Original Research

Knowledge, attitude, and practices of oral health care in early childhood caries among children in Almora District: A Questionnaire study

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Abstract

Aim: The aim of this study was to assess the existing knowledge, attitude, and practices of oral health care in early childhood caries (ECCs) among children in Almora district

Materials and Methods: A cross-sectional study was conducted in the outpatient Department of Dentistry, SSJGIMSR, Almora, Uttrakhand. Institutional Ethical Clearance was obtained. The study was conducted during the month of April 2022 to DECEMBER 2022 after taking prior informed consent from the 200 parents. Inclusion criteria were parents getting their children treated for dental caries and who were willing to participate. Parents who could not read and write were excluded from the study. The self-administered, close-ended questionnaire was written in English and Hindi.

Results: The response rate was 100% as all 200 parents completed the questionnaire. Of 200 parents, 115 were mothers and 85 were fathers. The overall mean knowledge score was 55.5%. The overall mean attitude score was 45.3%. The overall attitude toward prevention of ECC was not in accordance to knowledge. The overall mean of "good" practices and "bad" practices score was 31.4% and 16.5%, respectively. Good knowledge and attitude toward oral health do not necessarily produce good practices.

Keywords: Attitude, early childhood caries, infant oral health, knowledge, practice

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Introduction

Oral health is an essential part of the overall health and well-being of children. Poor oral health can affect children's eating, speaking, learning, and socializing abilities. It can also lead to pain, infections, and tooth loss. Therefore, it is important to promote good oral health habits from an early age and prevent dental caries, which is the most common chronic disease of childhood. Dental caries is caused by the interaction of sugars from food and drinks with bacteria in tooth plaque, resulting in acid production that damages the tooth enamel. Dental caries can be prevented by regular tooth brushing with fluoride toothpaste, drinking fluoridated tap water, applying fluoride varnish or dental sealants to the teeth, and visiting the dentist regularly^{1–5}. Early childhood caries(ECCs) is defined as the presence of one or more carious dental lesions (with cavitation or without it), lack of teeth as a result of caries or the presence of fillings on deciduous teeth in the age of the child up to the 71st month⁶⁻⁷. Early childhood caries is an aggressive form of caries that occurs in caries-resistant places, such as the labial surfaces of the upper maxillary deciduous incisors, in contrast to caries of older age which occurs in places of plaque retention⁸.

Oral health, as an important segment of the general health of infants and children, has a significant impact on quality of life ⁹. Early childhood caries is a multicausal disease. The key factor, for early childhood development caries, is early colonization by cariogenic microorganisms¹⁰. The studies mention the risks for the development of early childhood

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caries: nutrition, inadequate oral hygiene, irregular dental visits of the child, as well as social and factors¹¹⁻¹².The behavioral main cariogenic microorganisms in the oral environment are Streptococcus mutans and Lactobacillus. A newborn can be infected with Streptococcus mutans at birth during natural childbirth or immediately in the first months of life by direct contact, through saliva (pacifier, spoon, etc.)- vertical transmission¹³. In the presence of carbohydrates, metabolic processes of cariogenic bacteria are activated creating the acidic products, which lead to the enamel demineralization and caries formation ^{7,14}. One of the primary factors for the early childhood caries is nutrition quality and habits, as well as using a bottle. Sweetened beverages, fruit juices and soft drinks with inadequate remineralization activity of saliva, which occurs at night due to reduced flow of saliva, can lead to demineralization of enamel and thus to the development of caries¹⁵. Lack of oral hygiene allows the constant presence of fermentable carbohydrates, it improves the metabolism of cariogenic bacteria and enables the accumulation of plaque on the tooth surface.

The goal of therapy is to slow down the acute course of the disease, prevent complications, as well as premature tooth extraction and possible consequences. As early childhood caries is a disease that can prevent in time, the main goal is the application of measures in its development. The basic therapeutic link is early prevention and diagnosis so the modern dentistry today advocates precisely the prevention of early childhood caries and its occurrence¹⁶. Preventive measures include the application of measures before the occurrence of the diseases, namely: use of fluoride preparations, filling of fissures and pits, counseling on nutrition and adequate oral hygiene^{17,18}. Parents are responsible for their child's oral health care.Preschool children are not capable of brushing themselves and lack the manual dexterity and the psychological maturity to understand the importance of maintaining oral health. With changing lifestyles, a trend of having a single child and increased the cost of living, most of the parents are working with very less time left for performing day-to-day oral health care practices in their child's early years¹⁹.

Materials and methods Study design

A cross-sectional study was conducted in the outpatient Department of Dentistry SSJGIMSR Almora Uttrakhand. Ethical clearance was obtained from the Research and Ethical Committee. The study was conducted during the month of April 2022 to DECEMBER 2022 after taking prior informed consent from the parents who were willing to participate. Inclusion criteria were parents getting their children treated for dental caries or had a past dental history and who were willing to participate. In

addition, parents with children with no medical conditions or no medications prescribed to them were included in the study. Child's age could be from being a newborn till 72 months of age (ECC is referred to caries in children <72 months of age)⁴ and also parents having more than two children were included in the study. Parents who could not read and write were excluded from the study. In addition, parents who were not the primary caretakers of their children or who had children with medical problems were excluded from the study.

