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Original Article

Importance of Deciduous Teeth: Maternal Perceptions and Early Childhood Caries

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Abstract

Objective: To assess the perception of mothers on the importance of deciduous teeth and correlate with eating habits, oral hygiene and infant oral health status (presence or absence of early childhood caries - ECC). **Material and Methods:** Study's participants were 80 mothers of children of both genders, from two to five years old, with and without severe ECC. The mothers were divided into two groups according to the child's oral health. A questionnaire at the form of an interview was applied to mothers with questions on sociodemographic characteristics, eating habits and oral hygiene, and the importance of primary teeth. Mothers were asked to respond according to a Likert scale modified "strongly agree", "partially agree", "partially disagree" and "strongly disagree". The data about oral health status of the child (absence or presence of ECC) were collected from dental records. **Results:** It was observed that in relation to scores of oral hygiene and eating habits and the importance of primary teeth, the predominance was observed of scores above 10 points, 56.3%, 93.8% e 92.5%, respectively. For the two groups there was no significant difference. **Conclusion:** The largest number of preschool children's mothers that have ECC do not know the importance of primary tooth and the important functions it performs. There was no correlation between eating habits, oral hygiene and infant oral health status.

Keywords: Dental Caries; Primary Teeth; Preschool.

Introduction

The deciduous tooth is important for the proper performance of the masticatory, joint, phonation and occlusion functions. It also participates during periods of growth and development of the height of the dental arches, in breathing and esthetics harmony. Thus, it is crucial its maintenance until the normal time of exfoliation. In addition, the deciduous dentition is important for the development of the jaws and muscles of the face, serving as a guide for the permanent teeth burst in the correct position [1].

The early loss of a deciduous tooth that occurs, among other reasons, due to traumas, ectopic eruption, congenital disorders and deficiencies of the arc length causing reabsorption of deciduous teeth [2], since the main etiological factor is the dental caries [3]. In the deciduous dentition, a specific form of caries which may develop soon after the eruption of the first tooth, is currently called childhood early caries (CPI) [4,5]. This form of disease is defined by the presence of one or more tooth surfaces with caries (cavitated and non-cavitated lesions), loss (due to caries), or restored in any deciduous tooth of a child under six years old. Any sign of caries in smooth surface in children under three years old is indicative of severe CPI [5].

CPI is considered a serious public health problem both in developing countries and industrialized countries [6], it can bring serious consequences with local, systemic, psychological, and social repercussions [7], such as infection, loss of space in the bow, interference in quality of life, growth disturbance, effects on intellectual development, greater risk of new carious lesions in both deciduous dentition, and permanent, higher incidence of hospitalization and visits to emergency, and increase in time and cost of treatment [7,8]. However, CPI can be prevented, controlled or even reversed [7].

Children under five years old spend most of their time with parents and/or guardians, especially mothers. And it has been demonstrated that the maintenance and the consequences on the children's oral health are influenced by the parents' beliefs and knowledge [9]. The oral health of Brazilian children is still worrying and the indices of early loss of deciduous teeth are high [10-13]. Thus, the American Academy of Pediatric Dentistry recognizes the importance of education, prevention, diagnosis and treatment required for maintenance of the oral health of infants, children and adolescents through preventive and curative measures [14].

Although some mothers have basic knowledge about oral health, they usually do not consider the deciduous dentition important, valuing more the permanent dentition, having as background the fact that the deciduous teeth will be replaced in short space of time [15]. Thus, the hypothesis of the present study was that mothers of children with CPI had less knowledge about eating habits and oral hygiene, as well as, a less knowledge about the importance of deciduous teeth. Therefore, the objective of this work was to evaluate the perception of mothers about the importance of deciduous teeth and correlate with the habits of oral hygiene and dental condition (presence or absence of CPI).

