Oral hygiene condition among five years old Kindergarten Children in relation to level of parent education in Baghdad city Iraq

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Summary :

Background: The level of parent education has an important role in making decision about their children oral hygiene.

Material and methods: A cross sectional descriptive study was conducted in Baghdad city, the total sample include 569 preschool children (318 males and 251females) aged 5-years, they were randomly selected from different kindergartens. For measuring oral cleanliness gingival condition and dental stain, Plaque index by Silness and Löe gingival index by Löe and Silness and stain index by Leung were used respectively.

Results: Results showed that the mean plaque index was (0.68 ± 0.018) results reveal a high prevalence of gingival inflammation (77%)with mild type was found to be the predominant, as males had a significantly higher mean gingival value than females. A higher mean gingival value was recorded among children with low level of parent education. The prevalence of extrinsic dental stain was 48.33 %.As yellow stain was the most prevalent and higher in anterior segment than posterior segment. The mean plaque index was significantly low among children who have no stain. A higher percentage of different types of tooth stain were reported in children with low level of parent education.

Conclusion: Mild type gingival inflamation and yellow stain was most prevalent at this age group.The extrinsic tooth stain was found to be predominant in children with low level of parent's education.

Keywords: Oral hygien, socioeconomy, preschool children, parent education.

Introduction

Gingivitis can be defined as an inflammatory lesion confined to the tissue of the marginal gingiva, and it's commonly observed in children 1. Positive association was demonstrated between a decreased level of oral cleanliness and increasing severity of gingivitis 2. Extrinsic tooth stains become absorbed by plaque or pellicle that produce irregular on the teeth surface 3,4,5,6,7. prevalence and severity of periodontal diseases are widely spread in children and may vary from one community to another(WHO,1997) 8, the prevalence of gingivitis in preschool children were found in Iraqi studies by El-Samarrai in 1989 9 and Al-Azawi in 2000 2 to be 81.18% and 43.46% respectively, and the mean gingival index among these studies were moderate type. While in UK 6 and Sweeden 10 the prevalence of gingivitis were equal to 46.3% and 64% respectively.

Many studies have shown a significant correlation between the socioeconomic status and gingivitis, oral cleanliness and parent usually are the primary factor affected their children oral health 11,12 the level of parent education is one of the important socioeconomic factors 10,13,9. Many Iraqi studies have found a positive relationship between different levels of parent education and gingival health condition of children 2,14,15,16, as well as in other countries 15,16 In order to prevent or reduce oral diseases, the oral health condition have to be determined at first through an epidemiological study 4, therefore this investigation was carried out to increase the knowledge, concerning this subject and to compare the data with previous studies done on this age group in order to evaluate the change in the oral health status.

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Material and methods

This study was conducted in Baghdad city, a sample size was composed of 569 preschool children aged 5 years that were randomly selected from different kindergartens, the age of the children was recorded according to the last birthday from the record of the child 8. Oral examination of children was carried out using, plan mouth mirror (No. 4)(Derlfa,West Germany) and exploratory mouth probes along with brand new and a portable lamp for artificial illumination , patient were examined under standarized condition by investigator while the children sitting on a portable chair [8]. Criteria of the plaque index was used to assess oral cleanliness, by Sillnes and Löe 1964 17. While gingival index was

used to assess the gingival condition by Löe and Silnes 1963 18. Concerning gingival and plaque indices, index teeth of Ramfjord 19 were examined to represent the whole dentition only fully erupted teeth were scored, if the index tooth was partially erupted or missing, that segment was excluded. Extrinsic tooth stain was assessed using the stain index by Leung 1950 20, concerning the extrinsic dental stain all teeth were examined, all stains were classified under five groups according to colour: green, brown, yellow, orange and black. Level of parent education was classified into non primary, secondary, diploma, university and post graduated. Once all data were collected, statistical analysis were conducted utilizing SPSS version 10.

Results

Among of 569 screened children, 318 (55.89 %) were males and 251 (44.11%) were females. The mean value of plaque and gingival index for the total sample were (0.68 ±0.02), (0.49 ±0.02) respectively. For both plaque and gingival index males had ahigher mean value than females, such variation was statistically not significant difference (P>0.05) (Table 1). The prevalence of gingivitis was about 77% of screened children. For both gender, mild type of gingivitis was found to be predominant (64%) while sever gingivitis was absent (Table 2). Concerning the relation between gingival health condition and level of parent education, data recorded a higher mean gingival value among children with low level of father education. While children with middle level mother education recorded higher mean of gingival index. However no significant difference was found among different levels of parent education as shown in (Table 3). The prevalence of extrinsic dental stain among the total sample was (48.33%). Moreover all stain was higher in anterior segment than posterior segment for black, brown, yellow and green stain as seen in Table (4). Table (5) shows the relationship between level of parents' education and types of extrinsic tooth stain among children. The low level of parents education group is the greatest affected by the extrinsic stains.

