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Evaluation of Periodontal Awareness of Parents with Periodontitis Regarding their Children's Oral and Dental Health

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ABSTRACT

Aim: Periodontal disease is thought to be seen in adults, children and adolescents can also be affected by this disease. The aim of this study was to evaluate parents with periodontitis in respect of the awareness and knowledge of oral and dental health of their children.
Material and Methods: The study included 183 parents diagnosed with periodontitis. A questionnaire was completed by the parents. The first 7 items were related to sociodemographic data and socioeconomic status, the next 13 items were multiple choice questions to evaluate the periodontal awareness of the parents, and the final section included 8 items for the parents to evaluate the oral hygiene habits of their children.
Results: Only 22.7% of the participants knew that there should be 20 primary teeth and the majority of those who responded correctly had an education level of primary school or middle school. When asked what oral care should be given to infants aged 0-3 years, the vast majority stated that they did not perform any oral care. The parents were seen to have knowledge consistent with scientific data on subjects that are constantly in printed and visual media such as the frequency of changing toothbrushes and the duration of teeth brushing but did not supervise their child when brushing their teeth.
Conclusion: The results of this study showed that there is a clear need to inform individuals with periodontitis about the oral and dental health of their children, and to raise awareness of periodontitis.

Periodontitisli Ebeveynlerin Çocuklarının Ağız ve Diş Sağlığına İlişkin Periodontal Farkındalıklarının Değerlendirilmesi

Makale Bilgisi

Makale Geçmişi

Geliş Tarihi: 16.11.2023
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Anahtar Kelimeler:
Periodontal farkındalık,
Periodontitis,
Ebeveyn,
Çocuk.

ÖZET

Amaç: Periodontal hastalığın yetişkinlerde görüldüğü düşünülmekle birlikte, çocuklar ve ergenler de bu hastalıktan etkilenebilmektedir. Bu çalışmanın amacı periodontitisli ebeveynlerin çocuklarının ağız ve diş sağlığı konusundaki farkındalık ve bilgileri açısından değerlendirilmesidir.
Gereç ve Yöntemler: Çalışmaya periodontitis tanısı alan 183 ebeveyn dahil edildi. Ebeveynler tarafından bir anket doldurduldu. İlk 7 madde sosyodemografik veriler ve sosyoekonomik durumla ilgili, sonraki 13 madde ebeveynlerin periodontal farkındalığını değerlendirmeye yönelik çoktan seçmeli sorular, son bölümde ise ebeveynlerin çocuklarının ağız hijyeni alışkanlıklarını değerlendirmeye yönelik 8 madde yer aldı.
Bulgular: Katılımcıların yalnızca %22,7'si 20 adet süt dişi olması gerektiğini biliyordu ve doğru cevap verenlerin çoğunluğu ilkokul veya ortaokul eğitim seviyesine sahipti. 0-3 yaş arası bebeklere hangi ağız bakımının verilmesi gerektiği sorulduğunda büyük çoğunluk herhangi bir ağız bakımı yapmadıklarını belirtti. Ebeveynlerin diş fırçası değiştirme sıklığı, diş fırçalama süresi gibi yazılı ve görsel medyada sürekli yer alan konularda bilimsel verilerle tutarlı bilgiye sahip olduğu ancak çocuğunun dişlerini fırçalarken denetlemediği görüldü.
Sonuç: Bu çalışmanın sonuçları periodontitisli bireylerin çocuklarının ağız ve diş sağlığı konusunda bilgilendirilmesine ve periodontitis konusunda farkındalık yaratılmasına açık bir ihtiyaç olduğunu göstermiştir.

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INTRODUCTION

Periodontal diseases represent a prevalent health issue worldwide.[1] Although periodontal disease is thought to be seen in adults in the population, it's noteworthy that children and adolescents can also experience this condition.[2,3] Periodontal disease usually forms due to micro-organisms in the dental plaque, and over time when it is not treated, can cause alveolar bone destruction resulting in dental losses. Therefore, with oral hygiene motivation, regular dental check-ups, and a high level of awareness of periodontal disease, the tissue damage caused by periodontal disease can be reduced. It can be considered that the creation of and raising the level of periodontal health awareness in individuals will help to control periodontal disease both in themselves and in their children.[4]

Periodontitis is a disease that causes loss in supporting dental tissues associated with chronic inflammation. Although the primary agent of periodontitis is microbial dental plaque, several factors can affect progression of the disease, such as some systemic diseases, hormonal changes, and smoking.[5] Previous studies have shown that individuals with periodontal disorders have low levels of awareness and knowledge about periodontal disease.[6-9] In addition to it being difficult for an individual with insufficient knowledge and awareness to maintain their own periodontal health, it may also cause them not to show sufficient attention to the oral hygiene practices of their children.