Material and Methods

Ethical Aspects

This study was approved by the Ethics Committee in Human Beings Research from the Federal University of Uberlândia (Protocol number 887.514). The mothers were invited to participate in the research and signed the Informed Consent Form containing information about the objectives and methodology of the study.

Study Design

It was performed a quantitative observational descriptive-analytical study, cross-sectional, based on primary data.

The sample of non-probabilistic type was composed of 80 mothers of children aged two to five years old without and with CPI, cared at clinics of Pediatric Dentistry of Hospital Dentistry at the Federal University of Uberlândia, without distinction of gender and race. The sample established was related to the number of patients treated in the period of development of research in clinics of Pediatric Dentistry during a semester. When performing the sample size calculation (sampling error of 5% and a confidence level of 95%), the representative sample necessary would be 67 mothers. The universe of mothers present in the sample is related to patients treated in the period of development of research in clinics of Pediatric Dentistry during a semester.

The mothers were divided into two groups according to the child's oral condition: Group 1 - 40 mothers of children without CPI (G1) and Group 2 - 40 mothers of children with CPI (G2). The criterion used for the diagnosis of CPI is in accordance with the classification of AAPD [5] and the analysis was performed in the first semester of the year 2015.

Data Collection

A structured questionnaire containing questions to characterize the sample, about habits, habits of oral hygiene and the importance of deciduous teeth was applied. The answers were formed by four items type Likert of four points, where 0 = "I strongly disagree", 1 = "I disagree a little," 2 = "I agree a little" and 3 = "I strongly agree". The global scores of the scales ranged from 0 (minimum score) to 12 (maximum score), i.e., when all the answers are "strongly disagree" the overall scores will be zero (0) and when all the answers are "agree strongly" the final score of scores will be 12 (twelve). The questionnaires were administered by a single researcher (CGCR) in the form of an interview.

This study considered three groups of variables. The variables of the first group were those of sociodemographic characteristics, such as the mother's age, family income, number of children, working area (retired, commerce, domestic service, sporadic activities) and mother's schooling (years of study completed). The variables of the second group were those related to eating habits and oral hygiene. These allowed the construction of two potential scales: the scale of importance of food habits (HA) and the scale of importance of hygiene habits (HH). Finally, the variables of the third

group, those related to the importance that mothers give to deciduous teeth, allowed to build the scale of importance of deciduous tooth (ID).

Statistical Analysis

The data were tabulated in an Excel spreadsheet (Microsoft Inc., Redmond, WA, USA). A descriptive statistical analysis was performed considering the measures and notations [16], namely Mean \pm SD for quantitative variables with normal distribution, Median (Q1-Q3) for ordinal or quantitative variables with non-normal distribution and n (%) for nominal variables. It was used the "t" test for independent samples for equal assumed variances and the Mann-Whitney U test, Fisher's exact test, Pearson's chi-square test. The software SPSS for Windows v.23 was used in all analyzes (IBM, 2015). Correlations or associations with p value less than 0.05 were considered statistically significant. Whenever it was possible a confidence interval of 95% were built as measures of the accuracy of estimates.

Results

Table 1 shows the sociodemographic characteristics of the mothers studied by means of the distribution of age, household income, number of children, working area and education. No significant statistical differences between G1 and G2 were found.

Table 1. Sociodemographic characterization of mothers by age, income and number of children.

