

Influence of Mother's Knowledge on the Oral Hygiene Habits of their Preschool Children

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Abstract

Aim: Children under 7 years of age generally spend most of their time with parents or guardians, especially mothers. Parents play a central role in giving children the information and encouragement needed for healthy lives. Parental oral health knowledge, belief, and attitudes influence the oral health maintenance, dietary habits, and healthy behavior of their children. The aim of this study was to assess the mother's oral health care knowledge and to assess the oral health status of their child. **Materials and Methods:** A total of 130 mothers along with their child of 1–7 years were randomly selected for the study. A 19-point questionnaire including dietary practices and oral hygiene practices was designed to assess the knowledge of the mothers regarding oral health of their child. Oral examination of the children was done by the World Health Organization criteria for recording children's oral health status. **Results:** About 87% of the mothers agreed that intake of food with excessive sugars can cause cavities, and 95.8% admitted that chocolates cause the most decay. 80.5% agreed to the fact that leaving a milk bottle all night increases the risk for tooth decay, however, 59.3% of mothers were of the opinion that dental visit is must only in the presence of decay. 59.3% of mothers were unaware about the optimal fluoride content. 71.7% of mothers agreed that caries in deciduous teeth are a matter of concern. The average decayed score of the children was 2.9% and 77.9% of the children had a fair to good oral hygiene status. **Conclusion:** Instead of the fact that most of the health care knowledge that the mothers had was primarily from the family elders, they were aware of caries risk factors, toothbrushes and amount of toothpaste and bacteria from mother's cavities can infect the child. This could be observed by less number of decayed teeth and good oral hygiene status of the children. However, parent's knowledge, attitudes, and few beliefs regarding dental care need to be improved.

Keywords: Oral health care, oral health status, preschool children

INTRODUCTION

The major role of knowledge and attitudes in explaining behavioral changes has been confirmed by many behavioral theories such as the health belief model and theory of reasoned action.^[1,2] When the assessment of the role of parents' knowledge of and attitudes towards health behavior and status of their offspring is done, the aspects of these theories are particularly emphasized.^[3] Parents play a central role in imparting the information and encouragement to their children for healthy lives. Their attitudes have a significant impact on the children's dental and overall health.^[4,5] The more positive attitude of the parents toward dental health care and dental professionals, leads to a better dental health of their children. Without basic knowledge of caries risk factor, importance of deciduous teeth, and oral maintenance, it is difficult to employ effective disease preventive strategies.^[6]

Children below 7 years of age spend most of their time with parents or guardians, particularly mothers. Within the family, the role of mother has been emphasized in relation to a child's oral health habits and status. Despite changing roles and areas of responsibility within the family, the role of the mother has been emphasized in relation to a child's oral health habits and status and she still seems to play the key role.^[7] Developing countries like India, face many challenges for providing oral health care to children of 1–7 years of age, mainly in the rural areas.^[8,9] Parental knowledge and awareness of oral health care

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and oral hygiene habits of these children, dietary and feeding habits, care of deciduous teeth, and regular dental visits are necessary for required behavioral changes towards health and early disease prevention.^[10]

Studies on mother's knowledge on child's oral health and its influence on their child's oral health status are scanty, which has led to design this study. Hence, this study evaluates the influence of maternal aspects on child's oral health by estimation of oral health-related knowledge on diet, feeding habits, oral hygiene practices, and maintenance in a developing country.

MATERIALS AND METHODS

This study was carried out in a representative sample of 3–7-year-old primary school children selected from the Star International Primary School, in Puducherry, India. A total of 130 mothers along with their children (3–7 years) were randomly chosen for the study. Approval for conducting the study was obtained from the principal of the school. Ethical clearance was also taken from Institutional Ethical Board. Informed consent was obtained from the participating mothers.

A 19-point questionnaire including, dietary and feeding practices, oral hygiene practices and the importance of dental visits, was designed to assess the knowledge of mothers regarding the oral health of their child. The questionnaire was prepared in English and also translated into the local language. Oral examination of children was done in schools with the help of mouth mirror, and probe in good light using deft index and assessment of oral hygiene status. The mothers of a same child attending parents-teachers meeting were then asked to fill the questionnaire. A total of 130 mothers, who attended the parents-teachers meeting, comprised the final sample. The answers were recorded by asking the mothers to respond to the questions by indicating the suitable option, which were expressed as scores of 1, 2, and 3 for the options in that order. The subjects were explained about how to fill the questionnaire. The data were collected and descriptive statistics were obtained. The percentage frequency distributions of parental responses to questions were calculated. Study data were analyzed using SPSS (version 12.0) (SPSS Inc., Chicago, IL, USA.).

