An Oral Health Status and Treatment Needed in Relation to Dental Knowledge, Among a Group of Children Attending Preventive Department, College of Dentistry, University of Baghdad

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ABSTRACT

Background: Oral health represents an important base for human well-being; the heath of the body begins from oral cavity. Great deal has been applied to increase knowledge in the field of oral health in order to develop appropriate preventive program. This study was conducted in order to estimate the percentage and severity of dental caries and gingivitis among children attending Preventive Department in Collage of Dentistry, University of Baghdad and to determine dental treatment need for those patients, further more to study the relation of these variables with dental knowledge.

Materials and Methods: The study group consists of 163 children with an age ranged from 6 to 14 years, who attended the preventive clinic for the first time to be involved in preventive program. Plaque index and gingival index were applied for examination of dental plaque and gingivitis, dental caries and treatment need was recorded according to criteria described by WHO. Dental knowledge of each child was evaluated by ten questions prepared for this reason.

Results: The results showed that caries-experience among permanent teeth represented by DS and DMFS were (3.22 ± 0.31 and 4.09 ± 0.35) respectively, while caries-experience among deciduouse teeth represented by ds and dmfs were (6.79 ± 0.61 and 9.03 ± 0.81) respectively. Analysis of variance (one way ANOVA test-) showed that caries experience among permanent teeth increased with age (P < 0.001), while caries-experience among deciduous teeth decreased with age (P 0.001). The majority of studied sample were in need for one surface filling (93%) followed by two or more surface filling (66%). High percentage of children involved in this study had mild accumulation of plaque and mild gingivitis (69.93% and 83.43%) respectively. Evaluation of dental knowledge among those children showed that 67% of them had good dental knowledge (scores 5), but weak correlations were recorded between good dental knowledge and caries experience for deciduous teeth(r=0.12, P > 0.05) and for permanent teeth (r=0.22, P<0.05).The same correlation was recorded between dental plaque and dental knowledge (r=0.05, P> 0.05).

Conclusion: those children need further motivation and instructions to improve their dental knowledge and to improve their attitude to change their behavior towards further improvement of oral hygiene and oral health.

Key words: oral health status, treatment need, dental knowledge. (J Bagh Coll Dentistry 2015; 27(4):138-142).

INTRODUCTION

Oral health means more than healthy teeth, it is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity [1]. In spite of that, dental caries still represent the most common oral disease followed by periodontal diseases, so evaluation of these two oral diseases may give an indication about oral health condition [2,3].

Research in oral health condition among different samples of population may produce a wide base of information that may play an important role in development of appropriate preventive programs and in organization of dental resources [4-6]. On the other hand, dental knowledge is one of the important factors that affect oral health. Children may accept dental knowledge from their homes or their schools, this knowledge may promote them to maintain good oral health, or may remain as an information only[7,8].

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The present study was conducted in order to estimate the prevalence and severity of dental caries and gingivitis among children attending Preventive Department and to determine dental treatment need for those patients, further more to study the relation of these variables with dental knowledge. Data gained may initiate or increase the knowledge concerning oral health status of those children and may aid for planning or improving of dental health programs among the study group.

MATERIALS AND METHODS

The study group consisted of children attending the Preventive Clinic, College of Dentistry, University of Baghdad for the first time, those children were involved in preventive program that include thorough oral hygiene and dietary habits instructions in addition to full mouth dental treatment. Collection of data started from 20/2/2014 to 20/5/2014, the total number of patients was 163 children with an ages range from 6 to 14 years.

Dental plaque severity was recorded according to the criteria described by Silness and Loe [9],

diagnosis and assessment of gingival health condition was recorded according to criteria described by Loe and Silness [10], where Ramfjored index teeth [11] were examined in both index (plaque index and gingival index). Examination and assessment of dental caries was done according to criteria described by WHO [12] using plane dental mirror and an explorer (No.00). After assessment of dental status, the need for treatment of each tooth was recorded according to criteria of treatment need described by WHO [12] as following:

0: No treatment.
1: Caries arresting or sealant care.
2: One surface filling.
3: Two surface filling.
4: Crown for any reason.
5: Bridge elements.
6: Pulp care.
7: Extraction.
8: Need for any other care.

Dental knowledge of each child was evaluated by ten questions that prepared for this reason. They were as following:

1. Do you think that it is important to have dental brush?
2. Do you think that it is important to use the brush and paste to clean the teeth?
3. Is it important to brush the teeth twice or more daily?
4. What type of food may cause dental caries?
5. What type of food may increase teeth resistance against caries?
6. Do you think that you have to visit the dentist for checking up?
7. Do you think that good oral hygiene is important for healthy teeth?
8. May progression of dental caries cause losing of teeth?
9. Could losing of teeth cause disharmony of teeth?
10. Could losing of teeth affect your appearance?

