

CORRELATION BETWEEN PARENTAL KNOWLEDGE AND PARENTS' ATTITUDE TOWARDS DENTAL HEALTH OF THEIR CHILDREN

КОРЕЛАЦИЈА МЕЃУ ИНФОРМИРАНОСТА НА РОДИТЕЛИТЕ И НИВНИОТ СТАВ КОН ДЕНТАЛНОТО ЗДРАВЈЕ НА НИВНИТЕ ДЕЦА

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Abstract

This study aims to determine the relationship of parental knowledge and parents' attitude on one side, comparable to the oral habits and dental status of their children on the other, as well as to evaluate whether educational status of parents and the level of motivation of parents play a significant role for children's regular dental check-ups. The present study is a descriptive survey which was carried out at the University Dental Clinical Centre "Ss. Pantelejmon" in Skopje, at the Clinic for paediatric and preventive dentistry. The representative subjects were selected by convenience sampling and included parents of preschool children. A total of 57 subjects participated in the study. An informed consent was obtained prior to data collection. The questionnaire assessed the parental knowledge and awareness of primary teeth, their location, number, functions, shedding and effects on permanent teeth. Further assessments of parents' attitude toward treatment of decayed, traumatized or infected primary teeth were made as well as assessment of their opinion and willingness to treat and extract such teeth. Most of the children attending the Pediatric and Preventive Dentistry Clinic have dental caries. Parents show more superficial or partial knowledge of the meaning of milk teeth, which in turn imposes the need to improve their awareness related to this issue. **Keywords:** information, attitude, meaning, parents, primary teeth.

Апстракт

Оваа студија има цел да ја детерминира врската меѓу информираноста на родителите и нивниот став, наспроти оралните навики и денталниот статус на нивните деца како и да евалуира дали степенот на образование на родителите и степенот на мотивираноста имаат сигнификантна врска со регуларните дентални прегледи на нивните деца. Студијата е описна и истражувачка и беше изведена на Универзитетскиот стоматолошки клинички центар „Св.Пантелејмон“ во Скопје на клиниката за Детска и превентивна стоматологија. Во студијата беа вклучени родителите на предучилишни деца. Вкупниот број на испитаници беше 57, а прашалникот беше насочен кон познавањата на родителите за забите од млечната дентиција во однос на нивната локација, број, функција и нивното влијание врз трајната дентиција. Беше проследен и ставот на родителите околу третманот на кариозните, фрактурираните или инфизираните млечни заби и нивната мотивираност и став за нивно санирање или екстрахирање. Најголем број од децата кои ја посетуваат Клиниката на детска и превентивна стоматологија имаат голема застапеност на денталниот кариес. Родителите покажуваат повеќе површно или делумно познавање за значењето на млечните заби, што, од своја страна ја наметнува потребата за подобрување на оваа свест. **Клучни зборови:** информираност, значење, родители, млечни заби.

Introduction

Appropriate infant oral health attitudes and practices are of fundamental importance for preventing chronic oral diseases¹. Oral health patterns are consolidated during childhood, and some attitudes may increase the child's risk of caries development^{2,3}. Morbidities due to dental caries are particularly harboured in children from families of low socio-economic level⁴, whose nutrition^{5,6} and quality of life may be consequently impaired^{3,7-9}.

Potential risk factors of dental caries include biological and behavioural factors, all of which may be modulated by environmental factors^{10,11}. Parents play an important role in promoting positive attitudes and strategies toward oral health behaviours^{12,13}. Mothers are the immediate and reliable caregivers of children in many countries, and they have a central role in providing effective guidance and positive attitudes toward oral health^{14,15}. Despite improvements in oral health measures in high-income countries, the literature notes the persistence of

an imbalance in caries prevalence in certain countries^{16,17}. Moreover, most surveys concentrate on parents from high-income countries, and less is known from countries with high prevalence of dental caries.

Aim

This study aims to determine the relationship of parental knowledge and attitude towards oral habits and dental status of their children, and evaluate whether the educational status of parents and the level of their motivation play a significant role for children's regular dental checkups.

