

The role of parents health literacy for the development of dental caries in children

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Abstract

Introduction: Dental caries is a multifactorial infectious disease starting at early age. This requires the dental specialists to emphasize on the prevention of dental caries in children of different ages. Many researchers underline the relationship between the health habits of the children and the key role of their parents in the maintenance of the oral health. Health literacy of the parents is very important for the development of children health related habits.

Aim: The aim of this research is to determine the relationship between oral health literacy of the parents and the oral health of their children.

Methods and materials: The study includes 104 children from 6 to 10 years old and their parents that were examined in the practice of the main researcher. During the examination process, the parents fulfilled a questionnaire, estimating their knowledge about oral health, employment, educational level, area of living. Examination included the prevalence of caries among children of different ages, different components of DMF(T+t) index, the correlation between the health literacy of the parents, the intensity of dental caries among children

Results: The results from the survey show that most of the parents have low level of health literacy; the low level of parents education is related to low level health literacy. The Low level of parents literacy is related to the carious status in children from different group of ages.

Keywords: oral health literacy, parents education, caries risk factors, children oral health, pediatric dentistry

Background

Dental caries is a multifactorial infectious disease, starting at early age. This requires the dental specialists to emphasize on the prevention of dental caries in children of different ages. Many researchers underline the relationship between the health habits of the children and the key role of their parents in the maintenance of the oral health. Health literacy of the parents is very important for the development of children health related habits.

Aim

The aim of this research is to determine the relationship between oral health literacy of the parents and the oral health of their children.

Methods and materials

104 children from 6 to 10 years old and their parents were examined in the practice of the main researcher. DMFT index of Klein&Palmer (1938) and a standard WHO probe were used to determine the caries prevalence.

During the examination process, the parents fulfilled a questionnaire, estimating their knowledge about oral health. According to the results, the parents were classified in to three groups good (13- 19 points), acceptable (7-13) points and non-acceptable (0-6). The questions were about dental caries, oral hygiene, diet and the role of carbohydrates in caries development, fluoride prophylaxis, the frequency of dental visits, different instruments for prevention of oral diseases. The correct answers were marked as 1 point and the wrong answers were marked as 0 points.

The Educational level of the parents was classified as: primary school education I to IV grade; junior high school/ middle school education V to VII grade; secondary school Education VIII-XII, vocational college- IX-XIII grade; high school education in certified universities.

According to the employment of the parents they were categorized as: working (both parents), one working parent or unemployed. According to the living area they were categorized as living in rural areas and urban areas.

The study included examination of the prevalence of caries among children of different ages, different components of DMF(T+t) index, the correlation between the health literacy of the parents , the intensity of dental caries among children.

Results

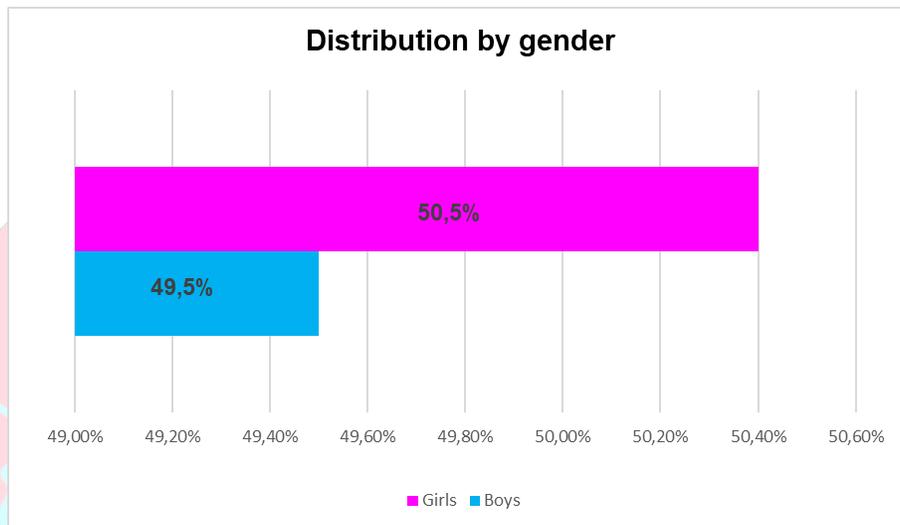


Figure 1. Distribution by gender

104 children 6 to 10 years old participated in the study. 50.5% were boys and 49.5% were girls.