Answers for all questions were either (yes) or (no), where (yes) was gave code (1), while (no) was gave code (0). Except question 4 the answers were either sweets (code 1) or others (code 0), and question 5 the answers were either milk group (code 1) or others (code 0). So that (10) was the maximum total score. For each child's parents the objectives of the study were explained to, and they approved to participate.

Data were analyzed by using SPSS soft ware (Statistical Package for Social Sciences) by using (Analysis of Variance (One Way ANOVA test), Student's t-test and Person's correlation coefficient)

RESULTS

According to age the sample was divided into three age groups; (6-8) years which was the largest one in number followed by (9-11) years, then (12-14) years which was the smallest one, generally boys were slightly higher in number than girls as shown in table (1).

Results showed that all children involve in this study were affected by dental caries. Caries-experience among permanent teeth represented by (DS and DMFS) was higher among the last age group (12-14) than others, the difference was statistically highly significant ($P<0.001$), while caries-experience among deciduous teeth (ds and dmfs) was higher among the first age group (6-8) than others, the difference was statistically highly significant too ($P<0.001$) as illustrated in table (2).

Boys totally show higher values of caries-experience including (DS, DMFS, ds and dmfs) than girls, but these values were statistically not significant. Distribution of sample according to treatment need showed that the majority of studied sample were in need for one surface filling (93%) followed by two or more surface filling (66%), while needs for bridges and other care showed the minimum percentage (1.84%, 7.36%) respectively as shown in table (3).

According to results of the present study the differences between means of plaque index and gingival index between age groups were statistically not significant ($P > 0.05$), while highly significant difference was found between boys and girls involved in this study for PI ($p< 0.001$) and significant difference between them for GI ($P< 0.05$) as shown in table (4). Strong, positive and highly significant correlation was reported between PI and GI among (9-11) and (12-14) age groups.

Generally high percentage of children involved in this study had mild accumulation of plaque and mild gingivitis (69.93% and 83.43%) respectively. While only small percentage of them was suffering from fair oral hygiene and sever gingivitis (1.22% and 2.45%) respectively. Evaluation of dental knowledge among those children showed that the three age groups had high percentage of positive answers for the majority of the questions. Furthermore, 67% of them expressed good knowledge (scores 5), where 61% of (6-8) age group, 76% of (9-11) age group and 66% of (12-14) age group showed good knowledge. On the other hand weak correlations were recorded between caries experience and

dental plaque on one hand and good dental knowledge on the other hand that was significant with (DMFS) only.

Table (1): Distribution of Sample by Age and Gender

Age group in years	Boys		Girls		Total	
	No.	%	No.	%	No.	%
6-8	49	30.06	32	19.63	81	49.69
9-11	22	13.49	21	12.88	43	26.38
12-14	28	17.17	11	6.74	39	23.92
Total	99	60.72	64	33.16	163	100

Table (2): Caries Experience among the Studied Age Groups (DS, DMFS, ds and dmfs) Described by Mean and Standard of Error.

Age group (years)		DS		DMFS		ds		dmfs	
		Mean	SE	Mean	SE	Mean	SE	Mean	SE
6-8		1.22	0.18	1.41	0.20	10.74	0.91	13.07	1.17
9-11		3.02	0.38	4.16	0.52	5.38	0.96	9.59	1.54
12-14		7.48	0.98	9.41	0.78	0.25	0.10	0.25	0.10
ANOVA Test		49.47**		80.83**		34.11**		26.50**	
Total	Boys	3.48	0.46	4.59	0.50	7.68	0.86	9.96	1.09
	Girls	2.78	0.38	3.26	0.43	5.39	0.81	7.56	1.09
	T-test	1.07		1.83		1.82		1.45	
	Total	3.22	0.31	4.09	0.35	6.79	0.61	9.03	0.81

****Highly significant P<0.000, df =2 (between age groups)**

Table (3): Distribution of Sample According to Treatment Need

Treatment need	Children		Teeth			
	No.	%	Mean	SD	Min.	Max.
Caries arresting or sealant	91	55.82	2.08	2.70	0	10
One surface filling	153	93.86	3.20	2.07	0	11
Two surface filling	126	66.30	2.06	1.78	0	7
Crown for any reason	27	16.56	0.30	0.70	0	3
Bridge elements	3	1.84	0.02	0.13	0	1
Pulp care	27	16.56	0.29	0.70	0	3
Extraction	19	11.65	0.16	0.49	0	3
Need for other care.	12	7.36	0.09	0.33	0	2

Table 4: Distribution of Sample According Plaque Index and Gingival Index Described by (Mean and Standard Error) and Correlation between Them.