Groups				
Variables	G1 (without CPI) N (%)	G2 (With CPI) N (%)	Total N (%)	p-value
Age (year) [80]				
21 - 31	12 (30.0)	11 (27.5)	23 (28.8)	0.229 ¹
31 - 41	20 (50.0)	19 (47.5)	39 (48.8)	
41 - 51	8 (20.0)	7 (17.5)	15 (18.8)	
51 - 61	0 (0.0)	2 (5.0)	2 (2.5)	
61 - 71	0 (0.0)	1 (2.5)	1 (1.3)	
Mean ± SD	33.9 ± 6.3	36.1 ± 9.4	35.04 ± 8.05	
Med (Q1-Q3)	33.0 (30.0-38.8)	35.0 (30.0-40.7)	33.0 (30.0-40.0)	
Income (minimum wages) [73]				
0.4 -2.0	5 (13.5)	8 (22.2)	13 (17.8)	0.469 ²
2.0 - 3.6	26 (70.3)	24 (66.7)	50 (68.5)	
3.6 - 5.2	4 (10.8)	4 (11.1)	8 (11.0)	
5.2 - 6.8	1 (2.7)	0 (0.0)	1 (1.4)	
6.8 - 8.4	1 (2.7)	0 (0.0)	1 (1.4)	
Mean ± SD	2.7 ± 1.5	2.3 ± 0.9	2.5 ± 1.3	
Med (Q1-Q3)	2.0 (2.0-3.0)	2.0 (2.0-3.0)	2.0 (2.0-3.0)	
Nr. of children [80]				
1	21 (52.5)	7 (17.5)	28 (35.0)	<0.001 ²
2	16 (40.0)	22 (55.0)	38 (47.5)	
3	3 (7.5)	6 (15.0)	9 (11.3)	
4	0 (0.00)	3 (7.5)	3 (3.8)	
5	0 (0.0)	2 (5.0)	2 (2.5)	
Mean ±SD	1.5 ± 0.6	2.3±1.0	1.9 ± 0.9	
Med (Q1-Q3)	1.0 (1.0-2.0)	2.0 (2.0-3.0)	2.0 (1.0-2.0)	

Working area [80]				
Retired	1 (2.5)	1 (2.5)	2 (2.5)	1.000 ³
Commerce	2 (5.0)	1 (2.5)	3 (3.8)	1.000 ³
Domestic service	26 (65.0)	26 (65.0)	52 (65.0)	1.000 ⁴
Sporadical activities	11 (27.5)	12 (30.0)	23 (28.8)	0.805 ⁴
Educational level [80]				
1	4 (10.0)	4 (10.0)	8 (10.0)	
2	3 (7.5)	5 (12.5)	8 (10.0)	
3	1 (2.5)	2 (5.0)	3 (3.8)	
4	21 (52.5)	19 (47.5)	40 (50.0)	
5	4 (10.0)	1 (2.5)	5 (6.3)	
6	6 (15.0)	8 (20.0)	14 (17.5)	
7	0 (0.0)	0 (0.0)	0 (0.0)	
8	1 (2.5)	1 (2.5)	2 (2.5)	
Med (Q1-Q3)	4.0 (4.0-5.0)	4.0 (3.0-4.7)	4.0 (4.0-5.0)	0.683 ⁵

¹T test "t" of independent samples for equal variances assumed; ²The Mann-Whitney U test. ³Fisher's exact test; ⁴Pearson chi-square test; ⁵Mann-Whitney U-test.

Table 2 presents the distribution of the scores produced by the scales HA, HH and ID. The values of the scales HA, HH and ID ranged with scores 0 to 12 points at intervals of 2.5.

Regarding the score HA, in the set of mothers, it was identified a predominance of scores above 10 (56.3%), with a mean score of 9.74 (± 2.04). The predominance of scores above 10 points was observed in both groups (G1 (62.0%) and G2 (50.0%)), and that the mean score was 9.9 (± 1.9) and 9.5 (± 2.1), respectively (Table 2). No mother presented a score below 5 points.

As for the score of HH, at all the mothers, it was identified a predominance of scores above 10 (93.8%), with a mean score of 11.6 (± 0.83), this means that the variables of responses were greater in number between the answers "I agree a little" and "I strongly agree". The predominance of scores above 10 points was observed in both groups (G1 (92.5%) and G2 (95.0%)), being that with relation to these groups the mean score was 11.6 (± 0.8) and 11.6 (± 0.8), respectively (Table 2). No mother presented a score below 7.5 points.

