

Impact of Gingivitis on the Quality of Life of Primary School Children 8-10 Year Age Group in Al-Najaf City

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ABSTRACT

Background: Gingivitis is the most prevalent form of periodontal disease. It begins in early childhood, increases in prevalence and severity into the early teenage years, it has been recognized that children's quality of life is related to their oral health status.

Aim of the study: The survey was made to investigate the prevalence and severity of gingivitis in Al-Najaf city / Iraq the impact of this disease on the quality of life among (8-10) year old primary school children.

Subjects and methods: The total sample composed of 1200 children aged (8-10) year selected randomly from different primary schools in Al-Najaf governorate. WHO 2013 index was used for assessment of the gingival health and oral hygiene assessed by Silness and Loe, 1964 plaque index, Calculus index by ramfjord 1959 and OHRQoL questionnaire was applied for children.

Results: Results showed that the mean plaque index was (0.501 ± 0.055) and the mean gingival index was (0.137 ± 0.017) for the total sample. No significant differences were seen between OHRQoL questionnaires and oral hygiene and gingival health except plaque index PLI of four OHRQoL questionnaire was significant.

Conclusion: Primary schools children in Al-Najaf were found to have a high prevalence of gingivitis. Hence this survey highlighted the need of children to dental health education programs to public and school preventive measures among those children.

Key words: Quality of life, Gingival health, School children

INTRODUCTION

Many functions of the oral cavity have a relationship to daily life including intake of food, social contact, speech and appearance. Reduced oral health has thus the possibility of hindering the quality of life. Reduced food intake due to poor dental status or oral pain can cause little growth in children and may affect badly in the nutritional status. Pain influence also have a negative impact on the capacity to involve in social relations and children might not become the full educational benefit

if suffering from discomfort and pain. While poor dental status among children has a negative effect on speech development⁽¹⁾.

Gingivitis is the most prevalent form of periodontal disease. It begins in early childhood, increases in prevalence and severity into the early teenage years, and then subsides slightly and levels off until approximately 20 years of age⁽²⁾.

Severe gingivitis is relatively uncommon in children⁽³⁾. The severity of the disease is directly related to the accumulation of biofilm due to poor oral hygiene. The presence of the biofilm for a period of 10 to 21 days is sufficient to establish a condition of gingival inflammation, but it is reversible if methods for controlling the biofilm are established⁽⁴⁾. Thus, it is necessary to have a better understanding of the patient's perception of the impact of gingival disease on their lives. It is also important to plan gingival care, which addresses patient's needs and key concerns.

Several Iraqi epidemiological studies recorded high gingivitis prevalence among different age groups^(5,6,7).

This study was conducted on a group of primary school children 8-10 years old living in Al-Najaf governorate to find out the impact of gingivitis on the quality of life.

Subjects and Methods

A sample of 1200 primary school children 8-10 years old were selected randomly from different schools in Al-Najaf governorate (600 boys and 600 girls) from urban areas in Al-Najaf city.

Oral health related quality of life was recorded by 16 questionnaires (OHRQoL questionnaires)⁽⁸⁾ which consist of four groups: Question about the mouth and teeth (Q1. Pain in the teeth or mouth in the past 4 weeks? Q2. Sore spots in the mouth in the past 4 weeks? Q5. Needed longer time than others to eat the meal because of the teeth or mouth? Q6. Had a hard time biting or chewing food like apples, corn on the cob or steak because of the teeth or mouth? Q7. Had a problem sleeping at night because of the teeth or mouth), Question about feelings (Q14. Had a hard time paying attention in school because of the teeth or mouth? Q15. Not wanted to speak or Question about child school (Q18. Not wanted to be with other children because of the teeth or mouth?), Questions about child being with other people (Q19. Stayed away from playing with children because of the teeth or mouth? Q20. Other children teased

or called names because of the teeth or mouth? 21. Not wanted to be with other children because of your teeth or mouth? 22. Stayed away from playing with children because of your teeth or mouth? 23. Other children teased you or called you names because of your teeth or mouth? 24. Other children asked you questions about your teeth or mouth?

Intra oral examination of gingival health status was recorded according to WHO 2013⁽⁹⁾ and oral hygiene measured by using Silness and Loe, 1964 plaque index and calculus index by Ramfjord 1959, the examination was performed by CPI probe. The statistical data analysis was approached by using statistical package (SPSS) ver.(23.0) in order to analyze and assess the results of this study through application of descriptive data analysis, by frequencies and percentages. Inferential data analysis, these types of analysis were used to test hypothesis by accept or reject it, which include the following; Chi square test, Spearman Rank Correlation test, analysis of variance and P value.