There are studies in literature showing that parents have insufficient knowledge of the oral health of their children and do not give enough importance to their oral health status.[10,11] However, there is very little information about the awareness and knowledge of parents on the subject of periodontal health. Only one study could be found that has investigated this relationship and as of the current literature, no research has been conducted to assess the awareness and knowledge of parents with periodontitis regarding the oral and dental health of their children. We think that our study can contribute to the literature by examining the knowledge and attitudes of parents who do not adequately implement their own oral hygiene practices regarding their children's oral and dental health. Therefore, the objective of this study was to assess the understanding and behaviors concerning the periodontal health of parents, examining the correlation with the oral health practices of their children. The study hypothesized that individuals with periodontitis would exhibit limited awareness and negative attitudes toward the periodontal well-being of their children, leading to a lack of emphasis on oral health practices.

MATERIALS AND METHODS

This cross-sectional study included patients who presented and were diagnosed with periodontitis in the Periodontology Department of the Dental Faculty of Kahramanmaraş Sütçü İmam University between April 2021 and June 2022. The study received approval from the Non-Interventional Clinical Research Ethics Committee of Kahramanmaraş Sütçü İmam University, indicated by decision number 10/2021711, dated March 22, 2021. All protocols adhered to the principles outlined in the Helsinki Declaration. Additionally, all participants in the study provided signed informed consent. All the patients who were planned to be included in the study underwent a clinical periodontal evaluation and radiographic examination. The classification of periodontitis in this study adhered to the guidelines outlined in the 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions. The patients included to the study with interdental clinical attachment loss of ≥2 mm in at least 2 non-adjacent teeth, buccal or lingual probing depth ≥3 mm in 2 or more teeth, and clinical attachment loss ≥3 mm.[12] The study included 183 parents diagnosed with periodontitis who had a child age 3-12 years.

A questionnaire was completed by the parents. The first 7 items were related to

sociodemographic data and socioeconomic status, including age, gender, education level, monthly income, occupation, and number of children in the family. The next 13 items on the questionnaire were multiple choice questions to evaluate the periodontal awareness of the parents, and the final section included 8 items for the parents to evaluate the oral hygiene habits of their children. While preparing the survey questions, studies in the literature evaluating parents' oral health awareness and articles related to periodontal awareness were used.[6,13,14] The questionnaire items are shown in Table 1.

Table1. Survey questions

Question No.	Question	Category
1	How many primary teeth are there in the mouth?	12
		16
		20
		32
2	What is the ideal length of time to brush the teeth?	A few seconds
		1 minute
		2 minutes
		3 minutes
3	How often do you change your child's toothbrush?	Once a month
		Once every 3 months
		Once a year
		There is no need to change it
4	What is the most appropriate age for your child's first dental examination?	At birth
		6 months -1 year
		After the age of 6 years
		When in pain
5	What is dental plaque?	Soft accumulation
		Hard accumulation
		I don't know
		Discolouration of the teeth
6	What is calculus?	Soft accumulation
		Hard accumulation
		I don't know
		Discolouration of the teeth
7	Why is it important to have fluoride added to toothpaste?	To prevent decay
		To whiten the teeth
		To clean the mouth
		I don't know
8	In what way do you think plaque most affects oral health?	It causes gum disease
		It causes bad breath
		It causes discolouration
		I don't know
9	Do milk tooth problems have an effect on permanent teeth?	Yes
		No
		I don't know
10	Do you think that the oral health of your child is affected by their general health?	Yes
		No
		I don't know
11	How many times a day do you brush your child's teeth?	Once a day
		Twice a day
		Three times a day
		I don't brush
12	Did you apply oral care to your infant at the time when primary teeth were emerging (0-3 years)?	I wipe the mouth with gauze
		I brush the teeth
		I wipe the mouth with a cloth
		I don't do anything
13	Has your child been given information about why teeth brushing is necessary?	At school
		During a previous visit to a dentist
		We have explained at home
		No information has been given

	Yes	No
1. Did your child brush their teeth under your supervision when aged 0-6 years?		
2. Does your child use a toothbrush when cleaning their teeth?		
3. Does your child use toothpaste when cleaning their teeth?		
4. Do you use dental floss when cleaning your child's teeth?		
5. Do you know the correct technique for brushing the teeeth?		
6. Does your child suck their thumb?		
7. Do you regularly examine inside the mouth of your child?		
8. Has a paediatric doctor to whom you have taken your child referred you to a dentist for oral and dental health examination?		

