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Parents´ Knowledge about the Effects of Oral Hygiene, Proper Nutrition and Fluoride Prophylaxis on Oral Health in Early Childhood

SUMMARY

Background/Aim: *Health education, as one of the important aspects of preventive dentistry, plays an important role in promoting and achieving good oral health. The aim of this study was to determine the influence of parents´ knowledge about the effects of oral hygiene, proper nutrition and fluoride prophylaxis on oral heath in early childhood.* ***Material and Methods:*** *Parents were asked to fill a questionnaire which consisted of three sections, oral hygiene, fluoride prophylaxis and nutrition. The study included 136 parents of children, aged between 3-6 years. The survey was conducted in pedagogical-education institution – PE "Our happiness" - Leposavic, Kosovo and Metohia, Serbia.* ***Results:*** *More than 58% parents from urban areas and 63% parents from rural areas were informed that the teeth should be brushed at least twice a day (p=0.007). Only 31.11% of parents from urban and 15.22% of parents from rural areas were informed that a child should visit dentists for the first time, at the one year of age (p=0.083). The analysis of the questionnaire section regarding the nutrition and oral health, showed that parents from rural areas were better informed than parents from urban areas. Awareness about fluoride and their role in preventive dentistry was poor, as only 3% of children from urban and 1% of children from rural areas were using tablets based on fluoride while only 1% of children from urban and none from rural areas were using fluoride mouth rinses.* ***Conclusions:*** *The study showed that parents have the knowledge about the impact of oral hygiene, food and fluoride prophylaxis on the oral health but unfortunately they do not apply their knowledge in practice.*

Key words: Oral health, Knowledge, Parents, Questionnaires, Oral hygiene, Proper nutrition, Fluoride prophylaxis, Child

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Introduction

Oral health is an integral part of the general health and has an impact on the quality of life human population[1]. Health education, as one of the important aspects of preventive dentistry, plays an important role in promoting and achieving good oral health. Proper oral hygiene, nutrition, regular visits to the dentist, fluoride prophylaxis have a significant impact on oral health[2].

The family provides the background for developing knowledge, attitudes and habits related to the children´s oral health. The parents, as the highest authority, have an important and crucial role in forming a personality and hygienic-dietary of the children in period of primary socialization, including their appropriate attitude to oral health[3,4]. Gao et al. in their research established a relationship between parents´ knowledge, habits and oral health behaviors and oral health of their children[5]. In addition to parents school and friends can modify the behavior and habits of children affected by process of secondary socialization[2].

Good oral health has an important role in the upbringing of children, contributes to their physical, mental and social development[6]. The dentist has important

influence in the process of oral health education. The role of dentist is reflected in educating parents and children about the importance of oral health and preventive measures in order to preserve good oral health[7].

The aim of this study was to determine the influence of parents´ knowledge about the effects of oral hygiene, proprer nutrition and fluoride prophylaxis on oral health in early childhood.

Material and Methods

The study included 136 parents, 90 from urban and 46 from rural areas (mean age of parents´ 33±4). The survey was conducted in pedagogical-education institution – PE "Our happiness" in Leposavic, Kosovo and Metohia, Serbia. Heads of educational institutions were informed about aim of study and gave their written consent to conduct this research in their institution. Parents´ level of information about proper nutrition, oral hygiene and fluoride prophylaxis was determined based on a questionnaire which consisted of three sections: oral hygiene, fluoride prophylaxis and nutrition.

Every part of the questionnaire contained a number of questions that analyzed demographic characteristics of children, habits, knowledge, attitudes of parents associated with oral health. The survey consisted of 32 questions in total, divided into three parts.

The first part of the questions included questions that examined parents´ knowledge about proper oral hygiene and demographic characteristics of parent and children. The second part of survey contained questions respecting the knowledge about fluoride prophylaxis and reasons for dental visits. The third group of questions included questions that examined Parents´ knowledge about nutrition. The surveys were anonymous and Parents´ were informed about the aim of the research and the method of implementation. Parents gaved their written consent.

Data obtained in this study were processes by IBM SPSS Statistics 21 program. The results of the survey were analyzed using the χ^2 test.

