ORIGINAL RESEARCH ARTICLE

Pediatricians' View on Pediatric Dental Needs: Bridging the Gap

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Abstract

Background: Although repeated efforts are being made from time to time to enhance the knowledge of pediatricians regarding the oral health of children, yet there is a huge gap to bridge. This study is yet another effort to find the loopholes where improvements can be made, as establishing a good rapport and communication between both the fraternities is the need of the hour to decrease the load of a major public health problem, i.e., dental caries in children.

Aim: This study was aimed to appraise pediatricians' knowledge and awareness toward oral health and treatment needs.

Materials and methods: Pediatricians in the Amritsar district were requested to fill up the questionnaire concerning their knowledge level and approach toward pediatric dentistry.

Results: Although 80% of pediatricians were aware about dental caries, only 60% of the pediatricians surveyed had ample knowledge of the importance of various aspects of pediatric dentistry.

Conclusion: Every pediatrician should be associated with a pediatric dentist to minimize the load of oral diseases and brace the positive dental attitude in developing years of life.

Keywords: Oral healthcare, Pediatric dentist, Pediatricians, Referral.

AMEI's Current Trends in Diagnosis & Treatment (2019): 10.5005/jp-journals-10055-0080

Introduction

The significance of dentistry through primary years of child's life has been well appreciated.[1] The recommended guidelines by American Academy of Pediatric Dentistry (AAPD) put more emphasis on early professional intervention and primary preventive strategies for oral health.[2] Comprehensive healthcare cannot be achieved unless dental care is a strong priority in all health service programs.[1] Thus, oral health counseling becomes important for the new mothers; and as they usually seek pediatricians' guidance in securing their children's normal growth and development, pediatricians are the first ones who can provide information for improving oral healthcare to the young mothers.[3]

It has been reported that 89% of children aged 1 year had an office-based physician visit, compared with only 1.5% who had a dental office visit.[2] The Centers for Disease Control and Prevention reports that caries is the most prevalent infectious disease[4] and more than 40% of children have caries by the time they reach kindergarten. Latino, American, Indian, and Alaska Natives are especially at high risk of developing early childhood caries (ECC) also called "baby bottle tooth decay".[5]

The ECC is a virulent form of caries, beginning soon after tooth eruption, developing on smooth surfaces, progressing rapidly and having a lasting detrimental impact on dentin. Caries in primary teeth can affect children's growth, result in significant pain and potentially life-threatening infection, and diminish the overall quality of life.[6] Since medical healthcare professionals are far more likely to see new mothers and infants than are dentists, it is essential that they be aware of the infectious etiology and associated risk factors for ECC, so as to make appropriate decisions timely and refer the child to pediatric dentist for effective early intervention.[5]

These early screenings present an opportunity to educate parents about the benefits of preventive rather than restorative care and may be more effective in reducing ECC than traditional infectious disease models.[7] So a key element of comprehensive care for children thus involves the coordination of services between medical and dental providers, so that the appropriate healthcare professionals can provide appropriate services at the appropriate ages.[8]

The present study was performed in Amritsar district to assess and evaluate the knowledge, attitude, and awareness of the pediatricians regarding the preventive dental modalities and treatment needs of children.

Materials and Methods

A present survey was undertaken in Punjab state among 150 doctors having master's degree or postgraduate diploma in pediatrics.

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How to cite this article: Sadana G, Singh A, Rattan S, *et al.* Pediatricians' View on Pediatric Dental Needs: Bridging the Gap. AMEI's Curr Trends Diagn Treat 2019;3(2):68–71.

Source of support: Nil

Conflict of interest: None

There were no exclusion criteria apart from pediatricians unwilling to participate in the study.

A literature review was carried out to find studies regarding awareness and knowledge among pediatricians regarding the preventive dental modalities to form questionnaire. A comprehensive questionnaire was prepared based on the studies done by Shetty and Dixit,[9] Murthy and Mohandas,10 Subramaniam et al.,[11] Nammalwar and Rangeeth,[12] and Niranjan B et al.[1] Thus, a structured questionnaire written in English was framed. The questionnaire contained 12 questions. A pilot study was carried out by asking five pediatricians to complete the questionnaire. The participants were asked for their opinions on usability and clarity of questions, and the response was positive. So after the content validation, questionnaire was handed over personally to all the pediatricians who agreed to participate in the survey. Data were collected by a single investigator who explains questions to the pediatricians, in case of any doubt. Sufficient time was given to fill the questionnaire and collected on the spot after they had completed. Filled questionnaire were passed in a blind manner to the statistician for the analysis.

The purpose of the study and the questionnaire were explained to each participant.

