



RESEARCH ARTICLE

KNOWLEDGE AND PRACTICE TOWARDS INFANT ORAL HEALTH CARE AMONG PEDIATRICIANS IN CHENNAI: A QUESTIONNAIRE SURVEY

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ABSTRACT

Topic: Knowledge, Attitude and Practice Toward Infant Oral Health Care among the Pediatricians in Chennai: A Questionnaire Survey. **Background:** Oral Health Care in infants is of utmost importance as it plays a major role in the overall health. Pediatricians and family doctors are considered to be in a unique position to contribute to the dental health of children as they are brought to them at a very young age itself. The aim of this study was to study the Knowledge, Attitude and Practice Toward Infant Oral Health Care among the pediatricians in Chennai. **Materials and Methods:** A systematic random survey of pediatricians in Chennai using a questionnaire with questions pertaining to individual details, knowledge level regarding dentistry and approach toward infant oral healthcare. A total of 160 pediatricians were included in the survey. **Results:** Most of the pediatricians acknowledged the importance of pediatric dentistry. Very few pediatricians (36.2%) regularly examine the oral cavity of infants at birth. Initiating oral hygiene practice before the eruption of the first tooth was advised by 45.62% of the pediatricians and recommending the first dental visit was not seen to be prevalent (only 13.8%). **Conclusion:** Majority of the pediatricians are not advising parents to take infants to a pediatric dentist by 1 year of age. More interaction between the pediatrician and the pediatric dentist is essential in order to provide good overall health to the infants.

INTRODUCTION

Oral Health Care in infants is of utmost importance as it plays a major role in the overall health. It is the parent who primarily manages the child's diet, supervises the behavior and undertakes oral care practices (Hoefl, 2016). In another study they have found that a great majority of mothers acknowledged the importance of deciduous teeth for the child's general health (Ali, 2014). Pediatricians and family doctors are considered to be in a unique position to contribute to the dental health of children as they are brought to them at a very young age itself. Most children are exposed to medical care but not dental care at an early age; thus, primary health care providers can play an important role in reducing the burden of early childhood caries (Sonica Singhal, 2017). Dental caries is a multifactorial and a complex disease which often begins to develop at infancy. Early Childhood Caries (ECC), also known as baby bottle caries or nursing bottle caries, is characterized by the severe decay in the teeth of infants and young children.

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There is a virulent form of ECC in which caries occurs soon after tooth eruption, develops on smooth surfaces, progresses rapidly and has a lasting detrimental impact on the dentition (Dhull, 2016). ECC is a lifestyle disease with the biological, behavioral and social discriminates. It is the most common infectious disease and major threat to oral health in infants and children. The prevalence of ECC in some developing countries is reported to be as high as 70%. (Suresh, 2016) Some studies display the high rate of occurrence of ECC among children below 5 years of age in India. The AAPD states that dental caries risk assessment, based on a child's age, biological factors, protective factors, and clinical findings, should be a routine component of periodic examination by oral health and medical providers. An early screening of children below 1 year of age is an excellent opportunity for the detection of risk factors for ECC, prevention of dental caries and nursing caries by establishing proper feeding habits and reinforce the foundation for sound dental habits (Sham, 2006). To prevent caries in children, the high risk individuals must be identified at an early age and aggressive strategies should be adopted to prevent the development of ECC. The AAPD has said that by examining the oral cavity of infants to detect any indicator for disease and by providing preventive counselling, it is possible

to prevent many forms of oral diseases. The knowledge regarding the role of diet in oral health is good; parents now believe that sweet snacks contribute to caries (Ramesh Nagarajappa, 2013). A positive association was found between childhood caries, low parent education, and lower socioeconomic status of the family (Ganga Mahat, 2017). By working together, pediatricians and dentists can reinforce each other's efforts to provide excellent preventive oral care. One of the factors which affect the performance of preventive dentistry is the knowledge, attitude and practice of the pediatricians towards this issue. This study was designed with the objective to gather the data and evaluate the level of knowledge, attitude and practice toward infant oral healthcare among the pediatricians of Chennai.

MATERIALS AND METHODS

The present survey was undertaken among the pediatrician of Chennai. A survey questionnaire was prepared which comprised of 22 questions. A comprehensive questionnaire was prepared based on a study done in India (India, 2015) which showed a good internal consistency of the questionnaire. The questionnaire was handed over personally to 160 pediatricians who had agreed to participate in the survey. The questionnaire was then collected. The results were obtained and the statistical analysis was done and tables were drawn with the analyzed data.