Age group (years)		PI		GI		Correlations
		Mean	SE	Mean	SE	
6-8		0.85	0.05	1.93	0.86	0.04*
9-11		0.91	0.05	0.89	0.03	0.52**
12-14		0.93	0.54	0.73	0.06	0.56**
ANOVA-test		0.653		0.836		
Total	Total	0.88	0.03	1.33	0.42	0.55*
	Boys	0.91	0.32	1.75	0.70	
	Girls	0.83	0.06	0.63	0.04	
	t-test	1.20**		1.27*		

***Significant , ** Highly significant**

Table (5): Distribution of Age Groups According to Dental Knowledge Questions (Positive Answers) in Relation to Prevalence of Caries (dmfs and DMFS) and Plaque index (PI)

Questions	Age groups								Correlations					
	6-8		9-11		12-14		Total		dmfs		DMFS		PI	
	No.	%	No.	%	No.	%	No.	%	R	Sig	R	Sig.	R	Sig.
Q1	60	74.07	35	81.39	27	69.23	122	74.84	0.02	Not	0.00	Not	0.06	Not
Q2	49	60.49	34	79.06	23	58.97	106	65.03	0.03	Not	0.10	Not	0.05	Not
Q3	40	49.38	29	67.44	22	56.41	91	55.82	0.04	Not	0.07	Not	0.01	Not
Q4	52	64.19	28	65.11	23	58.97	103	63.19	0.05	Not	0.03	Not	0.08	Not
Q5	36	44.44	19	44.18	15	38.46	70	42.94	0.07	Not	0.07	Not	0.01	Not
Q6	36	44.44	30	69.76	29	74.35	95	58.28	0.23*	Sig.	0.24*	Sig.	0.05	Not
Q7	54	66.66	29	67.44	29	74.35	112	68.71	0.08	Not	0.14	Not	0.12	Not
Q8	56	69.13	34	79.06	28	71.79	118	72.39	0.10	Not	0.18	Not	0.20	Not
Q9	44	54.32	28	65.11	18	46.15	90	55.21	0.04	Not	0.00	Not	0.09	Not
Q10	48	59.25	30	69.76	22	56.41	100	61.34	0.02	not	0.00	not	0.04	Not
Good dental knowledge (scores 5)	50	61.72	33	76.74	26	66.66	124	76.07	0.12	not	0.22*	Sig.	0.05	Not

DISCUSSION

Caries-experience in primary teeth (dmfs) was decreased as age increased; difference was statistically highly significant (P< 0.001). This could be due to natural exfoliation of primary teeth by advancing in age. At the same time, caries experience in permanent teeth (DMFS) was increased with advancing in age; this could be due to eruption of permanent teeth and development of contact area. It was well established that caries severity increase with age due to accumulative and irreversible nature of dental caries [13]. Although it was statistically not significant; boys were higher than girls in all caries experience values (DS, DMFS, ds, dmfs). Girls take care of their teeth health more than boys for esthetic reasons [14, 15], this could explain these results.

Evaluation of treatment need among those children revealed that a high percentage of those children was in need for one surface filling which was mostly occlusal surface filling, followed by two surface filling and then sealant treatment. Presence of spacing between primary teeth make occlusal surface more susceptible to be affected by caries than other surfaces [14, 15]. Permanent teeth were relatively newly erupted, especially posterior teeth, so contact areas were newly affected by oral environment and the accumulative effect of caries process. According to all of the above, occlusal surfaces were also the most affected surfaces than others in permanent teeth among those children. All of these information's could explain why one surface filling recorded higher percentage in treatment need than others.

Results showed that PI values were increased with advancing in age, while GI values were decreased by advancing in age; however these differences were statistically not significant. It had been well established that dental plaque is the prime cause of gingival inflammation[16,17]. Results of the present study were agreed with that, where statistically strong highly significant correlation were recorded between PI and GI values within age groups, and significant strong correlation recorded between these two variable among total sample. Girls showed lower values for PI and GI than boys, the difference was highly significant for PI and significant for GI. Girls seem to be more interested in oral hygiene than boys.

Analysis of dental knowledge among those children reveled that high percentage of total sample recorded positive answers for the prepared questions (scores 5), further more high percentage of positive answers were recorded for relatively all of the prepared questions. These results reveled that the majority of those children had good knowledge (scores 5). Careis-experience for both primary and permanent teeth (DMFS and dmfs) shows weak correlations with most of the questions and with mean of good dental knowledge. This may be due to multifactorial nature of carious process that depended on interaction of number of factors that should occur simultaneously [5].

Weak and statistically not significant correlations were recorded between PI mean and the prepared questions, and with mean of children with good knowledge. These results give an indication that those children had good dental knowledge, but they lack attitude to change their behavior toward application of oral hygiene measures to improve their oral health.

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