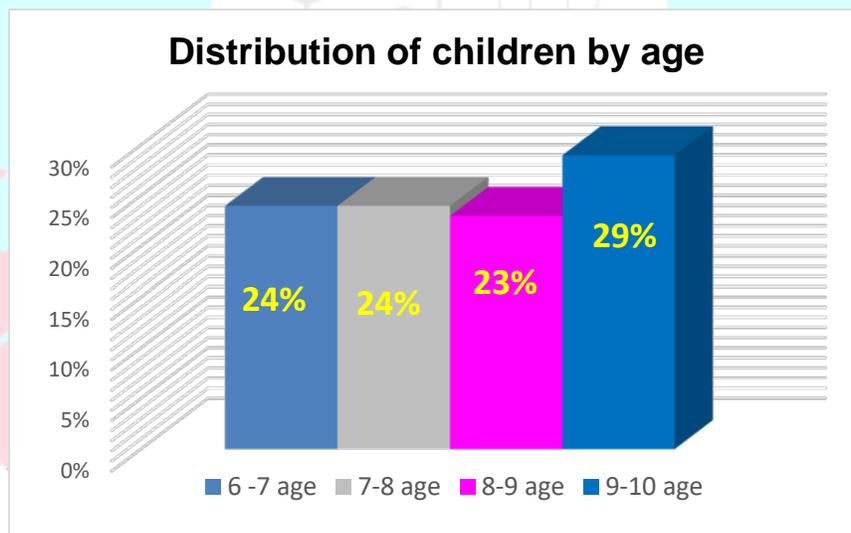


Figure 2. Distribution of children by age

On figure 2 the distribution of children by age can be seen.

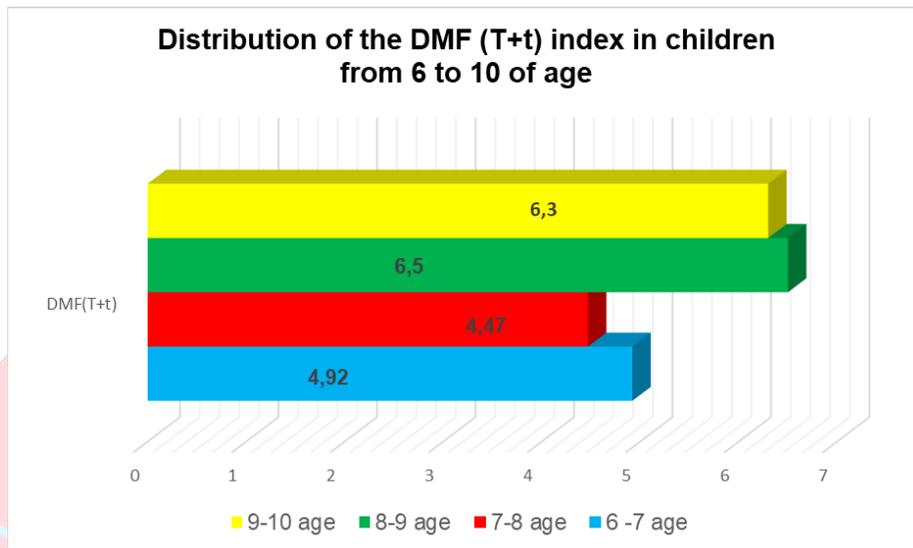


Figure 3. Distribution of the DMF(T+t)

The oral health of the children is controlled mostly by the parents. This age groups, were chosen because their oral health is strongly influenced by the parents.

The DMF(T+t) index in the groups showed a different dynamics. The collected data showed values 4.47 in children 7-8 years old. The values in the group between 6-7 years old were insignificant higher. The values in the age 8-9 years and 9-10 years were significant higher ($p < 0,001$).