Statistical analysis

Jamovi (Version 2.2.5) software was used for statistical analysis. Descriptive analysis of demographic attributes of the involved population was presented. The relationship between demographic features and responses was tested via the chi-square test. The probability level for statistical significance was set at $p = 0.05$.

Power Analysis

The sample size was determined utilizing the Raosoft web survey software (http://www.raosoft.com/samplesize.html). To achieve an 80% confidence interval, a 5% alpha error, a 50% response distribution rate, and considering a population size of 150,000, a total of 165 participants were deemed necessary for the study.

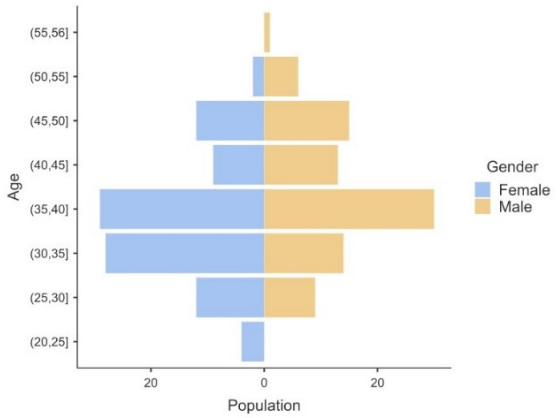

Figure 1. Age-Gender graph of the participants

RESULTS

The 183 parents included in the study comprised 95 females and 88 males, with the majority in the 35-40 years age range. The age and gender of the participants are shown in Figure 1. In the examination of education levels, the largest group (32%) was formed of those with a primary school level. The income level of most (42%) participants ranged between 3000 TL (Turkish lira) and 5000TL. A higher rate (34%) of the participants worked in the private sector and most (40%) had 2 children. The demographic data of the study participants are demonstrated within Table 2.

Table 2. Demographic features of the included population

Characteristic	**n =183**
Age range	
<39	103 (56%)
>38	80 (44%)
Gender	
Female	95 (52%)
Male	88 (48%)
Education	
Elementary school	58 (32%)
Secondary school	47 (26%)
Highschool	42 (23%)
University	36 (20%)
Income	
<3000	29 (16%)
3000-5000	76 (42%)
5000-10000	59 (32%)
>10000	19 (10%)
Profession	
Government official	51 (28%)
Special worker	63 (34%)
Own business	23 (13%)
Unemployed	46 (25%)
Number of children	
1	18 (9.8%)
2	73 (40%)
3	59 (32%)
4	33 (18%)

n (%)

Table 3. Knowledge and attitudes toward periodontal health among parents according to demographic variables

