Dental caries prevalence and severity in relation to residential factor among (6-9) years school age children in two different area in Baghdad city

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Abstract

The aim of this study is to estimate the prevalence and severity of dental caries among(6-9) years old children in two different socioeconomic background area in Baghdad city .

Dental caries diagnosis was done according to criteria of WHO(١٩٨٧).

The total sample composed of 240 children (120 males and 120 females).

Results showed that the prevalence of dental caries for the total sample was 100%, in another word caries free percentage was zero. Result showed that for the primary dentition dmfs and dmft values were higher for males aged 6-7 and 7-8 years in high socioeconomic class (7.8 & 4.2 , 9.7 & 4.7) than in low socioeconomic class (6.7 & 3.9 ,7.2 & 3.2) with statistically no significant differences (p> 0.05). For children aged 8-9 years in low socioeconomic area the values were higher compared with those in high socioeconomic area for both gender.

For the permanent dentition the high social class showed higher prevalence of dental caries compared with their lower social class counter parts except females aged 8-9 years with low socioeconomic status recorded higher DMFS and DMFT values (2.66 & 2.6) compared to those in high socioeconomic (2.6 & 1.8), while the relation was not significant (p>0.05).

Generally the present study showed that the prevalence and severity of dental caries for primary teeth was higher among children with low social class (dmfs & dmft) than those with high social class, while the results were reversed for the permanent teeth.

Key words: dental caries, socioeconomic class.

Introduction

Oral health problems are universal that affect nearly all the people in all societies, races and socioeconomic classes throughout the world[1]. Dental caries, in particular, is considered "the single most common chronic childhood disease"; without intervention, the prevalence and severity of caries increase into adulthood, it was understood to be a progressive continuous disease that eventually destroyed the tooth unless the dentist intervened. Oral health like general health is strongly influenced by socioeconomic status[1,2].

In addition to that dental caries is a biosocial infectious disease, and its prevention and treatment should take into consideration all the factors that may lead to the development and progression of demineralization[3].

Also in order to reduce, and eventually prevent dental disease in a community, it is necessary first to determine the prevalence of the dental disease. The knowledge can only be acquired by a properly conducted epidemiological survey[4].

Subjects and Method

The sample was collected from children with ages 6-9 years mixed dentition (120 males &120 females) table (1) , who attended schools in AL-Kharkh sector Baghdad city which roughly categorized into high and low social areas, then schools from each area where chosen randomly ,AL-Mansour city represent high social area and AL-Washash represent low social area). The schools authority was contacted and the purpose of the study was explained to them to ensure full cooperation. Examinations were carried out in the classroom under standardized conditions and under natural day light using plane mouth mirror and sharp dental explorer, dental caries diagnosis were according to criteria of WHO[5]

According to American dental Association Numbering system, a systemic approach of teeth examination was followed, starting from the last upper right molar proceeding in an orderly manner from one tooth to the adjacent tooth space reached upper left last molar, then going to the lower left last molar and passing to the lower last right molar. A coding system was applied for recording dental caries status of primary teeth and a numerical coding system for permanent teeth [5]. The results were tabulated, and the mean value for each age group was calculated

The data analysis was carried using statistical package for social science (SPSS version 12.0). The analysis of data included:

Classification of data and calculation of frequencies.
Calculation of statistical parameter (mean and standard deviation of the mean).
Statistical tests that were used in this study is t-test.
The significant level was accepted at 5%.

Results

Results showed that the prevalence of dental caries for the total sample was 100%, in another word caries free percentage was zero. Caries experience according to the social status was found to be higher in females with low socioeconomic status aged 6-7 & 7-8 years compared to those with high socioeconomic status (higher dmfs & dmft values) with a non significant difference, while data revealed that males in high social area aged 6-7 & 7-8 years experienced higher dental caries compared to males in low socioeconomic area with a non significant differences ,table (2,3).

Comparison between the two social classes for age 8-9 years indicated that both males and females in low social areas recorded higher dental caries compared to those with high social areas, the relation was non significant for all age groups (p>0.05).

Table (4,5) demonstrates that both gender with ages 6-7 and 7-8 years experienced higher DMFS & DMFT values for children with high social class than those with low social class with a non significant differences. For the children with age 8-9 years males with high socioeconomic status recorded higher dental caries compared with low socioeconomic status with a non significant differences, while females recorded reversed results, the differences were non significant for all age groups and for both sexes except females with age 7-8 years the difference was significant (p<0.05) .

Discussion

In the present study the indicator for the socioeconomic status is the area of residency, children who live in AL-Mansour city with high means of socioeconomic status, while those living in AL-Washash city with low means socioeconomic status, a similar observation was reported by Slade et al [6] and AL-Sharbatti [7].

The caries experience for primary dentition was found to be affected by the socioeconomic status of the children (table 2,3). Children of high socioeconomic level had lower caries experience than those of the low socioeconomic level although there were no significant deference between them , this finding agreed with studies in the developed countries by Vargas et al [2] and AL-Mohammadi et al [8] but it comes in contrast to the results reported also in the developed countries by Olsson [9] and AL- Sayyab [10] where caries experience is known to be greater in the higher social class. This finding has been attributed to the reason of more social awareness of the importance of utilizing the dental services and the use of preventive measures on a large scale for the high social class[*].

