

Knowledge, Attitude and Practices of Oral Health Care in Prevention of Early Childhood Caries Among Parents of Children In Bhilai-Durg City

Anil Pandey^{1*} Premkishore K² Alok Avinash³ Sunil Pandey⁴ Brij Kumar⁵ Dhani Kapur⁶

¹PG Student, Department of Pedodontics and Preventive Dentistry, Rungta College of Dental Sciences and Research, Bhilai, Chhattisgarh, India.

²Professor and Head, Department of Pedodontics and Preventive Dentistry, Rungta College of Dental Sciences and Research, Bhilai, Chhattisgarh, India.

³Reader, Department of Pedodontics and Preventive Dentistry, Rungta College of Dental Sciences and Research, Bhilai, Chhattisgarh, India.

⁴Reader, Department of Pedodontics and Preventive Dentistry, Government Dental College and hospital, Raipur, Chhattisgarh, India.

⁵Senior Lecturer, Department of Pedodontics and Preventive Dentistry, Rungta College of Dental Sciences and Research, Bhilai, Chhattisgarh, India.

⁶PG Student, Department of Pedodontics and Preventive Dentistry, Rungta College of Dental Sciences and Research, Bhilai, Chhattisgarh, India.

ABSTRACT

Background: Among all the oral diseases, dental caries is the most common chronic disease affecting the children. Though dental caries is preventable, not much importance has been given to the preventive aspect of dental caries. This is because of the lack of oral health education. Since parents play an important role in a child's life, their knowledge about child's oral health will have a significant impact on the child's oral health status. A proper knowledge for the parents regarding infant's oral health care will be beneficial in reducing the burden of dental caries in children. **Aim:** The aim of this study is to assess the knowledge, attitude, and existing oral health care practices among parents on children's oral health care in Bhilai-Durg City.

Materials and Methods: A cross-sectional study was conducted among a convenient sample of 750 parents, whose children were 71 months of age or younger. After obtaining informed consent from participants, data were collected using a structured questionnaire. The questionnaire used in this study was divided into three sections knowledge, attitude and practice having nine questions in each segment.

Results: Significant numbers of parents had limited knowledge, poor attitude and inadequate oral hygiene practices towards prevention of ECC.

Conclusion: The limitations of the parents in providing adequate oral health care for children should be addressed by the dentists as well as other health care providers like Gynaecologists, Paediatricians, Anganwadi workers, Doctors at Primary Health Care centres (PHC).

Keywords: Attitude, Early Childhood Caries, Infant Oral Health, Knowledge, Practice.

INTRODUCTION

Oral health is an important aspect of general health in infants and children, which has an impact on the quality of life and health outcome [1]. Dental caries is the most common and chronic disease affecting preschool children. Although dental caries levels

have been declining the world over, the problem of early childhood caries (ECCs) has remained unchanged in many areas of the world, especially socially and economically weaker communities [2,3]

Received: July. 2, 2020; Accepted: Aug. 23, 2020

*Correspondence Dr. Anil Pandey.

Department of Pedodontics and Preventive Dentistry, Rungta College of Dental Sciences and Research, Bhilai, Chhattisgarh, India.

Email: dranilpandey07@gmail.com

Dental caries affecting the primary dentition of preschool children is referred to as ECCs. ECC is defined as “the presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces in any primary tooth in a child under the age of six years.” ECCs is a multifactorial disease with an aetiology that involves a complex interaction between biological and socioeconomic factors. It is classified as mild, moderate, and severe. In children younger than 3 years of age, any sign of smooth-surface caries is indicative of severe ECCs (S-ECCs). The age ranged from 3 to 5 years, 1 or more cavitated, missing (due to caries), or filled smooth surfaces in primary maxillary anterior teeth or a decayed, missing, or filled score of ≥ 4 (age 3), ≥ 5 (age 4), or ≥ 6 (age 5) surfaces constitutes S-ECC [4].

Deciduous teeth are an integral part of oral and general health, and it influences the quality of life. Deciduous teeth whenever infected by dental caries can cause pain and discomfort making kids uncooperative for complete and comprehensive treatment, sometimes making it necessary to treat under general anaesthesia. Treatment under GA in preschool children is associated with so many risks. More over, many dental specialists feel not happy to do treatment in such small children because of its time- consuming nature, money related returns and are not prepared enough.[5,6]

Children under the age of 5 years generally spend most of their time with parents and guardians, especially mothers, even when they attend pre-schools or nurseries. These early years involve “primary socialization” during which the earliest childhood routines and habits are acquired [7]. These include dietary habits and healthy behaviours established as norms in the home and are dependent on the knowledge and behaviour of parents and elder siblings. Studies have reported that poor attitude of parents toward the oral health of infants and young children are associated with increased caries prevalence [8].