Material and method

The present study was a descriptive, cross sectional survey which was carried out at the University for Dental Clinical Centre "Ss. Pantelejmon" in Skopje, at the Clinic for paediatric and preventive dentistry. The representative subjects were selected by convenience sampling and included parents of preschool children and primary school children categorized up to 12 years of age. A total of 60 subjects participated in the study. An informed consent was obtained prior to data collection.

A self-designed closed end type of questionnaire was provided. Assistance was offered to those who desired help in understanding the questions. The demographic details were collected from the parents, such as age, sex, educational qualification, monthly income, child's age and the reason for their visits to the dental clinic. The responders were then asked to indicate the most appropriate correct answer from the given list of options in order to assess their knowledge, awareness and perception regarding the significance of primary teeth. The questionnaire assessed the parental knowledge and awareness of primary teeth, their location, number, functions, shedding and effects on permanent teeth. Further assessments of parents' attitude toward treatment of decayed, traumatized or infected primary teeth were made as well as assessment of their opinion and willingness to treat and extract such teeth.

Results

The survey included 57 parents. It was observed that mothers (57,9%) accompanied their children more than fathers (42,1%) for dental treatment (Table 1). of which 33 (57,9%) were mothers and 24 (42,1%) fathers.

As a proxy for the socioeconomic status of the parents, we use the parents' employment status, so we rank

Table 1. Distribution of respondents by sex

Parent	Number of respondents	Percent
Mother	33	57,9
Father	24	42,1
Total	57	100

them as parents with high, middle and low socioeconomic status, if both, one or none of the parents were employed, respectively. Figure 1 shows that 30 % of the families had one employed parent, 43 % were with both employed parents and 27 % were with two unemployed parents.

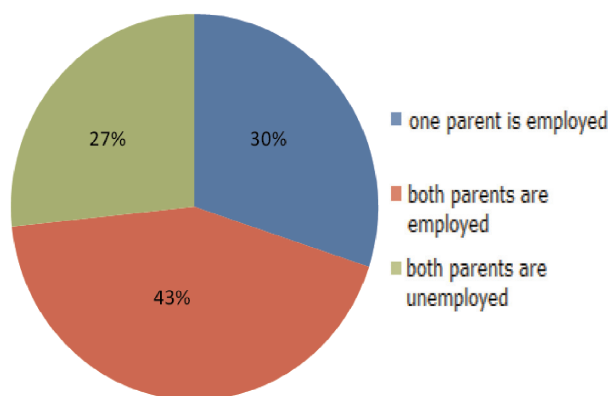


Figure 1. Distribution of parents by employment

Figure 2 describes the level of parents' education in our survey. 12 % of the parents were with primary education, 50 % with secondary, 2 % higher education and 37 % with high education.