RESULTS

The final study sample comprised 130 children and their mothers. There were 65 boys and 65 girls with an average age of 4.30 years. The mothers' knowledge in relation to the dietary and feeding practices. 6.2% mothers thought that prolonged breast feeding may lead to caries, whereas 50.8% thought that caries are caused due to prolonged bottle feeding. 83 of the total mothers agreed to the fact that leaving milk bottle whole night in the child's mouth harms their teeth. 112 mothers believed that excessive intake of sugar-containing foods such as chocolates (121 mothers), mainly can cause caries.

The knowledge of the mothers relating to oral hygiene practices. 117 mothers said that the child's teeth should be brushed twice daily, and 93.8% mothers agreed that a small-sized toothbrush was best for preschool children. 77.7% of mothers thought that standing in front of the child during brushing was the right method. Most of the mothers (80%) placed a small pea-sized amount of toothpaste on the brush; however, 74 mothers were unaware about the optimal fluoride levels that a paste should contain.

The knowledge of mothers related to dental awareness. Seventy-three mothers agreed to the fact that with the eruption of the first baby teeth, parents can begin to clean them with a piece of gauze or clean washcloth. However, 60% would visit a dentist only in cases of tooth decay. 60 mothers disagreed to the fact that caries in deciduous teeth can be ignored since these teeth will be replaced with the permanent successors. 37.7% of the total participating mothers' received child care information from the elders in the family, and only 45.4% acquired any such information from their dentists. Mother's knowledge on dietary and feeding practices was shown in Figure 1. Mother's knowledge on oral hygiene practices was shown in Figure 2. Dental awareness of the mother was depicted in Figure 3.

On the interpretation of the deft index of the children, it was found that 38.5% of the children had decayed tooth and 1.5% of extracted and filled tooth [Figure 4]. On the assessment of the oral hygiene status of the children 46.2% of the children had a plaque score of 1 and 3.8% of the children had a score of 2. 0.8% of the children had calculus and 2.3% of the children had stained tooth. This also indicates that mothers participating in the present study had a fairly better knowledge of oral health care of their children. Figure 5 shows distribution of study participants based on deft index and decayed surface was more than filled surfaces.

DISCUSSION

The oral health knowledge of the parents and/or guardians establishes the oral health and related habits of the children during infancy and maintained throughout the preschool years. Parents, especially the mothers, play an important role for their children. There are limited data for the oral health of children during the early childhood period in developing countries.^[6,11] A good understanding of parental knowledge, attitudes, beliefs and awareness regarding oral health, habits and hygiene is essential for the effective implementation of oral health promotion efforts aimed at improving the dental health of preschool children.

Majority of the mothers had good knowledge about the dietary and feeding practices. 87% of the mothers believed that excessive intake of sugar-containing food causes dental cavities. The findings of the present study were in line with the findings of Suresh *et al.*, Lin *et al.*, and Kumar *et al.*, who also reported that parents of preschool children had good knowledge about dietary practices.^[6,12,13] 93.1% of the mothers found chocolates to be the most cariogenic agent. 50.8% mothers