Discussion

The oral hygiene of preschool children age 5 years old was assessed in relation to the level of parent education. The result of the present study indicates that the mean gingival index were mild, this finding coincides with AL– Kubaisi[21], Al-Obaidi 23 and Stamm study 24, and disagree with Al – Azawi 2 and EL – Samarrai 9. The prevalence of gingivitis among study population was higher than that reported in UK 6 and Sweeden 8. while when comparing with previous Iraqi studies it was higher than that reported by Al-Azawi 2, while it was lower than that reported by El-Samarrai 16. The present study showed that mean gingival and plaque index were higher among males than females, this finding is in agreement with previous Iraqi studies Al – Azawi 2, and AL – Kubaisi 21 and disagree with other studies 9,22. Data shows that the mild type of gingival inflammation was found to be most predominant among children this is in agreement with Al- Obaidi and Stamm [24] this can be explained by the fact that the commonest type of gingivitis in early childhood is the mild one and the severity increase with age 25. The present study reported no significant difference between gingivitis and level of parent education, this in agreement with El-Sammarai 9 and disagree with other 2. Concerning extrinsic dental stain, study recorded a higher prevalence stain than previous Iraqi studies 2,21 , while it was lower than that reported by Abdul-Hameed in 1989 (90.6%) 26 and Al-Kubasi in 2000 (96.3%) 21. The predominant tooth stain was yellow this finding is in accordance with studies 2,21,26. Males showed significantly lower susceptibility to yellow stain than females, simillerly to Abdul Hameed 26 However, it was different from the results reported by Al-Azawi 2. Children with no stain significantly have low mean plaque value than those with any type of extrinsic stain. This is in agreement with Abdul Hameed [26]. Data analysis in the present study showed that no significant difference in dental stain were found between different levels of parents education in both gender, this may be due to the failed of a highly educated parents in teaching their children take care their teeth by brushing and performing a proper oral hygiene measures 9,27. However, the present study reported that the majority of extrinsic tooth stains tend to be higher among low level of parents education, a similar finding reported by Al- Kubaisi and Saeed 21,28,

Table 1 Plaque and gingival index (mean and SE) by gender.

		Mean	SE
PL	Male	0.69	± 0.02
	Female	0.67	± 0.03
	Total	0.68	± 0.02
GI	Male	0.51	± 0.021
	Female	0.47	± 0.03
	Total	0.49	± 0.02

Table 2 The severity of gingivitis according to different level by gender.

	Level	Male	Female	Total
GI	Free (zero)	* 10%	** 13%	23%
	Mild (Less than one)	37%	27%	64%
	Moderate(One and less than two)	9%	4%	13%
	Total	56%	44%	100%

Table 3 Mean of gingival index according to the level of parent education.

Parent education level	Father			Mother		
	No.	Mean	SE	No.	Mean	SE
No\ primary	384	0.51	± 0.02	337	0.49	± 0.02
Secondary\ high	93	0.46	± 0.04	2	0.06	± 0.06
Diploma	24	0.5	± 0.08	205	0.51	± 0.03
University & post graduated	68	0.44	± 0.05	25	0.41	± 0.08
Total	569	0.49	± 0.02	569	0.49	± 0.02

Table 4 Distribution of types of stain among children with extrinsic dental stain in anterior and posterior segment by gender.

Segment	Gender	Black		Brown		Yellow		Green	
		No.	%	No.	%	No.	%	No.	%
Anterior	Male	31	5.45%	46	8.08%	51	8.96%	2	0.35%
	Female	17	2.99%	49	8.61%	65	11.42%	6	1.05%
	Total	48	8.44%	95	16.70%	116	20.39%	8	1.41%
Posterior	Male	5	0.88%	6	1.05%	3	0.53%	0	0.00%
	Female	10	1.76%	6	1.05%	11	1.93%	2	0.35%
	Total	15	2.64%	12	2.11%	14	2.46%	2	0.35%

Table 5 Distribution of extrinsic tooth stain accaording to level of parent education.

		Parent education level							
	Stain	No\ primary		Secondary\ high		Diploma		University & post graduated	
		No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Father	No	234	41.12%	0	0.00%	50	8.79%	10	1.76%
	Blak	33	5.80%	0	0.00%	13	2.28%	4	0.70%
	Browen	60	10.54%	0	0.00%	34	5.98%	6	1.05%
	Yellow	64	11.25%	0	0.00%	45	7.91%	8	1.41%
	Green	7	1.23%	0	0.00%	1	0.18%	0	0.00%
Mother	No	241	42.36%	20	3.51%	8	1.41%	25	4.39%
	Blak	35	6.15%	7	1.23%	4	0.70%	4	0.70%
	Browen	63	11.07%	13	2.28%	5	0.88%	19	3.34%
	Yellow	73	12.83%	19	3.34%	5	0.88%	20	3.51%
	Green	5	0.88%	0	0.00%	1	0.18%	2	0.35%

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