Assessing knowledge, attitude, and practice of parents regarding infant oral health among outpatients of private dental college in Chennai - A cross-sectional study

Naziya K. Babu¹, Sri Sakthi Doraikannan²*, Meignana Arumugham Indiran², Pradeep Kumar Rathinavelu²

ABSTRACT

Introduction: The life of a child from conception to age 3 is clearly the most profound period of a human being’s growth and development. The mouth occupies an important place in the initiation of an individual’s physical, social, and emotional functioning. Once the teeth have erupted in an infant, they are susceptible to dental caries. The major contributing factor to this problem is the prolonged amount of time the child spends nursing each day. Early recognition and treatment are necessary to save the child’s teeth, but prevention is the key. Aims and Objectives: This study aims to assess the knowledge, attitude, and practices regarding infant oral health among parents visiting outpatient of a private dental college in Chennai. Materials and Methods: A cross-sectional study which involved parents of infant visiting outpatient of a private dental college in Chennai. Following convenience sampling, 256 parents were selected. A self-administered questionnaire was distributed to the parents and descriptive data were analyzed using SPSS software. Results: The study sample consisted of 256 subjects, of which 90 were male and 166 were female, of which only 34% had good knowledge and 59% had positive attitude. Conclusion: Infant oral health care is important from the very beginning. The present study shows that there are poor knowledge and practice about infant oral health among few section of the society.

KEY WORDS: Dental caries, Infant, Oral health, Parents

INTRODUCTION

The life of a child from conception to age 3 is clearly the most profound period of a human being’s growth and development. Growth is synonymous with size, whereas development relates to an individual’s cognitive, psychomotor, and affective levels of functioning.[1] Oral health of children includes inter-relationship with all aspects of their developmental processes, genetic potential, and environmental circumstances.[2] The span of time from birth through the 2nd year is referred to as infancy.[3] Freud described the mouth as the center of nutritional, relational, and erogenous gratification. From birth, it is through the mouth and through contact with the mother during feeding that the infant becomes aware of his environment.

The mouth occupies an important place in the initiation of an individual’s physical, social, and emotional functioning.[4] Once the teeth have erupted in an infant, they are susceptible to dental caries. The major contributing factor to this problem is the prolonged amount of time the child spends nursing each day. If the child falls asleep with milk bottle which has fermentable carbohydrates, causes the liquid to stagnate the teeth. The carbohydrate containing liquid offers an excellent substrate for acidogenic microorganisms.[5]

Other contributing factors include as follows:
1. A decrease in the swallowing during sleep, which prevents clearance of liquid from the mouth.
2. A reduction in the salivary flow during sleep, which compromises buffering capacity.
3. A more viscous saliva in children which enhances plaque adherence on the teeth.
4. A warm oral environment during sleep, which provides a culture medium for bacterial growth.
Early recognition and treatment are necessary to save the child’s teeth, but prevention is the key. Preventive measures such as topical fluoride application and use of dental fissure sealants should be encouraged through continuous dental health educational programs for children.\(^6\)

Parents should begin cleansing their child’s teeth as soon as the first tooth erupts. The alveolar ridges where the teeth will later erupt, the tongue, the vestibule, and the palate should also be swabbed to remove milk or food residue.

For the child to become accustomed to and enjoy home care, it must begin early in infancy and practiced daily. Early orientation of the infant to oral hygiene at home prepares the child for his first dental visit. The first appointment should be a pleasant one, allaying any apprehensions the child might feel. Ideally, the child should be between 6 and 12 months of age when he first visits the dentist.\(^7\)

Early childhood caries (ECC) is the most prevalent infectious disease and major threat to oral health in infants and children as reported by the Center for Disease Control and Prevention and the National Institute of Health. American Academy of Pediatrics Dentistry recognizes that ECC emerges in all the cultural and pediatric population. Although ECC is preventable, more than 50% of the children have caries by the time they reach the kindergarten.\(^8\)

Caries in primary teeth can affect children’s growth, resulting in significant pain and potentially life-threatening infection, and diminish overall quality of life. Good oral health during infancy is important for the overall health and well-being of a child, and is one of the building blocks for a disease-free life. Studies have shown that infant oral health status is poor in developing nations, and dental caries is the most common chronic childhood disease.\(^9\)

Parents are the decision makers in matters of children health and health care, thus they play an important role in achieving best oral health outcomes for their young children. Considering parent’s role in the well-being of young children, it is essential to explore their knowledge, attitude, and practices (KAP) that affect the dental care children receive at home and their access to professional dental services. Furthermore, their assumptions and beliefs may be an important consideration in attempts made to improve infant oral health.

