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KNOWLEDGE OF DENTAL HEALTH AND DISEASES AMONG DENTAL PATIENTS, A MULTICENTRE STUDY IN SAUDI ARABIA

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ABSTRACT : The aim of this study was to assess the knowledge of dental patients about dental health and diseases. A questionnaire was developed with three sets of questions, 1-general knowledge of dental conditions, 2-use of alternate methods in prevention and treatment of dental diseases, 3-awareness about personal oral health. Six hundred questionnaires were distributed in 6 cities from 4 different regions (i.e. Makkah, Riyadh, Tabuk, Gizan). 367 respondents (61% response rate) constituted 233 (63.5%) male and 134 (36.5%) female with the age range 11-70 years (mean 30±11.9). The data were analyzed by SPSS version 9.0 and results presented in frequency distributions. 99% male and 96% female considered their teeth for chewing food, 97% male and 96% female knew that increased carbohydrate intake and poor oral hygiene are related to tooth decay, 89% male and 96% female used toothbrush and paste to prevent dental diseases and 75% male and 66% female were regular user of miswak (chewing sticks.) 67% male and 59% female visit dentist, only in pain. 46% used miswak after their meals, only 14% of the subjects used miswak on their lingual and palatal surfaces of teeth, while 38% of the subjects used clove as remedy for toothache, 25.6% used saline and 10% used lemon for bleaching their teeth. 15% considered honey important for their good oral health. Regarding personal oral health, 35% had pain in gums, 36.8% were with bad breath, 28% had tooth hypersensitivity, and almost 50% used toothbrush twice daily while 42% had bleeding gums. It is important to note that knowledge and awareness about dental health and disease conditions are better in male subjects, dietary habits and oral hygiene methods need to be addressed in future investigations. There is a need to provide more health education to female subjects to improve their oral health.

INTRODUCTION

The knowledge of dental health and disease condition among dental patients need to be determined to find the most suitable dental education programs for the population, the dental knowledge from country to another differ according to the education programs (schools, T.V.,

magazine, etc). This difference will affect also on the oral hygiene habits and regular visit to the dentist.

There is a need of information about the knowledge of general public including subjects with dental diseases to dental health and disease conditions.

In most industrialized countries, the prevalence of oral diseases in children and adolescents has declined significantly over the past decades,¹⁻⁵ the facts to be considered in relation to this decline are changing pattern of sugar consumption, improved oral hygiene, fluorides in tooth pastes, fluoride rinsing and other school-based preventive programmes. Moreover, some developing countries are presently confronted

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with serious and widespread problems of poor oral health.^{1,2}

In Kingdom of Saudi Arabia, the prevalence of dental caries is relatively high in the primary teeth (mean dmft was much lower than the DMFT), but the risk of caries increase later because the permanent teeth are exposed over a longer period of time.⁵ The difference between male and female and between urban and rural were not statistically significant.⁵ In another study, results showed that the mean dmft and DFT were 4.23 and 1.85, respectively. The mean dmft and DFT values excluding caries-free children were 5.71 and 2.95, respectively. Only 26.1% of the children were caries free.⁹

In 6-years olds, 85% had caries in primary teeth and a mean of 3.1 DMFT was observed among the 12 year-olds; the 35-44 year olds had an average of 13.1 DMFT. Difference in dental caries prevalence were found according to sex, urbanization, region and ethnic group.⁵

In Saudi Arabia (KSA), almost 46% of the population reported having bleeding gums, calculus was present in almost 50% of the population and 95% of the subject with calculus had mild to moderate amount present on their teeth.⁶ About 78% of the subjects had fair to good oral hygiene, while 22% were with poor oral hygiene.⁶

In KSA, 65 of primary school teachers know about tooth decay, while 32% don't know; about 45.8% know about gum disease, 39% don't know about gum disease.¹⁰

In KSA, the level of dental knowledge of mothers were diffuse whereas the attitude toward prevention were positive. 62% of the mothers knew about the role of bacteria plus sugar in the development of dental caries, as to prevention of dental caries, 76% of mothers reported the relevance of tooth brushing. 75% realized the importance of regular dental visit and use of miswak was mentioned by 41%.³

Periodontal disease has a reciprocal relationship with education level.⁵ The higher the education level, the lower the periodontal dis-

ease. In KSA, the oral hygiene by education level shows that good oral hygiene associated with higher education level, for example 33% poor oral hygiene among primary school educational level patient while 0% with higher degree educational level patient, also 7.35% good oral hygiene among primary school educational level patient while 0% with higher degree educational level patient, also 7.35% good oral hygiene among primary school educational level, while 33% with good oral hygiene among higher degree educational level patients⁶. So the correlation with education and disease level is obvious.