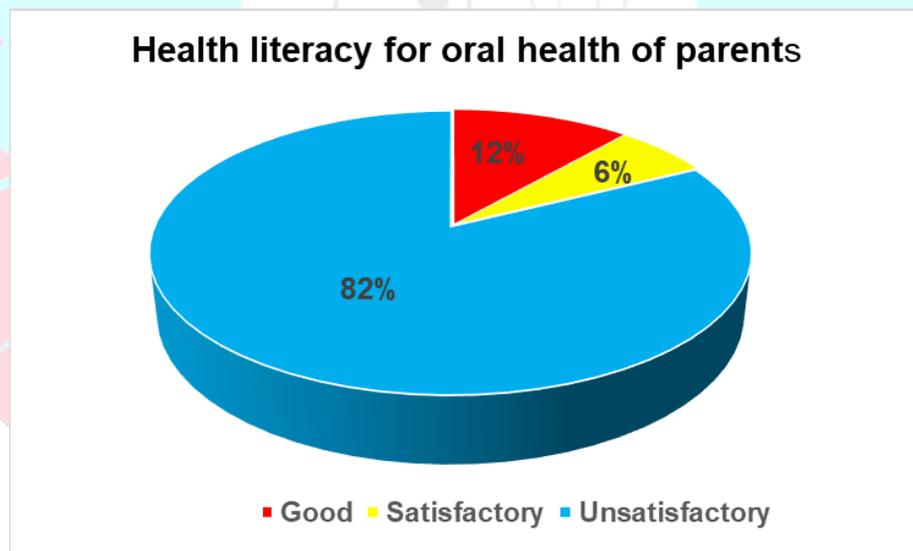


Figure 4. Health literacy for oral health of parents

On figure 4 the results of the parents' health literacy examination are presented. The analysis of the graphics shows, that most of the parents have low level of health literacy, followed by parents that have good health

literacy, and those with unsatisfactory health literacy. We also found that, the low level of parents' education, has an influence on their health literacy, as shown on Figure 5.

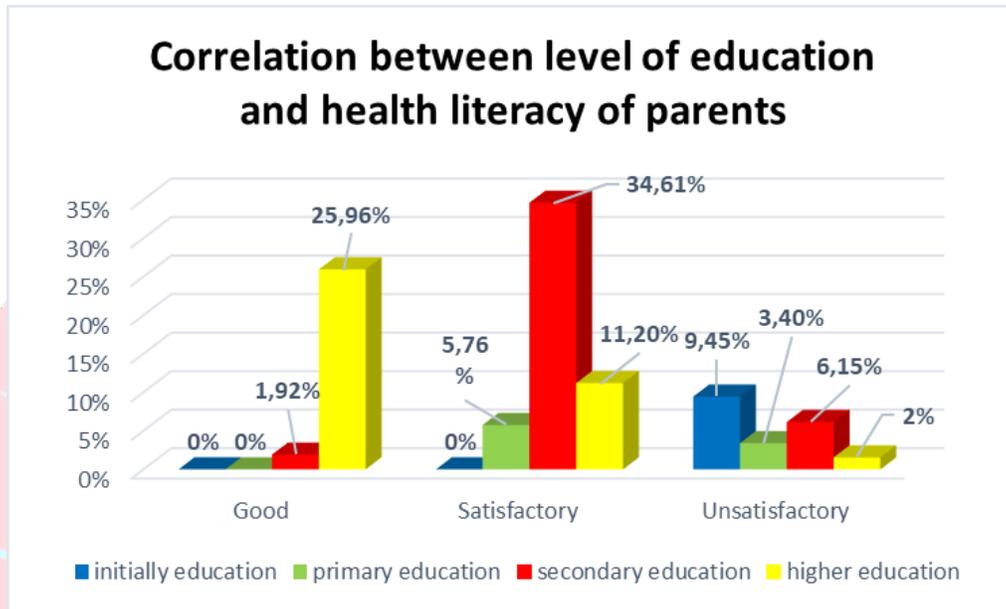


Figure 5. Correlation between level of education and health literacy of parents

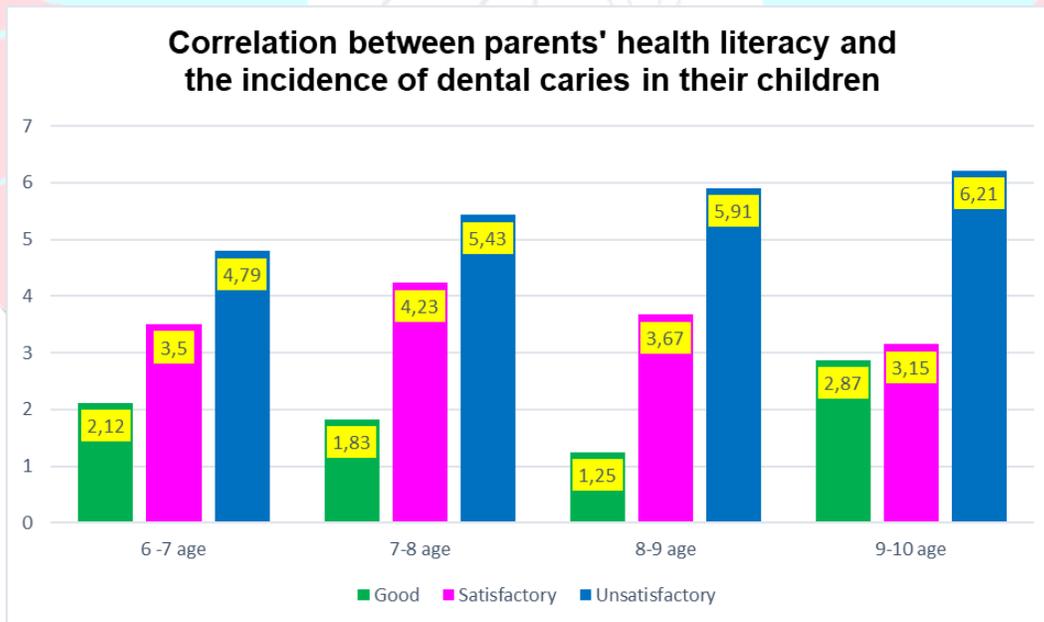


Figure6. Correlation between parents' health literacy and the incidence of dental caries in their children

