Available online at **www.ijmrhs.com**

ISSN No: 2319-5886

International Journal of Medical Research & Health Sciences, 2019, 8(2): 64-68

Assessment of Parents Knowledge about Oral Health in National Guard Primary Schools, Riyadh, Saudi Arabia

Mohammed Nasser Aldosari*, Ibrahim Aljabali, Abdullah Altammami, Abdulrahman Obaid, Abdulaziz Fakih, Emad Alshehri and Nasser Al Shraim

College of Dentistry, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia

**Corresponding e-mail: Aldosarident@gmail.com*

ABSTRACT

Aim: *Evaluation of parents' knowledge about oral health in primary schools of the National Guard, Riyadh.* ***Methods:*** *A cross-sectional study was carried out in King Abdullaziz Iskan City. Parents of 257 school children, who completed a self-administrated questionnaire, were involved in this study.* ***Results:*** *It was revealed that there was a lack of knowledge and awareness of the importance of fluoride, regular dental visit, and plaque. In contrast, good knowledge about brushing and the relation between oral health and general health was observed. Also, a mother with a high level of education has knowledge better than mothers who have a low level. In addition, the families with higher income have more knowledge especially about fluoride and dental visits.* ***Conclusion:*** *Parents' knowledge about the importance of oral health needs to be improved because children mostly gain knowledge about oral health and hygiene from their parents and then start establishing their habits. Coordinated efforts by dentists and other health professionals are required to impart dental health education about oral health and preventive care among parents.*

Keywords: Evaluation, Care givers, Education, Oral status

INTRODUCTION

Teeth are not an individual part of the body that means oral health; it is associated with the general health of body and quality of life. Globally, dental caries is considered to be the most chronic public health problem that affects the oral health of children [1]. Children spend the majority of their time at home with their family and closely to their parents when they begin exploring life. Children obtain living skills and knowledge from their parents and up to a specific age they rely on their parents in forming their habits. Primary caregivers (parents) play a critical role in preventing dental caries in young children. Therefore, it is important to educate the parents early about the prevention and treatment of dental caries.

Very few studies have been done to measure the level of oral health related knowledge of parents in developing countries. Assisting parent's knowledge regarding their children's oral health and hygiene is important as mentioned by other studies. Parents' habits and knowledge about oral health have found that it influences their children's oral health status [1]. The leading cause of dental caries and other serious problem in the mouth of children is not because of children themselves but because of ignorance of their parents towards their oral hygiene and lack of knowledge about good oral health [2]. It was shown that the lack of knowledge and awareness about the importance of the primary teeth among parents creates barriers to early preventive dental care of school children [3-5].

A study done by Maharani, et al., showed that nearly half of the participant parents considered deciduous teeth are not important to maintain because it will be replaced with permanent teeth anyway [6]. Studies have further emphasized that decay in primary teeth can affect growth, social life, lead to malocclusion in permanent teeth, eating disorders, phonetic problems, present greater risk of lesions on permanent dentition, pain leads to bad quality of life, and lead to very expensive treatments that could require general anesthesia [2]. It has been found that a low level of parental knowledge and poor attitudes towards oral health are related to the high rate of exposure to dental caries in young children [7]. Children with poor oral health habits are more capable to be affected by dental caries and oral diseases

when compared with those who have good oral habits [2]. Despite the knowledge that dental decay is more common among poor children and adults, an understanding of the factors underlying income-based oral health play a role in parents' knowledge [8]. Parents' socioeconomic background may be a contributing factor to oral health concerns.

Rajab, et al., showed that a low level of education was associated with a lack of knowledge about oral health issues and lack of access to dental care [9]. Not surprisingly, it was found that parents with lower incomes had less knowledge concerning the utilization of health care services than parents with higher incomes [9]. Additional factors to consider when exploring influences on children's dental health could be the age of the mother or primary care giver and the number of children for which care is being provided [8]. It has been reported that children who had an early preventive dental visit were more likely to use subsequent preventive service and experience lower dentally related costs [7].

A study was done by Prabhu, et al., showed that only 5.33% of the responded parents were in the opinion that, the regular visit to the dentist should be every 6 months [10]. Zavras showed that educational level of mother associated with the regular number of dental visits of their children, 53% of well-educated mothers visited the dentists one or two times per year versus 19.6% mothers with basic education [11]. Hale stated that along with proper feeding practices, mothers should also be aware of the timing of basic oral health practices, such as when a child should see the dentist for the first time, and when a child should have exposure to small amounts of fluoride [9]. The oral hygiene and feeding practices were found to be disappointing and the knowledge about the essential role of fluoride was found to be limited [3].