Results

The analysis of the questionnaire section regarding the oral hygiene showed that 58.89% parents from urban areas and 63.04% parents from rural areas were informed the teeth should be brushed at least twice a day (p=0.007). On question "How long it necessary to wash the teeth", parents from urban (65.56%) and rural (63.04) areas responded in an average of 1 to 3 minutes (p=0.081). Since the survey included parents whose children were 3 to 6 years old the questionnaire did not contain questions related to the usage of dental floss, mounthwash and interdental brushes.

The results of this study showed that most parents know when is the most important time to brush teeth (Figure 1). Of the total number of surveyed parents, 76% parents from urban and 60.87% parents from rural areas controled their children in maintaining the oral hygiene on a daily basis (p=0.129).

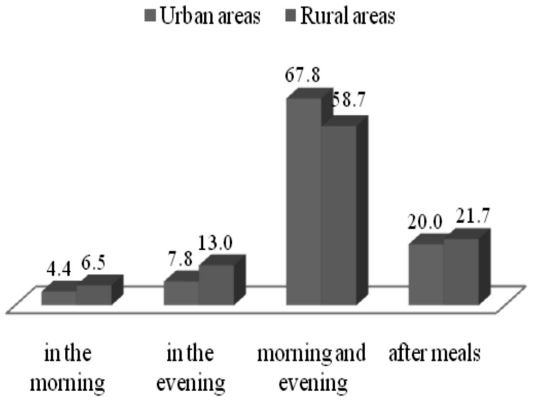


Figure 1. When is the most important time to brush teeth?

Parents from urban (72.22%) and rural (69.57%) areas were informed that the use of fluoride toothpaste is important in the prevention of dental caries (Table 1.)

Table 1. The analysis of the questionnaire section dealing regarding fluoride prophylaxis on oral health

Question	Urban areas (%)	Rural areas (%)	χ^2 p
Whether paste that you brush your teeth contains fluoride?			
YES	73.33%	73.91%	0.005
NO	26.66%	26.08%	0.942
Whether daily use of tooth paste with fluoride has a role in oral prophylaxis?			
YES	72.22%	69.57%	0.105
NO	27.78%	30.43%	0.746
Whether you use a fluoride tablets?			
YES	1.1%	0%	0.515
NO	98.9%	100%	0.473
Whether your child use tablets with fluoride?			
YES	3.3%	2.2%	0.143
NO	96.7%	97.8%	0.705
Since when your child use tablets with fluoride?			
One year age	-	-	
Three year age	100%	100%	
Six year age	-	-	
Whether the child benefits mouth rinses with fluoride?			
YES	1.1%	0%	0.504
NO	98.9%	100%	0.478

Only 1.1% of parents from urban areas take fluoride tablets, contrary to none of the investigated parents in rural areas. Only 31.11% of parents from urban and 15.22% of parents from rural areas were informed that a child should visit the dentist for the first time, at one year of age (p=0.083). Results how often and when parents take their children to the dentists are presented in Figure 2.

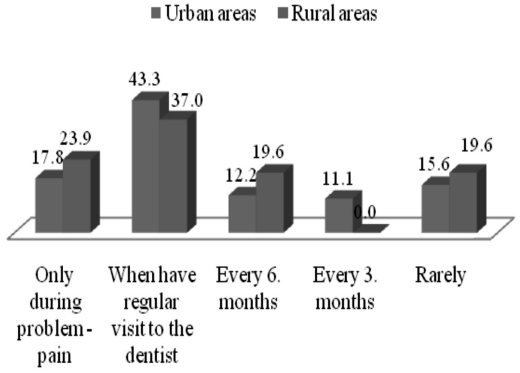


Figure 2. How often children visit the dentist?

Of the total number of surveyed parents, 5.56% children from urban and 13.04% children from rural areas never visited the dentist.

The results of this study showed that 75.56% parents from urban and 65.22% parents from rural areas were informed that the primary teeth are equally important as permanent teeth (p=0.151). The main source of information regarding the oral health (urban areas- 82.22%) and (rural areas- 67.39%) was dentist. The results concerning the source of information about the oral health are presented in Figure 3.