Methodology

The self-administered questionnaire written in English was adapted from Mani et al.¹⁹ It had 24 questions, 8 questions in the knowledge and 9 questions in practice components and 7 questions in the attitude component, and took about 10-15 min to complete. It was then translated in local languages, i.e. hindi and Kumauni. These questionnaires were later back-translated in English and verified with the original English questionnaire by dentists who were well-versed in all the three languages. The scoring for practice was based 4-point Likert scale, respectively while the scoring for knowledge and attitude included true/false/do not know responses. All aspects of oral health promoting factors in children including oral hygiene, diet, and fluoride, and awareness regarding infant oral health and practices were addressed. Suggestions from public health dentists, regarding the content of all the three questionnaires, were also taken and incorporated

Results

The response rate was 100% as all 200 parents completed the questionnaire. Of 200 parents, 115 were mothers and 85 were fathers. Nearly 75% of the participants were from 30 to 39 age groups. About 15% participants had primary education while 51%, i.e. maximum people had higher secondary education. Only 31% people had University level education, 35% of the participants were homemakers/unemployed, i.e., the mothers of children only. Other 65% people were either self-employed or salaried employees. Mothers had significantly better overall knowledge scores than fathers. In addition, participants with higher education level had significantly better overall knowledge scores than less educated parents.

Knowledge: The overall mean knowledge score was 58 %. The percentage of parents who answered correctly, for individual knowledge questions is shown in Figure 1. Nearly 53% of parents were aware that caries can affect infants below 2 years, but 19.5% of parents answered incorrectly, and 11% parents were in a dilemma about the same fact. When asked about food cariogenicity, 79% of parents knew that sweet food causes tooth decay but knowledge regarding when to begin using fluoridated toothpaste

and whether deciduous teeth need treatment appeared to be low, i.e., 22% and 57%, respectively. However, 64% parents knowing the importance of brushing teeth.

Attitude: The overall mean attitude score was 43.5%. The overall attitude toward prevention of ECC was not in accordance to knowledge which had an average of 58%. The percentage of participants who correctly answered individual attitude questions is shown in Figure 2. Only 20 % parents were aware that dental caries can be transmitted by sharing feeding utensils, i.e., mainly through saliva; on the contrary, majority,

i.e., 45% parents believed it cannot be transmitted from parents to children. Similarly, night time bottle feeding is harmful was known to 40% parents but prolonged swallowing of paste can be harmful was known to only 25% parents while 75% disbelieved it. The most surprising revelation was that most of the parent's, i.e., 42% believed children can brush their teeth independently. Only 26% parents responded positively regarding child visit to dentist before 2 years of age. Attitude is below 50%; hence, we can say it is below average, parents need to be educated and motivated to improve their attitude toward prevention of ECC.



TABLE 1: Percentage of correct answers for knowledge questions



TABLE 2: Percentage of correct answers for attitude questions



Practice: The practices were categorized into "good" practices and "bad" practices. The overall mean good practice and bad practice score were 30.5% and 18.5%, respectively. An analysis of the practice score for individual questions is shown in Figure 3. The most prevalent bad practice was giving sweet food frequently, i.e., 35%. Good practices, for instance, use of fluoridated toothpaste was relatively low, i.e. 38%. The percentage prevalence of bad practices is low, but good practices are also relatively low. Therefore, good practices need to be increased. The education level of the parents had a positive effect on their practices. Parents who did not complete high school education had lower mean practice score than those with a higher education. To summarize, it is interesting to note that the percentage of knowledge about ECC in parents was high, i.e., 58%, followed by attitude, i.e., 43.5% but that of good practices was low, i.e., 30.5%.

Discussion

Parents are role models for their children. Children learn habits by imitating their role models and the best way to teach them is to practice these oral hygiene practices ourselves. Dental caries is a preventable disease and if it is noticed at an early stage, children cooperate better and parents save their valuable time and money spent on dental treatments which are also inclusive of the loss of pay for multiple visits for the treatment. Hence, prevention at the root level, i.e., primordial prevention and oral health education of parents is essential as the preschool age group (2–4 years of age) is dependent on them for their oral health care needs. Later, from 2 years onward, oral health promotion strategies such as fluoridated toothpaste, etc., can be begun in cooperation with the parents. To attain these goals, one needs to assess the existing levels of knowledge, attitude, and practices to bring about the necessary changes. In addition, children with primary dentition affected by dental caries are prone to the development of dental caries in permanent dentition. Hence, children reinforced at an early age by their parents are motivated and trained for a lifetime. Studies assessing the parents ability to care for child's oral health reveal that parents do not have enough time, lack of knowledge in brushing, job/employment stress, and last but not the least, due to nuclear families and working parents many parents do not raise their children themselves, and leave them at day-care centers or crèches²⁰.

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