Regarding the score ID, in the set of mothers, it was identified a predominance of scores above 10 (92.5%), with a mean score of 11.3 (± 1.7). Only one mother (1.3%) presented a score 0.0 |- 2.5. The predominance of scores above 10 points was observed in both groups (G1 (92.5%) and G2 (92.5%)), being that with relation to these groups the mean score was 11.5 (± 1.2) and 11.2 (± 2.2), respectively (Table 2).

There were no statistically significant differences AMONG the groups regarding the mean scores ($p=0.301$), HH ($p=0.526$) and ID ($p=0.923$).

Table 2. Distribution of the mothers according to the eating habits, of hygiene and importance given to the deciduous teeth.

to the deciduous teeth.				
Variables	Groups		Total N (%)	p-value
	G1 (without CPI)	G2 (With CPI)		
	N (%)	N (%)		
Scale HA [80]				
0.0 -2.5	0 (0.0)	0 (0.0)	0 (0.0)	
2.5 - 5.0	0 (0.0)	0 (0.0)	0 (0.0)	

5.0 - 7.5	4 (10.0)	6 (15.0)	10 (12.5)	
7.5 - 10.0	11 (27.5)	14 (35.0)	25 (31.3)	
10.0 - 12.0	25 (62.0)	20 (50.0)	45 (56.3)	
Mean \pm SD	9.9 \pm 1.9	9.5 \pm 2.1	9.74 \pm 2.04	0.301 ¹
Med (Q1-Q3)	10.0 (9.0-12.0)	9.5 (8.2-11.0)	10.0 (9.0-11.0)	
Scale HH [80]				
0.0 -2.5	0 (0.0)	0 (0.0)	0 (0.0)	
2.5 - 5.0	0 (0.0)	0 (0.0)	0 (0.0)	
5.0 - 7.5	0 (0.0)	0 (0.0)	0 (0.0)	
7.5 - 10.0	3 (7.5)	2 (5.0)	5 (6.3)	
10.0 - 12.0	37 (92.5)	38 (95.0)	75 (93.8)	
Mean \pm SD	11.6 \pm 0.8	11.6 \pm 0.8	11.6 \pm 0.83	
Med (Q1-Q3)	12.0 (11.0-12.0)	12.0 (12.0-12.0)	12.0 (12.0-12.0)	0.526 ²
Scale ID [80]				
0.0 -2.5	0 (0.0)	1 (2.5)	1 (1.3)	
2.5 - 5.0	0 (0.0)	0 (0.0)	0 (0.0)	
5.0 - 7.5	1 (2.5)	1 (2.5)	2 (2.5)	
7.5 - 10.0	2 (5.0)	1 (2.5)	3 (3.8)	
10.0 - 12.0	37 (92.5)	37 (92.5)	74 (92.5)	
Mean \pm SD	11.5 \pm 1.2	11.2 \pm 2.2	11.3 \pm 1.7	
Med (Q1-Q3)	12.0 (11.0-12.0)	12.0 (11.0-12.0)	12.0 (11.0-12.0)	0.923 ²

¹Testet of independent samples for different variances assumed; ²Mann-Whitney U-test.

Discussion

Family is the basis for social, psychological and emotional development of the child, participating in the formation of his or her personality. It is still the place where the basic care with the body takes place and is managed, exercising a fundamental role in health promotion and maintenance of their children [17]. Generally, it is the mother who is responsible for matters involving the health, exercising the function of the educator of knowledge's and habits [18]. Furthermore, a study on the influence of behaviors related to parents' oral health about the situation of children' dental caries, concluded that the habits of oral health of parents influence the oral health of their children and that it is necessary education programs in oral health care with preventive actions to provide not only oral health suitable for children, but also a better quality of life. Special attention should be given to the whole family, in relation to their life style and habits related to health [17].