	Age range			Gender			Education					
	<39 (n=103)	**>38 (n=78)**	**p value**	**Female (n=96)**	**Male (n=85)**	**p value**	**Elementary school (n=58)**	**Secondary school (n=46)**	**Highschool (n=42)**	**University (n=35)**	**p value**	**Total (n=181)**
Question (1)			0.309			0.548					0.045*	
1	38 (36.9%)	31 (39.7%)		37 (38.5%)	32 (37.6%)		29 (50%)	21 (45.7%)	8 (19%)	11 (31.4%)		69 (38.1%)
2	38 (36.9%)	28 (35.9%)		31 (32.3%)	35 (41.2%)		17 (29.3%)	11 (23.9%)	21 (50%)	17 (48.6%)		66 (36.5%)
3	26 (25.2%)	15 (19.2%)		25 (26%)	16 (18.8%)		12 (20.7%)	12 (26.1%)	11 (26.2%)	6 (17.1%)		41 (22.7%)
4	1 (1%)	4 (5.1%)		3 (3.1%)	2 (2.4%)		0 (0%)	2 (4.3%)	2 (4.8%)	1 (2.9%)		5 (2.8%)
Question (2)			0.005*			0.112					0.308	
1	3 (2.9%)	10 (12.8%)		11 (11.5%)	2 (2.4%)		7 (12.1%)	2 (4.3%)	4 (9.5%)	0 (0%)		13 (7.2%)
2	31 (30.1%)	16 (20.5%)		25 (26%)	22 (25.9%)		17 (29.3%)	10 (21.7%)	10 (23.8%)	10 (28.6%)		47 (26%)
3	53 (51.5%)	30 (38.5%)		40 (41.7%)	43 (50.6%)		26 (44.8%)	22 (47.8%)	16 (38.1%)	19 (54.3%)		83 (45.9%)
4	16 (15.5%)	22 (28.2%)		20 (20.8%)	18 (21.2%)		8 (13.8%)	12 (26.1%)	12 (28.6%)	6 (17.1%)		38 (21%)
Question (3)			0.308			0.179					0.245	
1	30 (29.1%)	14 (17.9%)		26 (27.1%)	18 (21.2%)		17 (29.3%)	15 (32.6%)	7 (16.7%)	5 (14.3%)		44 (24.3%)
2	59 (57.3%)	52 (66.7%)		56 (58.3%)	55 (64.7%)		31 (53.4%)	28 (60.9%)	30 (71.4%)	22 (62.9%)		111 (61.3%)
3	13 (12.6%)	10 (12.8%)		14 (14.6%)	9 (10.6%)		8 (13.8%)	3 (6.5%)	5 (11.9%)	7 (20%)		23 (12.7%)
4	1 (1%)	2 (2.6%)		0 (0%)	3 (3.5%)		2 (3.4%)	0 (0%)	0 (0%)	1 (2.9%)		3 (1.7%)
Question (4)			0.920			0.747					0.210	
1	5 (4.9%)	4 (5.1%)		6 (6.2%)	3 (3.5%)		1 (1.7%)	2 (4.3%)	3 (7.1%)	3 (8.6%)		9 (5%)
2	28 (27.2%)	21 (26.9%)		24 (25%)	25 (29.4%)		15 (25.9%)	11 (23.9%)	8 (19%)	15 (42.9%)		49 (27.1%)
3	59 (57.3%)	47 (60.3%)		56 (58.3%)	50 (58.8%)		34 (58.6%)	28 (60.9%)	29 (69%)	15 (42.9%)		106 (58.6%)
4	11 (10.7%)	6 (7.7%)		10 (10.4%)	7 (8.2%)		8 (13.8%)	5 (10.9%)	2 (4.8%)	2 (5.7%)		17 (9.4%)
Question (5)			0.214			0.193					0.027*	
1	11 (10.7%)	10 (12.8%)		9 (9.4%)	12 (14.1%)		8 (13.8%)	3 (6.5%)	2 (4.8%)	8 (22.9%)		21 (11.6%)
2	58 (56.3%)	43 (55.1%)		55 (57.3%)	46 (54.1%)		23 (39.7%)	28 (60.9%)	29 (69%)	21 (60%)		101 (55.8%)
3	34 (33%)	22 (28.2%)		32 (33.3%)	24 (28.2%)		25 (43.1%)	14 (30.4%)	11 (26.2%)	6 (17.1%)		56 (30.9%)
4	0 (0%)	3 (3.8%)		0 (0%)	3 (3.5%)		2 (3.4%)	1 (2.2%)	0 (0%)	0 (0%)		3 (1.7%)
Question (6)			0.454			0.358					0.908	
1	15 (14.6%)	10 (12.8%)		17 (17.7%)	8 (9.4%)		9 (15.5%)	6 (13%)	7 (16.7%)	3 (8.6%)		25 (13.8%)
2	68 (66%)	56 (71.8%)		62 (64.6%)	62 (72.9%)		39 (67.2%)	29 (63%)	30 (71.4%)	26 (74.3%)		124 (68.5%)
3	17 (16.5%)	12 (15.4%)		16 (16.7%)	13 (15.3%)		9 (15.5%)	10 (21.7%)	5 (11.9%)	5 (14.3%)		29 (16%)
4	3 (2.9%)	0 (0%)		1 (1%)	2 (2.4%)		1 (1.7%)	1 (2.2%)	0 (0%)	1 (2.9%)		3 (1.7%)
Question (7)			0.942			0.760					0.070	
1	53 (51.5%)	38 (48.7%)		51 (53.1%)	40 (47.1%)		27 (46.6%)	24 (52.2%)	18 (42.9%)	22 (62.9%)		91 (50.3%)
2	20 (19.4%)	18 (23.1%)		18 (18.8%)	20 (23.5%)		10 (17.2%)	7 (15.2%)	13 (31%)	8 (22.9%)		38 (21%)
3	24 (23.3%)	18 (23.1%)		21 (21.9%)	21 (24.7%)		19 (32.8%)	9 (19.6%)	9 (21.4%)	5 (14.3%)		42 (23.2%)
4	6 (5.8%)	4 (5.1%)		6 (6.2%)	4 (4.7%)		2 (3.4%)	6 (13%)	2 (4.8%)	0 (0%)		10 (5.5%)
Question (8)			0.094			0.925					0.347	
1	58 (56.3%)	40 (51.3%)		51 (53.1%)	47 (55.3%)		26 (44.8%)	26 (56.5%)	23 (54.8%)	23 (65.7%)		98 (54.1%)
2	9 (8.7%)	17 (21.8%)		15 (15.6%)	11 (12.9%)		11 (19%)	6 (13%)	3 (7.1%)	6 (17.1%)		26 (14.4%)
3	16 (15.5%)	9 (11.5%)		14 (14.6%)	11 (12.9%)		9 (15.5%)	4 (8.7%)	8 (19%)	4 (11.4%)		25 (13.8%)
4	20 (19.4%)	12 (15.4%)		16 (16.7%)	16 (18.8%)		12 (20.7%)	10 (21.7%)	8 (19%)	2 (5.7%)		32 (17.7%)
Question (9)			0.840			0.048*					0.004*	

