

The Effect of Mother Knowledge on the Oral Health Status of their Children

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Abstract

Background: Parents especially, mothers have a highest authority and an important role in establishment of oral health behavior, developing attitudes and habits to their children because they are the main caregiver of oral health during the first years of their life, even in pre-school. In addition to mothers, schools and friends can affect the habits and behaviors of their children by process of secondary socialization.

Key words: Parents' knowledge, mothers' awareness, children, oral health, oral hygiene.

Objectives: the aim of this study was to examine the influence of mothers knowledge about the effects of oral hygiene, dietary and feeding practices and the importance of deciduous dentition on oral health status in early childhood.

Materials and Methods: A cross-sectional, questionnaire study was conducted from three schools in Jeddah city. The study sample included 134 mothers along with their children (4-9) years old. A mothers were asked to fill a questionnaire which consisted of four sections, dental awareness of mothers, oral hygiene practices, diet and feeding practices and the importance of deciduous teeth

The oral examination was done in the schools by dentists. The answers of mothers were collected, the percentage of mothers' responses to questions were calculated. Study data were analyzed using Excel program Version 2010.

The results: We found that the mothers having a good knowledge about their children oral health, but most of mothers do not care to use it for their children.

Conclusion: The present study reflects a mothers' need regular dental program, by pediatrician to teach and educate how to apply their knowledge to develop positive practices among their children toward oral health care.

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I. Introduction

Parents, especially mothers, play an important role in the establishment of oral health behavior, developing knowledge, attitudes, and habits related to their children's oral health (1) (Zahra Moallemi, 2008). They are the primary caregiver of oral health to their children during the first years of their life, even at pre-school age (2) (Bozorgmehr, 2013). This relationship between mothers' awareness about dental health and dental caries in their children can be explained by the influence of faulty diet and hygiene habits (3,4) (Law V, 2007) (Touger-Decker R, 2003).

Also, an environmental factor influences caries development in children (5) (Rong Min Qiu, 2014). The parents, as the highest authority, have an essential and crucial role in forming personal and hygienic/dietary habits of children in the period of primary socialization, including an appropriate attitude to oral health (6),(7). (Poutanen R, 2006) (Vermaire JH, 2010). Gao et al. established a relationship between parents' knowledge, habits, and oral health behaviors, and the oral health of their children. In addition to parents, schools, and friends can affect the behavior and habits of children through the process of secondary socialization (8) (Ramos-Gomez F, 2010). Several studies showed that a more positive attitude of parents toward dental health care and dental professionals leads to the better dental health of their children (9) (Raghavendra M, 2016).

Good oral health has an essential role in the upbringing of children and contributes to their physical, mental, and social development (10) (Pediatr Dent, 2012). In addition, the role of the dentist is reflected in educating parents and children about the importance of oral health and preventive measures to preserve good oral health and hygiene.

(11) (Blinkhorn AS, 2003). Few studies have been done on the effect of mothers' knowledge on the oral health status of their children. In the present study, we examined the influence of mothers' knowledge about the effects of oral hygiene, dietary and feeding practices, and the importance of deciduous dentition on oral health in early childhood.

II. Materials And Methods:

This cross-sectional, questionnaire study was conducted in three schools in Jeddah city. The study sample included 308 mothers, along with their children (4-9 years old). Approval for conducting the study was obtained from the principals of the schools.

A four-section questionnaire including dental awareness of mothers, oral hygiene practices, diet and feeding practices, and the importance of deciduous teeth was designed to evaluate the knowledge of mothers regarding the oral health status of their child. The questionnaire was prepared in English and translated into Arabic.

The oral examination was done in the schools by doctors with the help of a tongue depressor in a good light. The data from the oral surveys were collected and analyzed using a creative link in the form of a questionnaire for each group that filled the data in the links by a group of dental interns.

The mothers of the same child were asked to complete the questionnaire, which asked them to respond to the questions by indicating the suitable option, expressed as yes or no. The data were collected, and descriptive statistics were obtained. The percentages of mothers' responses to questions were calculated. Study data were analyzed using Microsoft Excel Version 2010.

III. Results:

The final study sample of mothers that answered the questionnaire was 134, with 308 children examined by our doctors. The average age of the children was 7, all of them were girls.

Table 1 shows the mothers' general awareness of causes of early dental caries in their children; 61 mothers (45.5%) thought that the cause of early dental caries is malnutrition. Whereas 53 mothers (39.6%) thought that early dental caries are due to parental negligence, and 13 mothers (9.7%) thought the important factor was genetics.

When we asked them if the presence of white spots in their children's teeth were considered as a carious cavity, 74 mothers (55.2%) answered that it is not considered as a carious cavity, 52 mothers (38.8%) answered that it is considered as a carious cavity, and 6% did not answer the question.

Next, they were asked if they believed that it is not important to care about decayed baby teeth because permanent teeth will replace them; 98 mothers (73.1%) answered NO, it is important, but 32 mothers (23.9%) answered YES, it is not important.

