



*Original Research Article*

## **Cross-Sectional Study of Awareness and Knowledge of Causative Factors for Early Childhood Caries among Saudi Parents: A Step towards Prevention**

Rafi A. Togoo\*\*\*<sup>@</sup>, Zakirulla M\*\*, Syed Mohammed Yaseen\*\*, Nasim VS\*\*, Ali Robian Al Qahtani\*, Abdullah Ali Al-Turki\*

\*\*\*Associate Professor, \*\*Assistant Professor, \*Intern

Department of Pedodontics, King Khalid University College of Dentistry, Abha, Kingdom of Saudi Arabia

<sup>@</sup>Correspondence Email: [rafitogoo@gmail.com](mailto:rafitogoo@gmail.com)

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### **ABSTRACT**

**Objectives:** Oral health knowledge and awareness among parents is an integral component of preventing Early Childhood Caries (ECC) among children. The purpose of this paper therefore is to assess the knowledge and awareness among the Saudi Arabian parents about causative factors for ECC. **Methods:** A questionnaire based survey was conducted among parents in randomly selected residential areas and hospitals in Abha city Saudi Arabia. A total of 125 questionnaires were distributed. Questionnaires were filled and returned anonymously by 80 parents. **Results:** The data was analyzed using SPSS software version 11.0. The results of the study showed that of the 80 respondents about one-third (39%) agreed that mother's diet during pregnancy affects development of the infant's teeth while 33% disagreed and 28% parents did not have an answer. An overwhelming majority of the parents (95%) believed that proper breast feeding was important for infant's teeth and 46% recommended breast feeding the child before sleeping. A majority (63%) parents assumed that night time bottle feeds don't affect the child's teeth. 85% of the 80 parents questioned answered in the affirmative when asked whether healthy milk teeth are important and 63% agreed that any problems with milk teeth affect the child's permanent teeth. 80% parents did not favor bottle feeding the child before sleeping and 70% favored the use of comforters/pacifiers while as 70% suggested giving sweetened juices to children frequently. 46% disagreed whether infants and children should be taken to a dentist for regular checkup even if they have no dental problems. 85% of the 80 parents who returned the questionnaire agreed to the benefits of fluoridated tooth pastes and 94% understood that decayed teeth affect the general health of the child. **Conclusions:** Our study concluded that parents showed some degree of knowledge about certain aspects of early Childhood caries. The knowledge however appeared to

be inconsistent and contradictory at times. We recommend that more needs to be done to increase parent awareness about Early Childhood Caries.

**Keywords:** Early childhood caries, prevention, parental knowledge.

## INTRODUCTION

Early childhood caries (ECC) is defined as the presence of 1 or more decayed, missing or filled tooth surfaces in any primary tooth in a child 71 months or younger. [1] ECC is the most common chronic disease in young children and may develop as soon as teeth erupt. [2] It is a significant public health problem particularly in developing countries and disadvantaged segments of society are most vulnerable to its effects. Oral health surveys of 5 year-old and 6-year-old pre-school children in Malaysia showed a high caries prevalence of 76.2% and 74.5% in 2005 and 2007 respectively. [3, 4] In Saudi Arabia ECC presents a unique challenge as more and more patients are reporting dental clinics with signs of early or severe form of the disease. Caries prevalence has also been very high among children in Saudi Arabia, including preschool children. Wyne *et al.* examined a number of socio-economic and behavioral characteristics of the children with ECC and recommended that studies should be conducted to measure prevalence of the disease and compare the characteristics of those with and without the condition. [5] In the community served by the Northwest Armed Forces Hospitals (NWAFFH), Tabuk, Saudi Arabia, Stewart reported that more than 92% of 6-year-old children had caries in primary teeth. [6] In a study conducted in Riyadh city the decayed, missing and filled teeth (dmft) of 6 year old children was 4.14 for boys and 3.43 for girls and 22.3% of the children were free of caries in their primary teeth. [7] In the city of Jeddah dmft values have ranged from 2.9 to 6-3 per child, and caries prevalence has ranged from 70% to 76% in 6 year old

children. [8] High prevalence of ECC in Saudi Arabia is mainly due to changing dietary habits, lack of awareness among parents and negligence of oral hygiene. Since infants and toddlers are not in control of their oral health, the parental role is of utmost importance. The aim of this study was to assess the knowledge and practice of early childhood oral health related practices among parents in randomly selected parents from residential areas and hospitals in Abha city Saudi Arabia.

