Clinical and Experimental Health Sciences

Oral and Dental Health Knowledge and Attitudes among Parents of Children

Hazal Deniz Köse[1], Betül Şen Yavuz[2], Betül Kargül[2]

[1] Department of Restorative Dentistry, Faculty of Dentistry, Hatay Mustafa Kemal University, Hatay, Türkiye.
[2] Department of Pediatric Dentistry, Faculty of Dentistry, Marmara University, İstanbul, Türkiye.

Correspondence Author: Betül Şen Yavuz
E-mail: dtbetulsen@gmail.com
Received: 11.01.2022 **Accepted:** 22.09.2022

ABSTRACT

Objective: This study aims to evaluate parents' knowledge and attitudes level on oral and dental health.

Methods: One hundred and thirty parents of children aged 6-12 years, were invited to participate in the study. A 33-item questionnaire covering socio-demographic characteristics, dental attitude, dietary practices, tooth eruption, dental caries, and oral hygiene practices, was distributed to parents. The relationship between categorical variables was tested with the Chi-square test.

Results: The sample comprised of 100 parents with a mean age of 37.1 ± 6.4. The knowledge and attitudes towards dental caries and oral health habits among parents did not differ significantly according to the parents' gender, education level, or dental chair experience. There was a statistically significant difference in the responses of the first primary tooth and the first exfoliating primary tooth according to the gender of the parents (p=0.031, p=0.002, respectively). Although the education level of the parents did not affect the answers about the number of primary and permanent teeth, a statistically significant difference was found in the time of first primary tooth eruption (p=0.008).

Conclusion: The study showed that parents do not have enough knowledge and awareness of dental caries and oral healthcare. Oral healthcare should be promoted as a part of general health and the awareness of the public should be increased.

Keywords: Children, Knowledge, Oral health, Parental attitudes

1. INTRODUCTION

Many factors play a role in children's general and oral health. Parents, one of these factors, is of central importance. The perceptions of parents about oral health can affect children's access to preventive dental care and professional dentistry services (1). One of the main factors of oral health awareness in parents is the frequency of going to the dentist (2). The American Academy of Pediatric Dentistry recommends that when children are six months old, their oral health should be evaluated by qualified pediatricians or pediatric dentists (3). The oral health of preschool children is influenced by parental knowledge of oral health, cultural beliefs and baby nutrition and nutrition practices, oral hygiene habits, preventive regular dental visits, and awareness about the care of primary teeth (4). Many behavioral and socioeconomic caries risk factors have been identified; insufficient oral hygiene, lack of preventive treatments such as topical fluoride application, sugary foods/drinks consumption, long-term bottle-feeding, frequent snack consumption, low income, and low-health literacy (5). Additionally, there is also a relationship between these factors and the knowledge level of the parents about oral health (6).

Diet plays a significant role in the emergence and progression of dental caries (7,8). Frequent consumption of unhealthy snacks is associated with a variety of health problems, such as dental caries, increased obesity among humans, and other chronic diseases (9,10). Also, when dental caries occurs in childhood, the child's eating patterns, permanent tooth eruption, and general health are affected (11). In a previous study, it has been determined that parental knowledge about nutrition affects their children's eating habits (12). Public health activities should be developed to address the factors affecting the oral health of children and to provide them with good oral health and a better quality of life (13).

There is a linear relationship between knowledge, attitude, and behavior as external factors such as environmental, social, and family conditions affect human behavior (14). More research on family characteristics and parent-child

DOI: 10.33808/clinexphealthsci.1056574

relationships has been proposed to find factors that promote children's oral health behavior (15). More studies on these issues in developing countries are needed in the literature. Therefore, this study aims to assess the level of knowledge, attitude, and habits on the oral health of parents. The null hypothesis tested was that there were no differences between the knowledge level of parents about dental caries and oral health according to their gender.

2. METHODS

2.1. Study Population and Sampling Method

The study was approved by the ethical committee of Marmara University Institute of Health Science (Protocol no: 47/ date:30.05.2016). The minimum sample size for the study was calculated as 76 with G*power Version 3.1.9.6 by taking impact size 0.840, type 1 error (α) = 0.05, and power (1-β) = 0.95 at a confidence level of 95% (16). A questionnaire was conducted on the parents of children between the ages of 6-12 years who came to the Pediatric Dentistry Clinic of Marmara University between November 2016 and February 2017. Considering the possibility of low participation and low response rate, one hundred and thirty parents were invited to the study. Participation in the research was done voluntarily and the study was performed according to the Declaration of Helsinki (2013). A total of 107 parents agreed to participate in the study. Verbal and written informed consents were obtained from all parents who were included in the study. Seven questionnaires that were not completed were excluded from the study. However, a post hoc power analysis to justify the chosen sample size at least partly was conducted. When the post hoc analysis was examined by taking 62 cases in the mother group and 38 cases in the father group, the power of the test (1-β) was obtained as 98.1% with 95% confidence (1-α) (16).