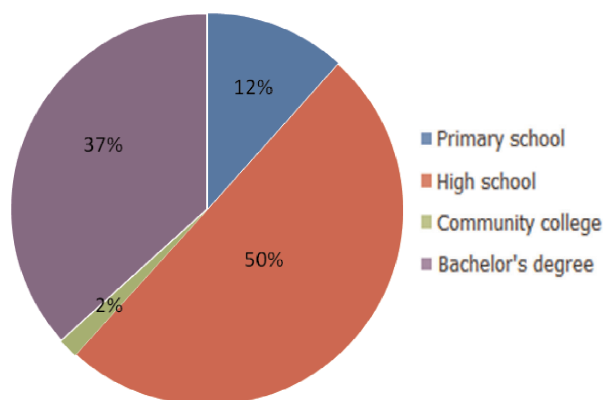


Figure 2. Distribution of parents by level of education

Table 2. Distribution of parental responses in percentages

		Answers in numbers	Percentage
1	What was the reason for your child's first dental visit?		
	Pain/swelling	21	36.84
	Visible change in the teeth colour	7	12.28
	Regular check-up	29	50.88
2	How frequently do you take your child to the dentist?		
	Every 3-6 months	18	31.58
	Every 6-12 months	8	14.04
	When needed (when there's a problem)	31	54.39
3	Who is your child's dentist?		
	My dentist	22	38.60
	A specialist in pediatric and preventive dentistry	35	61.40
4	What are primary (milk) teeth?		
	Teeth which only children that drink milk have	5	8.77
	Teeth which all children have	10	17.54
	The first set of teeth that will be replaced with permanent teeth	42	73.68
	None of the above	0	0.00
5	What is the total number of milk teeth?		
	All the front teeth	9	15.79
	All the teeth in the mouth, when the children are 4 years old	43	75.44
	All the upper teeth		0.00
	I don't know	5	8.77
6	How many teeth in a 3-years old child's mouth are milk teeth?		
	0.5	14	24.56
	0.25	2	3.51
	There're no milk teeth when a child is 3-years old		0.00
	All the teeth are milk teeth	41	71.93
7	What's the total number of milk teeth?		
	8	4	7.02
	12	11	19.30
	18	11	19.30
	20	31	54.39
	4	0	0.00
8	Do you think that all the milk teeth will be replaced?		
	Yes	49	85.96
	No	4	7.02
	Only the front teeth	4	7.02
	Only the back teeth	0	0.00

9	At what age do milk teeth start being replaced by permanent teeth?		
	4 years	9	15.79
	6 years	47	82.46
	12 years	1	1.75
	18 years		0.00
10	Do all the permanent teeth erupt with the replacement of milk teeth?		
	Yes	32	56.14
	No	7	12.28
	Some of them	18	31.58
11	Milk teeth are important for:		
	Chewing	6	10.53
	The child's physical appearance	3	5.26
	Speaking	2	3.51
	The eruption and maintaining space for the permanent teeth	8	14.04
	All the above is correct	38	66.67
	None of the above is correct	0	0.00
12	Do you think that a milk tooth decay should be treated?		
	Yes	53	92.98
	No	4	7.02
13	If a milk tooth is infected		
	It's important that it is preserved, if possible	39	68.42
	It's not necessary to be preserved, since it will eventually fall off	18	31.58
14	If your child has a milk tooth that is infected and needs a longer therapy which will be provided over several dental visits and will incur additional costs, you will:		
	Accept the therapy	53	92.98
	Reject the therapy	4	7.02
14a	Reasons:		
	Time	3	5.26
	Financial challenges	1	1.75
	You don't feel the need to waste time and resources for curing a tooth which will eventually be replaced with a permanent one		
15	If your child has an infected tooth for which the only solution is tooth extraction, you will:		
	Accept	47	82.46
	Reject	10	17.54
15a	Reasons:		
	You're afraid that the infection will spread to the eyes	1	1.75
	You're afraid that the infection will spread to the brain		
	You don't think that extraction will be needed, since the tooth will be replaced by another tooth	3	5.26
	It will cause trauma or pain for the child	6	10.53
	It costs		

The χ^2 independence test is used to test the dependence between two categorical variables. Each of the selected variables can have two or more categories. The basic assumption, in order to obtain valid results using the χ^2 test is at least 80% of the data to have an expected frequency of 5 or more. The SPSS 21 statistical software was used to calculate the χ^2 test statistic. This software, when calculating the χ^2 test, shows Pearson Chi-Square and Likelihood Ratio values, with corresponding p-values. When the basic assumption is not disturbed, we use the Pearson Chi-Square value, and if it is, then the Likelihood Ratio is used. In the following table, both are shown, but both show the same (in) significance. In order to determine if there is a statistically significant correlation, we compare the p-values of χ^2 test with the selected level of significance (5%). If the p-values of the χ^2 test are less than 5%, then the relationship is statistically significant.

In our research, the χ^2 test was used to show whether there was a statistically significant relationship between the level of education of the parent and the answer to the questions in the survey. Finally, the χ^2 value is given for examining the significance of the level of education on the dmf index, which will be discussed later on.