Most of the surveys reported in the literature are targeted at school-age children due to easy accessibility [9]. This study was carried out to assess the knowledge, attitude, and existing oral health care practices among parents of preschool children’s oral health care in Bhilai-Durg City.

MATERIALS AND METHODS

A cross-sectional study was conducted in the outpatient Department of Pedodontics and Preventive Dentistry. Ethical clearance was obtained from the institutional Research and Ethical Committee. Inclusion Criteria were parents of 2-6 year aged children who visited the outpatient department for the treatment of dental caries of their children or had a past dental history and willing to participate. In addition parents of children with no medical condition or no medications prescribed to them were included in the study. Parents having more than two children were also included in the study. Parents not willing to participate or could not read or write were excluded from the study. In addition, parents who were not the primary caretakers of their children and parents of children with the medical condition were also excluded from the study.

All the parents of children aged 2 to 6 years, who visited the Department was informed about the purpose of the survey and were invited to participate. Those who fulfilled the above-mentioned eligibility criteria and willing to participate were included in the survey. Based on convenience sampling, a total sample size of **750** was obtained

The self-administered questionnaire written in English was adapted from Mani et al [10]. It was modified having 27 items, 09 each in the knowledge, attitude and practice components. It was then translated in local language Hindi. These questionnaires were later back-translated in English and verified with the original English questionnaire by pediatric dentists. The scoring for practice was based on a 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 data was tabulated and subjected to statistical analysis using the Statistical Package for the Social Sciences (SPSS version 20) program. The response rate was 100% as questionnaire were only distributed willing patients, they were instructed to answer the questions and return it before leaving the department. Out of 750 parents, 303 were mothers and 447 were fathers. Maximum no. of parents i.e.49.6% were from 30-39 years of age group. About 10% of the participants had primary education while 45.2%, i.e. maximum people had higher secondary education, and 39.8% of people were graduates. Only 5.9% of people were having a post-graduation degree. Nearly 33.7% of the participants were homemakers/unemployed, 7.8% of parents were professionals and the remaining 58.5% were either the salaried employee or having their own business. Parents with higher education level had significantly better overall knowledge scores than less educated parents (Table 1).

Table 1: Sociodemographic characteristics of the study population.

Variables		Frequency % (n =750)
Age group	20-29	18.9
	30-39	49.6
	>40	31.5
Parental status	Father	59.6
	Mother	40.4
Education	primary level	10
	Higher secondary	45.2
	Graduation	39.8
	Post Graduation	5.9
Occupational Status	Homemaker / Unemployed	33.78
	Business	30
	Salaried	28.5
	Professional	7.8

Knowledge

The percentage of parents who answered correctly, for individual knowledge questions is shown in Figure 1.

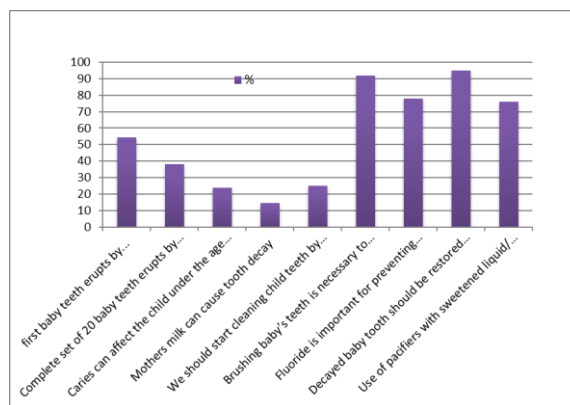


Fig 1: Percentage of Correct answers for Knowledge Questions.

Around 54.5% of parents answered correctly about the first appearance of the tooth. Only 24% of parents were aware that caries can affect infants below 2 years, and 60.7% of parents answered incorrectly, When asked about food cariogenicity, 76.2% of parents knew that sweet food and pacifiers with sweetened liquid causes tooth decay but only 14.4% had the idea that mothers milk can also cause tooth decay.78% of parents knew that Fluoride is important for preventing tooth decay but only 24.8% knew that one should start cleaning child teeth by the age of 6-12 months.95% of parents agreed that Decayed baby tooth should be restored for better oral and general health.

Attitude

The percentage of participants who correctly answered individual attitude questions is shown in Figure 2.