A study by Wierzbicka, et al, concerning the prevention of caries demonstrated that 80% of the respondents answered that tooth brushing can prevent dental decay [12]. However, only 46% of these respondents believed that fluoride could prevent decay [12]. In order to prevent oral disease in children, primary caregivers have to be educated about how to promote good oral health in their children. The aim of the study is to evaluate parents' knowledge about children oral health in primary schools of the National Guard.

PATIENTS AND METHODS

Study Design and Sampling

This cross-sectional study was carried out in King Abdullaziz Iskan City primary schools of National Guard in Riyadh, Saudi Arabia. The total number of primary schools was 13. The total students enrolled in this study were 469 students. In addition, this study aimed to assess oral health knowledge among parents of primary school children. An updated list of all the public primary schools in King Abdullaziz Iskan City was used as the sampling frame. Each school received a number and 2 schools were selected using cluster random sample. All the students from the 2 schools were taken and given the questionnaires to deliver it to their parents.

Data Collection and Questionnaire

The study was carried out during the period from September 2014 to April 2015. Total of 469 students of the selected schools handled a self-administrated questionnaire designed to assess the parents' knowledge about oral health. The questionnaire was categorized into 5 groups with 29 MCQ's (multiple-choice questions); 5 background questions about (father/mother age, occupation, education level, and the family income), 8 questions for knowledge about general health and oral health like: (the relationship to oral health and dental diseases, the importance of treating oral diseases, primary teeth, vesting the dentist, brushing teeth, dental floss), 4 questions about fluoride discuss the people knowledge and attitude about it, 4 questions about periodontium (gum diseases, symptoms of gum diseases), and 8 questions about caries (what is plaque, calculus, transmitting of caries to permanent teeth from primary teeth). The questionnaires were distributed to the children to deliver it to their parents. Principles of schools permissions were conducted before the distribution of the questionnaire.

Data Management and Processing

Data entry and processing was carried out using SPSS version 22 software (Chicago, IL, USA). Both descriptive and inferential data analyses were generated using the appropriate statistical tests of significance 'chi-square test' to test the association between different variables with the level of significance set at $p \leq 0.05$, i.e. p-value of equal or less than 0.05 was considered significant in this study. The association of factors; age, level of education, and income to the estimated knowledge had been provided.

RESULTS

As to reach the aim of this study, 469 questionnaires were distributed to the parents of the primary school children. The total number of parents with completed questionnaires was 257. A response rate of 55% was estimated after data orientation and clearance. Age, income, and level of education was considered in this study to see the relationship between these factors and other various questions related to parents' knowledge about oral health. Age groups were used in the data analysis of this study (Table 1).

Table 1 Percentages of parents who responded correctly to questions

Variables	Percentage (%)
Teeth brushing every day protect your child gum	98%
Caries affect the general appearance of your child	97%
There is a relationship between oral health and general health	95%
Treatment and care of teeth is important as any organ in the body	95%
Consumption of a lot of sweets can lead to tooth decay	94%
Bad mouth odor can be caused by poor oral health	93%
Dental floss remove the impacted food between teeth	89%
Bleeding during teeth brushing is an indication of gum diseases	87%
Gum diseases are preventable diseases	86%
Primary teeth need care as permanent teeth	84%
Fluoride only isn't enough to prevent caries	83%
Fluoride works on protecting teeth from caries	82%

Demographic distribution is illustrated in Table 2. As for the father, it was divided into 2 groups one group less than equal to 44 years and the other was above 44 years. For mother age it was divided into two groups also one group below than or equal 36 years and the other was above 36 years. For father and mother education level we divided it to a bachelor degree and above and the other group was below bachelor degree. According to the Saudi Central Department of Statistics and Information, the average monthly income in 2014 for Saudi citizen was about 16 thousand Saudi Riyals. According to these statistics, we divided the income of our participants into below or equal 15 thousand Saudi Riyals and above or equal 16 thousand Saudi Riyals.