2.2. The Questionnaire

The questionnaires about oral health knowledge in Turkish were provided to the parents who agreed to participate in the study. The questionnaire questions were composed by reviewing previous studies (1,2,4,5,17-20). The 33-item questionnaire was comprised of six parts. Part 1 consisted of items that pertained to general demographics, such as the age and gender of parents and child's educational backgrounds. Part 2 included questions about dental attitude and behavior, such as the dental care experience and dental fear. Part 3 included questions about the effects of food on teeth, such as the consumption of carbohydrates. Part 4 included questions about tooth eruption, such as the number of teeth and eruption and exfoliating time, Parts 5 and 6 included questions about dental caries and oral health habits, such as the consequences of caries or frequency of tooth brushing.

2.3. Statistical Analysis

Descriptive statistics were given as a number (%) for categorical variables. The relationship between categorical variables was tested with the Chi-square test. The data were analyzed using SPSS (Statistical Package for the Social Sciences) version 22.0. The significance level was assumed at 0.05.

3. RESULTS

The mean age of 100 parents between the ages of 22-55 who participated in the survey was 37.1 ± 6.4 (mean ± standard deviation) years. It was determined that 62 of the parents in the study were mothers, 38 of them were fathers, and the children of them, 47% (n=47) were boys and 53% (n=53) were girls. The age of children was between 6-12 years and their mean age was 7.2 ± 2.5 years. When the educational status of the parents was evaluated, elementary school graduates were 34%, middle school 31%, high school 24%, and university 11%.

The dental attitude and behavior of the parents and their children were summarized in Table 1. According to the data, 55% (n=11) of the parents with no dental care experience (n=20) took their children to the dentist before the study whereas the ratio was 88.8% (n=71) for those with dental care experience (n=80). Most of the mothers and fathers stated that they had gone to the dentist before. The relationship between the answer of parents to the question of whether you went to the dentist and the answer they gave for their children was found to be statistically significant according to fisher's exact test (p=0.001). The majority of parents were not afraid of the dentist. The children of 38.7% (n=24) of the parents without the fear of dentist were afraid of the dentist. The relationship between dental fear of parents and their children was found to be statistically significant according to the chi-square test (p<0.001). The answers about 'when the child's first dental visit should be' showed that 10% of parents had no idea, and 62.2% of those who expressed an opinion also did not know the appropriate time.

The responses of participants regarding the effects of foods on teeth were shown in Table 2. While presenting the data, the 'not sure' option was also considered as an incorrect answer. Besides, when asked which carbohydrates, proteins, fats, and vitamins are beneficial for teeth, 88% stated that proteins and 32% stated that vitamins were beneficial, while 5% stated that carbohydrates were beneficial (Table 3).

Parental knowledge and awareness of the number and eruption of the teeth were shown in Table 4. Parental knowledge and awareness regarding dental caries and oral health habits were shown in Table 5. The parent's fear of dental chairs did not affect their knowledge level of dental caries, and oral health habits at all. Also, there seems no significant effect of the parent's gender, education level, or dental chair experience on their knowledge of dental caries and oral health habits. The answers about the first erupted primary tooth and the first exfoliating primary tooth differ

statistically according to the gender of the parents (p=0.031, p=0.002, respectively). While the education level of the parents did not affect the answers about the number of primary and permanent teeth (p=0.12, p=0.45 respectively), it made a statistically significant difference in the time of first primary tooth eruption (p=0.008). However, in the question about the cause of dental caries, 75% of the parents think that foods and drinks cause dental caries, 4% of them think that all factors were the cause (Table 3). Besides, the parents were asked to indicate their preferred products for oral care. However, no one has chosen all the oral care products. The most preferred products were toothbrush with 71%, toothpaste with 36%, and dental floss with 30%.