Males in this study were found to have higher dmfs mean than females in high socioeconomic status, the lower caries experience in females was attributed to the better oral hygiene than males and also for more awareness of dental care.

The present study revealed that for the permanent dentition the results were reversed with a non significant differences ,table (4,5), the possible explanation for this finding is that sugar consumption is an important factor in the etiology of dental caries and many studies conducted by Moynihan [11] , Dasanayake and Caufieled [12] showed a positive correlation between sugar intake and dental caries.

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Table (1): Distribution of the total sample by age groups and gender

Age	Gender				Total	
	Male		Female		No	%
	No	%	No	%		
6-7	40	16.66	40	16.66	80	33.33
7-8	40	16.66	40	16.66	80	33.33
8-9	40	16.66	40	16.66	80	33.33
Total	120	50	120	50	240	100

Table (2): Caries Experience (dmfs: Mean±S.D) by Age, Gender and Socioeconomic status

Age		Gender	Socioeconomic Status	Mean	S.D	t-test	Sig.
6-7	dmfs	Males	High	7.8	3.64	0.55	N.S
			Low	6.73	6.65		
		Females	High	6.73	4.55	0.80	N.S
			Low	8.46	7.05		
		Total	High	6.76	4.05	0.41	N.S
			Low	7.6	6.8		
7-8	dmfs	Males	High	9.73	9.88	0.86	N.S
			Low	7.26	5.11		
		Females	High	9.66	7.75	0.49	N.S
			Low	11.1	8.47		
		Total	High	9.2	7.15	0.17	N.S
			Low	9.7	8.73		
8-9	dmfs	Males	High	8.6	5.11	0.24	N.S
			Low	9.06	5.47		
		Females	High	7.86	5.26	0.57	N.S
			Low	9.06	6.20		
		Total	High	8.23	5.11	0.42	N.S
			Low	9.06	5.76		

N.S: Non significant at level P>0.05

S: Significant at level P<0.05

Table (3): Caries Experience (dmft: Mean±S.D) by Age, Gender and Socioeconomic status

Age		Gender	Socioeconomic Status	Mean	S.D	t-test	Sig.
6-7	dmft	Males	High	4.26	1.98	0.38	N.S
			Low	3.93	2.76		
		Females	High	4	2.47	0.66	N.S
			Low	4.6	2.5		
		Total	High	4.13	2.20	0.15	N.S
			Low	4.26	2.61		
7-8	dmft	Males	High	4.73	3.34	1.57	N.S
			Low	3.26	1.43		
		Females	High	4.86	2.87	0.45	N.S
			Low	5.33	2.81		
		Total	High	4.8	3.06	0.50	N.S
			Low	4.3	2.43		
8-9	dmft	Males	High	4.2	1.52	0.17	N.S
			Low	4.33	2.46		
		Females	High	3.53	1.80	1.37	N.S
			Low	4.53	2.19		
		Total	High	3.86	1.67	0.78	N.S
			Low	4.43	2.29		

Table (4): Caries Experience (DMFS: Mean±S.D) by Age, Gender and Socioeconomic status

Age		Gender	Socioeconomic Status	Mean	S.D	t-test	Sig.
6-7	DMFS	Males	High	0.13	0.35	0.63	N.S
			Low	0.06	0.25		
		Females	High	0.33	0.72	0.32	N.S
			Low	0.26	0.45		
		Total	High	0.23	0.56	0.40	N.S
			Low	0.16	0.37		
7-8	DMFS	Males	High	1.26	1.03	0.09	N.S
			Low	1.21	1.99		
		Females	High	2.2	1.69	0.048	S
			Low	0.9	1.12		
		Total	High	1.73	1.46	1.01	N.S
			Low	1.16	1.62		
8-9	DMFS	Males	High	3.06	2.71	0.34	N.S
			Low	2.73	2.68		
		Females	High	2.6	2.41	0.08	N.S
			Low	2.66	1.87		
		Total	High	2.83	2.53	0.15	N.S
			Low	2.7	2.27		

Table (5): Caries Experience (DMFT: Mean±S.D) by Age, Gender and Socioeconomic status

Age		Gender	Socioeconomic Status	Mean	S.D	t-test	Sig.
6-7	DMFT	Males	High	0.13	0.35	0.63	N.S
			Low	0.06	0.25		
		Females	High	0.33	0.72	0.32	N.S
			Low	0.26	0.45		
		Total	High	0.23	0.56	0.40	N.S
			Low	0.16	0.37		
7-8	DMFT	Males	High	1.26	1.03	0.94	N.S
			Low	0.93	0.88		
		Females	High	1.93	1.33	0.049	S
			Low	0.8	1.08		
		Total	High	1.6	1.22	0.84	N.S
			Low	0.86	0.97		
8-9	DMFT	Males	High	1.86	1.30	0.27	N.S
			Low	1.73	1.33		
		Females	High	1.8	1.37	0.93	N.S
			Low	2.26	1.33		
		Total	High	2	1.33	0.35	N.S
			Low	1.83	1.31		