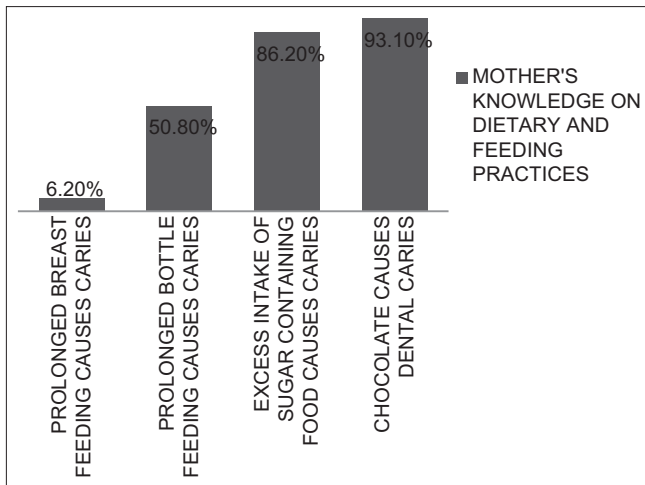


Figure 1: Mother's knowledge on dietary and feeding practices

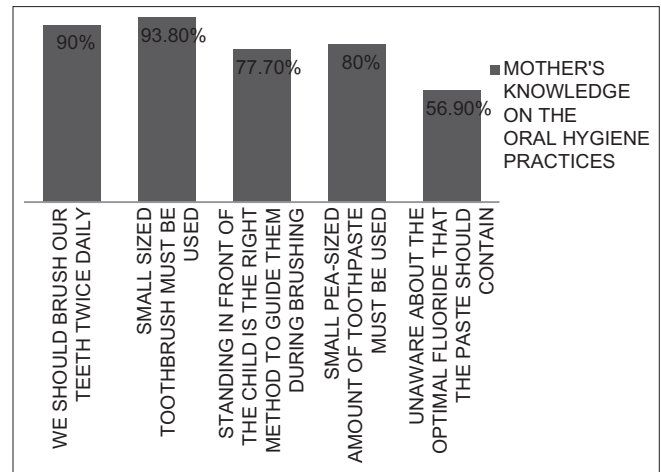


Figure 2: Mother's knowledge on oral hygiene practices

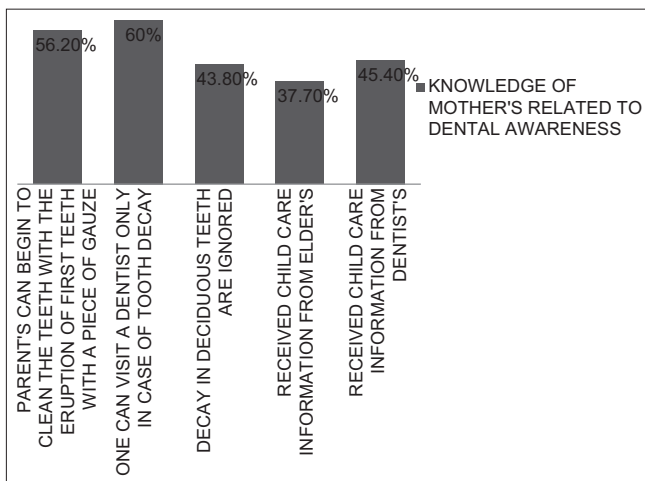


Figure 3: Knowledge of mother related to dental awareness.

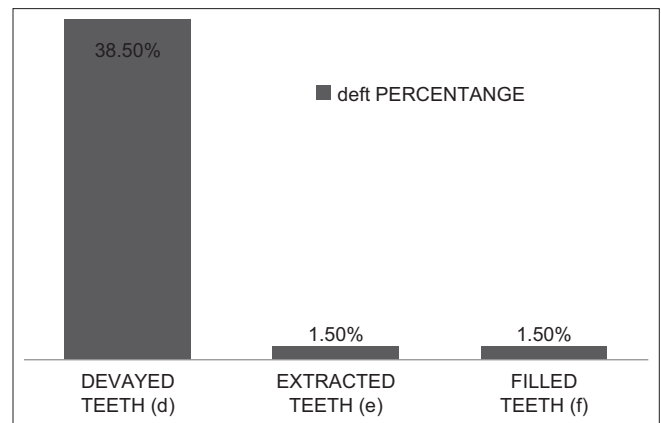


Figure 4: Distribution of study participants based on deft index

believed that prolonged bottle feeding leads to decay, but only 6.2% believed that tooth decay may be caused by prolonged breast feeding. A vast majority of the mothers (63.8%) believed that leaving the bottle all night in the infant's mouth increases the risk for tooth decay. The mothers, who disagreed or were unaware of this, had low literacy levels. Suresh *et al.*, reported that despite having good knowledge, many mothers used nursing bottles at bed time, similar to the findings of Gussy *et al.*, in rural mothers in Australia.^[6,14]

67.7% of mothers had adequate knowledge regarding sharing of utensils when feeding the baby, can transmit bacteria from mothers to their children and this could also be observed in the oral health status of the children where 84.23% children had good oral hygiene. This is in contradiction to the findings of Suresh *et al.*, Chhabra and Chhabra and Sakai *et al.*^[6,11,15] Dental caries is an infectious disease caused by *Streptococcus mutans*. It has been strongly suggested by studies using phenotyping and/or genotyping methods that the mother is the main primary source of infection for children. The early establishment of *S. mutans* is promoted by improper feeding habits, which

increases the risk for early childhood caries in infants and toddlers.^[16] The bacteria may be transmitted by contact, either direct (through saliva, by kissing) or indirect (shared utensils, toys or toothbrush).^[6]