Table 2 Percentage of father and mother age, father and mother education level and family income

Father age		Mother age		Father education level		Mother education level		Family income	
≤ 44 years	>44 years	≤ 36 years	>36 years	Bachelor or above	Below bachelor	Bachelor or above	Below bachelor	≤ 15000SR	≥ 16000SR
50%	50%	46%	54%	44%	56%	33%	67%	60%	40%

As can be seen in Table 1 the percentages of correct answers for the 23 questions ranged from a low percentage of 25% for the statement "The precipitation of yellowish soft layer on teeth is called plaque", to the highest percentage of 98% correct answers to the questions "Teeth brushing every day protect your child gum". The percentage of correct answers concerning the knowledge about plaque was low (25%), as well as the percentage of correct answers concerning knowledge about caries range from 55% to 57%. Specifically, these results show what specific information should be provided for parents in educational interventions concerning promoting good oral health in children. In Table 3, 65% of fathers with ages >44 were knowing that they should take their sons to dentist every 6 months while 52% of fathers less than 44 years knew that they should take their sons to dentist every 6 months (p-value=0.026) so there was a significant relationship between fathers age and visiting the dentist every 6 months. There was no significant correlation between father age and knowing the main benefit of fluoride (p-value=0.202) and that mean fathers above or equal 44 years and below 44 years had the same knowledge about the main benefit of fluoride. We can notice that there was no significance relationship between father education level and know if there was a relationship between oral and general health (p-value=0.432), that mean fathers with or above bachelor degree had nearly the same knowledge of fathers below bachelor degree. In contrast with mothers education level, 100% of a mother with or above bachelor degree know that there was a relationship between oral and general health while 93% of mothers below bachelor degree know that there was a significant relationship with knowing if there was a relationship between oral and general health and mother education level (p-value=0.014). There was no significant relationship between father education level and mother education level and knowledge related to dental problems that affect primary teeth

and permanent teeth of father (p-value=0.435) and mother (p-value=0.461) so, fathers and mothers below bachelor degree knowing that problems affecting primary teeth will affect permanent teeth more than fathers and mothers with or above bachelor degree. Around 88% of fathers with or above bachelor said that fluoride protects teeth from caries while 78% of fathers below bachelor degree said that fluoride protects teeth from caries (p-value=0.082) so, there was a tendency towards significance between father education level and knowing that fluoride protects teeth from caries. There was no significant relationship between mother education level and knowing that fluoride protects teeth from caries (p-value=0.161).

In Table 3, 90% of family with income equal or more than 16 thousand Saudi Riyals said that fluoride protect teeth from caries while 77% of parents with income below than or equal to 15 thousand Saudi Riyals said that fluoride protects teeth from caries so we can conclude that parents with high income know about fluoride more than family with low income (p-value=0.034). In Table 3, there was significance relationship between family income and a number of a dental visit with 67% of a family with income equal or more than 16 thousand riyals visit the dentist every 6 months while 53% of families below than or equal 15 thousand did not.

Table 3 Relationship between family income with knowledge about a dental visit, fluoride, a relationship between oral and general health and problems that affect primary teeth

Family income		≤ 15000SR	≥ 16000SR
Parents who knew that they should take their sons to visit the dentist every six months	Yes	53%	67%
	No	47%	33%
	p-value=0.022 Chi-Square=5.253		
Fluoride helps to protect teeth from caries	Yes	77%	89%
	No	23%	11%
	p-value=0.034 Chi-Square=4.506		
There was a relationship between oral and general health	Yes	94%	97%
	No	6%	3%
	p-value=0.264 Chi-Square=1.245		
Problems that affecting primary teeth affect permanent teeth	Yes	75%	72%
	No	25%	28%
	p-value=0.506 Chi-Square=0.443		

DISCUSSION

The study announces to be the first of its kind conducted in Riyadh, Saudi Arabia where the parents' populations were targeted. This cross-sectional study focuses on oral health knowledge among parents in the National Guard. 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. In interpreting the findings of the present study, it is important to outline the possible limitation which is the questionnaires were not distributed directly to parents. The aim of this study was similar to the aim of studies conducted by Martínez, et al., Saied-Moallemi, et al., and Lalić, et al., [13-15].

Majority of respondents aware about the importance of deciduous teeth and should be taken care of, moreover, many of them (73%) said that problems in primary teeth will lead to problems on permanent teeth. This was in accordance with the study done by Alaa, et al., [15]. The result of this study shows that 82.8% of the mothers were highly educated that reflects good knowledge about fluoride and it's a mechanism to prevent caries, as compared with the study of Wierzbicka, et al., which reported that only 46% of the responded parents know the importance of fluoride [12].

