



Knowledge attitude and practice amongst paediatricians towards oral health of children: An evidence based review of the global scenario

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ABSTRACT

Background: Primary care providers, such as general physicians, pediatricians, and school nurses, have the potential to significantly contribute to the delivery of preventive services, particularly for children under the age of three in demographic segments with restricted accessibility to dental care. In light of the existing challenges pertaining to the availability of dental services for individuals with low income in India, it is important to engage non-dental primary healthcare providers in the process of identifying and mitigating oral health issues.

Objective: The purpose of this overview is to present the findings derived from systematic reviews and cross-sectional studies regarding the current knowledge, attitude and practice of pediatric oral health care among physicians and explore the effectiveness of various interventions, such as continuing medical education, printed educational material, academic outreach, and reminders, in facilitating the adoption of new knowledge and practices among primary care providers.

Results: The present analysis shows that medical practitioners lack the overall knowledge to provide valid dental referrals for children and adolescents. This may be due to inadequate training in dental morphologies and diseases in medical schools, failure to follow AAP/AAPD criteria, or negligence of pediatric oral health. The review confirms the lack of knowledge about developmental aspects like tooth eruption timing, dental caries etiology, mother-to-child oral bacteria transmission, preventative services like topical fluorides and pit-fissure sealants, and others. Dental referrals have also failed due to timing constraints and insurance issues.

Conclusion: The data reveals that pediatricians need better oral health training. It is crucial to improve pediatricians' oral/dental health related knowledge and practices. Paediatricians, general physicians and dentists, must work together to promote oral health and prevent dental problems in children.

INTRODUCTION

Oral health is recognised by the World Health Organization (WHO) as an important subject for interprofessional collaboration within the primary health sector. A more comprehensive definition of oral health was introduced in 2016 by the Federal Dental International (FDI) Dental World Federation as the "capability to speak, taste, smile, touch, chew, swallow, and express a variety of emotions through facial expressions with confidence and no pain,

discomfort, and disease of the craniofacial complex". Scientific literature confirms that oral health of pre-school children who have high levels of caries has, for the most part, been ignored. This may be attributed to a general conception that primary teeth shed off and are therefore not as important as permanent teeth. However, loss of primary teeth has shown to impact negatively a child's ability to eat, speak, play, and socialise as well as impair sleep. Pain, infections, and a poor diet are all potential contributors to stunted growth and impaired nutrition. Inadequate oral health can also have wider-reaching consequences for children and their families. For instance, children might have to skip school because they are suffering from toothaches or because they need dental treatment, and their parents or other caregivers might have to take time off work to take them to the dentist. Oral health care is typically treated as a separate entity from primary health care for children, despite the fact that researchers have identified a variety of connections between oral health and overall systemic health. Oral health is a topic that has been debated as needing to receive more attention in the field of paediatric medicine. It is possible that less favourable health outcomes will result if oral health care is not incorporated into paediatric practises. For the purpose of levelling the playing field in terms of access to preventive dental care for children under the age of 5, the Human Resources and Services Administration (HRSA) suggested in 2011 that primary care providers include oral health care services as part of their standard practise. It was proposed that primary care physicians for children and families, such as paediatricians and family physicians, should play an increasingly important role in evaluating the oral health of children. According to a study conducted by the American Academy of Pediatrics, approximately 90% of infants and children up to 1 year of age have visited a primary care clinician, whereas only 2% have been to the dentist. Therefore, "well child" sessions are great times to check a kid's oral health, apply fluoride varnish, and educate parents on the need of good oral hygiene. It's possible that a youngster could see one of these providers 11 times before finally making it to the dentist.

As members of the medical profession, paediatricians are responsible for monitoring and guiding the process of physical development and maturity in children. They also advise parents on matters pertaining to eating, maturation, vaccinations, and infections. Providing children with preventative dental care is a team effort that includes the participation of both paediatricians and dentists. Paediatricians are the guardians of the overall health of children and are the most qualified members of the medical staff to provide knowledge and guidance to other members of the medical community. The early diagnosis of oral diseases and the subsequent referral to the appropriate specialist for treatment can both be assisted by paediatricians. They have the ability to educate parents on fundamental preventive oral care. The American Academy of Pediatrics (AAP) strongly suggests that general health care practitioners, such as paediatricians, should incorporate preventative oral health care methods into their standard operating procedures for patient care. In addition, paediatricians should also conduct oral health risk evaluations on children as early as six months of age and provide appropriate dental referrals. The AAP previously recommended that children wait until age 3 to have their first dental visit, but in 2003 the guideline was changed to recommend that children with a high risk of dental caries establish a dental home by the age of one. An early relationship between a family and a dental practitioner, from whom the family will receive preventive instruction, dental care, counselling, and anticipatory guidance is the idea behind the dental home concept. This early relationship is intended to be established as soon as possible. The establishment of a dental home for children in their first year of life is important for promoting the early detection of high-risk individuals and the prevention of dental disease, thereby decreasing the incidence of early childhood caries. As a result, paediatricians are considered to play a pivotal role in providing preventive oral health care

education and in diagnosing oral problems in children at an early age. For this reason, the oral health awareness among paediatricians is important.