Table 1. *Dental attitude and behavior of the parents and their children*

	Mother n (%)	Father n (%)	Total (n=100) (%)
Have you been to the dentist before?			
Yes	51 (82.2%)	29 (76.3%)	80%
No	11 (17.7%)	9 (23.7%)	20%
Did your child go to the dentist before?			
Yes	49 (79%)	33 (86.8%)	82%
No	13 (21%)	5 (13.2%)	18%
Are you afraid of dental treatment?			
Yes	24 (38.7%)	14 (36.8%)	38%
No	38 (61.3%)	24 (63.2%)	62%
Is your child afraid of dental treatment?			
Yes	33 (53.2%)	20 (52.6%)	53%
No	29 (46.8%)	18 (47.4%)	47%
What is the reason for your child's visit to the dentist?			
Caries	21 (33.9%)	17 (44.7%)	38%
Toothache	13 (21%)	13 (34.2%)	26%
Control	18 (29%)	6 (15.8%)	24%
Halitosis	8 (12.9%)	2 (5.3%)	10%
Primary teeth exfoliation	2 (3.2%)	0	2%
Gingival bleeding	0	0	0
When should you take your child to the dentist for the first check-up?			
First primary tooth eruption	25 (40.3%)	9 (23.7%)	34%
First permanent tooth eruption	16 (25.8%)	10 (26.3%)	26%
Tooth problem	12 (19.4%)	12 (31.6%)	24%
At birth	3 (4.8%)	3 (7.9%)	6%
Don't know	6 (9.7%)	4 (10.6%)	10%

Table 2. *Parental knowledge and awareness of the effect of foods on teeth*

	Mother n (%)	Father n (%)	Total (n=100) (%)
How many times a day does your child eat?			
Less than 3	23 (37.1%)	15 (39.5%)	38%
3 and more than 3	39 (62.9%)	23 (60.5%)	62%
How often does your child consume milk, yogurt, and cheese?			
Never	2 (3.2%)	4 (10.5%)	6%
Rarely	7 (11.3%)	5 (13.2%)	12%
Every week	2 (3.2%)	4 (10.5%)	6%
Everyday	36 (58.1%)	24 (63.2%)	60%
Several times a day	15 (24.2%)	1 (2.6%)	16%
How often does your child consume fruit juice and carbonated drinks?			
Never	6 (9.7%)	3 (7.9%)	9%
Rarely	33 (53.2%)	15 (39.5%)	48%
Every week	6 (9.7%)	6 (15.8%)	12%
Everyday	15 (24.2%)	10 (26.3%)	25%
Several times a day	2 (3.2%)	4 (10.5%)	6%
How often does your child consume sugar, sweets, and chocolate?			
Never	0	0	0
Rarely	12 (19.4%)	8 (21.1%)	20%
Every week	17 (27.4%)	10 (26.3%)	27%
Everyday	27 (43.5%)	16 (42.1%)	43%
Several times a day	6 (9.7%)	4 (10.5%)	10%
Does eating between meals increase the risk of caries?			
Yes	42 (67.7%)	21 (55.3%)	63%
No	20 (32.3%)	17 (44.7%)	37%

Table 3. *Multiple answer questions regarding the effect of foods on teeth, dental caries, and oral health habits*

	Total (n=100) (%)
Which food group is beneficial for teeth?†	
Fats	0
Carbohydrates	5%
Vitamins	32%
Proteins	88%
What is the cause of dental caries?†	
Plaque and tartar	11%
Genetic	33%
Bacteria and virus	50%
Food and drinks	75%
Which products do you prefer for oral care?†	
Mouthwash	18%
Toothpick	23%
Dental floss	30%
Toothpaste	36%
Toothbrush	71%

†: *Multiple answer questions*

Table 4. *Parental knowledge and awareness of the number and eruption of the teeth*