Table 2 shows the knowledge of mothers about the oral hygiene practices of their children; 129 mothers (96.3%) said the children have a toothbrush and only 3 mothers (2.2%) said no; 110 mothers (82.1%) disagreed that their children take a toothbrush to their school, whereas 13 mothers (9.7%) agreed.

Table 3 shows the knowledge of mothers in relation to dietary and feeding practices in maintaining the dental health of their children. Regarding the type of feeding, 50 mothers (37.3%) answered 'formula feeding,' while the mothers that answered 'breastfeeding' or and 'both types of feedings' were 41 (30.6%) for each.

When asked about adding sugar or honey to the bottle milk, 102 mothers (76.1%) said they did not add any sweetener to the bottle, but 26 mothers (19.4%) said they did. A total of 100 mothers (74.6%) gave their children milk before or during sleeping, 33 mothers (24.6%) answered said they did not.

Table 1: the general dental awareness of mothers.

Knowledge	Number of mothers	Percentage
In your opinion, what do you think is the main reason for tooth cavities at preschool ages?		
* Malnutrition	61	45.5%
*Parents' negligence	53	39.6%
* Genetics	13	9.7%
Do you think the presence of white spots in your child's teeth is considered as a cavity?		
* Yes	52	38.8%
* No	74	55.2%
Do you think it's not important to care that much for the decayed baby teeth because they will be replaced by permanent teeth anyway?		
* Yes	32	23.9%
* No	98	73.1%

Table 2: The mothers' care of the oral hygiene of their children

Knowledge	Number of mothers	Percentage
Does your child have a toothbrush?		
* Yes	129	96.3%
* No	3	2.2%
Does your child take her/his toothbrush to school?		
* Yes	13	9.7%
* No	110	82.1%

Table 3: The dietary practice of mothers in maintaining the dental health of their children

Knowledge	Number of mothers	Percentage
How do you feed your newborn baby?		
* Breast	41	30.6 %
* Formula	50	37.3%
* Both	41	30.6%
Do you add sugar or honey to the bottle of milk?		
* Yes	26	19.4%
* No	102	76.1%
Do you give your child milk before or during sleep?		
* Yes	100	74.6%
* No	33	24.6%

Table 4 shows the awareness of the mothers regarding the importance of deciduous teeth, 74 mothers (55.2%) thought that the perfect period to start brushing baby teeth was after all teeth have erupted, 53 mothers (39.6%) said when the first tooth starts to erupt. For brushing, 67 mothers (50.0%) said that the child's teeth should be brushed twice daily, 52 mothers (38.8%) said once, and 8 mothers (6.0%) could not remember. When we asked about the importance of fluoride for children's teeth, 71 mothers (53%) were aware of fluoride's importance, while 60 mothers (44.8%) were unaware of the importance of fluoride. In addition, 76 mothers (56.7%) agreed to the fact that the carious primary teeth may affect the permanent teeth, and 46 mothers (34.3%) disagreed.

In the assessment of oral hygiene conditions of children, 308 children of the schools were examined, the mean of the children's ages was seven years old (26.3%), and the average type of teeth was a mixed dentition of 178 children (57.8%). It was found that the average of number of carious teeth for each child was 4 and the number of missing teeth was 1.

Regarding the level of oral health status of children, 58 children (18.8%) had poor oral health, 80 children (26%) had fair oral health, 93 children (30.2%) had good oral health, and 77 children (25%) had excellent oral health (Table 5).

Table 4: The awareness of the mothers regarding the importance of deciduous teeth

Knowledge	Number of mothers	Percentage
In your opinion, when should you start brushing your child's teeth?		
* When all her/his baby teeth are complete	74	55.2 %
* When the first tooth appears	53	39.6%
How often does your child brush her/his teeth?		
* Twice	67	50.0%
* Once	52	38.8%
* I don't remember	8	6.0%
Do you know the importance of fluoride application at the dentist's office?		
* Yes	71	53.0%
* No	60	44.8%
Do you think that cavities in the baby teeth will affect the permanent teeth?		
* Yes	76	56.7%
* No	46	34.3%

Table 5: The level of oral health status of children

Status	Number of patients	Percentage
* Poor oral health	58	18.8 %
* Fair	80	26.0%
* Good oral health	93	30.2%
* Very good oral health	77	25.0%

Upon the dental examination of 308 children, and the answers of 134 mothers, we found that the mothers have good knowledge about the importance of oral hygiene, dietary and feeding habits and the importance of their children's deciduous teeth. Despite this, most of them do not apply this knowledge to their children, leading to an average number of 4 carious teeth, and 1 missing tooth.

