

ECC and Infant Oral Care Assessment of Paediatrician's Knowledge and Attitude on Early Childhood Caries and Infants Oral Care in Bhopal, Madhya Pradesh: A Questionnaire Study.

Abstract:

Introduction : Early Childhood Caries (ECC) is considered as a significant public health problem in both developing and developed countries. ECC can start early in a child's life, progresses rapidly and might lead to adverse effects on a child's physical, psychological and social well-being. Access to child's dental care might be compromised as most parents are unaware of the importance of the child's first dental visit. Also Children in their first years are often seen by their Pediatric health professionals compared to dentists. Hence they can be considered as a reliable source for child's oral health promotion and caries prevention.

Objective: The main objective of this study is to assess the awareness, knowledge and attitude of Paediatric health professionals towards Early Childhood Caries.

Study Design: A cross-sectional questionnaire study

Methodology: Questionnaire based study will be conducted among the paediatric health professionals in Bhopal City. The questionnaire composed of two sections: Demographic characteristics and questions assessing participant's knowledge and attitude will be distributed among paediatric health professionals.

Result and Conclusion: It was found that Paediatricians have significant knowledge and attitude towards infant oral care and ECC but they accept lacking knowledge in some aspects and hardly acquired any dental training.

Keywords: Early childhood caries, Infant oral care, Paediatricians, Knowledge and Attitude, Prevention

Introduction:

Early childhood caries (ECC) is an ailment that distresses and affects teeth in children aged up to 71 months. AAPD defines ECC 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 preschool age child between birth and 71 months of age". [1]

ECC is considered as a substantial dental health problem in both developed countries and developing countries with occurrence of diseases in 1–12% population which was found to be as high as 70%. The prevalence of ECC varies according to the crowd examined, and occurrence as high as 85% has also been reported for deprived groups. The prevalence of ECC


changes with time, population and country. For instance, ECC was reported dominant in 11.4% of Swedish children and 7–19% among Italian children. Also, ECC was stated with a greater percentage (65%) among innate Canadian 3-year-olds children while, some countries' national surveys showed

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varying prevalence such as 36% in Greece, 45.8% in Brazil, 51.9% in India, and 61.4% in Egypt. [2]

The main risk factors in the establishment and expansion of ECC can be characterized as bacteriological, dietetic, socio-economic and environmental risk factors. It is a well-known fact that ECC mostly occurs due to high sugar contained diet, especially milk. Children often tend to develop habit of Bottle feeding specially during sleeping time which increases the risk of developing early childhood caries in children.

It is essential that every health care professional who is involved with the prescription or recommendation of drugs be fully aware of any resultant disorders that may arise as a side-effect as a range of drugs can affect the teeth. Various drugs have direct cariogenic effect on teeth due to their high sugar content and sticky nature e.g. Amoxicillin, Azithromycin. While some drugs have indirect carious effect on teeth as they lower the pH, induces xerostomia e.g. diuretic, antidepressants, antihistamines, anticonvulsants.

Even though it is mainly a preventable condition, ECC remains one of the frequent and chief diseases occurring in childhood. ECC might lead to adverse effects on child's overall health as it influences children's social, physical and psychological welfare and wellbeing because the associated dental pain and tooth loss can negatively influence children's nutrition, phonetics, socializing and sleeping. Moreover, treating ECC can become economic liability for both the health care organizations and family, as it may demand the utility of general anaesthesia. [3]

Hence, ECC need not be abandoned and precautionary as well as anticipatory dental measures for children's oral health should be considered. The initiation of oral care and the application of these preventive measures are expressively associated with the child's first dental visit, which is suggested within 6 months of the first primary tooth eruption and not later than 12 months.

Maximum parents are ignorant of the significance of the child's first visit at dental office. Also, children in their early and initial ages of life are frequently seen by paediatricians compared with dentists. As a result, it is crucial for paediatricians to recognize their role in the promotion of children's oral health by several means such as; assessing the child's risk of developing dental caries, providing basic screening services for early detection of dental problems, parental education, and referral of required conditions.