1	48 (46.6%)	36 (46.2%)	45 (46.9%)	39 (45.9%)	30 (51.7%)	19 (41.3%)	14 (33.3%)	21 (60%)	84 (46.4%)
2	21 (20.4%)	14 (17.9%)	25 (26%)	10 (11.8%)	17 (29.3%)	9 (19.6%)	5 (11.9%)	4 (11.4%)	35 (19.3%)
3	33 (32%)	26 (33.3%)	25 (26%)	34 (40%)	9 (15.5%)	18 (39.1%)	23 (54.8%)	9 (25.7%)	59 (32.6%)
4	1 (1%)	2 (2.6%)	1 (1%)	2 (2.4%)	2 (3.4%)	0 (0%)	0 (0%)	1 (2.9%)	3 (1.7%)
Question (10)		0.133		0.469				0.174	
1	66 (64.1%)	45 (57.7%)	57 (59.4%)	54 (63.5%)	31 (53.4%)	31 (67.4%)	27 (64.3%)	22 (62.9%)	111 (61.3%)
2	22 (21.4%)	17 (21.8%)	24 (25%)	15 (17.6%)	15 (25.9%)	6 (13%)	9 (21.4%)	9 (25.7%)	39 (21.5%)
3	15 (14.6%)	12 (15.4%)	14 (14.6%)	13 (15.3%)	8 (13.8%)	9 (19.6%)	6 (14.3%)	4 (11.4%)	27 (14.9%)
4	0 (0%)	4 (5.1%)	1 (1%)	3 (3.5%)	4 (6.9%)	0 (0%)	0 (0%)	0 (0%)	4 (2.2%)
Question (11)		0.204		0.525				0.595	
1	41 (39.8%)	23 (29.5%)	32 (33.3%)	32 (37.6%)	20 (34.5%)	12 (26.1%)	16 (38.1%)	16 (45.7%)	64 (35.4%)
2	33 (32%)	32 (41%)	36 (37.5%)	29 (34.1%)	21 (36.2%)	20 (43.5%)	15 (35.7%)	9 (25.7%)	65 (35.9%)
3	26 (25.2%)	17 (21.8%)	25 (26%)	18 (21.2%)	12 (20.7%)	13 (28.3%)	9 (21.4%)	9 (25.7%)	43 (23.8%)
4	3 (2.9%)	6 (7.7%)	3 (3.1%)	6 (7.1%)	5 (8.6%)	1 (2.2%)	2 (4.8%)	1 (2.9%)	9 (5%)
Question (12)		0.063		0.531				0.080	
1	11 (10.7%)	17 (21.8%)	12 (12.5%)	16 (18.8%)	8 (13.8%)	8 (17.4%)	4 (9.5%)	8 (22.9%)	28 (15.5%)
2	35 (34%)	15 (19.2%)	25 (26%)	25 (29.4%)	11 (19%)	11 (23.9%)	12 (28.6%)	16 (45.7%)	50 (27.6%)
3	55 (53.4%)	45 (57.7%)	57 (59.4%)	43 (50.6%)	38 (65.5%)	27 (58.7%)	25 (59.5%)	10 (28.6%)	100 (55.2%)
4	2 (1.9%)	1 (1.3%)	2 (2.1%)	1 (1.2%)	1 (1.7%)	0 (0%)	1 (2.4%)	1 (2.9%)	3 (1.7%)
Question (13)		0.252		0.392				0.282	
1	22 (21.4%)	17 (21.8%)	22 (22.9%)	17 (20%)	14 (24.1%)	9 (19.6%)	8 (19%)	8 (22.9%)	39 (21.5%)
2	40 (38.8%)	39 (50%)	46 (47.9%)	33 (38.8%)	25 (43.1%)	23 (50%)	18 (42.9%)	13 (37.1%)	79 (43.6%)
3	36 (35%)	17 (21.8%)	24 (25%)	29 (34.1%)	19 (32.8%)	9 (19.6%)	12 (28.6%)	13 (37.1%)	53 (29.3%)
4	5 (4.9%)	5 (6.4%)	4 (4.2%)	6 (7.1%)	0 (0%)	5 (10.9%)	4 (9.5%)	1 (2.9%)	10 (5.5%)