Objectives
The objectives of this study were as follows:
- To assess the knowledge of parents regarding infant oral health care.
- To assess the attitudes of parents toward infant oral health.
- To assess the levels of practices of parents regarding infant oral health care.

It was hypothesized that there is no difference in the levels of KAP regarding infant oral health care among parents.

MATERIALS AND METHODS
The present study was designed to assess the KAP about infant oral health care among parents who are visiting a private dental college at Chennai. Chennai is an administrative division of the state of Tamil Nadu, India. Chennai city covers an area of 178.2 km. According to 2011 census, Chennai has a population of 4,681,087, of which 2,335,844 were male and 2,310,888 were female. The sex ratio numbers 989 females for every 1000 males. The average literacy rate has been calculated to be 90.18%, much higher than the national average of 64.5%.

The study population was parents of infant (child <2 years) visiting the outpatient Department of Pedodontia, Saveetha Dental College. A self-administered questionnaire was distributed to the selected number of parents visiting the OP.

Inclusion Criteria
- Parents of child <2 years visiting the outpatient Department of Pedodontia, Saveetha Dental College, were included in the study.

Exclusion Criteria
- Parents who were not willing to participate in the study.
- Parents of children with systemic diseases, mentally disabled children.

Before the start of the study, Ethical Clearance was obtained from the Institutional Ethics Committee, Saveetha University. Written informed consent was obtained from the study participants. The anonymity of the participants was maintained. Data collection was scheduled for the period of April 2017–June 2017.

Sample Size
The sample size was \(n = 256\) parents (95% power @5% alpha based on a study done by Nagarajappa et al.\(^{10}\) in 2013, June).
Sampling
The present cross-sectional study was conducted among 256 parents reporting to the Department of Pedodontia of Saveetha Dental College in April 2017–June 2017. The parents were informed about the aim of the study. Information about anonymity, confidentiality, and consent were included in the explanation, and written permission was obtained.

During the research period, all the parents who have child <2 years were eligible for the study. Following convenience sampling, 256 parents were selected. Data were collected during interview using a data collection form.

Survey Instrument
A pretested structured and self-administered questionnaire was adapted from the questionnaires used previously by Nagarajappa et al. The survey tool consisted of two parts.

The first part collected demographic information about participants. The second part of the questionnaire was used to assess the KAP of parents about infant oral health care.

The final questionnaire consisted of 22 questions under following sections:

Section I: Incorporated parent’s demographic characteristics including age, gender, employment, educational level, and monthly income.

Section II: Incorporated 10 questions in the knowledge composite assessed parents knowledge concerning infant oral health care. A three-point Likert scale (ordinal scale) was used to assess the responses: Agree, disagree, and do not know.

Section III: Six questions in the attitude composite assessed the parents attitude toward infant oral health. A five-point Likert scale was used to assess the responses for each question.

Section IV: Six questions in the practice composite assessed parents level of practice toward infant oral health. Yes/no response was used to assess the practice level for each question. The Cronbach’s alpha for the questionnaire was 0.774 which signifies that the internal consistency was acceptable.

After a brief introduction on the purpose and intent of the study with the help of information sheet, questionnaires were distributed to the parents and data were collected. For statistical analysis data were entered into Microsoft Excel spreadsheet and analyzed using SPSS software (Version 20.0).

RESULTS
Figure 1 depicts the distribution of study subjects. The study sample consisted of 256 subjects, of which 90 (35%) were male and 166 (65%) were female.

Figure 2 depicts the distribution of study subjects based on education. The study sample consisted of 256 subjects, of which 69 (27%) have completed school, 101 (39%) are undergraduates, and 86 (34%) have completed postgraduation.

Figure 3 depicts frequency of cleaning the kid’s mouth by parents. About 56 parents (22%) clean the kid’s gums after feeds, 31 parents (12%) clean the kid’s gums once a day, 33 parents (13%) clean the kid’s gums twice a day, and 136 parents (53%) remain without cleaning the kid’s gums.

Figure 4 depicts knowledge of parents regarding amount of toothpaste to be given to child <3 years. About 174 parents (68%) suggest pea size toothpaste to their kids, 47 parents (18%) suggest length of the brush head amount of toothpaste to their kids, and only about 35 parents (14%) suggest rice amount of toothpaste to their kids.

Table 1 depicts the knowledge and awareness regarding infant oral health among parents. Among the parents, 66 (26%) had poor knowledge, 103 (40%) had fair knowledge, and 87 (34%) had good knowledge.