RESULTS:

Results showed that the mean plaque index was (0.501 ± 0.055) and the mean gingival index was (0.137 ± 0.017) for the total sample. No significant differences were seen between OHRQoL questionnaires and oral hygiene and gingival health except plaque index PII of the fourth OHRQoL questionnaire was significant as shown in table 1, 2, 3, 4.

Table (1): Mean and standard error of Gingival health in relation to OHRQoL(Pain) Questionnaires

Gingival index	Pain Questions	Don't know		I		No		F	p
		Mean	SE	Mean	SE	Mean	SE		
GIO	Pain in teeth	23.07	0.17	22.99	0.06	23.13	0.06	1.518	0.220
	Sore spots in mouth	23.27	0.11	22.93	0.07	23.10	0.05	3.173	0.042
	Bad breath	23.00	0.17	22.98	0.06	23.12	0.06	1.308	0.271
	Need longer time for eating	22.90	0.15	22.97	0.07	23.12	0.05	2.035	0.131

	Had a hard time chewing food	23.14	0.17	22.96	0.06	23.11	0.05	1.799	0.166
GI1	Pain in teeth	0.10	0.08	0.14	0.02	0.14	0.03	0.111	0.895
	Sore spots in mouth	0.02	0.02	0.16	0.03	0.14	0.02	1.968	0.140
	Bad breath	0.13	0.05	0.12	0.02	0.15	0.03	0.482	0.618
	Need longer time for eating	0.12	0.05	0.10	0.02	0.17	0.03	1.792	0.167
	Had a hard time chewing food	0.07	0.04	0.12	0.02	0.16	0.03	0.965	0.381

Not significant at $p > 0.05$

The results in table (1) showed that the relation of children gingival health with OHRQoL pain questionnaires was non-significant.

Table (2): Mean and standard error of Oral hygiene in relation to OHRQoL(Pain) Questionnaires

Oral hygiene index	Pain Questions	Don't know		Yes		No		F	p
		Mean	SE	Mean	SE	Mean	SE		
PLI	Pain in teeth	0.421	0.038	0.558	0.097	0.429	0.014	0.679	0.508
	Sore spots in mouth	0.385	0.032	0.464	0.014	0.542	0.100	0.422	0.656
	Bad breath	0.427	0.035	0.568	0.116	0.444	0.013	6.244	0.002
	Need longer time for eating	1.213	0.791	0.468	0.014	0.435	0.012	0.270	0.764
	Had a hard time chewing food	0.448	0.042	0.461	0.013	0.541	0.107	7.797	0.000
CLI	Pain in teeth	0.032	0.011	0.025	0.003	0.035	0.006	1.405	0.246
	Sore spots in mouth	0.041	0.010	0.023	0.004	0.032	0.005	0.174	0.840
	Bad breath	0.010	0.004	0.025	0.004	0.036	0.005	1.921	0.147

Need longer time for eating	0.026	0.008	0.022	0.004	0.034	0.005	0.575	0.563
Had a hard time chewing food	0.015	0.009	0.029	0.005	0.030	0.004	1.700	0.183

Highly significant at $p < 0.01$; non-significant at $p > 0.05$

The result in table (2) showed that the relation of children oral hygiene with OHRQoL pain questionnaires was non-significant except plaque index PLI for question about bad breath in the mouth and question about had a hard time chewing food were highly significant p -value=0.002 and 0.000 respectively.

Table (3): Mean and standard error of oral hygiene and Gingival health in Relation to OHRQoL(Feelings) Questionnaires

feelings Question	The index	Don't know		Yes		No		F	p
		Mean	SE	Mean	SE	Mean	SE		
Been concerned what other people think about the teeth	PI	1.11	0.69	0.47	0.02	0.44	0.01	5.332	0.005
	GI0	22.81	0.18	22.92	0.09	23.11	0.05	3.362	0.035
	GI1	0.20	0.08	0.11	0.03	0.14	0.02	0.807	0.447
	CI	0.02	0.01	0.02	0.00	0.03	0.00	2.834	0.059
Worried about appearance	PI	0.39	0.05	0.72	0.27	0.45	0.01	2.058	0.128
	GI0	22.80	0.22	22.89	0.10	23.10	0.04	2.933	0.054
	GI1	0.18	0.08	0.10	0.02	0.15	0.02	0.805	0.447
	CI	0.02	0.01	0.03	0.01	0.03	0.00	0.478	0.620

Highly significant at $p < 0.01$; non-significant at $p > 0.05$

The results in table (3) showed that the relation of children gingival health and oral hygiene with OHRQoL feelings questionnaires was non-significant except plaque index PLI for question Been concerned that other people think about the teeth or mouth was highly significant p -value=0.005.