Majority of the mothers responded positively for questions relating to the oral hygiene, which suggested that they had adequate knowledge about tooth brushing and oral hygiene, except for their knowledge about fluoride. 56.9% of the mothers did not know about the fluoride content of the toothpaste. 90% of mothers were of the opinion that the children's teeth should be brushed twice a day. Majority of them knew that small-sized tooth brush should be used for brushing and only a pea-sized amount of toothpaste should be used. The results of this study were much higher than the findings of Chhabra and Chhabra who found that only 41.3% of the children brushed twice a day.^[11] 56.2% of the parents believed that with the eruption of the first baby teeth, parents can begin to clean them with a piece of gauze or clean washcloth, similar to the findings of Gussy *et al.*^[14] However, in the study conducted by Suresh *et al.*, most of the parents felt that brushing should be started when all the primary teeth have erupted.^[6] This reflected the lack of parental knowledge. 58.5% of the mothers claimed that

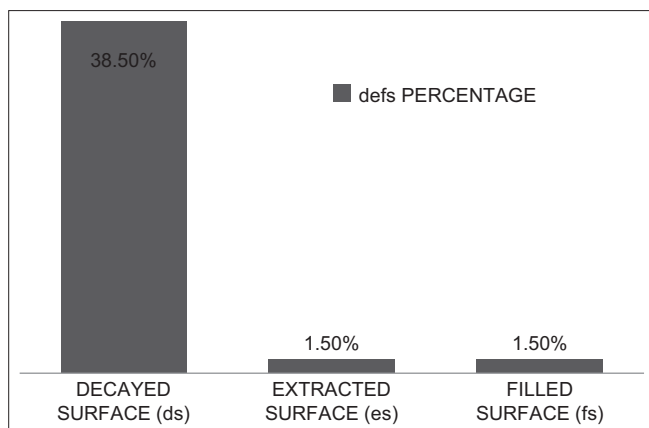


Figure 5: Distribution of study participants based on defs index

their children happily brushed their teeth. This showed that the mothers had adequate knowledge and a positive attitude toward oral hygiene maintenance which reflected in the children as more than 84.23% had a fair to good oral hygiene status.

Surprisingly, in the present study despite the fact 37.7% of the mothers received information about child care from the elders in the family, they had a good knowledge about tooth brushing habits and other dietary habits. The studies conducted by Chhabra and Chhabra, Wong *et al.*, and Mattila *et al.*, also suggested that the elders of the family had a much higher influence on the parents for child care.^[11,17,18] Only 45.4% of the mothers received information from the dentists. This suggests that there was a lack of regular dental visits and it was not considered to be important by many mothers. Furthermore, 60% of the mothers believed that dental check-up is required only if a caries is detected in the child's teeth. However, only 16.9% of the mothers were aware of the fact that the first dental visit should be preceded with the eruption of the first primary teeth. This can be attributed to the fact that the literacy level of the mothers in this study was quite high. The mothers were also aware of the importance of primary teeth, due to the fact that two-thirds of the mothers believed that cavities in primary teeth should be treated, since they can lead to further caries in the permanent teeth. This was contradictory to the findings of Chhabra and Chhabra and Harrison and Wong^[11,19] It has been reported that the lower attention paid towards the importance of primary teeth can prove to be an obstacle to develop effective preventive programs.^[20] The parents believe that primary teeth are present in mouth only for a short duration, and are ultimately replaced by permanent teeth.^[11] The children whose parents ignored the importance of primary teeth or paid less attention toward decay in these teeth were more susceptible to early childhood caries.

There are certain limitations of the present study. Since the study was conducted among the children and mothers of the schools located in the city, the literacy level was considerably high. Thus, further studies with children and parents of rural areas and a larger sample are encouraged. This will aid in the formulation of preventive programs that target the rural

population and increase awareness, knowledge, and help in the removal of negative attitudes among the rural population. The habits developed during the preschool period provide a foundation for better oral health care, dietary habits and encourages regular dental check-up and use of dental services in the later years. Parents, particularly the mothers should be encouraged to improve their child's oral habits since they are role models for their children.

CONCLUSION

The results of this study suggested that the response of the mothers regarding the role of frequent intake of sweets and sticky food products in causing decay was quite encouraging. However, it was unfortunate to find that there was a lack of knowledge by the parents regarding the role of fluoride in preventing decay, about the background levels of fluoride in their drinking water, and the appropriate use of fluoridated toothpastes, since fluoride has a protective action against the development of caries. There should be an emphasis on the preventive strategies, about the importance of fluoride and optimal fluoride exposure required for the children in the programs conducted for educating the parents. Regular dental visits should be encouraged by the pediatrician to develop positive attitudes among parents and subsequently the children, toward oral health care.

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Conflicts of interest

There are no conflicts of interest.

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