IV. Discussion

The oral health knowledge of mothers is an important factor of oral hygiene status of the children during infancy and should be maintained throughout the pre-school years (12) (Suresh BS, 2010). Maintaining healthy primary teeth is essential to a child's overall oral and general development (13) (Srinivasan, 2016). Mothers are considered as the key persons in achieving the best oral health for children (14) (Noura Mahmoud, 2017).

There are limited data for the oral health of children during the early childhood period in developing countries (15) (Chhabra N, 2012). Mothers' knowledge, attitudes, beliefs, and awareness regarding oral health, habits, and hygiene are essential in improving the dental health of pre-school children.

In the present study, the majority of mothers were aware of new cases of dental caries; 114 (85%) believed that malnutrition and parental neglect are important factors which increase dental cavities in children. Shetty et al. reported that excessive intake of food containing sugar causes dental caries.

These findings were in line with the findings of Suresh et al., Lin et al., and Kumar et al., who also reported that parents of pre-school children had good knowledge about dietary practices. Early causes of dental caries are strongly associated with *Streptococcus mutans*. Early establishment of *S. mutans* is promoted by improper feeding habits, which increases the risk of early childhood caries in infants and toddlers. (12, 16, 17) (Lin HC, 2001) (Kumar RP, 2009). A total of 74 (55.2%) mothers had a good response that the white spots are not considered as carious cavities and their answers were good because the white spots or chalky-white appearance is the first readily visible sign of developing caries. One can expect these lesions in those areas where dental plaque has been allowed to accumulate and persist. The mothers' knowledge regarding the importance of the deciduous teeth was satisfactory, as approximately 98 (73.1%) of mothers were aware of the importance of caring for the primary teeth. The notion that the baby teeth don't deserve care because they are lost anyway has largely disappeared in the Western world. (18) (Djordjevic, 2018). In the present study, the majority of the mothers, approximately 129 (96.3%), responded positively to questions relating to oral hygiene, suggesting that they had adequate knowledge about the importance of using a toothbrush for their children. Except for their knowledge about the importance of using a toothbrush after eating even in school, approximately 110 (82.1%) mothers did not know about its importance. Mothers had good knowledge about diet and feeding practices; 102 (76.1%) mothers believed that adding sugar or honey to their child's milk causes dental caries. Despite having good knowledge, 100 (74.6%) mothers reported using a nursing bottle at bedtime. Shetty et al found that 53.9% of mothers believed that prolonged bottle feeding leads to decay, but only 33.7% believed that tooth decay may be caused by prolonged breastfeeding. A total of 80.5% believed that leaving the bottle all night in the infant's mouth increases the risk of tooth decay. (9) (Raghavendra M Shetty, 2016) Suresh et al. reported that despite having good knowledge, many mothers used nursing bottles at bedtime, similar to the findings of Gussy et al., in rural mothers in Australia. (12, 19) (Gussy MG1, 2008). When the mothers were asked about the importance of deciduous teeth, 76 (56.7%) knew that primary carious teeth might affect permanent teeth. When they were asked about tooth brushing, 67 mothers (50.0%) said twice per day. The results of this study were much higher than the findings of Chhabra, who found that only 41.3% of children brushed twice a day (15). One study by Dye et al. showed a direct association between tooth brushing habits of the mother and her child. (20) (Dye BA, 2011). A total of 71 (53%) of mothers had good knowledge about the importance of fluoride for their child's teeth. Djordjevic reported in his study that most parents from urban and rural areas did not use fluoride tablets or any fluoride products. The awareness about fluoride and their role in preventive dentistry was poor (18). Moulana et al., Suresh et al., as the knowledge regarding the role of fluoride was poor. (12,21) (Salma A Moulana, 2012). Contrary to this result were studied by Gussy et al. and Kamolmatyakul and Saoing who reported good knowledge about fluoride usage (20, 22) (S Kamolmatyakul, 2007).

We surveyed mothers to see if they knew when was the best time to start brushing a baby's teeth. Seventy-four answered after all teeth had erupted. This means there are lots of mothers who do not know how important baby teeth are to a child's future oral health. The presence of baby teeth help form the pathways a child's permanent teeth take. They are also important for speech development and in the formation of the shape of the jaw. Losing baby teeth before its time can lead to a plethora of future dental issues including the need for orthodontia. Too many children already need orthodontic treatment due to the premature loss of deciduous teeth.

The examinations used in this study showed that on average, children have cavities in approximately four teeth, and are missing at least one tooth. Mothers interviewed for this study showed they understand the impact food has on a baby's oral health, but these results demonstrate they don't apply that knowledge.

V. Conclusion:

This study showed that mothers have the information needed about oral hygiene best practices, diet and feeding habits and the role of fluoride in preventing cavities. However, they do not apply this knowledge in everyday life. This suggests that pediatricians and other healthcare workers need to take a more active role in promoting the importance of oral healthcare. They need to stress that regular dental visits are just as important as regular pediatric visits. By promoting regular dental visits, pediatricians ensure that mothers recognize oral hygiene is also crucial to a baby's overall wellbeing.

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