One positive aspect of the results was that nearly 59% of the responded parents were in opinion that, the regular visit to the dentist should be every 6 months and this result disagrees with the study done by Anand, et al., which stated that only 5.33% of the responded parents know about the regular dental visits. It is suggested that the earlier and regular child visits to the dentist, the more would be his chance of being caries free [10]. Although 64% of the parents who participated in this study know that plaque is the main cause of dental decay, only 25% of them know the scientific meaning of plaque. The reason they have limited knowledge about plaque other than it causes dental decay is due to the fact that health education services are very limited when it comes to explaining the real meaning and scientific definition of it. On the other hand, the fact that it causes dental decay is widely spread among people via social

media and many other sources. A study of Akpabio, et al., in the USA shows that parents with lower incomes had less knowledge concerning the utilization of health care services just like the result of this study show that there is a significant relationship with a p-value=0.032 between a number of dental visits and family income [9].

CONCLUSION

Overall parents showed low oral health knowledge about fluoride, dental visit, caries transition from primary to permanent teeth, and dental plaque. It is important to plan appropriate oral health education programs targeting different groups through the strategies designed for specific requirements. More emphasis should be placed on improving the level of knowledge, which would be reflected in their children oral health status.

DECLARATIONS

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

REFERENCES

[1] McClain, Mildred, Clifford R. McClain, and Anthony Paventy. "Oral health needs and parental attitudes, behavior, and knowledge of lower SES children." *Nevada Journal of Public Health,* Vol. 2, No. 1, 2005, p. 1.

[2] Castilho, Aline Rogéria Freire de, et al. "Influence of family environment on children's oral health: a systematic review." *Jornal de Pediatria,* Vol. 89, No. 2, 2013, pp. 116-23.

[3] Chhabra, N., and A. Chhabra. "Parental knowledge, attitudes and cultural beliefs regarding oral health and dental care of preschool." *European Archives of Paediatric Dentistry,* Vol. 13, No. 2, 2012, pp. 76-82.

[4] Adair, Pauline M., et al. "Familial and cultural perceptions and beliefs of oral hygiene and dietary practices among ethnically and socio-economicall diverse groups." *Community Dental Health,* Vol. 21, No. 1, 2004, pp. 102-11.

[5] Maharani, Diah Ayu, and Anton Rahardjo. "Mothers' dental health behaviors and mother-child's dental caries experiences: study of a suburb area in Indonesia." *Makara Journal of Health Research,* 2013, pp. 72-76.

[6] ElKarmi, R., E. Shore, and A. O'Connell. "Knowledge and behaviour of parents in relation to the oral and dental health of children aged 4-6 years." *European Archives of Paediatric Dentistry,* Vol. 16, No. 2, 2015, pp. 199-204.

[7] Lewis, Charlotte W., Kristi A. Linsenmayer, and Alexis Williams. "Wanting better: a qualitative study of low-income parents about their children's oral health." *Pediatric Dentistry,* Vol. 32, No. 7, 2010, pp. 518-24.

[8] Akpabio, Aisha, Christine P. Klausner, and Marita Rohr Inglehart. "Mothers'/guardians' knowledge about promoting children's oral health." *American Dental Hygienists Association,* Vol. 82, No. 1, 2008, pp. 12-12.

[9] Prabhu, Anand, et al. "Parental knowledge of pre-school child oral health." *Journal of Community Health,* Vol. 38, No. 5, 2013, pp. 880-84.

[10] Zavras, Athanasios I., et al. "Advances in oral health knowledge of Greek navy recruits and their socioeconomic determinants." *BMC Oral Health,* Vol. 2, No. 1, 2002, p. 4.

[11] Wierzbicka, Maria, et al. "Changing oral health status and oral health behaviour of schoolchildren in Poland." *Community Dental Health,* Vol. 19, No. 4, 2002, pp. 243-50.

[12] González Martínez, Farith, Carmen Cecilia Sierra Barrios, and Luz Edilma Morales Salinas. "Knowledge, attitudes and practices in oral health of parents and caregivers in children's homes in Colombia." *Salud Publica de Mexico,* Vol. 53, No. 3, 2011, pp. 247-57.

[13] Saied-Moallemi, Z., et al. "Influence of mothers' oral health knowledge and attitudes on their children's dental health." *European Archives of Paediatric Dentistry,* Vol. 9, No. 2, 2008, pp. 79-83.

[14] Lalić, Maja, et al. "Oral health related knowledge and health behavior of parents and school children." *Medicinski Pregled,* Vol. 66, No. 1-2, 2013, pp. 70-79.

[15] Hussein, Alaa S., et al. "Parent's perception on the importance of their children's first dental visit (A cross-sectional pilot study in Malaysia)." *Journal of Oral and Dental Research,* Vol. 1, No. 1, 2013, pp. 17-24.