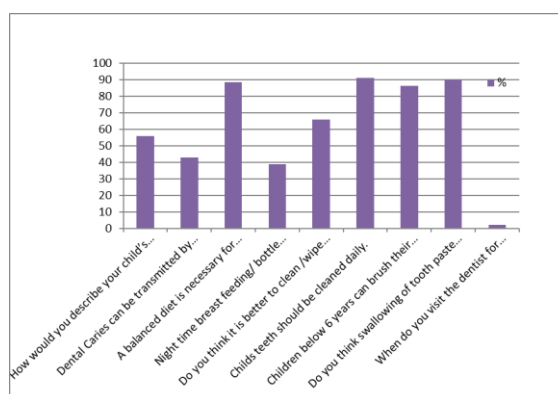


Fig 2: Percentage of Correct Answers for Attitude Questions.

Only 43% of parents were aware that dental caries can be transmitted by sharing feeding utensils, i.e.,

mainly through saliva. Similarly, night time bottle feeding is harmful was known to 45.5% parents but prolonged and frequent breastfeeding too can be harmful was known to only 39% parents while 45.5% disbelieved. It was good to see that 86% of parents believed that Children below 6 years cannot brush their teeth themselves properly, about 90% of them believed in cleaning child's teeth daily. surprisingly only 15% of parents responded positively regarding child visit to the dentist before 3 years of age and 84% of them accepted to visit the dentist for examination of child's teeth when they had pain. Overall attitude is just above 50%; hence, we can say it is above average, but parents need to be educated and motivated to improve their attitude toward the prevention of ECC.

Practice

The practices were categorized into "good" practices and "bad" practices. An analysis of the practice score for individual questions is shown in Figure 3.

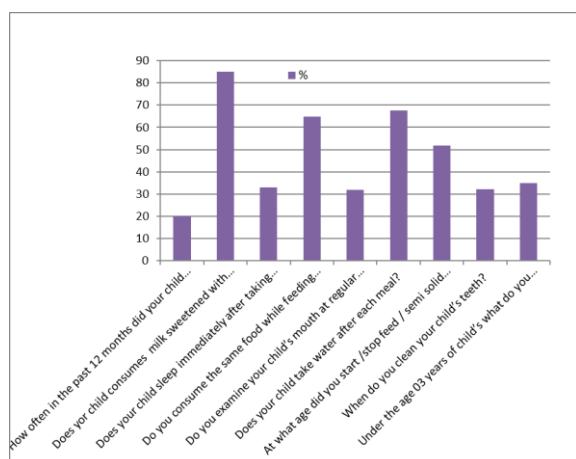


Fig 3: Percentage of Correct answers for Practice questions.

The most prevalent bad practice was giving sweet and cariogenic food frequently. It was observed that 10-15% children were consuming biscuits, cakes, creams, milk with sugar and sweat candies several times a day and about 40-60% every day. Most of the parents i.e.52% started top food along with breast/bottle feeding around 12 months of their child's age. It should be started at the age of 6 months. Good practices for the instance use of fluoridated toothpaste and brushing child's teeth twice a day was very low, only 32.2%. Most of the parents i.e.60.7% used to clean child's teeth once

daily. 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 a high school education had lower mean practice score than those with higher education.

DISCUSSION

Providing preventive dental health care should begin early in a child's life. Parental belief and behaviour towards the dental health of their children differ among families due to cultural and ethnic background [11]. Oral health of the children is associated with oral health knowledge of their mothers/guardians, as oral health-related habits (such as those related to oral hygiene and diet) are established during infancy and maintained throughout early childhood [12]. 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. Parents, especially mothers, function as role models for their children. Children under the age of 5 years generally spend most of their time with parents and guardians, especially mothers, even when they attend pre-schools or nurseries. These early years involve "primary socialization" during which the earliest childhood routines and habits are acquired. 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 [7, 13].

In our study a general good score was found in the knowledge but poor score for attitude, and good practices in infant oral health care such as timing for first dental visit, ideal time to start use of fluoridated toothpaste, ill effects of night time, frequent and prolonged breast/bottle feeding, harm caused by swallowing of toothpaste.

However most of the parents believed that excessive intake of sugar containing food causes dental cavities but this does not reflect in their practice and 40-60% of the children were taking sweet items almost daily. Around 10-15% was consuming sweet items several times a day. It has been observed that due to nuclear family, busy job schedule, many parents do not spend much time with their children and this is compensated by providing them sweet candies and other such things to show their love and affection. This is in accordance with the study carried by Ashkanani F et al (2013) [14].

