practice amongst pilgrims visiting Madinah.

A total of 628 pilgrims were included in the study; 407 (64.8%) males and 221 (35.2%) females (Figure 2) and the average age was 39 years old (Figure 4). The pilgrims were divided into 5 groups; Saudi Arabia, other Arab countries, Asian, African and Europe and each group consisted of approximately 100 pilgrims (**65** males and **35** females).

Among the study group 30.7% reported brushing their teeth twice daily using a toothbrush and toothpaste (table 1&table 2). Those pilgrims from Europe had the highest prevalence of twice daily tooth brushing whilst Saudi males had the lowest frequency of tooth brushing.

Almost 70.2% reported to use both tooth brush to clean their teeth while 21.3% reported to use Miswak (tooth stick) (table 3&4).Almost 90.2% reported to use both tooth paste while 91.6% reported to use mouth wash as means to clean teeth (table 5).Regarding the knowledge about the benefits of fluoride in preventing dental caries, 80% Europeans knew the correct answer while African pilgrims had the least amount of knowledge regarding fluoride. (Figure 1).

The majority of respondents (55%) reported to visit the dentist only when experiencing pain. The most common reasons for not visiting the dentist were fear (22%) and high cost (14%) (Figure 2).

The prevalence of tobacco use was 17% and most of the smokers were males and females from Africa (31%). Europe pilgrims had the least amount of using Tobacco. (Figure 3).

Table 6 and table 7 explains the demographic and gender distribution of study group.

Table 8 shows education level among the study participants. The majority of respondents (51%) reported to finish high school whereas 15.4% finish primary schooling and 4.1% didn't enter any school level.

Table 1. Relationship between demographic variables and tooth brushing.

	Frequency	percentages
once / day	133	21.2
twice / day	193	30.7
three times / day	189	30.1
occasionally	60	9.6
never	53	8.4
Total	628	100.0

Table 2. Relationship between demographic variables and tooth brushing among male and female.

Time /day	Saudi Arabia		Other Arab countries		Africans		Asians		Europeans	
	M	F	M	F	M	F	M	F	M	F
Once/day	23	8	29	13	7	9	26	4	8	4
Twice /day	37	4	37	11	26	11	15	17	28	10
Three times/day	27	56	28	11	19	7	3	11	17	9
Occasionally/never	22	12	16	7	7	9	11	6	17	0
Total	109	80	110	42	59	36	55	38	70	23

Table 3. Relationship between study participants and method of cleaning teeth.

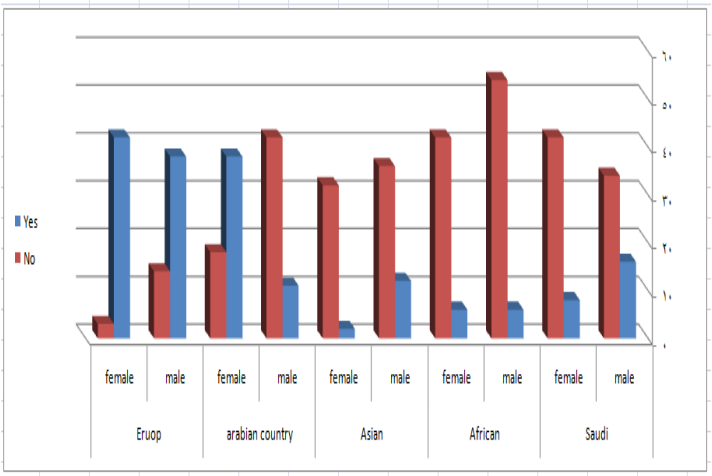
	Frequency	Percentages
Brush	441	70.2
Miswak	134	21.3
Other	53	8.4
Total	628	100.0

Table 4. Relationship between study participants male and female and method of cleaning teeth ()

TYPE	Saudi Arabia		Other Arab countries		Africans		Asians		Europeans	
	M	F	M	F	M	F	M	F	M	F
Brush	78	64	81	32	39	29	41	30	44	16
Miswak	20	11	23	9	19	3	17	7	18	7
Other	11	5	6	4	5	6	3	3	12	9

Table 5. Relationship between study participants and with what do they clean teeth ().