Table 2 depicts the attitude regarding infant oral health among parents. Among the 256 parents, 104 (41%) had negative attitude and 152 (59%) had positive attitude.
DISCUSSION

Oral health maintenance of kids was influenced by the parent’s knowledge and beliefs which affect the oral hygiene of the child. Parent’s knowledge and positive attitude toward good dental care are very important in the preventive cycle. Previous studies reveal that the positive attitudes of parents toward dentistry have a good impact on the dental health of their children. Oral health of children is associated with oral health of their parents as oral health-related habits are established throughout early childhood.

Parents function as role model for their children. This present study provides data about the KAP regarding the infant oral health care among the parents in Chennai city and also the influence of level of education of parents on the oral health KAP scores.

A total of 256 parents visiting the outpatient of Pediatric Department at Saveetha Dental College were surveyed, of which 166 (65%) were female. This is not surprising since mothers are the parents commonly in contact with children in this age group.

Oral hygiene is maintained by tooth brushing. In this present study, about 53% of the parents do not clean the child’s mouth. These results are consistent with the findings obtained by Nagarajappa et al. but were lower in comparison to the findings by Shivaparakash et al. Similar findings were observed in the study by Suresh et al.; where most of the parents felt that they should brush their child’s teeth when all the primary teeth have erupted. This results shows that there is no awareness about the infant oral health. This shows the need for educating the parents, especially mothers about infant oral health care.

A significant association was observed in this study between knowledge and practice scores and level of education. Studies by Suresh et al. and William et al. have also shown that parents with lower education had poor dental knowledge levels. There are no significant differences in the knowledge and attitude scores of parents based on gender.

On comparison of the educational qualification of parents, there is significant difference in the knowledge and practice domain, with the graduates and postgraduates showing a better score than those with lower educational qualification. These results are in line with studies conducted by Thomas et al., Sufia et al. and Nazar et al. This result clearly emphasizes on the importance of educating the uneducated section of the society. Practices in early childhood serve as a good foundation for oral health and dental service utilization later in the adulthood.

Parents and responsible adults are the principal people in the children’s development in the 1st year of life. Preventive dental care should be practiced right from the infancy, during the 1st year of child’s life to ensure successful outcomes. As a public health professional, it becomes prime responsibility to educate the parents about oral health disease prevention and promotion strategies so that there is improved oral health. As dental professionals, they have a responsibility to stress on the public the importance of good oral hygiene practices. A matter of high priority is the development and implementation of wide scale, long-term programs of health education, and promotion of expectant mothers. A perspective on oral health for infants shows that there is a need to move away from the surgical approach of managing oral disease and embrace the concept of primary care right from the perinatal period. Preventive dental assessment and treatment programs and early preventive counseling to mothers may improve the infant oral health and thereby
promote the total health of child patients. It is crucial to increase awareness among children of the oral health consequences of high-sugar consumption.\(^{19}\) It is always possible to prevent dental caries in primary dentition with good dental health education of the parents.\(^{20}\) It was suggested that the sooner oral health-related behavior was initiated in life, higher probability for successful long-term maintenance.\(^{21}\)

The results of this study cannot be extrapolated as the sample size was small and the study was localized to one particular hospital. Hence, studies exploring the same issue need to be conducted on larger samples covering different populations so as to evaluate, which strategies will be effective and efficient in bringing about a behavior change in parents regarding IOH care. ECC is a very common bacterial infection affecting 70% of children worldwide.\(^{22}\) Infant oral health care is important from the very beginning. This implies an urgent need for awareness initiative for preventive dental health behavior and attitudes, which is beneficial for the lifetime.\(^{23}\) The prevention of dental caries has long been considered as an important task for the health profession.\(^{24}\)

**CONCLUSION**

The study conducted reveal that the positive attitudes of parents toward dentistry have a good impact on the dental health of their children. This can be achieved by educating the parents about dental health. The present study shows that there is a poor knowledge and practice about infant oral health among few section of the society. Many dentists recommend an initial visit before the child's first birthday to make sure teeth and gums are cared for and cleaned properly. It is important duty of a dental professional to identify, intercept, and modify the potential harmful parenting practices that may adversely affect the infant’s oral health. Parent education must be given right from the prenatal period highlighting the importance of their role in the prevention of dental disease for their child.

Caries risk assessment and age appropriate anticipatory guidance needs to be practiced by the clinicians. Coordination between dental and medical communities can ensure optimal infant oral health.

**REFERENCES**


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