Thus, at the significance level of 5%, the results show that statistically significant correlations are present in questions 2, 4, 5 and 14. Namely, how often parents take their children to the dentist depends on the level of education of the parent, i.e. parents with lower education

(primary) visit the dentist only when a problem occurs, unlike those with higher education (secondary and higher) who visit their dentist on a more regular basis. Similarly, knowledge of primary teeth, what they are and what their number is, is relatively lower among parents with primary education compared to parents with secondary and higher education. Also, their willingness to accept longer treatment, which would mean more visits to the primary dentist and additional costs, is related to the level of education of the parents. Since the χ^2 test only shows whether there is a certain statistical relationship between the two variables but does not indicate how strong the relationship is, we also calculate the Cramer's V - effect size measure where a statistically significant correlation is evident. According to Cramer's V obtained values for questions where there is a significant association, we can conclude that the effect of educational level on the corresponding answers is moderate (Table 3).

Next, we look at the dmf index, which measures the average number of cavities, extracted and sealed teeth in each child as a truly measurable indicator and standard set by the WHO (World Health Organization).

In our study, the dmf index was 5.21 which is also considered high compared to WHO's recommendations for oral health. In order to determine whether there is any relationship between this index and the level of parent's education, we applied the χ^2 independence test, with the results indicating that there was no statistically significant relationship between them (Table 3).

Table 3. Correlation between parents' level of education and children's dmf index with parents' knowledge

Question	Pearson Chi-Square	p-value	Likelihood Ratio	p-value	Significance of association 0=insignificant 1=significant	Strength of the effect of education
						Cramer's V
1	8.95	0.062	9.486	0.051	0	
2	10.313	0.035	13.149	0.011	1	0.301
3	0.409	0.815	0.409	0.815	0	
4	15.924	0.003	17.254	0.002	1	0.374
5	16.918	0.002	15.082	0.005	1	0.385
6	7.977	0.092	7.36	0.118	0	
7	10.582	0.102	12.066	0.061	0	
8	6.089	0.196	5.145	0.273	0	
9	6.604	0.158	4.406	0.354	0	
10	8.909	0.063	10.252	0.086	0	
11	8.084	0.425	10.057	0.261	0	
12	0.688	0.727	0.61	0.737	0	
13	3.969	0.137			0	
14	9.789	0.007			1	0.414
14A	2.278	0.685	3.001	0.558	0	
15	2.471	0.291	3.227	0.199	0	
15A	7.192	0.308	9.812	0.133	0	
KEP	18.21	0.868	22.136	0.681	0	

Table 4. Correlation between socioeconomic status of parents and children's dmf index with parents' knowledge

Question	Pearson Chi-Square	p-value	Likelihood Ratio	p-value	Significance of association 0=insignificant 1=significant	Strength of the effect of education
						Cramer's V
1	8.95	0.062	9.436	0.051	0	
2	10.313	0.035	13.149	0.011	1	0.301
3	0.409	0.815	0.409	0.815	0	
4	15.924	0.003	17.254	0.002	1	0.374
5	16.918	0.002	15.032	0.005	1	0.385
6	7.977	0.092	7.36	0.118	0	
7	10.582	0.102	12.066	0.061	0	
8	6.089	0.196	5.145	0.273	0	
9	6.604	0.158	4.406	0.354	0	
10	8.909	0.063	10.252	0.086	0	
11	8.084	0.425	10.057	0.261	0	
12	0.688	0.727	0.61	0.737	0	
13	3.969	0.137			0	
14	9.789	0.007			1	0.414
14A	2.278	0.685	3.001	0.558	0	
15	2.471	0.291	3.227	0.199	0	
15A	7.192	0.303	9.812	0.133	0	
KEP	18.21	0.868	22.136	0.681	0	

In addition to testing the relationship between the level of education of the parent and the answer to the questions in the survey, we also decided to test the relationship between the socioeconomic status of the parents and the questions' answers. As a proxy for the socioeconomic status of the parents we use the parents' employment status, so we rank them as parents with high, middle and low socioeconomic status, if both, one or none of the parents are employed, respectively. Thus, at the significance level of 5%, the results show that statistically significant correlations are present in questions 1, 4, 8 and 14A. The results in the present study suggest that half of the parents visited their dentist for the first time only after their child had complaints or they have noticed a change of color of the teeth themselves, while the other half actually visited the dentist for a regular check-up. In fact, the socioeconomic status does have an effect on the reason parents visited their child's dentist for the first time, so those parents with high and middle socioeconomic status are more likely to head to the dentist just for a check-up, rather than waiting for the toothache. Moreover, the knowledge of primary teeth, what they are and whether they will all be replaced, was relatively less among low socioeconomic group of parents, as compared with middle and high socioeconomic groups. Finally, their willingness for a longer treatment of an infected primary tooth was more of a time problem

between high and middle socioeconomic groups, whereas it was more of a money issue for parents with low socioeconomic status.