## MATERIALS & METHODS

A questionnaire based survey was conducted among parents in randomly selected residential areas and hospitals in Abha city Saudi Arabia (Table 1). A total of 125 questionnaires were distributed. The questionnaire, written in Arabic had questions on role of diet on oral health, cleaning of infants mouth after feeding, proper use of breast and bottle feeding, and importance of deciduous teeth and effect of oral health on general health of a child. Questionnaires were filled and returned anonymously by 80 parents .The data was analyzed using SPSS software version 11.0.

## RESULTS

A total of 125 questionnaires were distributed and 80 completed forms were received back giving a response rate of 64%.The results of the study are summarized in Table I. The results of the study showed that of the 80 respondents about one-third (39%) agreed that mother's diet during pregnancy affects development of the infant's teeth while 33% disagreed and 28% parents did not have an answer. A

majority of the parents (95%) believed that proper breast feeding was important for infant's teeth and 46% recommended breast feeding the child before sleeping while as 40% didn't follow this practice . 70% respondents agreed that the oral cavity of a child without teeth should necessarily be cleaned before sleeping , 14% disagreed and 16% had no opinion. A majority (63%) parents assumed that night time bottle feeds don't affect the child's teeth. 85% of the 80 parents questioned answered in the affirmative when asked whether healthy milk teeth are important and 63% agreed that any problems with milk teeth affect the

child's permanent teeth. 80% parents did not favor bottle feeding the child before sleeping and 68% agreed that children should use a cup as soon as they are able to hold one. 70% favored the use of comforters/pacifiers while as 70% suggested giving sweetened juices to children frequently. 33% agreed and 46% disagreed whether infants and children should be taken to a dentist for regular checkup even if they have no dental problems. 85% of the 80 parents who returned the questionnaire agreed to the benefits of fluoridated tooth pastes and 94% understood that decayed teeth affect the general health of the child.

**Table I: Results of the study**

Questions	YES	NO	DON'T KNOW
Does mother's diet during pregnancy affect development of baby's teeth?	31(39%)	26(33%)	23(28%)
Is proper method of breast feeding important for oral health?	76(95%)	3(4%)	1(1%)
Is it advisable to breast feed the infant before sleeping?	37(46%)	33(40%)	10(14%)
Is it advisable to clean the infant's mouth after bedtime feed?	57(70%)	10(14%)	13(16%)
Is it important to maintain healthy milk teeth?	68 (85%)	8(10%)	4(5%)
Night-time bottle feeding directly affect infants teeth	14(18%)	50(63%)	16(19%)
Is it advisable to have milk bottle for child before sleep?	11(14%)	64(80%)	5(6%)
Does Bottle feeding affect the child's teeth?	48(60%)	24(30%)	8(10%)
Does a child require for dental checkup even if no dental problems exist?	26(33%)	37(46%)	17(21%)
Do pacifiers /comforters affect the infants oral health	56(70%)	13(16%)	11(14%)
Should the baby drink milk with a cup when he/she gets old enough to hold it?	21(26%)	54(68%)	5(6%)
Is sweetened juice recommended to be given frequently to a child?	57(71%)	16(20%)	7(9%)
Does fluoride toothpaste help to prevent the tooth decay?	68(85%)	2(2%)	10(13%)
Do problems with milk teeth affect permanent teeth?	50(63%)	17(21%)	13(16%)
Do decayed teeth affect child's general health?	75(94%)	3(4%)	2(2%)

## DISCUSSION

Oral disease particularly early childhood caries can be prevented to a great extent if parents are adequately informed and motivated. Lack of awareness is one of the important factors affecting oral health. Poor health knowledge is associated with

poorer opinions of health, decreased utilization of services and poorer understanding of verbal and written instructions of self-care. [9, 10] Maternal attitude towards oral health is significantly correlated to the oral health of their children. [11, 12] Parents of caries-free children had more positive beliefs and attitudes than

those with caries when studied over a period of time. <sup>[13]</sup> The assessment of knowledge, attitude and practice among parents of young children can indicate knowledge areas that are lacking and approaches and practices that are flawed.