* indicates significance

Table 4. Oral hygiene habits of children according to demographic variables

	Age range			**Gender**			**Education**					
	<39 (n=103)	**>38 (n=80)**	**p value**	**Female (n=95)**	**Male (n=88)**	**p value**	**Elementary school (n=58)**	**Secondary school (n=48)**	**Highschool (n=41)**	**University (n=36)**	**p value**	**Total (n=183)**
Question (14)			0.479			0.708					0.987	
1	40 (38.8%)	27 (33.8%)		36 (37.9%)	31 (35.2%)		21 (36.2%)	17 (35.4%)	16 (39%)	13 (36.1%)		67 (36.6%)
2	63 (61.2%)	53 (66.2%)		59 (62.1%)	57 (64.8%)		37 (63.8%)	31 (64.6%)	25 (61%)	23 (63.9%)		116 (63.4%)
Question (15)			0.663			0.805					0.596	
1	85 (82.5%)	64 (80%)		78 (82.1%)	71 (80.7%)		48 (82.8%)	36 (75%)	35 (85.4%)	30 (83.3%)		149 (81.4%)
2	18 (17.5%)	16 (20%)		17 (17.9%)	17 (19.3%)		10 (17.2%)	12 (25%)	6 (14.6%)	6 (16.7%)		34 (18.6%)
Question (16)			0.623			0.347					0.901	
1	73 (70.9%)	54 (67.5%)		63 (66.3%)	64 (72.7%)		42 (72.4%)	32 (66.7%)	29 (70.7%)	24 (66.7%)		127 (69.4%)
2	30 (29.1%)	26 (32.5%)		32 (33.7%)	24 (27.3%)		16 (27.6%)	16 (33.3%)	12 (29.3%)	12 (33.3%)		56 (30.6%)
Question (17)			0.572			0.332					0.707	
1	37 (35.9%)	32 (40%)		39 (41.1%)	30 (34.1%)		19 (32.8%)	21 (43.8%)	15 (36.6%)	14 (38.9%)		69 (37.7%)
2	66 (64.1%)	48 (60%)		56 (58.9%)	58 (65.9%)		39 (67.2%)	27 (56.2%)	26 (63.4%)	22 (61.1%)		114 (62.3%)
Question (18)			0.031*			0.822					0.524	
1	44 (42.7%)	47 (58.8%)		48 (50.5%)	43 (48.9%)		27 (46.6%)	27 (56.2%)	22 (53.7%)	15 (41.7%)		91 (49.7%)