According to the calculated Cramer's V, a statistically significant correlation is evident, we come to the conclusion that the effect of socioeconomic status on the corresponding answers is moderate.

Discussion

Maintaining healthy primary teeth is essential to a child's overall oral and general development¹⁸. Family members are considered the primary source for knowledge about children's health habits¹⁹. They are considered the key persons in achieving the best oral health outcomes and assuring well-being for children. Frequently in pediatric dental practice we find parents ignorant about the primary tooth, its function and importance. They often question the necessity of treatment to save and maintain the milk tooth in function. There is no good reason for leaving primary teeth decayed and untreated in a child's mouth. No other branch of medicine would willingly leave disease untreated²⁰. Untreated carious primary tooth can give rise to different complications, such as pain, oral infection, problems in eating and sleeping, malnutrition and alterations in growth and development²¹⁻²⁴ and probably early loss of teeth, which

might lead to short-term effects like problems in eating and speaking and long term effects like malalignment of permanent teeth and increased risk of malocclusion later on²⁵.

In the present study, 36,84% of parents visited the dental clinic only after their child had complaints of untreated carious teeth; 66,67% of parents were aware of all the functions of primary teeth. How often parents take their children to the dentist depends on the level of education of the parent, i.e. parents with lower education (primary) visits the dentist only when a problem occurs, unlike those with higher education (secondary and higher) who visit their dentist on a more regular basis. Similarly, knowledge of primary teeth, what they are and what their number is, is relatively lower among parents with primary education compared to parents with secondary and higher education. Also, their willingness to accept longer treatment, which would mean more visits to the primary dentist and additional costs, is related to the level of education of parents. The reason for poor knowledge among parents and low value about primary teeth might be due to cultural-based opinions or the fact that these are temporary teeth and they will shed and be replaced by a new set of secondary teeth.

Some authors have reported that certain cultures place little value on primary teeth and that caries and early loss of the primary dentition is an accepted occurrence²⁶. A qualitative study of caregivers in Saipan found that the low value attributed to baby teeth was an obstacle to developing effective preventive program²⁷. In another qualitative study, Finnish caregivers of preschool children gave less importance to primary teeth when compared with general health²⁸. Conversely a Canadian study indicated that parents who believed baby teeth were important had children with significantly lower caries rates than those who believed otherwise²⁹. Thus, parental knowledge of primary teeth appears to have a direct effect on the oral health of the child.

In this study, the socioeconomic status does have an effect on the reason parents visited their child's dentist for the first time, so those parents with high and middle socioeconomic status are more likely to head to the dentist just for a check-up, rather than waiting for the toothache. Moreover, the knowledge of primary teeth, what they are and whether they will all be replaced, was relatively less among low socioeconomic group of parents, as compared with middle and high socioeconomic groups. Finally, their willingness for a longer treatment of an infected primary tooth was more of a time problem between high and middle socioeconomic groups, whereas it was more of a money issue for parents with low socioeconomic status.

Conclusion

The results of our study indicate that the parents involved in the research are relatively well informed, regardless of their educational and socioeconomic status, yet the impression is that children are practicing habits that adversely affect their oral dental health.

It is of particular importance to raise dental awareness of parents through programs designed for children with active parent involvement, with particular emphasis not only on their education, but also on developing personal skills, both for parents and young children.

There is an urgent need to motivate and strengthen the parents' positive attitude towards milk dental health, their function, primary preventive care for these teeth, as well as informing the parents about the first visit and the importance of regular visits to the dentist.

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