Periodontitis has been generally associated with older age groups, male have a higher prevalence and severity of periodontal disease than female, before the age of 20 years and there is a little difference.⁵ In another study, the oral hygiene by gender shows that female has better oral hygiene than male (3.11% good oral hygiene of male, while 19% good oral hygiene of female patients).⁶ In another study, there was a statistically significant difference between male and female in different age groups in the periodontal health status - women had a less periodontal disease than men, in the age groups over 20 years.⁵

Little is known about the knowledge of general public about oral health diseases and oral diseases. So the aim of this study was to find out the knowledge of dental health and disease conditions among dental patients from waiting areas of different hospitals and dental centres from the Kingdom of Saudi Arabia.

MATERIALS AND METHODS

Sample

Six hundred questionnaires were distributed and only 367 subjects replied (i.e. 61%) response rate was low due to lack of interest among patients and dentists.

Selection Criteria

The convenient samples were included

in the study. The selection of cities and dental centers was based on the cooperation extended by colleagues in those areas. Six cities were selected in 3 different areas of the Kingdom of Saudi Arabia, those cities were :

1. Riyadh (middle area and the capital of KSA)
2. Makkah (western area and the holy capital of Islam)
3. Jeddah (western area)
4. Taif (western area)
5. Tabouk (north western area)
6. Gizan (south western area)

The age range of the subject was 11-70 years (mean 30 ± 11.9). The main dental center and hospitals in each city were randomly selected as a place of distributing questionnaires to the dental patients attending for dental treatment.

The questionnaire had three groups of questions :

(1) The first group (A) containing five questions to assist the dental knowledge of the patient (Q1. on the function of the teeth knowledge, Q2. on the dental caries knowledge, Q3. on the periodontal knowledge, Q4. on the prevention of the dental disease methods, Q5. on the frequencies of visiting the dentist).

(2) The second group B containing seven questions to survey the traditional-alternative medi-

cine-methods used by the patients in prevention and treatment of the dental diseases (Qs. 1,2 and 3 on the use of miswak, Qs. 4 and 5 on the use of other alternative traditional remedies in dental treatment, Q6. on the behaviour toward dental pain using traditional methods. Q7. on use of traditional methods to extract the teeth).

(3) The third group C of questions was consisted of 14 questions to assess the oral and the periodontal health conditions in the patients.

RESULTS

Questionnaire A : (Knowledge) (Table 2)

99.0% of male patients (n=230) and 96% of female patients (n=129) identified the main function of the teeth as for chewing the food, 66% of male (n=154) and 62% of female (n=83) identified the importance of teeth in speech.

97% of male (n=225), 96% of female (n=128) know that increased carbohydrate intake and poor oral hygiene are related to tooth decay.

82% of male (n=192) and female (n=109) know that gum inflammation can cause bleeding gum, 55% of male (n=128), 52% of female (n=70) know that gum inflammation can cause teeth loss. 15% of male (n=36) and female (n=20) they donot relate the gum inflammation with teeth health.

89% of male (n=207), 96% of female (n=128) use tooth brush and tooth paste to pre-

Table 1 : Geographic distribution of subjects by gender

		AREA						TOTAL
		Riyadh	Makkah	Jeddah	Taif	Tabuk	Gizan	
Gender	Male	49	45	36	57	22	24	233
	Female	30	55	5	9	25	10	134
Total		79	100	41	66	47	34	367

Table 2 : Percentage and frequency distributions of patients response : (Questionnaire A) :