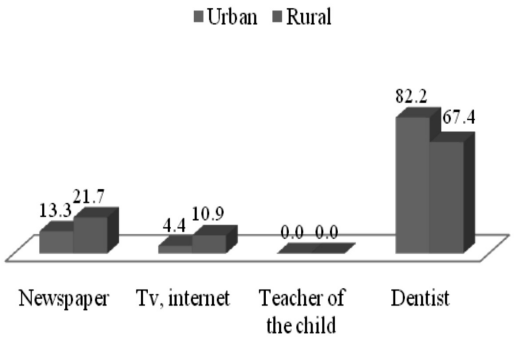


Figure 3. Educating parents about oral health

The third group of questions included question that examined parents´ knowledge about nutrition. The analysis of the questionnaire section dealing with proper nutrion regarding on oral health, parents from urban (100%) and rural areas (98%) were informed that sodas contain harmful ingredients for oral health.

When it comes to food like chips or other "snacks", 86.67% parents from urban and 91.30% parents from rural areas were informed that these tipes of food are harmful to oral health. Of the total surveyed parents, 86.67% parents from urban and 97.83% parents from rural areas believed that milk and milk products were healthy food. All parents from both urban and rural areas were informed that diet and nutrition have an impact on oral health. Analysis of the questionnaire about the nutrition revealed that parents from rural areas were better informed than parents from urban areas (Table 2).

Table 2. How often your child uses the following food?

Areas	Urban/ Rural		Urban/ Rural		Urban/ Rural		Urban/ Rural		Urban/ Rural	
Type of food	**Never/ Rarely**		**Once a week**		**Several times a week**		**Once a day**		**Many times during the day**	
Milk, milk products	7%	-	7%	9%	26%	30%	23%	24%	37%	37%
Fruits and vegetables	-	-	4%	2%	41%	26%	13%	26%	42%	46%
Fruit juices	4%	11%	13%	12%	48%	37%	7%	25%	28%	15%
Sodas (Coca-cola)	99%	80%	1%	9%	-	4%	-	7%	-	-
Chocolate, cookies	8%	9%	10%	20%	40%	49%	27%	13%	15%	9%
Potato chips and other snacks	11%	15%	23%	13%	33%	51%	16%	10%	17%	11%
Candy, lollipops	24%	35%	21%	13%	50%	35%	4%	10%	1%	7%

Discussion

The aim of health education is to inform human population about the measures necessary to prevent the occurrence of oral diseases, combat causes of disease and methods of treatment. In addition, it is necessary to point out the necessity of proper nutrition, particularly in terms of controlled use of carbohydrates and a soft non-abrasive food. It is important to educate parents and children about the importance of conducting regular and proper oral hygiene, fluoride prophylaxis and regular visits at the dentist. Triangle, the parent, the child and the dentist plays an important role in the preservation and improvement of the oral health. Attempts to construct good oral health behaviors can affect the general health of individuals, as well. The adoption of good oral health habits in childhood often takes place with parents, especially with mothers[8].

Oral health of children is associated with oral health knowledge of their parents as oral health-related habits

are established during infancy and maintained throughout early childhood[9]. Parents are the primary social force influencing children development in the early childhood, so targeting parental oral health beliefs and practices may be important in the prevention of oral health problem such as bad oral hygiene and dental caries[10]. Results this study about role in supervision of oral hygiene of parents were encouraging. One study by Dye et al. showed a direct association between toothbrushing habits of the mother and her child[11].

Gilinski et al. have shown that the effectiveness of health education intervention in the family depends on the initial attitudes and habits of parents regarding the oral hygiene and that education leads to improved knowledge about oral health[12]. In this study, parents from urban and rural areas were well informed about the importance of oral hygiene. Only 2% of children from urban areas did not have toothbrush.

The notion that the "baby teeth don't deserve care because you lose them anyway" has largely disappeared in western world. Most parents are unaware of the role a pediatric dentist play in their child´s life, and the importance of regular dental visits at an early age is underestimated as most believe that the primary teeth are going to exfoliate.

The first dental visit is an important milestone in the children life and a visit should be an essential part of the children general health care[13]. According to the American Academy of Pediatric Dentistry, every child must visit the dentist by the child first birthday[6]. In this study, only 31.11% of parents from urban and 15.22% of parents from rural areas knew when is necessary to take the child to the first dental examination. Of the total number of surveyed parents, 20% parents from urban areas and 17.39% of parents from rural areas do not know when it is necessary to visit the pediatric dentist for the first time. Most parents from urban (48.9%) and rural (67.4%) areas thought that the first dental visit should be after 3 year of age. There were parents (2%) who supplemented their answers, stating that they think there is no need to visit pediatric dentist if the child do not have toothache, and that the primary dentition is not important.