Table (4): Mean and standard error of oral hygiene and Gingival health in Relation to OHRQoL(About child school) Questionnaires

Questions about the school	The index	Don't know		Yes		No		F	p
		Mean	SE	Mean	SE	Mean	SE		
Not speak out loud in class	PI	1.653	1.192	0.478	0.022	0.440	0.010	10.604	0.000
	GI0	23.091	0.178	22.820	0.112	23.086	0.044	2.850	0.058
	GI1	0.073	0.044	0.142	0.036	0.139	0.020	0.333	0.717
	CI	0.039	0.014	0.022	0.005	0.030	0.004	0.738	0.478

Highly significant at $p < 0.01$; non-significant at $p > 0.05$

The results in table (4) showed that the relation of children gingival health and oral hygiene (calculus index CI) with OHRQoL was non-significant except plaque index PI was highly significant p -value=0.000.

Table (5): Mean and standard error of oral hygiene in Relation to OHRQoL (About child being with other people)

Questions about being with other people	Oral Hygiene index	Don't know		Yes		No		F	p
		Mean	SE	Mean	SE	Mean	SE		
Avoid smiling	PI	0.324	0.035	0.808	0.322	0.444	0.010	3.256	0.039
	CI	0.030	0.013	0.021	0.005	0.031	0.004	0.721	0.486
Not talk to other children	PI	0.408	0.043	0.460	0.023	0.513	0.067	0.117	0.889
	CI	0.016	0.008	0.020	0.005	0.031	0.004	1.198	0.302
Not be with other children	PI	1.462	1.094	0.480	0.024	0.446	0.010	8.050	0.000
	CI	0.033	0.012	0.019	0.005	0.030	0.004	0.856	0.425
Not playing with children	PI	0.353	0.037	0.468	0.026	0.514	0.065	0.207	0.813
	CI	0.030	0.011	0.015	0.005	0.031	0.003	1.371	0.254
Other children teased you	PI	0.336	0.045	0.837	0.375	0.449	0.010	3.225	0.040
	CI	0.020	0.010	0.022	0.006	0.031	0.004	0.706	0.494
Other children asked you questions	PI	0.360	0.045	0.453	0.021	0.519	0.070	0.236	0.790
	CI	0.007	0.005	0.023	0.005	0.032	0.004	1.595	0.203

#=Not significant at $p > 0.05$

The results in table (5) showed that the relation of children oral hygiene with OHRQoL questionnaires was non-significant except plaque index for question not be with other children was highly significant $p\text{-value}=0.000$.

Table (6): Mean and standard error of Gingival health in Relation to OHRQoL (About child being with other people)

Questions about being with other people	Gingival index	Don't know		Yes		No		F	p
		Mean	SE	Mean	SE	Mean	SE		
Avoid smiling	GI0	23.184	0.193	22.819	0.108	23.088	0.044	3.388	0.034
	GI1	0.143	0.071	0.118	0.028	0.140	0.021	0.125	0.882
Not talk to other children	GI0	22.846	0.206	22.890	0.116	23.082	0.044	1.896	0.151
	GI1	0.115	0.071	0.104	0.030	0.143	0.020	0.332	0.718
Not be with other children	GI0	23.050	0.160	22.873	0.124	23.072	0.044	1.320	0.268
	GI1	0.117	0.059	0.113	0.033	0.141	0.020	0.180	0.835
Not playing with children	GI0	23.145	0.188	22.842	0.125	23.067	0.044	1.681	0.187
	GI1	0.109	0.067	0.120	0.035	0.140	0.020	0.128	0.880
Other children teased you	GI0	22.951	0.188	22.834	0.117	23.087	0.044	2.553	0.078
	GI1	0.146	0.089	0.114	0.030	0.140	0.020	0.146	0.864
Other children asked you questions	GI0	22.915	0.235	22.854	0.101	23.096	0.044	2.828	0.060
	GI1	0.106	0.063	0.132	0.030	0.139	0.021	0.075	0.927

#=Not significant at $p>0.05$

The results in table (6) showed that the relation of children gingival health with OHRQoL was non-significant.

DISCUSSION

Oral health is essential for general health and well-being throughout life and is a marker for overall health status.

In this study, the mean plaque index was (0.501 ± 0.055) and the mean gingival index was (0.137 ± 0.017) for primary school (8-10) year children. They were less than

that reported by some studies ^(10,11). These discrepancies may be due to differences in sample size, residency, knowledge and attitude, method and time of brushing before the examination or the usual brushing.

No statistically significant differences were found between OHRQoL questionnaires and oral hygiene and gingival health except plaque index of four OHRQoL questionnaire was significant

This survey highlighted the need of children to preventive measures and dental health education and improvement of dental knowledge and attitude towards oral hygiene.

Finally , it is crucial to evaluate the outcomes of gingival treatments from the patients perspective and to draw attention to the overall significance of gingival care ⁽¹²⁾.

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