	Frequency	percentages
Tooth paste	568	90.4
Mouth wash	7	1.1
Other	53	8.4
Total	628	100.0



(Figure 1)- Relationship between knowledge of study participants about fluoride in preventing dental caries.

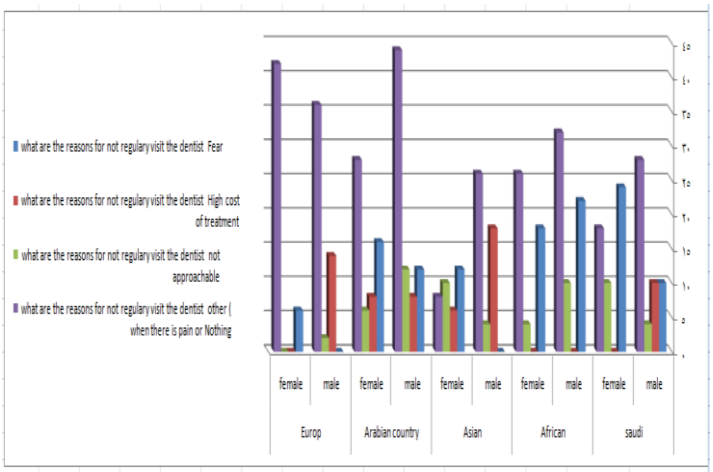


Figure 2. Relationship between attitudes of study participants towards visiting dentist.

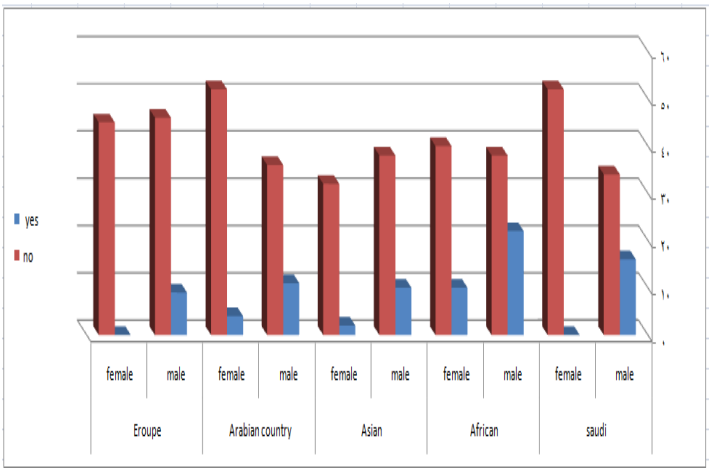


Figure 3. Relationship between demographic variables and tobacco usage

Table 6. Demographic distribution of study Group.

	Frequency	percentages
Saudi Arabia	192	30.6
other Arab countries	158	25.2
Asian	93	14.8
African	92	14.6
Europeans	93	14.8
Total	628	100.0

Table 7. Gender distribution of study group.

	Frequency	percentages
Male	407	64.8
Female	221	35.2
Total	628	100.0

Table 8. Education level among the study participants.

	Frequency	Percentages
Nothing	26	4.1
Primary	97	15.4
high school	323	51.4
Other	182	29.0
Total	628	100.0

Table 9. Descriptive Statistics of age group.

	N	Minimum age	Maximum age	Mean	Std. Deviation
Age	628	21	58	38.58	8.747

DISCUSSION

This cross-sectional study aims to study the Global Oral Health Knowledge, Attitude and Practice among 628 Pilgrims who were randomly selected Visiting Madinah.

Our study reports that 21.2% of study participants were brushing once a daily, 30.7% brush twice a day and 8.4%never brush. In our study the prevalence of daily brushing is reported as similar to that reported in a Saudi Arabian study conducted in 2003 and found that 65% of students were doing brushing at least once.[12] Our results are consistent with a Chinese study that assessed oral health behavior in school children and reported that, around 22% of the 12-year-old group brushed at least twice a day, 62% reported brushing frequency to be once a day and it was observed that 16% never brushed or brushed less frequently.[13] Our study reported that three fourth were using tooth brush as a tool for brushing and one fourth use of Miswak which was not very commonly used by the study participants while a study conducted in 2008 among 1115 male students in Al Hasa Saudi Arab reported that 45% were using Miswak as a brushing tool.[14] This might be attributed to either difference in either venues or demographic origin or religious faith in both studies. Our study reported that the study participants did not frequently use oral rinses and floss. The results are consistent with the findings of a study conducted in 2003 in Riyadh, which reported that only 5.1% of students were using dental floss, indicating that importance of the use of floss and mouth rinses is still underestimated in both the studies.[15]

Almost 70.2% reported to use both tooth brush to clean their teeth while 21.3% reported to use Miswak (tooth stick).