Alaa et al. reported that most parents thought that the first dental visit should be between 3-6 years of age, maybe because they believe that at one year of age all teeth were not erupted[14]. The results of Winier et al. showed that only 39% of the parents believe that the first dental visit should be at one year of age, while 21% reported to be as six months[15]. Since pediatricians see the children on a more regular basis for vaccination, it would be recommended they advise the patients about the importance of early dental visits. Hinze et al. noted that 40% of the pediatricians referred a one year old child to a dentist and only 29% believed it was important[16].

With the facts that the caries is a widespread and common disease of teeth in children in the Republic of Serbia, agreed 64% of parents from urban and 63% of parents from rural areas. In this study, we asked parents to rate dental health of their children and get information that 46% children from urban and 28% children from rural areas have caries. Of the total number of survevey parents, 97% parents from urban and 93% from rural areas considered regular visits to the dentist to be necessary. The fact is that a higher percentage of surveyed parents knows that the child should be taken to the dentist for regular checkups, but still they do not take them to the dentist on regular basis.

Research by Lalic et al. confirmed the hypothesis that the family affects the oral health of children[17]. It was found that the incidence of oral hygiene and parent´s daily control of the child in oral hygiene has a statistically significant impact on dental health status of the child[17]. In this study, 75% parents from urban and 61% from rural areas controlled daily oral hygiene of their children.

When it comes to awareness of fluoride usage, as one of the most powerful means in preventive dentistry, most parents from urban (99%) and rural (100%) areas did not use fluoride tablets or any other fluoride products. In this study awareness about fluoride and their role in preventive dentistry was poor, as only 3% of children from urban and 1% of children from rural areas were using tablets based on fluoride while only 1% of children from urban and none from rural areas were using fluoride mouth rinses. Of all the fluoride products, toothpaste with fluoride was used in 73.33% in urban and 73.91% rural areas. Parents whose children use fluride tablets, although in low percentage, reported that their children do not have caries. Although parents have the information about fluoride prophylaxis in oral health, on the basis of these results, conclusion is that in practice very rarely or never use tablets or solutions based on fluoride. Results of this study were similar to the study by Jain et al.[18], Moulana et al.[19], Suresh et al.[20], as the knowledge regarding role of fluoride was poor. Contrary to this results were studies by Gussy et al.[21] and Kamolmatyakul and Saoing[22], who reported good knowledge about fluoride usage. Results showed that parents are informed about fluoride prophylaxis, but the information is very rarely applied in practice.

Latest guidelines on the use of fluoride do not recommend giving fluoride systematically to the whole population, only to children with a high caries risk. The use of toothpaste with fluoride is a basic caries preventive measure that is recommended to everyone and should be promoted[23]. The author´s attitude on the use of fluoride tablets or any other fluoride products do not recommend giving systematically to every child, only to children with a high caries risk. It is necessary to inform parents more about fluoride tablets and other fluoride products and insist more on the use fluoride products in a dental office under the control of a dentist and after consultation with a dentist.

Regarding the source of information about the oral health, around 82.22% of parents from urban and 67.39

% parents from rural areas said that they got information about oral health from the dentist. Wyne et al. reported that 34.2% of the Saudi population gets the oral health information from dentist[24]. The results of this study show that newspaper, TV media and internet have big influence on people in their everyday lives as the newspaper was a main source of information about oral health in 13.3% parents form urban and 21.7% rural areas. Also Jain et al. reported that newspaper and TV were the major source of information about the oral health[18]. Strategies should be made to utilize media more effectively for oral health education.

Although parents were quite informed which food are harmful to the oral health, a large percentage of harmful ingredients were used several times a week, which is not encouraging. Parents have the knowledge about the impact of food on the oral health but unfortunately they do not apply their knowledge in practice.

Conclusions

Health education should raise the awareness about the importance of oral hygiene, proper nutrition and fluoride prophylaxis in the prevention of dental diseases. Parents should participate in the education proceses, as educators and controllers of the implementation of the suggested preventive measures.

This study showed that parents from urban and rural areas have the knowledge about the impact of oral hygiene, proper nutrition on the oral health but unfortunately they do not apply their knowledge in practice. Parents have the information about fluoride prophylaxis in oral health, but it can be concluded that in practice very rarely or never use tablets or solutions based on fluoride. The result of this study cannot be extrapolated because the sample size was small.

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