In the present study the opinion about effect of mother's diet during pregnancy on the dental health of the unborn child was divided. While as 39% believed it did have an effect 33% said NO and 28% had no knowledge about the question asked. This suggests a lack of knowledge about the relationship between the mother's health and oral health of the unborn child. Proper nutrition and good oral health of the mother and the care giver is an important factor as far as oral health status of the infant is concerned. Transmission of caries causing bacteria from mother to child has been investigated in various studies. Children with mother having good oral hygiene usually have low incidence of caries. Customarily, oral health education messages refer to kissing and sharing of utensils as the primary method of vertical transmission of oral bacteria. In a Malaysian study 67.6% of parents practiced biting hard food into small pieces before giving it to the child. Tasting food before giving it to the child was practiced at least sometimes by most respondents in rural Australia. <sup>[14]</sup> A majority (75%) of our respondents favored proper breast feeding of the child which is an encouraging sign. This may be due to the efforts of Ministry of health Saudi Arabia and partly due to cultural and religious significance of breast feeding among Saudi society. 37% favored feeding the child before sleeping and 33% answered in the negative. This point is debatable as those favoring the child before sleeping contend that it avoids the problem of the child waking up hungry in the night reducing the chances of having to bottle feed the child in the night. This argument is acceptable

provided the infant's mouth is cleaned properly after the feed. In our study 70% favored cleaning the child's mouth after feeding but surprisingly 63% respondents thought that night time bottle does not have an effect on the child's teeth. Prolonged bottle feeding up to 2 years in 73% of the children were also reported from Hong Kong. <sup>[15]</sup> Yet in another study, the children were weaned from the bottle during the day, but continued nighttime bottle feeding. <sup>[16]</sup> Another Asian study showed an increased risk for ECC due to prolonged duration of breast-feeding. <sup>[17]</sup> In some studies, mothers indicated that other caregivers encourage use of the bottle/sugar in diet when the mothers were away at work, even though mothers were not in favor of such practices. <sup>[16, 18]</sup> Cleaning a child's mouth should begin before teeth erupt and tooth brushing is recommended when the first tooth erupts at least once daily till 2 years and subsequently twice daily. <sup>[19]</sup> Generally, mothers with higher confidence in brushing their children's teeth and with higher frequency of brushing themselves had children with cleaner teeth. <sup>[14, 20]</sup> Those children who started tooth brushing earlier in life also have less caries. <sup>[15]</sup> The lack of knowledge about connection between night time bottle feeding and oral health is alarming given that it is one of the most important pre-disposing factors of ECC. Generally, parents of children with ECC were significantly more likely to disagree that nighttime nursing was safe; proving that knowledge among parents is high, but not reflected in the dental health of their children. <sup>[21]</sup> In another study, parents had good knowledge of diet related risk factors, but half the children were given bottle at bedtime. <sup>[14]</sup> However, poor knowledge was noted in Wu-Han, China where only 42% of mothers knew that dental caries is caused by sugar while only 39% of mothers in Romania

knew that dental caries is caused by sugar. [22, 23]

In our study 37% favored taking a child for dental checkup even in absence of any complaint whereas 33% did not find it important and 21 % did not respond to the question. This again represents lack of awareness among parents about regular dental checkups. 70% agreed that pacifiers /comforters affected oral health and 68% favored using a cup when the child is able to hold it. We were unable to determine whether the parents looked at pacifiers favorably or had a negative opinion about their role in ECC. The fact that 68% encouraged their children to use cups early in life is significant as it discourages the use of bottles and pacifiers. Parents (71%) at the same time favored providing sweetened juices to their children frequently which again represent some confusion among parents about the causative factors of ECC. In Hong Kong, 60% gave fruit juices in bottles, some consuming non-dairy products more than six times per day. [15] In our study 85% favored use of fluoridated tooth pastes which again reflects the growing awareness among Saudi society about benefits of maintaining good oral hygiene particularly among children. Numerous studies have revealed that most mothers are aware that poor oral hygiene is a cause for caries, [14, 24, 25, 26] while other studies discovered that mothers did not place enough emphasis on tooth cleaning. [27] Generally, the use of fluoridated toothpastes was known by mothers as useful in preventing tooth decay. [14, 21, 26] Studies have shown that many parents are not clear as to whether fluoride should be used in young children and how much should be used. [14, 24] In our study parents did show some degree of knowledge about the role of deciduous teeth with regard to effect on permanent teeth with 63% linking problems with deciduous teeth to permanent teeth. Significantly 94% agreed

that decayed teeth had an effect on general health of the child. The study was an initial attempt to understand the level of knowledge among parents with regard to the causative and preventive aspects of early childhood caries.

## CONCLUSION

Our study concluded that parents showed some degree of knowledge about certain aspects of early Childhood caries. The knowledge however appeared to be inconsistent and contradictory at times. We recommend increased parent awareness about Early Childhood Caries. Further studies are recommended to understand in-depth the parent's knowledge and understanding of the caries process particularly in of early Childhood caries.

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