RESULTS

A total of 160 pediatricians of Chennai were included in the survey, among which 36% had less than 5 years of experience as a pediatrician and 5.6% had more than 15 years of experience. Table 1 shows the Pediatricians awareness about dentistry and shows that 100% of them had a good knowledge about pediatric dentistry being a specialty of dentistry however only 19.37% refer to a pediatric dentist on a regular basis and 68.12% refer to a pediatric dentist sometimes. Table 2 shows the Pediatricians awareness about primary dentition and 81.25% have stated correctly that the number of primary teeth is 20, and 38.75% have stated correctly that the age of the first tooth eruption is 6- 9 months. Table 3 shows the pediatricians awareness about the first dental visit, and 37.5% of the respondents have said the AAP/ AAPD recommended age for the first dental visit is at birth, and 37.5% have said it to be after the eruption of the first primary tooth, and 15.62% have said it to be after eruption of all primary teeth and 9.37% didn't know the answer. Also, 39.37% of the pediatricians agreed that it is important to do dental examination for children less than 1 year, and 47.5% have neither agreed nor disagreed and 13.12% have disagreed. When asked if the pediatricians advise parents to take their infants to their very first dental visit, only 13.12% said yes, 5% said never and 81.87% said sometimes. 36.25% have stated that they examine the oral cavity of the infants at birth always, 6.25% said often, 39.37% said sometimes and 18.12% said rarely. In this survey it was found that 45.62% recommend cleaning the oral cavity after every feed from the time of birth, 36.25%- only when the first tooth erupts, 6.25%- after all primary teeth erupts and 11.87%- don't now (Table 4). Also, 93.12% have said that they don't advise bottle feeding and 6.87% said that they recommend it. 61.25% said that they don't examine for ECC in infants, 38.75% said that they examine for ECC, 74.37% said that they don't discuss ECC with parents and 25.62% have said that they do discuss about ECC with parents (Table 5).

When asked about the contents advised in bottle if bottle fed at night, the following results were obtained: Plain water- 54.37%, sweetened water- 27.5%, fruit juice- 2.5%, milk with sugar- 3.12% and 12.5% - don't know. 0.62% strongly agree, 3.75% agree, 20.62% neither agree nor disagree, 55.62% disagree and 19.37% strongly disagree that 'Prolonged breastfeeding leads to dental caries'. When asked what type of nutritional counselling was done to prevent ECC, 17.5% said to reduce high sugar snacks, 36.87% said to reduce high sugar drinks, 7.59% said to recommend foods rich in vitamins and minerals, 29.37% said all of the above mentioned options, and 8.75% said others. With the given statement 'Nutritional counselling is an important aspect of infant healthcare to prevent ECC', 18.75% strongly agreed, 75% agreed, 5.62% neither agreed nor disagreed, 0.62% disagreed and 0% disagrees with the above statement. (Table 6)

DISCUSSION

The knowledge regarding dentistry and pediatric dentistry as a specialty of dentistry among the pediatricians was good. Regular dental check-ups for toddlers and young children are not organised in most countries (Smit Sikligar, 2017). Although all the pediatricians who were a part of this survey knew about pediatric dentistry as a specialty of dentistry, only 19.3% refer infants to a pediatric dentist in routine practice. Data from the Medical Expenditure Panel Survey has stated that 89% of infants and 1 year- olds had physician visits annually, and only 1.5% had dental visits (Morrow, 2008). It is very evident that dental care is not given much importance as general overall health when it comes to infants. ECC is the most prevalent disease that affects early childhood. Although this is preventable, ECC is reported in 50% of the children by the time they enter kindergarten. In a survey conducted among the child caretakers, it was found that 78% found that brushing children's teeth was essential (Vinay, 2011) Tooth brushing twice daily is a part of recommended oral self-care and should start as soon as an infant's teeth erupt (Gussy, 2006) Mothers who have themselves experienced extensive tooth decay and therefore most likely harbor high titers of mutans streptococci in their saliva will more effectively transmit this infection vertically, thereby putting their young children at elevated risk for early childhood caries (Kim, 2006). This high number of incidence rate can be reduced if more visits to the pediatric dentists is recommended by the pediatricians, because they see children more often. The AAPD recommended age for the first dental visit is 6 months after the eruption of the first tooth or within 12 months of birth (Lorraine Ann Fuller, 2014). This was known only by 37.5% of the pediatricians who undertook the survey. With the increasing risk of ECC and demand for total health care right from birth, it is necessary for the infant to be taken to a pediatric dentist before 1 year. Another study claims that The introduction of a cariogenic diet at 6 months of age was observed in 86.7% of the caries-active infants and 77.6% of the caries-free infants (Régia Luzia, 2003). It was found that 39.3% agree that it is important to do dental examination when the infant is less than 1 year of age. Dental caries in a young population of 6-36 months is indeed prevalent (Milgrom, 2000). Pediatricians also have to examine for risk factors or any signs for the development of ECC; their role is also significant. In this study, it was found that only 36.2% always examine the oral cavity of the infants at birth. Also, it was found that only 13.12% of pediatricians advise parents for the child's first dental visit, and 5% never do so.