According to AAPD, the first dental visit should be with the eruption of the first primary tooth and no later than twelve months of age [15]. The most alarming aspect of our study was that none of the participants was aware of the child's first dental visit. The reason might be the result of inappropriate efforts taken by dental professionals for the positive reinforcement of primary teeth and their treatment. The results of the present study differed from the findings by various studies, where the majority were aware of the correct age for the first dental visit [9,16]. Timing of the first dental visit of a child by their parents is very much important as it reflects their concern for oral and dental care. It also helps to establish a foundation of the future dental health of their children.

Several studies have found that good knowledge and attitude toward oral health does not necessarily produce good practices [6,10,17]. Respondents have partial knowledge of the importance of deciduous teeth. Many of the parents said that cavities in baby's teeth do not matter, and are not able to identify common dental problems like dental caries and gingivitis. There is a significant difference between the three categories of questionnaires. Most of the parents had good knowledge about diet, but knowledge of oral hygiene and the importance of primary teeth was very poor. This suggests a need for paediatricians and the primary health workers, who come in contact with new mothers, to play an active role in oral health promotion and to draw parents attention to the need for their child to be seen by a dentist. Dietary knowledge is mostly influenced by the dietary tradition of a specific area, which is also clear from the results that knowledge about the diet and dietary practice does not depend upon with mother's educational qualification or the

demographic inhabitation. In addition to this, as the main source of information were the elders in the family, the dietary tradition was inherited. This also indicates that the dentist and dental organizations have not been able to educate the masses. This result is not in accordance with that of William et al, who stated that parents coming from the deprived areas and with lower educational level have a low level of oral health knowledge [18].

The role of bacteria in the causation of dental caries was not acknowledged by the majority of the parents which was reflected by the prevalent practice of sharing utensils and biting food into small pieces before feeding in this study. This is in accordance with studies by Mani et al. and Togo et al [10, 19]. The focus should be on parents/caregivers to encourage their children to stop the practice of sharing utensils and food and carry out proper oral hygiene practices. Children should be advised that foods and drinks containing sugar substitutes are available, but should be consumed in moderation. Sugar-free medicines should be used when available. Parents/carers should be encouraged to start cleaning their children's tooth as soon as the first tooth appears, using a soft toothbrush and water only. Children who use a baby bottle should be advised never to put sweet drinks, including fruit juice, into the bottle and breast-feeding should not be practised at the will of the child. Parents/carers should be advised not to let their child sleep or nap with a baby bottle or being breastfed [4, 6, and 20].

Despite having good knowledge, many mothers reported using a nursing bottle at bedtime. Similar results were reported by Gussy et al, in rural Australian mothers, although it is apparent that the content of the bottle is more important than the use of the bottle [13,21]. Parents with higher education have a better knowledge regarding the oral hygiene practice and importance of deciduous teeth. This is similar to a Polish study which reports that mothers with a lower level of education also have low levels of oral health knowledge [22].

In spite of these facts being known to parents, their inability to take proper oral health care is indeed surprising, and the hurdles in practising oral health practices along with other reasons behind this situation can be further explored using qualitative study.

CONCLUSION

This study shows that in spite of good knowledge among parents, their attitude, and practices are lacking to keep up with necessary standards. With increased literacy level, living standards most of the parents have adequate knowledge about oral health, but mostly they impart oral health care practices at the age of 3-4 years among their children. It is the need of time to educate parents as well as a society about the importance of child dental health and preventive measures to maintain healthy child's mouth. Parents should be informed to brush their children's teeth at least once by their parents themselves at night before going to bed. This shows that parents need to be trained and motivated to carry out oral hygiene practices in a proper way and efficiently.

Since general physicians and primary health care providers are in frequent touch with parents and children. They should encourage and motivate the parents to take good care of their child's oral health and consult a dentist at age of 6-12 month of child's age. In developing countries like India, primary health care workers like Nurses and Anganwadi workers have a key role in community health programs. They should be trained and encouraged to monitor the child's oral health and refer to a dentist for the betterment of the child when required. Coordinated efforts by paediatricians, paediatric dentists and other primary health care providers like nurses and Anganwadi workers are required to impart dental health education about oral hygiene, feeding practices, the importance of the primary dentition and to promote preventive dental programmes.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