In terms of brushing, more than 90% of the participants reported correct practice, in the studies conducted across the globe in Europe and Canada[16], Brazil[17], Sweden[18] whereas the studies reported from Jordan[19], China[20], Nigeria[21], Poland[22], Burkina Faso[23], India[24], Mexico[25], Tanzania[26], and Kenya[27] showed lower percentages. These differences in observation could be due to the research methodological differences in the studies and also the socio-cultural and demographic variations within and between countries.

In our study almost 90.2% reported to use both tooth paste while 91.6% reported to use mouth wash as means to clean teeth .Regarding the knowledge about the benefits of fluoride in preventing dental caries, 80% Europeans knew the correct answer while African pilgrims had the least amount of knowledge regarding fluoride which is direct reflect the oral hygiene status in this study.

The majority of respondents (55%) reported to visit the dentist only when experiencing pain. The most common reasons for not visiting the dentist were fear (22%) and high cost (14%). In a study show that more than half of the students consider that dental visits should be conducted every 6 months and three fourth of the student had visited the dentist. The study also showed growth in the knowledge and practices related to oral health when comparing with the findings of studies conducted, although this might be attributed to differences in demographics (mainly geographic regions) of population studies.[28]

The prevalence of tobacco use was 17% and most of the smokers were males and females from Africa (31%). Europe pilgrims had the least amount of using Tobacco.
Education level among the study participants (Table 6) show primary level of education of about 15.4%, high school level of 51.4% and 4.1% didn't enter any level schooling. A study conducted in 2013 evaluated the option of primary school principals on effectiveness of school based oral health education documented that school based program is beneficial for students, parents and also for school staffs and through such programs they had found improvement in the overall oral health knowledge.[29]

School based oral health programs are attended by most of the students when compared to other programs. As it is the most convenient means of getting knowledge for both parents and students. Such programs also guaranteed the presence of experienced dental trainee. Therefore knowledge and oral hygiene is directly proportion to the education level of the people.

In literature, knowledge and awareness about oral health is reported to be very low and marked differences in oral hygiene habits, depending on age and educational levels were observed. Studies conducted in Spain and Kuwait showed an association between increased knowledge and better oral health.[30, 31] Good oral health practice can be accomplished mainly through self - induced habits like maintenance of dental hygiene, restriction of diet especially reduced sugar intake, use of fluoridated products and also with the help of available dental services, which includes, regular dental checkup, utilization of primary and preventive care and dental health education.[32–35] It is important to prevent dental problems before they start. The easiest way is to practice daily brushing and flossing that in turn will reduce the dental diseases.[36–38]

A study conducted in 2011 in Madinah among 240-student children reported less than half of the participant (45%) visits dentist annually.[39] the oral health apprehension of an individual is reflected on the attitude

of a person. The attitude toward having a good oral health will be influenced by one's own experiences, cultural, familial practice, religious beliefs and other life situations and these will in turn reflect the oral health behavior of an individual.

In recent time, the sense of health awareness program has to be built in our society. From all of the pilgrims, the Europeans were the most likely to brush twice per day. This could be due to lifestyle, education. The African had the poorest oral hygiene practice and this could be due to don't care, money and poor education. It was uprising to see that most of females from other Arab counties knew about fluoride and its effects. Its possibility due to good education and schooling.

CONCLUSION

The overall knowledge regarding oral health was acceptable. In general, respondents from developed countries showed a greater level of oral health knowledge compared to the others. Pilgrims from Europe showed the greatest knowledge regarding oral health behavior and practices. Oral health promotion programs may be needed to improve oral health knowledge, attitude, and practices among developing countries.

The government can deployed and maintained various primary and secondary health care facilities in and around Madinah area in order for providing dental care for the pilgrims and citizen. College of dentistry, TAIBAH University as the only dental college in Madinah, should keen to introduce oral health programs that will benefit the pilgrims and citizen.

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