2	59 (57.3%)	33 (41.2%)	47 (49.5%)	45 (51.1%)	31 (53.4%)	21 (43.8%)	19 (46.3%)	21 (58.3%)	92 (50.3%)
Question (19)		0.305		0.788				0.702	
1	37 (35.9%)	23 (28.8%)	32 (33.7%)	28 (31.8%)	22 (37.9%)	15 (31.2%)	11 (26.8%)	12 (33.3%)	60 (32.8%)
2	66 (64.1%)	57 (71.2%)	63 (66.3%)	60 (68.2%)	36 (62.1%)	33 (68.8%)	30 (73.2%)	24 (66.7%)	123 (67.2%)
Question (20)		0.758		0.026*				0.058	
1	59 (57.3%)	44 (55%)	46 (48.4%)	57 (64.8%)	32 (55.2%)	28 (58.3%)	17 (41.5%)	26 (72.2%)	103 (56.3%)
2	44 (42.7%)	36 (45%)	49 (51.6%)	31 (35.2%)	26 (44.8%)	20 (41.7%)	24 (58.5%)	10 (27.8%)	80 (43.7%)
Question (21)		0.350		0.879				0.102	
1	47 (45.6%)	31 (38.8%)	41 (43.2%)	37 (42%)	23 (39.7%)	23 (47.9%)	12 (29.3%)	20 (55.6%)	78 (42.6%)
2	56 (54.4%)	49 (61.2%)	54 (56.8%)	51 (58%)	35 (60.3%)	25 (52.1%)	29 (70.7%)	16 (44.4%)	105 (57.4%)

When asked how many primary teeth there should be in the mouth, the majority of the participants thought there should be a total of 12. Only 22.7% of the participants knew that there should be 20 primary teeth and the majority of those who responded correctly had an education level of primary school or middle school (%46.7). The majority of the participants stated that 2 minutes was the ideal duration of tooth brushing (%45.9), a toothbrush should be renewed within 3 months (%61.3), and the child should be taken for their first dental examination after the age of 6 years (58.6%).

Only 11.6% of the parents gave a correct response to the question of "what is plaque?" and the vast majority (68.5%) knew that calculus was a hard accumulation on the tooth surface. Although most participants did not know what dental plaque is, the majority (54%) knew that dental plaque occurs gum disease. Of the total participants, 46% thought that the primary teeth affected the permanent teeth, and the majority (% 61.3) thought that general health was affected by oral health. When asked how they applied oral care to infants aged 0-3 years, the vast majority stated that they did not perform any oral care. The rate of this response from university graduates was lower than from the other education level groups. It was stated by a high rate of participants that education about tooth brushing had been given on previous visits to the dentist (%43.6) (Table 3).

The parents reported that the children did not brush their teeth by themselves (%63.4). The majority of participants stated that although they used a toothbrush and toothpaste, they did not use dental floss when applying oral care (%62.3). Approximately half of the parents stated that they regularly checked inside the child's mouth (% 56.3), and the majority of those were university graduates (%72.2). A negative response was given by the majority of parents to the question of "Has a paediatric doctor to whom you have taken your child referred you to a dentist for oral and dental health examination?" (%57.4) (Table 4).

DISCUSSION

Oral and dental health is one of the most important factors affecting the quality of life of individuals. Maintaining periodontal health involves crucial components such as practicing oral hygiene through tooth brushing and the use of dental floss.[15] The first factor in gaining awareness related to the oral and dental health of children is the parents as the primary caregivers. The knowledge and attitudes of parents related to periodontal health affect the level of adequacy of the oral hygiene habits of children.[16] Only one study could be found in the literature that has assessed the periodontal awareness of parents,[14] and the current study is the first to have evaluated the knowledge and awareness of parents diagnosed with periodontitis of the oral and dental health of their children.

The primary etiological factor of periodontal disease is microbial dental plaque. Using oral care tools, dental plaque can be removed from the tooth surface. In individuals with insufficient oral hygiene, when gingival inflammation that has formed is not treated it causes loss of the tooth supporting tissues and can become periodontitis.[17] It is inevitable that the primary influences are from the family when care habits related to oral and dental health are formed in children. Therefore, it can be expected that parents who do not pay enough attention to their own oral care will have low awareness of the oral and dental health of their children.[14] For children to be able to acquire correct oral care practice habits, it can be considered that maintaining high awareness of both the children and their families will also contribute to the oral and dental health of society.

Only 22.7% of the parents in the current study knew that there should be 20 primary teeth in the mouth. In a study by Nagaveni et al., it was reported that 18% of the participants thought that primary teeth were important,[18] and Narayanan et al., found this rate to be 83%.[19]

That there are different results in literature can be attributed to the differences in study populations.