	The gender of parents			The educational status of parents					The parents' previous visit to the dentist			Parent's fear of dentist		
	Female n (%)	Male n (%)	p †	Elementary s. n (%)	Middle s. n (%)	High s. n (%)	University n (%)	p†	Yes n (%)	No n (%)	p†	Present n (%)	Absent n (%)	p†
Tooth eruption														
The number of primary teeth														
Correct	16 (25.8)	10 (26.3) (26.3)	0.955	6 (17.6)	6 (19.4)	9 (37.5)	5 (45.5)	0.124	23 (28.8)	3 (15)	0.210	8 (21.1)	18 (29)	0.377
Incorrect	46 (74.2)	28 (73.7)		28 (82.4)	25 (80.6)	15 (62.5)	6 (54.5)		57 (71.3)	17 (85)		30 (78.9)	44 (71)	
The number of permanent teeth														
Correct	21 (33.9)	18 (47.4)	0.179	10 (29.4)	13 (41.9)	10 (41.7)	6 (54.5)	0.455	33 (41.3)	6 (30)	0.356	12 (31.6)	27 (43.5)	0.234
Incorrect	41 (66.1)	20 (52.6)		24 (70.6)	18 (58.1)	14 (58.3)	5 (45.5)		47(58.8)	14 (70)		26 (68.4)	35 (56.5)	
Time of first primary tooth eruption														
Correct	26 (41.9)	14 (36.8)	0.614	17 (50)	6 (19.4)	9 (37.5)	8 (72.7)	**0.008**	30 (37.5)	10 (50)	0.307	13 (34.2)	27 (43.5)	0.355
Incorrect	36 (58.1)	24 (63.2)		17 (50)	25 (80.6)	15 (62.5)	3 (27.3)		50 (62.5)	10 (50)		25 (65.8)	35 (56.5)	
Time of first permanent tooth eruption														
Correct	15 (24.2)	7 (18.4)	0.499	6 (17.6)	7 (22.6)	5 (20.8)	4 (36.4)	0.632	17 (21.3)	5 (25)	0.720	9 (23.7)	13 (21)	0.750
Incorrect	47 875.8)	31 (81.6)		28 (82.4)	24 (77.4)	19 (79.2)	7 (63.6)		63 (78.8)	15 (75)		29 (76.3)	49 (79)	
First primary teeth														
Correct	35 (56.5)	13 (34.2)	**0.031**	20 (58.8)	14 (45.2)	9 (37.5)	5 (45.5)	0.426	42 (52.5)	6 (30)	0.072	15 (39.5)	33 (53.2)	0.182
Incorrect	27 (43.5)	25 (65.8)		14 (41.2)	17 (54.8)	15 (62.5)	6 (54.5)		38 (47.5)	14 (70)		23 (60.5)	29 (46.8)	
First permanent teeth														
Correct	7 (11.3)	1 (2.6)	0.095	1 (2.9)	4 (12.9)	3 (12.5)	0	0.187	8 (10)	0	0.053	2 (5.3)	6 (9.7)	0.417
Incorrect	55 (88.7)	37 (97.4)		33 (97.1)	27 (87.1)	21 (87.5)	11 (100)		72 (90)	20 (100)		36 (94.7)	56 (90.3)	
First exfoliation of primary tooth														
Correct	36 (58.1)	10 (26.3)	**0.002**	17 (50)	16 (51.6)	8 (33.3)	5 (45.5)	0.539	38 (47.5)	8 (40)	0.547	12 (31.6)	34 (54.8)	**0.023**
Incorrect	26 (41.9)	28 (73.7)		17 (50)	15 (48.4)	16 (66.7)	6 (54.5)		42 (52.5)	12 (60)		26 (68.4)	28 (45.2)	

†: Chi-square test, s: school, Bold font: p<0.05

Table 5. *Parental knowledge and awareness regarding dental caries and oral health habits*

	The gender of parents			The educational status of parents					The parents' previous visit to the dentist			Parent's fear of dentist		
	Female n (%)	Male n (%)	p†	Elementary s. n (%)	Middle s. n (%)	High s. n (%)	University n (%)	p†	Yes n (%)	No n (%)	p†	Present n (%)	Absent n (%)	p†
Dental caries														
Is caries a contagious disease?														
Correct	43 (69.4)	25 (65.8)	0.711	20 (58.8)	22 (71)	17 (70.8)	9 (81.8)	0.476	54 (67.5)	14 (70)	0.830	28 (73.7)	40 (64.5)	0.340
Incorrect	19 (30.6)	13 (34.2)		14 (41.2)	9 (29)	7 (29.2)	2 (18.2)		26 (32.5)	6 (30)		10 (26.3)	22 (35.5)	
Can dental caries cause other diseases?														
Correct	45 (72.6)	31 (81.6)	0.306	25 (73.5)	23 (74.2)	19 (79.2)	9 (81.8)	0.918	61 (76.3)	15 (75)	0.907	28 (73.7)	48 (77.4)	0.671
Incorrect	17 (27.4)	7 (18.4)		9 (26.5)	8 (25.8)	5 (20.8)	2 (18.2)		19 (23.8)	5 (25)		10 (26.3)	14 (22.6)	
Does caries present in the primary tooth affect the permanent teeth?														
Correct	36 (58.1)	20 (52.6)	0.595	13 (38.2)	19 (61.3)	17 (70.8)	7 (63.6)	0.068	41 (51.3)	15 (75)	0.056	25 (65.8)	31 (50)	0.123
Incorrect	26 (41.9)	18 (47.4)		21 (61.8)	12 (38.7)	7 (29.2)	4 (36.4)		39 (48.8)	5 (25)		13 (34.2)	31 (50)	
Should they be treated when decayed primary teeth?														
Correct	52 (83.9)	33 (86.8)	0.686	28 (82.4)	24 (77.4)	23 (95.8)	10 (90.9)	0.193	70 (87.5)	15 (75)	0.184	31 (81.6)	54 (87.1)	0.453
Incorrect	10 (16.1)	5 (13.2)		6 (17.6)	7 (22.6)	1 (4.2)	1 (9.1)		10 (12.5)	5 (25)		7 (18.4)	8 (12.9)	
Oral health habits														
How often do toothbrushes need to be changed?														
Correct	23 (37.1)	12 (31.6)	0.574	10 (29.4)	7 (22.6)	12 (50)	6 (54.5)	0.079	27 (33.8)	8 (40)	0.600	14 (36.8)	21 (33.9)	0.762
Incorrect	39 (62.9)	26 (68.4)		24 (70.6)	24 (77.4)	12 (50)	5 (45.5)		53 (66.3)	12 (60)		24 (63.2)	41 (66.1)	
Is brushing teeth sufficient to prevent caries?														
Correct	20 (32.3)	9 (23.7	0.359	10 (29.4)	11 (35.5)	4 (16.7)	4 (36.4)	0.440	21 (26.3)	8 (40)	0.225	14 (36.8)	15 (24.2)	0.176
Incorrect	42 (67.7)	29 (76.3)		24 (70.6)	20 (64.5)	20 (83.3)	7 (63.6)		59 (73.8)	12 (60)		24 (63.2)	47 (75.8)	
From what age should teeth be brushed?														
Correct	29 (46.8)	20 (52.6)	0.570	11 (32.4)	16 (51.6)	14 (58.3)	8 (72.7)	0.067	41 (51.3)	8 (40)	0.368	17 (44.7)	32 (51.6)	0.504
Incorrect	33 (53.2)	18 (47.4)		23 (67.6)	15 (48.4)	10 (41.7)	3 (27.3)		39 (48.8)	12 (60)		21 (55.3)	30 (48.4)	