REFERENCES

1. D. Nivedha, G. Kayalvizhi, R. Sajeew, G.S. Prathima, A. Selva Balaji, M. Kirthiga. Association of knowledge and attitude of mothers and pre-nursery / nursery school teachers regarding early childhood caries in preschool children of puducherry – a cross sectional study. International Journal of Contemporary Medical Research 2017;4(3):676-680.
2. Bedi R, Lewsey JD, Gilthorpe MS. Changes in oral health over ten years amongst UK children aged 4-5 years living in a deprived multiethnic area. Br Dent J 2000;189:88-92.
3. Williams NJ, Whittle JG, Gatrell AC. The relationship between socio-demographic characteristics and dental health knowledge and attitudes of parents with young children. Br Dent J 2002;193:651-4.
4. American Academy of Pediatric Dentistry. Policy on Early Childhood Caries (ECC): Classifications, Consequences, and Preventive Strategies. (2016). Pediatric dentistry, 38(6), 52-54.
5. Almeida AG, Roseman MM, Sheff M, Huntington N, Hughes CV. Future caries susceptibility in children with early childhood caries following treatment under general anesthesia. Pediatr Dent 2000;22:302-6.
6. Suma Sogi HP, Hugar SM, Nalawade TM, Sinha A, Hugar S, Mallikarjuna RM. Knowledge, attitude, and practices of oral health care in prevention of early childhood caries among parents of children in Belagavi city: A Questionnaire study. J Family Med Prim Care 2016;5:286-90.
7. Holm AK. Caries in pre-school children: international trends. J Dent 1990;291-5.
8. Hinds K, Gregory JR. National diet and nutrition survey: Children aged 11/2 to 4 1/2 years. Report of dental survey. Vol. 2. London: HMSO; 1995.
9. Chhabra N, Chhabra A. Parental knowledge, attitudes and cultural beliefs regarding oral health and dental care of preschool children in an Indian population: a quantitative study. Eur Arch Paediatr Dent. 2012;13(2):76-82.
10. Mani SA, John J, Ping WY, Ismail NM. Knowledge, attitude and practice of oral health promoting factors among caretakers of children attending day-care centers in Kubang Kerian,

- Malaysia: A preliminary study. *J Indian Soc Pedod Prev Dent* 2010;28:78-83.
11. Saima Sultan, Tasneem S. Ain, Owais Gowhar. Awareness of mothers regarding oral health of their children in Kashmir, India. *International Journal of Contemporary Medical Research* 2016;3(7):2168-2171.
 12. Wendt LK, Hallonsten AI, Koch G, Birkhed D. Analysis of caries-related factors in infants and toddlers living in Sweden. *Acta Odontol Scand* 1996;54:131-7.
 13. Suresh BS, Ravishankar TL, Chaitra TR, Mohapatra AK, Gupta V. Mother's knowledge about pre-school child's oral health. *J Indian Soc Pedod Prev Dent*. 2010;28(4):282-287.
 14. Ashkanani F, Al-Sane M. Knowledge, attitudes and practices of caregivers in relation to oral health of preschool children. *Med Princ Pract* 2013;22:167-72.
 15. AAPD Guideline on Periodicity of Examination, Preventive Dental Services, Anticipatory Guidance/Counseling, and Oral Treatment for Infants, Children, and Adolescents. AAPD; 2013
 16. Kumari NR, Sheela S, Sarada PN. Knowledge and attitude on infant oral health among graduating medical students in Kerala. *J Indian SocPedodPrev Den*. 2006;24:172-208.
 17. Mitrakul K, Laovoravit V, Vanichanuwat V, Charatchaiwanna A, Charatchaiwanna A, Bunpradit W, et al. Factors associated with parent capability on child's oral health care. *Southeast Asian J Trop Med Public Health* 2012;43:249-55.
 18. William NJ, Whittle JG, Gatrell AC. The relationship between socio-demographic characteristic and dental knowledge and attitudes of parents with young children. *Br Dent J* 2002;193: 651-4.
 19. #10 Nagarajappa, R., Kakatkar, G., Sharda, A. J., Asawa, K., Ramesh, G., & Sandesh, N. (2013). Infant oral health: Knowledge, attitude and practices of parents in Udaipur, India. *Dental research journal*, 10(5), 659–665.
 20. Bertness J, Holt K. Promoting Oral Health in Young Children: A Resource Guide. Washington, DC: National Maternal and Child Oral Health Resource Centre; 2013.
 21. Gussy MG, Waters EB, Riggs EM, Lo SK, Kilpatrick NM. Parental knowledge, beliefs and behaviours for oral health of toddlers residing in rural Victoria. *Aust Dent J* 2008;53:52-60
 22. Szatko F, Wierzbicka M, Dybizbanska E, Struzycka I, Iwanicka Frankowska E. Oral health of polish three-year olds and mother's oral health-related knowledge. *Community Dent Health* 2004;21:175-80.