The ideal duration for tooth brushing has been recommended as 2 mins by the American Dental Association.[20] The rate of respondents who thought 2 mins was the ideal tooth brushing time was determined to be 48.9% in the current study, 28.1% in the study by Hamasha et al.,[13] and 56% in the study bu Anusha et al.[21] When questioned about the frequency of replacing toothbrushes, the majority of parents stated that they thought it should be once every 3 months, which was consistent with the literature.[13,19,21] The majority of the parents in the current study thought that the first visit of a child to a dentist should be at the age of 6 years, which was seen to be similar to the results of other studies.[22]

When parents were asked what dental plaque and calculus were, the vast majority responded to both questions that they were hard accumulations on teeth. It was seen that the parents thought dental plaque and calculus were the same term. When the literature was examined, the rate of correct response to the question of "what is dental plaque?" was observed to be low in previous studies.[23-25] Although the majority of the current study participants knew that dental plaque caused gum disease, the results suggested that basic periodontal terms were foreign to these parents and they did not know the definitions.

Oral health is one of the components of systemic health. Periodontal diseases have been stated to be associated with some systemic diseases such as rheumatoid arthritis, diabetes and cardiac diseases.[26-28] Previous studies have shown a low awareness in the general population of the link between oral health and systemic health.[28,29] In contrast to the data in literature, the majority of the parents in the current study thought that systemic health was affected by oral health. It was thought that developments in technology and increased education levels could have been the reasons for increased awareness on the subject of this relationship.

While a very small proportion of the participants in this study stated that they cleaned the primary teeth between the ages of 0 and 3 years with gauze or a similar dental cloth, 55.2% stated that they applied no oral care to the primary teeth in this period. It was therefore observed that the participants did not make sufficient application on the subject of the need for oral care in the period when primary teeth are erupting. From an examination of literature, no study could be found that examined the awareness of parents about the tools and the need for oral care in the period of infancy from birth to 3 years. However, there are studies reporting the need for teeth cleaning in the early stages of tooth eruption.[30,31] Galganny-Almeida et al. reported that the formation of dental plaque was significantly reduced by cleaning teeth with an infant tooth cleaning cloth in the 8-15-month milk tooth eruption period.[32] Correa et al. evaluated toothbrush, tooth cloth, and gauze in respect of which was the more appropriate oral tool in the 8-15-month period. Although it was concluded that the use of all three significantly reduced the formation of biofilm, it was reported that mothers and infant carers preferred a tooth cloth for oral cleaning.[33]

The vast majority of the participants in the current study reported that education about correct tooth brushing had been given to the child by dentists during a previous visit to a dentist. The need to start oral care practices at an early age, and parents being informed about correct oral care practices are of great importance in respect of preventative dentistry.

It was reported by the majority of participants that the children aged 0-6 years did not brush their teeth under the supervision of the parents. In the study by Narayanan, the vast majority of parents thought it was necessary to supervise tooth brushing between the ages of 0 and 6 years.[19] In a study by Monahar et al., it was reported that the majority of parents did not supervise their children while brushing their teeth.[22] When it is considered that children of

this age do not have sufficient manual skills and may not undertake sufficient oral care when brushing their teeth by themselves, it is recommended that parents supervise teeth brushing.[34]

Conclusion

The findings of this study represent the awareness of a small population of parents with peridontitis about the oral and dental health of their children. The results showed a low level of periodontal awareness of these parents. Not only in this study group, but in society in general, there are low levels of awareness on subjects such as the need to supervise children up to the age of 6 years when they are brushing their teeth.[33] It can be considered that it would be beneficial to increase preventative dentistry practices and make parents more aware of oral health and periodontal diseases. One of the limitations of the study is that the age groups of the participants were not balanced. The other limitation of this study was that as the periodontal data of the patients diagnosed with periodontitis were not recorded, it was not possible to evaluate the correlation between disease severity and periodontal awareness. In future comprehensive studies, questions such as the presence of mouth breathing, which can affect the general periodontal health of children, whether the child has bad habits and malpositions, and whether the parent has tooth brushing habits and oral hygiene knowledge can be added.

Ethical Approval

The ethical approval for this study was received from the Kahramanmaraş Sütçü İmam University Non-Interventional Clinical Research Ethics Commitee (decision number 10/2021/11).

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Conflict of Interest

The authors deny any conflicts of interest related to this study.

Author Contributions

Methodology: EÇÖ, MU. Data curation: EÇÖ. Formal analysis: EÇÖ, MU. Investigation: EÇÖ, MU. Writing-original draft: EÇÖ. Writing-rewiew&editing: EÇÖ, MU.

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