†: Chi-square test, s: school, Bold font: p<0.05

4. DISCUSSION

Oral health behaviors that begin in childhood affect adulthood. Considering the effects of parents on children, it is important to investigate their attitudes on the factors affecting the oral health of their children. In order to spread the awareness of oral and dental health for the preventive practices and treatments, the parents and dentists are answerable for the patient-dentist relationship. However, more studies are needed to examine these relationships (21). Therefore, this study provides important data on parental knowledge of their children's oral health.

In the study of Sakai et al.(22), 58% of parents and 41% of children had never been to a dentist. In the current study, this parent's rate was found to be 20% and the children's rate was found 18%. However, the fact that 20% of parents and 18% of children never went to a dentist is thought-provoking in terms of public health. Ivica and Galic (23) stated that although the perception of oral health is high, the perception of oral diseases is quite low. This results in fewer dentist visits.

Dental anxiety is a common condition, and this situation may occur due to many factors. Previous studies have reported that there were relationships between parents and their children's dental anxiety (24-26). This was in line with this study. Dental fear causes dental treatments to be delayed, which requires more invasive treatments such as endodontic treatments and tooth extractions (27).

In the study, while most of the parents thought that proteins are useful, no parent thought carbohydrates, proteins, vitamins, and fats were all beneficial. Regarding the frequency of sugar consumption, it was observed that most children ate sweets every week or every day and 10% of children consumed these foods several times a day. Half of the participants who thought that snacks increased the risk of cavities stated that their children often consume snacks such as candy and chocolate. According to Saied-Moallemi et al.(28), most mothers (79-84%) realized the detrimental effect of sweet foods on teeth. Furthermore, almost half of children frequently consumed carbonated drinks and fruit juice. These drinks have a high content of simple carbohydrates and acids, so their frequent consumption should be considered as a risk factor for dental caries and erosion (29).

Parents need to know the factors that cause dental caries and the eruption time of teeth to maintain their children's oral health. The first visit to the pedodontics clinic should be done within six months after the eruption of the first primary tooth for communication and building up a trust (3,30). In this study, the answers to the question 'When should you take your child to the dentist for the first check-up?' were consistent with the previous study (31). The first erupted primary tooth is the lower central incisor (32). In this study, the responses given to question about the first primary tooth differed significantly according to the gender of the parents. Also, the responses to the first exfoliating primary tooth differed significantly according to the gender of the parents. Besides, the education level of the parents made a significant difference in the time of the first primary tooth eruption. After the lower central incisor, the lower lateral incisors and upper central incisors begin to erupt. When the child is approximately 5-6 years old, the lower central primary incisor begins to loosen. Under normal circumstances, the first permanent tooth that is molar begins to erupt around the age of six. Usually, 20 primary teeth are completed at the age of 2.5-3 and 28 permanent teeth except wisdom teeth are completed approximately at 12-13 ages (32). In the study of Jain et al. (31), 29% of the parents did not know the total number of primary teeth, 36% gave the correct answer. In this study, 74% of the participants did not know the total number of primary teeth. However, the rate of participants who know the total number of permanent teeth was higher. Only eight participants were aware of the eruption times of both primary teeth and permanent teeth. Additionally, eight participants knew both the first erupted primary tooth and the first permanent tooth. Almost half of the parents gave the correct answer to the first primary tooth question.