The American Academy of Paediatric Dentistry also mentions the application of diverse preventive approaches for inhibition and initial diagnosis of ECC as well as stresses on initiation of oral health and its awareness at the primary health care provider's office.

Hence, this study aims to assess the knowledge and attitude of Paediatric health professionals on Early Childhood caries and Infant oral health in Bhopal, Madhya Pradesh

Methodology

Convenient sampling was employed, which comprised of paediatricians employed at different healthcare services that are providing healthcare for paediatric patients in Bhopal city, including; private hospitals, governmental hospitals, specialized hospitals and private clinics.

A self-administered, close ended survey adapted by literature review was used for the data collection. The questionnaire surveyed collected of the following informations; (A) Sociodemographic data including: gender, place of practicing, availability of dental training at working place, adaptation of dental training. (B) Knowledge assessment questions including; primary teeth development and importance, timing of first child's dental visit, child's oral hygiene practice, child's diet and questions for the knowledge regarding dental caries's signs. (C) Attitude assessment questions for the Paediatricians' acceptance of having a part in some parts comprising; inhibition of Early Childhood caries, children's oral examination, parents' education and referral of required cases.

The questionnaire as described below was distributed in English language via an online softcopy using Google Forms which was mailed to the participants.

Appendix 1: Knowledge Questions

Q1. When does first primary tooth erupt?

- A) At birth
- B) 6-8 Months
- C) 10-12 months
- D) After 12 months

Q2. When should children have their first dental visit?

- A) After 1 year
- B) After eruption of first primary teeth
- C) When Permanent teeth erupts
- D) In-case of pain and other symptoms

Q3. Which is the most cariogenic sugar?

- A) Glucose
- B) Fructose
- C) Sucrose
- D) Xylitol

Q4. What is most common encountered dental problem in Children?

- A) Fluorosis
- B) Early Childhood Caries
- C) Shedding of Primary teeth
- D) Delayed eruption of Primary Teeth

Q5. Bottle feeding leads to

- A) Malocclusion
- B) Early Childhood Caries
- C) Gum problems
- D) No effects in oral cavity

Q6. Brushing of the teeth should be started at

- A) After Shedding of primary tooth
- B) In-case of pain and other symptoms
- C) As soon as Primary teeth erupts
- D) After 12 months

Q7. Effects of fluorides on teeth:

- A) Prevention of gum diseases
- B) Prevention of tooth decay
- C) Cleaning of teeth
- D) Controls bad smell

Q8. Does teeth and oral health affect the health of the body?

- A) Yes
- B) No
- C) Can't say
- D) Don't know

Q9. Which of the following can cause caries in children?

- A) Night Feeding
- B) Excess consumption of juice
- C) Carbonated Beverages
- D) All of the Above

Q10 Ideal method of tooth brushing in children is:

- A) Tooth brush and tooth paste
- B) Finger and tooth paste
- C) Gargling with water and mouth rinse (D) Don't know

Appendix 2: Attitude questions

Q1. Pediatric health professionals play an important role in prevention of Caries

- A) Yes (B) No

Q2. Pediatric health professionals play an important role in promotion of Infants oral health

- A) Yes (B) No

Q3. Pediatric health professionals educate parents or caregivers regarding preventive dental measurements for children

- A) Yes (B) No

Q4. Pediatric health professionals examine child's teeth for presence of caries

- A) Yes (B) No

Q5. Pediatric health professionals have to refer or advice parents in case of suspected cases of caries

- A) Yes (B) No

Q6. Pediatric health professionals lack knowledge for identifying oral health problems

- A) Yes (B) No

Q7. Do you prepare a diet chart for children considering Cariogenic properties of certain food?

- A) Yes (B) No

Q8. Do you advice parents and caregivers for regular dental visit?