The questionnaire was divided into the following five sections:

- Awareness about the pediatric dentistry among pediatricians
- Pediatricians' awareness about primary dentition
- Knowledge about oral hygiene practices among pediatricians
- Awareness and attitude toward ECC in them
- Knowledge of link between dental and systemic diseases

Results

Discussion

The AAPD recognizes that infant oral health is the foundation upon which preventive education and dental care must be made to enhance the opportunity for a lifetime free from preventable oral disease.[2] The factor which indeed affects the preventive dentistry pursuance in the infants is the knowledge of the medical group concerning this issue. Pediatricians examine infants several times during the first and second years of life to note the developmental progress of the baby, provide necessary immunization, give the parents guidance concerning nutrition, and discuss cognitive development. The role of pediatricians in oral health was formalized in a policy issued by the American Academy of Pediatrics (AAP) in 2003 and reinforced by another policy issued in 2008, according to which pediatrician can assess the risks of dental problems and counsel parents and their children about the prevention of these problems.[12] So this survey was done to see the pediatricians' view on preventive dentistry as well as to study on the lacunae where the pediatricians need to improve the knowledge of oral health and to recognize the importance of pediatric dentistry.

Table 1 depicted the awareness about the pediatric dentistry in pediatricians surveyed. All the pediatricians are aware about pediatric dentist and 77% of them agreed that there is interlink between the specialties as both have same age-group of population to deal with, while 6% responded that there is no interlink and 17% replied with no comment. According to Niranjan et al.,[1] nearly 79% pediatricians practising for <10 years were well aware of the existence of postgraduation course especially for oral health of infants, children, and adolescents in the name of pediatric dentistry. Similar findings were reported by Shetty and Dixit,[9] where 72% of pediatricians were aware of pediatric dental specialty. The pediatricians' role in oral health was formalized with the 2003 AAP policy statement, Oral Health Risk Assessment Timing and Establishment of the Dental Home, which recommended that pediatricians and other pediatric primary care providers incorporate preventive oral health education into their practices and that children undergo an oral health risk assessment by a pediatrician or pediatric primary care providers by 6 months of age.[13] Similarly in the present study, 64% pediatricians agreed that pediatricians are part of the dental home as this relationship fosters care that is accessible, coordinated, and compassionate and that encourages mutual responsibility and trust, whereas 32% was not agreed. The concern to this percentage is important as those infants who do not receive the knowledge and the guidance during the early stages of life will end up with poor oral health and malocclusion.

When pediatricians were asked about the importance of primary dentition, an overwhelming response was seen (Table 2). Nearly 89% of the pediatricians knew about the importance of the deciduous dentition and they were familiar with the fact that they act as a space maintainer for their permanent counterpart, whereas only 11.32% answered in negative. When questioned about natal/neonatal teeth, 67.92% believed that they required special intervention, while 32.07% believed no special treatment was required except removing them if they are causing any trouble to the child. Eighty-three percent pediatricians answered in affirmation and was aware that thumb-sucking till the age of 3 years did not require any intervention and is accustomed. But it is worth noticing that if the habit continues after 5 years of age, then the child should be referred to the pediatric dentist, otherwise it can lead to severe dental and skeletal malocclusion. Pediatricians and family physicians reported that they gained their oral health education and training mostly through practice. According to Prakash et al.,[14] only 18.2% of pediatricians and 37.7% of family physicians reported receiving oral health training during medical school.

Table 3 shows the awareness among pediatricians about the oral hygiene practices. When pediatricians were asked about the

Table 1: Pediatricians' awareness about pediatric dentistry

	Yes (%)	*No (%)*	*No comment (%)*
Is there any interlink between the pedodontists and the pediatricians	77.35	5.66	16.98
Are pediatricians a part of dental home	64.15	32.07	3.77

Table 2: Pediatricians' awareness about primary dentition

	Yes (%)	*No (%)*	*No comment (%)*
Primary teeth acts as space maintainer for permanent teeth	88.67	11.32	0
Is any special intervention required to treat natal and neonatal teeth	67.92	32.07	0
Thumb-sucking does not require intervention before 3 years of age	83.01	15.09	1.88

Table 3: Knowledge of oral hygiene practices and preventive measures

	Yes (%)	*No (%)*	*No comment (%)*
Does gum pads require cleaning	62.26	37.73	0
Brushing should start as soon as first tooth erupts	69.81	26.41	3.77
Fluoridated toothpaste should be given to children	49.05	49.05	1.88
First dental visit should be before their first birthday	73.58	32.07	0
Pit and fissure sealants are effective measure against dental caries in children	77.35	9.4	13.2

Table 4: Awareness and attitude toward early childhood caries

	Yes (%)	*No (%)*	*No comment (%)*
Dental caries is irreversible	81.13	16.98	1.88
Child should visit dentist every 6 months	86.79	11.32	1.88
Is there any relationship between bottle-feeding and tooth decay	88.67	11.32	0