Table 1. Pediatricians awareness about dentistry and its specialty branches

Awareness about specialty fields in dentistry	100%
Awareness about pediatric dentistry as a specialty	100%
Referral to pediatric dentist	19.37% (68.12%- sometimes)

Table 2. Pediatrician’s awareness about primary dentition

Number of primary teeth	18 9 (5. 62%)	20 130 (81.25%)	28 28 (8.12%)	Don’t know 8 (5%)
Age of first tooth eruption	4- 6 months 86 (53.75%)	6-9 months 62 (38.75%)	9- 12 months 6 (3.75%)	Don’t know 6 (3.75%)

Table 3. Pediatricians awareness about first dental visit

AAP/ AAPD recommended age for first dental visit	At birth 60 (37.5%)	After eruption of first primary tooth 60 (37.5%)	After eruption of all primary teeth 25 (15.62%)	Don’t know 15 (9.37%)
Is it important to do dental examination for children < 1 year	Disagree 21 (13.12%)	Neither agree or disagree 76 (47.5%)	Agree 63 (39.37%)	
Advise parents for the 1 st dental visit	Never 8(5%)	Sometimes 131 (81.87%)	Almost every time 21 (13.12%)	
Examination of oral cavity of infants at birth	Rarely 29 (18.12%)	Sometimes 63(39.37%)	Often 10 (6.25%)	Always 58 (36. 25%)

Table 4. Recommendation of oral hygiene practice for infants

Initiation of cleaning of oral cavity	From the time of birth after every feed 73 (45.62%)	When the first tooth erupts 58 (36.25%)	After all the primary teeth erupts 10 (6.25%)	Don’t know 19 (11.8 7%)
Use tooth brush and paste to clean the teeth	When the first tooth erupts 37 (23. 12%)	After all the primary teeth erupts 93 (58. 25%)	After the age of 5 years 7 (4.37%)	Don’t know 23 (14.37%)

Table 5. Awareness, attitude and practice towards ECC in infants

Do you advise bottle feeding for infants	Yes 11 (6.87%)	No 149 (93.12%)
Do you examine for ECC in infants	Yes 62 (38. 75%)	No 98 (61.25%)
Do you discuss ECC with parents	Yes 41 (25. 62%)	No 119 (74. 37%)

Table 6. Knowledge and Measures advised to prevent ECC

If bottle fed at night, contents advised in bottle	Plain water 87(54 .37%)	Sweetened water 44(27 .5%)	Fruit juice 4(2.5%)	Milk with sugar 5(3.1 2%)	Don’t know 20(12.5%)
Prolonged breastfeeding leads to dental caries	Strongly disagree 31(19 .37%)	Disagree 89(55 62%)	Neither agree or disagree 33(20.62 %)	Agree 6(3.7 5%)	Strongly agree 1(0.62%)
Type of nutritional counselling given to prevent ECC	Reduce high sugar snacks 28(17 .5%)	Reduce high sugar drinks 59(36.87%)	Recommending food rich in vitamins and minerals 12(7.59%)	All of them 47 (29.37%)	Others 14(8.75%)
Nutritional counselling is an important aspect of infant healthcare to prevent ECC	Strongly disagree 0(0%)	Disagree 1(0.62%)	Neither agree nor disagree 9(5.62%)	Agree 120(75%)	Strongly agree 30(18.75%)

The importance of initiating oral hygiene practice before the eruption of the first tooth was not seen to be prevalent among the pediatricians. Only 45.6% recommend to clean the oral cavity after every feed and 6.2% recommend the use of tooth brush and paste only after eruption of all the primary teeth. The present study revealed that the pediatricians are aware of the factors causing ECC. However, only 38.7% examine for ECC and only 25.6% discuss about ECC with parents .The results of another study say that a higher frequency of a mother’s own tooth- brushing has an obvious impact on higher frequency of oral cleaning for the child and his or her good oral hygiene in early childhood (Simin, 2008). A study by Olatosi OO, Sote EO has said that prolonged breastfeeding (for more than 12 months) and bottle feeding at night leads to the development of

ECC in the infants (Olatos, 2014). In such cases, modification of the practices which lead to development of ECC has to identified early and alternative practices should be reinforced. In this study, it was found that 93.1% do not advise bottle feeding for the infants, and 0.62% agree that prolonged breastfeeding leads to dental caries. Although 98.7% of the pediatricians agree that nutritional counselling is an important aspect of infant oral healthcare to prevent ECC, only 11% offer nutritional counselling on a regular basis .It must be known that both pediatricians and pediatric dentists have special roles to play in providing good overall health to the infants. It was found that 36. 87% of the pediatricians recommend to reduce the high sugar drinks to prevent childhood caries, 17.5%

advise to reduce high sugar snacks and 7.59% recommend healthy food rich in vitamins and minerals. Also, 54.37% of the pediatricians recommend only plain water to be bottle fed at night. Programs of dental health education for young mothers before the eruption of the primary teeth may help reduce the prevalence of ECC (Kowash, 2000).

Conclusion

Majority of the pediatricians are not advising parents to visit a pediatric dentist by 1 year of age. There is need to educate everyone on infant oral health care and thus bridge the gap between the pediatricians and the pediatric dentists. More interaction between pediatricians and pediatric dentist would be worth to handle the infant population and provide complete overall health.

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