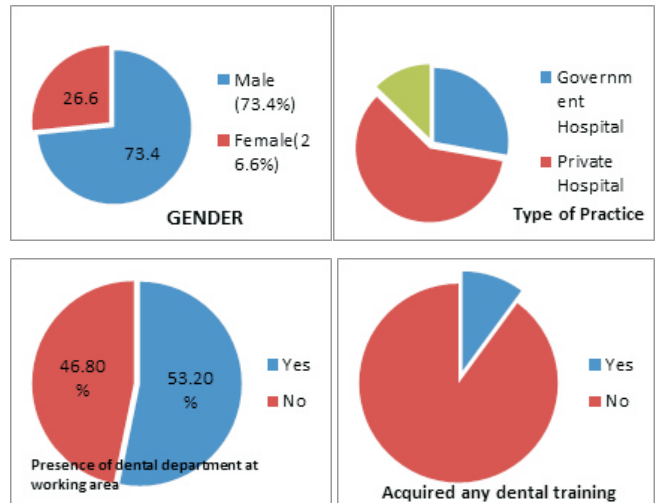
- A) Yes (B) No

Q9. Parent counselling is important for prevention and early diagnosis of caries?

- A) Yes (B) No

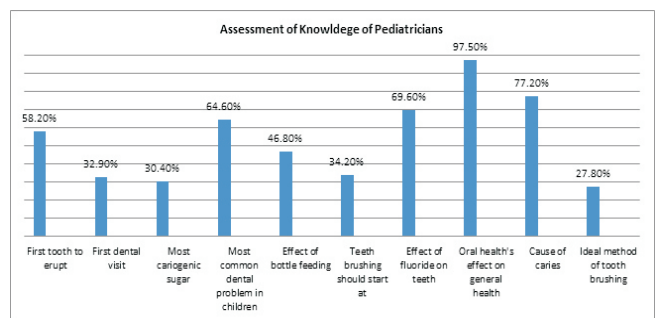
Q10. Do you believe early referral of children to dentist plays important role in maintenance of infant's oral health?

- A) Yes (B) No



Assessment of Demographic details of study participants

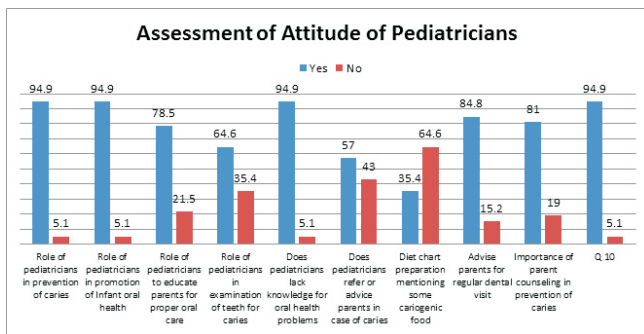
Results of assessment of knowledge were shocking as only 32.9% i.e. 26 participants had knowledge about children's first dental visit and as low as 30.4% (24) participants knew about sucrose being most cariogenic sugar. Furthermore only 34.2% participants were knowledgeable about initiation of brushing of teeth as soon as first primary teeth erupt. About 77.2% participants agreed caries being multifactorial diseases and can occur due to excess consumption of juice, carbonated beverages and night/ bottle feeding



Results:

The total numbers of participants who approved to participate and completed the questionnaire were 69. Out of 69 participants, majority i.e. 73.4% (58) participants were male while 26.6% were female. About 59.5% (47) participants were private hospital employees followed by government hospital employees i.e. 27.8 % (22) and private clinic practitioners i.e. 12.7% (10). As many as 53.2% participants accepted having dental department at working area while 46.8% denied having the same. Only 10.1% (8) participants acquired dental training while as high as 89.8% (71) accepted of not acquiring any dental training.

On assessing the attitude participants, majority of the participants accepted that they play important role in prevention of caries during childhood and also has a key role in promotion of oral health. Also about 64.6% paediatricians agreed examining child's teeth for the presence of caries. Approximately 57% participants accepted that they lack knowledge for identifying oral health problems and as high as 64.6% denied preparing diet chart considering cariogenic properties of food. Significantly high number of participants agreed that counselling of parents or primary caregivers play important role in prevention of ECC and they advise them for regular dental visit.