The methodology used in this research was similar to that used in previous studies [9,10,11,19], where the data were gathered by means of questionnaires in the form of an interview. This type of approach is performed with a frequency because of the advantages it offers, such as, low cost and easiness in data collection.

Health education can be regarded as essential to the maintenance and prevention of health, mother and/or guardian's dental education is a determining factor for the children's oral health, and the family serves as a model [20]. A study evaluating the knowledge of children's mothers aged one to four years old on the oral health of their children showed that 73.9% of mothers had a good knowledge about diet, while only 25.4% and 27.1% had a good knowledge about oral hygiene and the importance of deciduous teeth, respectively [9]. The present study observed that the population

studied had satisfactory knowledge on oral health, based on responses obtained in the survey, despite of not having been carried out any kind of specific evaluation for this purpose. This knowledge can be explained by the fact that these children were already part of the program of children's dental care offered by the area of Pediatric Dentistry, in which parents and/or guardians receive at the first dental visit guidelines on appropriate food habits and oral hygiene. In addition, in subsequent visits the guidelines and knowledge are always strengthened, in order to verify whether the information provided was fixed by the parents. However, a recent study considered the parents' knowledge limited when it comes to oral care [21].

One study found that the elevated degree of instruction of parents comes with more opportunities to information access on health [22]. Children who live with adults, in this condition, are subject to healthier habits and behaviors of oral health [19]. Nevertheless, although in the present study there is a predominance of participants with complete secondary education, the study population presented a satisfactory knowledge of oral health. When compared among the groups where, in the group without CPI (52.5%) and in the group with CPI (47.5%), it was not identified a significant correlation between educational level when comparing the group of mothers of children in both groups. The results of this study corroborate those found by a recent study [21] where there was also a predominance of parents with complete high school, with no correlation with the oral condition.

Regarding the children's dietary habits, this study identified a predominance of scores above 10 (56.3%), demonstrating a good knowledge about inappropriate oral habits. Despite of that, children's mothers without CPI showed to have a greater knowledge than children's mothers with CPI. Similar result was found in a study in which the majority of mothers (73.9%) showed a good knowledge of the diet of their children [9].

In relation to the oral hygiene habits, mothers in the present study, in a general way, presented knowledge even higher if compared to the eating habits with a predominance of scores above 10 (93.8%). In spite of the oral hygiene habit being one of the factors directly associated with the development of CPI, children's mothers with CPI in this study presented a superior knowledge to the children's mothers without CPI. This fact can be explained by the knowledge of parents about the determinants of dental caries not being sufficient stimulus for the adoption of care with the children's oral health, reinforcing the idea that there is not necessarily a causal relationship between information and action [18]. Contrary to the findings of the present study, other authors found that the majority of the population studied presented a partial knowledge about care with oral hygiene [9] and classified as a limited knowledge regarding the habits of oral hygiene of parents evaluated, especially in relation to the form of realization of brushing and importance of consultation for the prevention [21].

The mothers interviewed had a satisfactory knowledge about the importance of the deciduous tooth, with the prevalence of scores above 10 (92.5%). Other studies differed from the results found here, showing that the parents had little knowledge or partial knowledge about the

importance of deciduous teeth [9]. In spite of the groups differ as to knowledge about eating habits and oral hygiene, both groups had similar knowledge about the importance of the deciduous dentition.

The results of this study showed that a significant number of children's mothers with CPI had a pretty good idea on habits of oral health. Despite of this, it is necessary to strengthen the importance of putting into practice the knowledge acquired, since only the information is not sufficient oral health maintenance. Among the limitations of the studies it is possible to highlight the selection criteria and the sample size, however there were no similar studies in the literature.

Conclusion

Most mothers presented the basic notions on knowledge about the importance of deciduous teeth and the functions they perform, Children's mothers who were free from CPI exhibited a better knowledge regarding eating habits. Children's mothers with CPI presented a higher knowledge on oral hygiene habits. However, there was no correlation among eating habits, oral hygiene and children oral condition

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