		Male		Female	
Q1 : What are the functions of the teeth?					
A-Food chewing	Yes	98.7%	(230)	96.3%	(129)
	No	1.3%	(3)	3.7%	(5)
B-Nice look	Yes	65.2%	(152)	58.2%	(78)
	No	34.8%	(81)	41.8%	(56)
C-Good pronunciation	Yes	66.1%	(154)	61.9%	(83)
	No	33.9%	(79)	38.1%	(51)
Q2 : What are the causes of tooth decay?					
A-Eating sugar a lot and ignoring oral hygiene	Yes	96.2%	(225)	95.5%	(128)
	No	3.4%	(8)	4.5%	(6)
B-Genetics cause only	Yes	15.9%	(37)	14.9%	(20)
	No	84.1%	(196)	85.1%	(114)
C-Infection	Yes	12.9%	(30)	11.9%	(16)
	No	87.1%	(203)	88.1%	(118)
D-All of the above	Yes	12.9%	(30)	13.4%	(18)
	No	87.1%	(203)	86.6%	(116)
Q3 : What are the complications of gum disease?					
A-Gum bleeding	Yes	82.4%	(192)	81.3%	(109)
	No	17.6%	(41)	18.7%	(25)
B-Gum recession	Yes	58.4%	(136)	56.0%	(75)
	No	41.6%	(97)	44.0%	(59)
C-Tooth sensitivity	Yes	51.9%	(121)	51.5%	(69)
	No	48.1%	(112)	48.5%	(65)
D-Tooth loss	Yes	54.9%	(128)	52.2%	(70)
	No	45.1%	(105)	47.8%	(64)
E-All of the above	Yes	42.9%	(100)	41.8%	(56)
	No	57.1%	(133)	58.2%	(78)
F-No effect on the teeth, but only on the gum	Yes	15.5%	(36)	14.9%	(20)
	No	84.5%	(197)	85%	(114)
Q4 : What are the methods of preventing dental diseases?					
A-Tooth brushing	Yes	88.8%	(207)	95.5%	(128)
	No	11.2%	(26)	4.5%	(6)
B-Dental flossing	Yes	43.8%	(102)	53.7%	(72)
	No	56.2%	(131)	46.3%	(62)
C-Using miswak	Yes	74.7%	(174)	66.4%	(89)
	No	25.3%	(59)	33.6%	(45)
D-Mouth wash	Yes	49.8%	(116)	44.8%	(60)
	No	50.2%	(117)	55.2%	(74)
Q5 : When do we visit the dentist?					
A-Monthly-6 months	Yes	20.6%	(48)	30.6%	(41)
	No	79.4%	(185)	69.4%	(93)
B-From 6 months-one year	Yes	20.6%	(48)	19.4%	(26)
	No	79.4%	(185)	80.6%	(108)
C-From one year and more	Yes	10.7%	(25)	10.4%	(14)
	No	89.3%	(208)	89.6%	(120)
D-While in pain	Yes	66.5%	(155)	59.0%	(79)
	No	33.5%	(78)	41.0%	(55)

Table 3 : Percentage and frequency distributions of patients response (Questionnaire B)

		Male		Female	
Q1 : When do you use miswak?					
A-With ablution	Yes	43.8%	(102)	29.9%	(40)
	No	56.2%	(131)	70.1%	(94)
B-At prayer time	Yes	68.7%	(160)	33.6%	(45)
	No	31.3%	(73)	65.4%	(89)
C-When my mouth smell changes	Yes	51.1%	(119)	44.8%	(60)
	No	48.9%	(114)	55.2%	(74)
D-After eating	Yes	47.2%	(110)	44.8%	(60)
	No	52.8%	(123)	55.2%	(74)
E-When I wake up	Yes	40.3%	(94)	31.3%	(42)
	No	59.7%	(139)	68.7%	(92)
Q2 : What are the methods of using miswak?					
A-Horizontally motion	Yes	17.2%	(40)	11.2%	(15)
	No	82.8%	(193)	88.8%	(119)
B-Vertically motion	Yes	23.6%	(55)	27.6%	(37)
	No	76.4%	(178)	72.4%	(97)
C-Horizontally and vertically	Yes	82.4%	(192)	68.7%	(92)
	No	17.6%	(41)	31.3%	(42)
Q3 : Which surfaces that you clean by miswak?					
A-Labial surfaces only	Yes	32.6%	(76)	32.1%	(43)
	No	67.4%	(157)	67.9%	(91)
B-Biting (occlusal) surfaces only	Yes	13.3%	(31)	12.7%	(17)
	No	86.7%	(202)	87.3%	(117)
C-Internal surfaces only	Yes	14.2%	(33)	14.2%	(19)
	No	85.8%	(200)	85.8%	(115)
D-All of the surfaces	Yes	76.0%	(177)	73.1%	(98)
	No	24.0%	(56)	26.9%	(36)
Q4 : Did you try to bleach your teeth by one of these methods?					
A-Lemons	Yes	9.9%	(23)	9.7%	(13)
	No	90.1%	(210)	90.3%	(121)
B-Dairama	Yes	3.4%	(8)	14.2%	(19)
	No	90.6%	(225)	85.8%	(115)

Contd.