Oral health problems change metabolic habits such as eating, and sleeping patterns, which can cause impairment of the general health (33). In the present study, 76% of participants thought that dental caries would cause another disease. This rate was lower than the study of Wyne et al. (34) Moreover, dental caries is associated with an increased risk of serious diseases such as cardiovascular and respiratory diseases. Therefore, everyone should know the causes of dental caries and take precautions (35). The answer of the parents regarding the cause of dental caries revealed a lack of knowledge on this subject. The number of participants who knew all the factors causing caries was very low. In a study published in 2015, 19% of the participants knew all factors (36). While 18% of the participants thought that caries was not contagious and would not cause other diseases, 26% supported the opposite of this view. In the study, it was observed that parents had a lack of knowledge about dental caries. However, caries is currently defined as a dynamic, non-communicable disease in the light of current knowledge (37, 38) and 68% of parents knew this. In the study of Saied-Moallemi et al. (28), approximately 75% of mothers answered those primary teeth as important. The rate was lower in other studies (1,31). In the current study, most participants stated that primary teeth should be treated if necessary.

After the first tooth erupted, tooth brushing should begin. In the study of Jain et al., the rate of 'after first primary tooth eruption' answer was 21% (31). In another study, this rate was almost all of the participants (39). This rate of the answer in this study was only half. The incorrect answer of half of the participants may be a serious oral health concern. Most of those who use 'only' toothbrushes stated that they know the fact that toothbrush is not enough to maintain oral health. In the study of Jain et al. (31), the percentage of parents (52%) who knew that it was necessary to change the toothbrush every three months was higher than in this study (35%). The responses of parents to dental caries and oral health habits did not show a statistically significant difference according to gender, education level, dental chair fear, or previous

visit to the dentist of parents. Therefore, the null hypothesis of the study was accepted. While there are a few studies investigating the oral and dental health knowledge and attitudes of mothers in the literature, the data on fathers are very limited. Manohar et al. (40) reported that the knowledge level of the fathers was significantly lower than that of the mothers, but the level of attitude did not differ between the genders of the parents. In a study evaluating the knowledge levels of mothers, half of the mothers stated that dental caries affected general health, but caries of primary teeth did not affect permanent teeth. In this study, both mothers and fathers gave correct answers to these questions at a higher rate (4).

The study had some limitations. One limitation was the small sample size. One of the limitations was the low sociodemographic diversity since the study was conducted in a single hospital. The rate of university graduate parents in the study was only 11%. Another limitation is the relatively high average age of the children and the wide age range. More studies are needed to better understand the relationship between parents' questionnaire responses and their children's ages.

To date, and to the best of our knowledge, the education level of parents, dental chair experience, eruption times of teeth, eating habits, and oral health habits have not all been presented in a single study. Further studies are needed to assess the association of studied variables with actual parameters of oral health in children. According to the results of the studies conducted in this field, the importance of general health is explained clearly with various programs to be used based on the variables affecting the oral and dental health parameters, and the public is made aware of this issue, the success rates of the methods used in caries prevention may increase. By repeating training could give more effective results in increasing the continuity of knowledge and improving the attitudes of future generations about dental health. The hanging of information posters in pediatric dentistry clinics or/and information brochures for children to take to their parents in the fluor varnish application programs carried out by the Ministry of Health in schools can be given as examples of these strategies. In addition, as another suggestion, dentistry can be included in primary healthcare services. Thus, considering the population of the country, individual meetings with parents can provide complementary information to parents on issues they lack, thanks to the family dentistry practice.

5. CONCLUSION

The result of the study showed that the parents did not have enough knowledge and awareness about dental caries and oral health. It has been understood that informative training on the necessity of oral and dental healthcare, tooth eruption, dental caries, and healthy foods should be expanded.

REFERENCES

[1] Prabhu A, Rao AP, Reddy V, Ahamed SS, Muhammad S, Thayumanavan S. Parental knowledge of pre-school child oral health. J Community Health. 2013;38(5):880-884. DOI:10.1007/s10900.013.9693-x

[2] Gurunathan D, Moses J, Arunachalam SK. Knowledge, attitude, and practice of mothers regarding oral hygiene of primary school children in Chennai, Tamil Nadu, India. Int J Clin Pediatr Dent. 2018;11(4):338. DOI:10.5005/jp-journals-10005-1535

[3] American Academy of Pediatric Dentistry, Clinical Affairs Committee, Infant Oral Health Subcommittee. Guideline on infant oral health care. Pediatr Dent. 2012;34(5):e148-152.