Results from the analysis of figure 6 are very informative. They clearly show, that the low level of parents' literacy is related to the carious status in children from different group of ages. ($p < 0,001$). This can be caused by the impact on caries occurrence that the knowledge of oral health prevention of their parents has.

Discussion

Problems, related to health literacy are investigated more deeply during the last three decades (1,2,3). The concept of health literacy is used in all aspects of health, including oral health (4). The terms "health" and "literacy" form this powerful concept that is developing during the 70-ies, and attracts the attention of a wider range of disciplines, mostly education and healthcare, also library science, public and psychological health (5).

The lower health literacy of the parents is related to unhealthy behavior that is affecting the oral health (6). Evidence shows, that the parents' oral health related behavior and knowledge affect the oral status of their children (7, 8, 9).

This survey shows, that the parents' knowledge about oral health are affecting the oral health of the children. This means that the oral health knowledge improvement will relate to a better oral health of their children (10).

A study from Uganda investigates the parents' attitude towards control of children sugar consumption (10). It shows the relationship between the mother education and her intention to control the sugar consumption of her child (11). The clinical exam shows, that children with a lower social-economical group have higher DMFT and higher level of sugar consumption (11).

The results from a study show that children, whose mothers neglect oral health and have a low level of health literacy, had higher rate of dental caries, 31% of them showing DMFT index higher than 4, and 66% having gingivitis, related to long term oral hygiene neglect (12). Study from Hiroshima Okada and al. 2002 investigates the parents influence on the health behavior of their children and reports direct relationship between the parents behavior and the number of carious teeth and gingival health (13).

A study shows that families with parents that have a father with high professional status and mothers housewives have the lowest rate of DMF index (DMFT=1,3;DMFS=2,5) (14). This combination of factors and close relationship between children and parents reveals better habit development, than compared to the situation where both parents are present, but the relationship children-parents is not strong enough (6,7,8).

This shows that the habits of the children are a function of parents (15). The family environment encourages the healthy way of life. The dental specialist should inform the parents about the influence of their behavior and attitude on oral health of children (15,16).

Results of our research support the Khodadadi and al. study which says that parents with insufficient oral health literacy have children with more cavities. Parents with adequate health literacy towards the oral health have children with more restored teeth (17). Authors conclude that inadequate health literacy of the parents is related to higher level of dental caries and less fillings. They suppose that interventions aiming the increase of oral health literacy of the parents would be important for the promotion of the oral health of the children (17).

As the question about the relationship between parents oral health literacy (OHL) and children oral health, is not completely clear Firmino and al. make a systematic review of the literature (18). Most of the studies estimating dental caries, find relationship between the lower level of OHL and wider caries distribution. The

lower quality of life related to the oral health is more frequent when parents have lower OHL ($P < 0,05$). Studies differ according to the relationship between OHL and the level of restored teeth, extracted teeth, and the dental visits. Authors assume that there is no relationship between the frequency of teeth cleaning, use of dentifrice and the parents OHL (18). Tassio and al have investigated 740 twelve years children and found more carious cavities and lower level of mother education. They also point out, that lower level of health literacy, social-epidemiological factors and low level of proximity in the family are predictors for development of carious cavities in early childhood (19).

Conclusion

Results from the current study show the increasing of caries occurrence in older children, which may be caused by longer risk factors exposure. The parents' health literacy influences their health knowledge, which affects the children oral health habits.

There are not enough studies concerning health literacy, specially oral health literacy. It is necessary to have further investigation of this actual question and to analyze all the variables, related to a bigger sample of different ages.

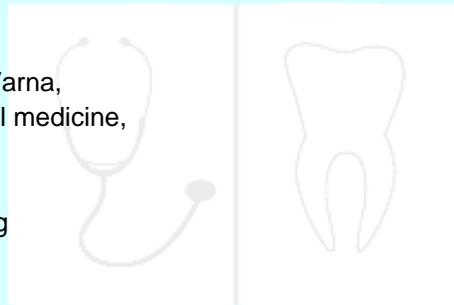
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