C-Water & Salt (saline)	Yes	22.3%	(52)	31.3%	(42)
	No	77.7%	(181)	68.7%	(92)
Q5 : What traditional methods of dental treatment you use?					
A-Honey	Yes	15.9%	(37)	14.2%	(19)
	No	84.1%	(196)	85.8%	(115)
B-Cloves	Yes	35.6%	(83)	52.2%	(70)
	No	64.4%	(150)	47.8%	(64)
C-Black cumin	Yes	13.7%	(32)	18.7%	(25)
	No	86.3%	(201)	81.3%	(109)
D-Ukber	Yes	3.4%	(8)	0.7%	(1)
	No	96.6%	(225)	99.3%	(133)
E-Water that's has been reading on	Yes	8.2%	(19)	17.9%	(24)
	No	91.8%	(214)	82.1%	(110)
Q6 : If you feel pain, in your teeth, what are the methods of treating pain?					
A-Analgesic drug (swallowing)	Yes	55.4%	(129)	55.2%	(74)
	No	44.6%	(104)	44.8%	(60)
B-Biting on analgesic tablets	Yes	11.2%	(26)	11.2%	(15)
	No	88.8%	(207)	88.8%	(119)
C-Putting clove on pain site	Yes	38.2%	(89)	38.1%	(51)
	No	61.8%	(144)	61.9%	(83)
D-Putting warm pack	Yes	11.2%	(26)	10.4%	(14)
	No	88.8%	(207)	89.6%	(120)
E-Reading Holy Quran on the pain site	Yes	28.8%	(67)	37.3%	(50)
	No	71.2%	(166)	62.7%	(84)
F-Going to the dentist	Yes	78.5%	(183)	82.1%	(110)
	No	21.5%	(50)	17.9%	(24)
Q7: Did you try to extract your tooth by yourself?					
	Yes	41.6%	(97)	39.6%	(53)
	No	58.4%	(136)	60.4%	(81)
Q8 : If yes what is the method?					
A-By your hand	Yes	25.3%	(59)	18.7%	(25)
	No	74.7%	(174)	81.3%	(109)
B-By the help of other person	Yes	6.4%	(15)	11.9%	(16)
	No	93.6%	(218)	88.1%	(118)

C-By forceps	Yes	3.0%	(7)	7%	(1)
	No	97.0%	(226)	99.3%	(133)
D-By floss	Yes	21.0%	(49)	14.2%	(19)
	No	79.0%	(184)	85.8%	(115)

Table 4 : Percentage and frequency distributions of patients response (Questionnaire C) :

		Male		Female	
Q1 : Does your mouth feel sticky (oral glutinousness)					
	Yes	22.7%	(53)	13.4%	(18)
	No	36.5%	(85)	48.5%	(65)
	Not sure	40.8%	(95)	38.1%	(5)
Q2 : Do food particles get between your teeth often : (food impaction)					
	Yes	84.5%	(197)	80.6%	(108)
	No	12.4%	(29)	15.7%	(21)
	Not sure	3.0%	(7)	3.7%	(5)
Q3 : Do you feel like your teeth have gotten longer than before? (gingival recession)					
	Yes	20.6%	(48)	15.7%	(21)
	No	59.2%	(138)	72.4%	(97)
	Not sure	20.2%	(47)	11.9%	(1697)
Q4 : Do you have sore gums? (gingival pain)					
	Yes	31.3%	(73)	37.3%	(50)
	No	62.7%	(146)	51.5%	(69)
	Not sure	6.0%	(14)	11.2%	(15)
Q5 : Can you smell your own breath? (subjective halitosis)					
	Yes	38.2%	(89)	34.3%	(46)
	No	51.5%	(120)	56.0%	(75)
	Not sure	10.3%	(24)	9.7%	(13)
Q6 : Has someone commented about your breath? (objective halitosis)					
	Yes	14/6%	(34)	9.7%	(13)
	No	76.8%	(179)	86.6%	(116)
	Not sure	8.6%	(20)	3.7%	(5)
Q7 : Does your jaw feel tired and sore? (fatigued and painful jaw)					

Contd.