Table 5: Knowledge of link between dental and systemic disease

	Yes (%)	*No (%)*	*No comment (%)*
Is there any link between teething and systemic problem	62.26	30.18	7.54
Enlarged adenoids lead to dental malocclusion	88.67	7.54	3.77

first dental visit, only 73% pediatricians agreed on the statement that the first dental visit should be before the children's first birthday. Traditionally, AAP had recommended seeing the dentist by the age of 36 months. However, more recently the AAP has changed and expanded its oral health guidelines due to the increasing incidence of ECC; and the recent policy recommends referring a child for oral health examination within 6 months of eruption of first primary tooth but not later than 12 months of age.[8] The importance of initiating oral hygiene practice before the eruption of first tooth was not seen to be prevalent among the pediatricians. Only 62% of them recommended cleaning the gum pads after every feed and 69% of the pediatricians recommended to clean the teeth as soon as the first primary tooth erupts. The policy by AAPD 2004 also focuses on the specific preventive strategies like diet counseling, optimal use of fluoride, and providing anticipatory guidance,[15] but only 49% of pediatricians surveyed concurred with this statement, while more than half of pediatricians are in contention. Similar findings were reported by Indira et al.[8] according to which only 47% of the pediatricians recommended to clean the teeth using toothbrush and fluoridated paste only after all the primary teeth erupts. It is worth mentioning here that for the children fluoridated toothpaste which contains less than 500 ppm of fluoride should be used with only wheat grain size amount for toddlers while pea size amount for preschool and school-aged children with guided toothbrushing by the parents or caregiver until the child develops dexterity, as recommended by AAPD. Fluoride application leads to the formation of fluor-appetite crystals on the surface of teeth, which acts as a protective layer and prevents the occurrence of caries.[16] But before recommending the fluoridated toothpaste, one should have the knowledge of the fluoride level in the water of their region as the children living in areas already rich in fluoride might not need topical fluoride application in any form. When pediatricians were enquired about the pit and fissure sealants for prevention of caries, 77% responded positively, whereas 13% were not aware about this modality; but even this low percentage is of concern as the newly erupted molars have deep pits and fissures, which need to be sealed, otherwise food will get stuck in those fissures and can result in caries.

In the United States, 98.9% of pediatricians frequently examine a child for signs of dental caries.[17] Children with ECC are three times more likely to develop dental caries in the permanent dentition (Table 4). In our study, it was found that 81% pediatricians were aware about dental caries and is familiar with the fact that it is an irreversible disease. When asked about the visit to the dentist, approximately 87% responded positively and aware about the relevance of biannual visit to the dentist as dental caries is an ongoing process. Present study revealed that the pediatricians were aware of the factors causing ECC and 89% of pediatricians agreed that bottle-feeding leads to ECC if the child was bottle fed at night. Similar results were found in the study done by Indira et al.[8] where 75% of pediatricians agreed that bottle-feeding leads to ECC and 95% of the pediatricians say no to bottle-feeding. Guidelines prepared by AAP suggest that pediatricians should advise parents to begin bottle or breast weaning when their child is approximately 9 months of age and accomplish it soon after the first birthday.[18] However, 11% of the pediatricians disagree to the fact that even prolonged breastfeeding at night can lead to ECC, but it is worth a mention that breastfeeding at night leads to overnight acquisition of milk on teeth especially incisors which catalyzes dental caries process.

Oral cavity is considered as the gateway to the whole system of the body and can lead to systemic diseases if oral hygiene is not maintained properly. So pediatricians should have the knowledge and should guide the parents. Teething is defined as the movement of the teeth from their pre-eruptive position in the alveolar bone through the mucosa into the oral cavity. Some of the symptoms that had been associated with teething in children include fever, diarrhea, general irritability, drooling of saliva, sleep disturbance, and ear infection. Others include pain, inflammation of the mucosa overlying the tooth, facial flushing, circumoral rash, gum rubbing (biting), sucking, constipation, and loss of appetite.[19] In present study, 62.26% pediatricians believed that there is an interlink between teething and systemic problems and 7.54% did not answer this question, while the rest of 30.18% did not believe that there is an interlink between the two (Table 5). But it is a fact that during the eruption process or teething, there is mild inflammation of the mucosa which leads to irritation and the child tends to put everything in mouth to relieve irritation and those unhygienic practices can lead to systemic problems like diarrhea and not teething on its own. Teething is a natural and physiological process and should not cause any problem except mild fever and pain due to the inflammation.[20] Menezes et al.[21] in their study revealed that events such as recurrent allergies and asthma cause nasal obstructions and favor mouth breathing; they are therefore considered predisposing factors for malocclusion; 88.67% of the pediatricians participated in the study were well aware about this fact, while 7.54% answered no and 3.77% did not comment to this

question. Enlarged adenoids can lead to mouth breathing which can further result in malocclusion.

Conclusion

The study conclude that on an average 60% of the pediatricians had the knowledge about the importance of pediatric dentistry but still those 40% needs to be educated to remove the loopholes and bridge the gap. Every pediatrician should be associated with a pediatric dentist to minimize the suffering of the child in the developing years of life and to decrease the load of oral health problems like dental caries.

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