Discussion:

Lewis et al. (2000) found that paediatricians who had necessary dental knowledge were able to reduce the occurrence of ECC by 77%. [4] For knowledge of oral wellbeing and practice assessment, Prakash et al. (2006) established that 46% of Canadian paediatricians have deficient knowledge in identifying the primary symbols of tooth caries. [3] Condensed knowledge regarding children's oral health was also a collective outcome in studies shown by Balaban et al. (2012) among Brazilian paediatricians and Eke et al. (2015) amongst Nigerian paediatricians. [5,6] Conversely, a European survey led by Hadjipanayis et al. (2018) revealed that paediatricians have a adequate knowledge regarding particular oral health's aspects with majority of them reported their performance of dental inspection. [7] Also, In Brazil, 92% of paediatricians prosecuted that they often inspect children's oral health (Soares et al., 2013). [8]

The results of the current study, indicted the presence of discrepancy within participants' knowledge and attitude. The maximum participants (i.e. about 73%) had a satisfactory level of knowledge about infant's oral health and ECC. However, less proportion of members actually reported the role of oral health related check-ups, which correspond with the American national survey conducted by Lewis et al. [4] Moreover, most of the paediatricians knew the eruption age of first primary tooth but fewer participants were aware that children should have their first dental visit after the eruption of first primary tooth. Correspondingly, both Sabbagah et al. (2011) and Sezer et al. (2013) stated similar findings among 25.6% of Saudi's and 13.9% of Turkish population, while a better level of knowledge in India was reported by Indira et al. (2015). [9, 10, 11]

In the recent study, a few participants were aware that brushing with tooth brush and tooth paste should be used at

the age of 6-8 months i.e. at the time of eruption of first primary teeth. Additionally, about children's diet, paediatricians were completely knowledgeable about the consequence of bottle night feeding, the effect of juice and carbonated beverages on children's teeth, also being the etiological and risk factor for ECC. Similar results were reported by Indira et al, Sabbagah et al, and Sezer et al [12, 11, 9]

Likewise, most of the participants believed that paediatricians have to examine children's teeth as part of their daily practice and admitted that they play vital role in prevention and early detection of caries. Contradictory, Sezer et al stated that low percentage of paediatricians performing children's oral health investigation. [9] Alternatively, another study conducted by Sabbagah et al, in Jeddah city, Saudi Arabia, showed an enhanced level of practice, of which the majority of paediatricians stated the inclusion of children's teeth examination in their routine practice. [11] Indira et al and Prakash et al also reported in their studies that most of paediatricians are counting children's teeth examination in their practice. [12, 3] Another study by Eke et al, also indicated that paediatricians well-thought their role in the inspection of children's teeth for avoidance and identifying ECC at early age. [6]

Although most of the participants considered their role in children's teeth examination, majority of them accepted of lacking proper knowledge for adequate diagnosis and advising initial preventive guidance. Most of paediatricians considered that they have a role in advising parent and educating them regarding infant's oral health and ECC. Whereas, a better training regarding parental counselling and education were stated in the previous studies. [3, 9, 12]

As children come across with medical care early enough in their first years of life, the study's outcomes provide a beneficial data that could be used to enhance the promotion of children's oral health and prevention of dental caries. Sufficient dental knowledge, attitude and training for paediatricians are of such an important, in order to permit them to do their parts in children's oral health promotion in the required way. The outcome of the current study revealed that most of paediatricians, actually considered themselves having an important role in children's oral health promotion. However, there was a lack of knowledge about some aspects of children's oral health.

Conclusion:

Most of the participants reported an acceptable dental attitude and knowledge. However, there was a lack of knowledge among some of the aspects and majority of the participants hardly acquired any dental training.

As a result, more efforts are encouraged to enhance and facilitate the provision of the required oral health assessment in the paediatric clinics along with increasing the interaction between paediatricians with dentists.

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