	Yes	21.9%	(5)	26.1%	(35)
	No	69.5%	(162)	64.2%	(86)
	Not sure	8.6%	(20)	9.7%	(13)
Q8 : Does your gum bleed when brushing teeth? (gingival bleeding)					
	Yes	42.1%	(98)	43.3%	(58)
	No	49.8%	(116)	47.8%	(64)
	Not sure	8.2%	(19)	9.0%	(12)
Q9 : Does your gum appear red and swollen? (redness and swelling gingival)					
	Yes	15.0%	(35)	11.9%	(16)
	No	74.7%	(174)	76.9%	(103)
	Not sure	10.3%	(924)	11.2%	(15)
Q10 : Does pus come out from your gums? (drainage)					
	Yes	6.9%	(16)	3.0%	(4)
	No	89.3%	(208)	93.3%	(125)
	Not sure	3.9%	(9)	3.7%	(5)
Q11 : Do you have difficulty chewing hard foods? (masticatory disturbance)					
	Yes	17.2%	(40)	16.4%	(22)
	No	78.5%	(183)	79.9%	(107)
	Not sure	4.3%	(10)	3.7%	(5)
Q12 : Do you have sensitive teeth? (cold water pain)					
	Yes	26.0%	(62)	30.6%	(41)
	No	64.8%	(151)	62.7%	(84)
	Not sure	8.6%	(20)	6.7%	(9)
Q13 : Do you think you have a gum disease? (periodontal disease)					
	Yes	17.2%	(40)	20.9%	(28)
	No	63.1%	(147)	57.5%	(77)
	Not sure	19.7%	(46)	21.6%	(29)
Q14 : How many times do you brush your teeth in a day? (once, more than twice, occasionally, don't brush)					
	One	29.2%	(68)	17.9%	(24)
	2+	37.3%	(87)	71.6%	(96)
	Sometimes	25.8%	(60)	8.2%	(11)
	No	7.7%	(18)	2.2%	(3)

vent dental disease, while 75% of male (n=174), 66% of female (n=89) use miswak (chewing sticks) for prevention. 21% of male (n=48), 31% of females (n=41) visit the dentist every 1-6 months, while 66.5% of male (n=155), 59% of female (n=79) visit the dentist in pain.

Questionnaire B : (Practice of alternate/traditional methods)

47.2% males (n=110) and 44.8% females (n=60) use miswak after eating, while 68.7% (n=160) male and 33.6% (n=45) female use miswak at prayer times.

76.0% (n=177) males, 73.1% (n=98) females use the miswak to clean all the surfaces of the teeth. 9.9% (n=23) males and 9.7% (n=13) females used lemon to bleach their teeth, while 22.3% (n=52) male and 31.3% (n=42) females used salt and water to bleach their teeth.

15.9% (n=37) male and 14.2% (n=19) females consider honey as a treatment method to maintain oral health. 38.2% (n=89) male and 38.1% (n=51) female use clove to treat their toothache. 25.3% (n=59) male and 18.7% (n=25) female used their hands to extract their teeth while 21% (n=49) male and 14.2% (n=19) female used floss to extract their teeth Table 3, see appendix 1).

Questionnaire C : (Awareness) (Table 4)

20.6% (n=48) male and 15.7% (n=21) female feel gingival recession while 31.3% (n=73) male and 37.3% (n=50) female feel gingival pain.

42.1% (n=98) male and 43.3% (n=58) female, gum bleeds with brushing and 6.9% (n=16) male, 3% (n=4) female, have gingival pus.

15% (n=35) male and 11.9% (n=16) female, have swollen gum while 20% (n=62) male and 30.6% (n=41) female have sensitive teeth.

DISCUSSION

As it has already mentioned that there is no data available from the Kingdom regarding

the similar population of the study. So the main emphasis will be on discussion of the results and to some extent the criteria used in this study.

This study has been carried out at 6 cities around the K.S.A. these cities were (Riyadh, Makkah, Jeddah, Taif, Tabouk and Gizan) in the main Dental Center and Hospitals. The studied population was conveniently selected. Those 6 cities represent the general population - to some extent, we don't really know either they are urbans from the beginning or having rural experience too. All of the population was Saudi with almost male double the number of female.

1. The first group of questionnaire : containing questions, to assess the dental knowledge of the patients.

Overall 98% of the male and 96% of the female know that the functions of the teeth is chewing food, while 65% of the male and 58% of the female mentioned the nice look (appearance / esthetics), 66% of the male and 61% of the female mentioned the good pronunciation, this shows their concern about esthetics and function.

In the answer to the cause of tooth decay, 96% of the male and 95% of the female mentioned the high sugar intake and ignoring the oral hygiene.

About 82% of the male and 81% of the female mentioned that gums recession is the complications of gum disease, while the other complications ranges from 51% - 55%. The same percentage was also for all the complications. This can be used for avoidance of poor oral hygiene.