[4] Chhabra N, Chhabra A. Parental knowledge, attitudes and cultural beliefs regarding oral health and dental care of preschool. Eur Arch Paediatr Dent. 2012;13(2):76-82. DOI:10.1007/BF03262848

[5] Tsang C, Sokal-Gutierrez K, Patel P, Lewis B, Huang D, Ronsin K, Baral A, Bhatta A, Khadka N, Gurung S. Early childhood oral health and nutrition in urban and rural Nepal. Int J Environ Res Public Health. 2019;16(14):2456. DOI:10.3390/ijerph16142456

[6] Dagon N, Ratson T, Peretz B, Blumer S. Maternal knowledge of oral health of children aged 1–4 years. J Clin Pediatr Dent. 2019;43(2):116-120. DOI:10.17796/1053-4625-43.2.8

[7] Garg N, Garg A. Dental caries. Ravi Kapur, editor. Textbook of Operative Dentistry. New Delhi: Jaypee Brothers, Medical Publishers Ltd; 2010.p.40-79.

[8] Kavitha D, Varghese A, Prabath S, Sreeram R, Asha J, Ravi AB. Prevalence of dental caries in adult South Indian population in association with dietary pattern: a comparative study. J Pharm Bioallied Sci. 2020;12(5):546. DOI:10.4103/jpbs.JPBS_155_20

[9] Ma X. Assessing school effects on dental hygiene and nutrition behaviors of Canadian adolescents. Educ Rev. 2007;59(1):37-54. DOI:10.1080/001.319.10600796876

[10] Scardina G, Messina P. Good oral health and diet. J Biomed Biotechnol. 2012;2012. DOI:10.1155/2012/720692

[11] Du MQ, Li Z, Jiang H, Wang X, Feng XP, Hu DY, Lin HC, Wang B, Si Y, Wang CX, Zheng SG, Liu XN, Rong WS, Wang WJ, Tai BJ. Dental caries status and its associated factors among 3-to 5-year-old children in China: a national survey. Chin J Dent Res. 2018;21(3):167-179. 167-79. DOI:10.3290/j.cjdr.a41076

[12] Scaglioni S, De Cosmi V, Ciappolino V, Parazzini F, Brambilla P, Agostoni C. Factors influencing children's eating behaviours. Nutrients 2018;10(6):706. DOI:10.3390/nu10060706

[13] De Castilho ARF, Mialhe FL, de Souza Barbosa T, Puppin-Rontani R. Influence of family environment on children's oral health: a systematic review. J Pediatr (Rio J). 2013;89(2):116-123. DOI:10.1016/j.jped.2013.03.014

[14] Cirakoglu N, Gokcek M. The impact of socioeconomic factors and oral health behaviour on knowledge levels of the dental health and procedures: the questionnaire based research. Clin Exp Health Sci. 2021;11:105-112. DOI:10.33808/clinexphealthsci.789597

[15] Christensen P. The health-promoting family: a conceptual framework for future research. Soc Sci Med. 2004;59(2):377-387. DOI:10.1016/j.socscimed.2003.10.021

[16] Naidu R, Nunn J, Irwin JD. The effect of motivational interviewing on oral healthcare knowledge, attitudes and behaviour of parents and caregivers of preschool children: an

exploratory cluster randomised controlled study. BMC Oral Health. 2015;15(1):1-5. DOI: 10.1186/s12903.015.0068-9

[17] Al-Omiri MK, Al-Wahadni AM, Saeed KN. Oral health attitudes, knowledge, and behavior among school children in North Jordan. J Dent Educ. 2006;70(2):179-187.

[18] Mesgarzadeh AH, Shahamfar M, Hefzollesan A. Evaluating knowledge and attitudes of elementary school teachers on emergency management of traumatic dental injuries: a study in an Iranian urban area. Oral Health Prev Dent. 2009;7(3):297-308.

[19] Vishwanathaiah S. Knowledge, attitudes, and oral health practices of school children in Davangere. Int J Clin Pediatr Dent. 2016 Apr;9(2):172. DOI:10.5005/jp-journals-10005-1358

[20] Ashkanani F, Al-Sane M. Knowledge, attitudes and practices of caregivers in relation to oral health of preschool children. Med Princ Pract. 2013;22(2):167-172. DOI: doi.org/10.1159/000341764

[21] Blumer S, Ratson T, Peretz B, Dagon N. Parents' attitude towards the use of fluorides and fissure sealants and its effect on their children's oral health. J Clin Pediatr Dent. 2018;42(1):6-10. DOI:10.17796/1053-4628-42.1.2

[22] Sakai VT, Oliveira TM, Silva TC, Moretti ABS, Geller-Palti D, Biella VA, Machado MAMM. Knowledge and attitude of parents or caretakers regarding transmissibility of caries disease. J Appl Oral Sci. 2008;16(2):150-154. DOI:10.1590/S1678.775.7200800.020.0013

[23] Ivica A, Galić N. Attitude towards oral health at various colleges of the University of Zagreb: a pilot study. Acta Stomatol Croat. 2014;48(2):140-146. DOI:10.15644/asc48/2.140

[24] Assuncao CM, Losso EM, Andreatini R, de Menezes JVNB. The relationship between dental anxiety in children, adolescents and their parents at dental environment. J Indian Soc Pedod Prev Dent. 2013;31(3):175-179. DOI:10.4103/0970-4388.117977

[25] Peretz B, Nazarian Y, Bimstein E. Dental anxiety in a students' paediatric dental clinic: children, parents and students. Int J Paediatr Dent. 2004;14(3):192-198. DOI: 10.1111/j.1365-263X.2004.00545.x

[26] Tickle M, Jones C, Buchannan K, Milsom KM, Blinkhorn AS, Humphris GM. A prospective study of dental anxiety in a cohort of children followed from 5 to 9 years of age. Int J Paediatr Dent. 2009;19(4):225-232. DOI:10.1111/j.1365-263X.2009.00976.x

[27] Armfield JM, Stewart JF, Spencer AJ. The vicious cycle of dental fear: exploring the interplay between oral health, service utilization and dental fear. BMC Oral Health. 2007;7(1):1. DOI: 10.1186/1472-6831-7-1

[28] Saied-Moallemi Z, Virtanen J, Ghofranipour F, Murtomaa H. Influence of mothers' oral health knowledge and attitudes on their children's dental health. Eur Arch Paediatr Dent. 2008;9(2):79-83. DOI:10.1007/BF03262614

[29] Søvik JB, Skudutyte-Rysstad R, Tveit AB, Sandvik L, Mulic A. Sour sweets and acidic beverage consumption are risk indicators for dental erosion. Caries Res. 2015;49(3):243-250. DOI:10.1159/000371896

[30] Mileva SP, Kondeva VK. Age at and reasons for the first dental visit. Folia Medica. 2010;52(4):56-61. DOI:10.2478/v10153.010.0018-x

[31] Jain R, Oswal KC, Chitguppi R. Knowledge, attitude and practices of mothers toward their children's oral health: a questionnaire survey among subpopulation in Mumbai (India). J Dent Res Sci Develop. 2014;1(2):40-45. DOI:10.4103/2348-3407.135073

[32] Dean JA. Growth of the face and dental arches. Ferguson DJ, Dean JA, editors. McDonald and Avery's Dentistry for the Child and Adolescent. Philadelphia: Mosby Elsevier; 2015.p.349-374.

[33] Sheiham A. Oral health, general health and quality of life. Bull World Health Organ. 2005;83(9):644.

[34] Wyne AH, Chohan AN, Al-Rowily FH, Mubarkal-Shehri B. Oral health knowledge, attitude and practices by parents of the children attending KSUCD clinics. Pak Oral Dent J. 2004;24(2):145-148.

[35] Yadav K, Prakash S. Dental caries: a microbiological approach. J Clin Infect Dis Pract. 2017;2(1):1-15. DOI:10.4172/2476-213X.1000118

[36] Murshid EZ. Dental knowledge of educators and healthcare providers working with children with autism spectrum disorders. Saudi Med J. 2015;36(12):1477-1485. DOI:10.15537/smj.2015.12.12622

[37] Splieth CH, Banerjee A, Bottenberg P, Breschi L, Campus G, Ekstrand KR, Giacaman RA, Haak R, Hannig M, Hickel R, Juric H. How to intervene in the caries process in children: A Joint ORCA and EFCD Expert Delphi Consensus Statement. Caries Res. 2020;54(4):297-305. DOI:10.1159/000507692

[38] Machiulskiene V, Campus G, Carvalho JC, Dige I, Ekstrand KR, Jablonski-Momeni A, Maltz M, Manton DJ, Martignon S, Martinez-Mier EA, Pitts NB. Terminology of dental caries and dental caries management: consensus report of a workshop organized by ORCA and Cariology Research Group of IADR. Caries Res. 2020;54(1):7-14. DOI:10.1159/000503309

[39] Gussy MG, Waters E, Riggs E, Lo SK, Kilpatrick N. Parental knowledge, beliefs and behaviors for oral health of toddlers residing in rural Victoria. Aust Dent J. 2008;53(1):52-60. DOI:10.1111/j.1834-7819.2007.00010.x

[40] Ashkanani F, Al-Sane M. Knowledge, attitudes and practices of caregivers in relation to oral health of preschool children. Med Princ Pract. 2013;22(2):167-172. DOI:10.1159/000341764

How to cite this article: Köse HD, Şen Yavuz B, Kargül B. Oral and Dental Health Knowledge and Attitudes among Parents of Children. Clin Exp Health Sci 2023; 13: 84-91. DOI: 10.33808/clinexphealthsci.1056574