Tooth brushing is the most common method known in preventing dental diseases. Almost half of the subjects know the importance of dental flossing in dental disease prevention.

Regarding frequency of visiting the dentists, it was obvious that there was low percentage of the subjects who visit the dentists regularly. Most of the subjects visit the dentists while

in pain. Females visit less than male, and that needs to be addressed. The barriers in attendance, availability to the services, utilization of services and logistic problems should be analyzed and solved.

2. The second group : The time of using miswak differ among males and females, especially at ablution, prayer time and in the morning. Other than this, they are equal, that may be due to the difference of daily routine of life.

The methods of using miswak were mostly in horizontal and vertical directions, while all surfaces are cleaned by miswak. The occlusal surfaces have the less percentage of cleaning by miswak.

Water and salt was the most commonly used bleaching agent with equal percentage between male and female. Dermah (Juglan regia) is commonly used by female (31%) while male (3%), that is due to the gender difference and change in color of mucosa after its use.

Clove is used usually as pain killer and it is used by female (52%) more than the male (35%) - other substances have equal percentage of use among male and female. The females have more access to cloves being at home.

About 41% of the sample extracted their teeth by themselves. The most commonly used method was by hands without any instrument. This needs to be addressed as patient may be suffering from advance periodontal diseases.

3. The third group of questions is to assess the oral and the periodontal health conditions in the patients.

About 22% male and 13% female feel their mouth sticky, on the other hand, in 84% male and 80% female, food particles get between their teeth. So they should be emphasised for interdental cleaning.

20% male and 15% female feel their teeth have gotten longer. 31% male and 37% female have sore gums. For subjective halito-

sis, only 14% male and 9% female answered yes. This needs to be evaluated clinically. Regarding question of gingival bleeding during brushing, about 22% male and 26% female answered yes. For the question of redness and swelling of gingiva about 15% male and 12% female answered yes, so the bleeding gums should be addressed properly. Bleeding gum is considered a social norm and most of the subjects were not worried about it.

Regarding question about pus coming out from their gums, 7% male and 3% female answered yes. 17% male and 16% female had difficulty during chewing hard foods, while 22% male and 26% female feel their jaw tired and sore.

26% male and 30% female had sensitive teeth. 17% male and 21% female think that they have gum disease. The female who brush their teeth twice daily (71%) are more than the male (37%). Regarding frequency of brushing 29% male and 18% female brush their teeth once a day. Effective tooth brushing is needed rather than of excessive frequency.

Tooth sensitivity is related with their dietary habit e.g. use of lemon for bleaching their teeth.

In summary, the results discussed above show that males have better knowledge of dental health and disease conditions. It reflects the better education level of the male subjects as compared to female responses to the questionnaire.

The results show that the subjects have a good knowledge of the function of the teeth and the cause of dental caries. But their knowledge about periodontal diseases is less and their tendency to visit dentists regularly is minimal. This demands the need of oral health education to increase the awareness of oral health education diseases among general population. The health message should be evaluated regularly.

It is an interesting finding that female

subjects are more adhered to traditional remedies as compared to male subjects. This may be attributed to social and cultural believes.

CONCLUSION

The male subjects are with higher percentage having knowledge of function of teeth and cause of dental caries. Both male and female subjects have a good knowledge in dental caries and the methods of preventing dental diseases, but they have low level of knowledge in the periodontal diseases and it's effects in their oral health. Most of the subjects neglect regular visit to the dental clinics for routine check up. The females use tooth brush more than males while the males use miswak (chewing sticks) more than females. Half of the subjects use dental floss to prevent dental diseases. The female subjects use the traditional remedies more than the male subjects.

RECOMMENDATION

More educational programs for the females are needed. The educational programs should focus on prevention of dental diseases and oral health maintenance. The emphasis should be on dietary counseling, oral hygiene instructions, teeth brushing, dental flossing, use of fluoride and the regular dental check up. The use of miswak should be guided with proper method of plaque removal from all the teeth. The traditional remedies could be used at the emergency situations until they visit the dentist but not as a substitute for the proper dental treatment available. More educational program about the periodontal diseases should be developed to motivate the population to avoid future tooth loss and burden of curative services. Further research is needed to correlate the knowledge, attitude, behavior, and oral health status of general population to improve educational and curative services.

ACKNOWLEDGEMENT

The authors wish to thank Dr. Nazeer Khan for his advice in data analysis, the Interns Committee, the Secretary, the dentists, CDRC

staff and all those subjects who took part in the study.

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