REVIEW

Oral health knowledge

In the late 1990s, it became evident that paediatricians and paediatric primary health care professionals were crucial to the process of providing anticipatory guidance and appropriate dental referrals, as well as setting up a dental home for a newborn. Indira MD et al. (2015) reported that 93.8% of paediatricians in the city of Mysore, India, were aware of paediatric dentistry as a discipline, but only 43% of them were aware of the AAPD/AAP recommendation that children have their first dental appointment by the age of 1. More than 60% of paediatricians in this survey were found to have sufficient knowledge about the number of primary teeth and the age of first tooth eruption. Most doctors in PGIMER Chandigarh, India, have the right knowledge about dental caries (60%), bottle feeding (88.2%), tongue cleaning (83.3%), and medicine inducing gum growth (92.2%), according to a study by Goyal A et al. (2020). However, just approximately a third of people surveyed knew the correct answers to questions about the optimal age to begin brushing one's teeth (35.3 percent), the optimal salivary pH for preventing tooth demineralization (32.4 percent), and the maximum recommended daily sugar exposures (35.3 percent). The authors also found that only a minority of the participating paediatricians correctly identified the role that fluoride varnish plays in preventing caries and correctly identified the appropriate amount of fluoride in children's toothpaste (2.9%). According to Acharya S et al(2019) 's findings, doctors in Bhubaneswar's medical schools were generally aware of the risks associated with administering liquid medication to children, particularly to their teeth. Sixty percent of paediatricians in Vadodara, Gujarat, were found to have inadequate knowledge of oral health, according to another study. Eighty paediatricians agreed that the mouth is not germ-free, whereas only 20% said that it is. Almost 80% of respondents were aware that dental caries is not contagious from mother to child, while 20% were under the false impression that it is. Because the first tooth erupts at birth, paediatricians agree that extended nursing cannot lead to dental caries. The majority of doctors in Puducherry (39.1%) were aware that cavity-causing bacteria can be passed from mother to kid, according to a study by Prathima GS et al. (2020). Their understanding of when children typically get their first teeth was only 46.9% accurate. In terms of when to start brushing, 39.1% of physicians recommended doing so after the eruption of the first primary tooth, while 51.8% recommended starting once all 20 primary teeth had come in. Shetty and Dixit conducted a survey among paediatricians in India and discovered that 92% of them were aware of fluoride's preventative uses; however, they did not collect data on how many of these doctors actually suggested fluoride to their patients.

According to American authors, there is a knowledge gap when it comes to developmental oral health and the appropriate age for a child's first visit to the dentist. Twenty-two percent of participants in a major European research admitted to having doubts regarding the transmission of oral bacteria. Twenty-five percent of respondents, according to the authors, didn't know the first clinical indications of dental caries (i.e., early or white spot lesions). There were large knowledge gaps about the benefits of pit and fissure sealants and fluoride supplements, as demonstrated by researches conducted in Nigeria and Brazil.

Oral health practice

When working in conjunction with their dental colleagues, paediatricians can help prevent, intervene in, and manage oral problems like dental caries. The oral disease burden, however, keeps rising if the knowledge is not put into practise. More dental referrals were made by

paediatricians who had more education and training, as determined by the research conducted by Sezer et al. (2013). The majority of the 97 physicians who took part in the Mysore study recommended their children see a paediatric dentist, but only 48 percent actually referred the children to a paediatric dentist. Approximately 77% of paediatricians checked the mouth and teeth of newborns. Only 26% of paediatricians suggested cleaning the mouth immediately after delivery and feedings, and 47% said brushing with a toothbrush and paste should wait until all primary teeth had erupted into the oral cavity. However, only 33% of paediatricians consistently offered nutritional counselling to the patients, despite 95% agreement that it is a vital part of newborn oral health care for preventing ECC. According to the results of a study, Goyal A et al. conclude that in India, 21.6% of general/physical examinations of CSHCN include an evaluation of the patient's dental health. There was just 17.6% paediatricians who always stressed on the importance of brushing one's teeth and tongue, especially after consumption of sugar containing drugs. Only 24.5% of participating paediatricians send CSHCN to a dentist for care, indicating a lack of appropriate referral. Prathima GS et al. report that 70% of doctors feel that untreated dental caries might harm a child's general health, and that 50% of physicians have discussed the negative implications of early childhood caries with parents. A total of 86.4% of paediatricians surveyed in this study examined their patients' oral health, 80.9% of paediatricians advised regular oral health examinations for children with special needs, and 95.5% of paediatricians referred children with suspected ECC to a general dentist. However, only 10.9% referred children with suspected ECC to a pedodontist.

In the United States, nearly all paediatricians (98.9%) routinely check a child's teeth for signs of dental caries. However, a different study conducted in the US found that referral rates for children at risk of oral health problems were low among the 1288 paediatricians who completed a risk assessment and referral tool (POORT). Lewis conducted a nationwide survey in the United States and found that 90% of physicians agreed that they should check for dental caries in children's teeth, but just roughly half (54%) reported checking the majority of children aged 0-3 years. Examination frequencies for oral disease were observed to be different in different nations. Sixty-four percent of paediatricians and forty-six percent of family physicians (n=537) in a Canadian study said they counselled parents or caregivers about teething and dental care; fifty-three percent of paediatricians and twenty-five percent of family physicians said they evaluated children's risk of developing tooth decay. A similar survey of Turkish paediatricians found that only 13.9 percent of respondents routinely referred patients with children under the age of one to a dentist. The capacity of paediatricians to spot plaque was evaluated by Dumas and coworkers. Low levels of agreement were found between a dental hygienist and the paediatricians' (n = 28) observations of the presence of plaque on the teeth of 39% of children (n = 118).

Barriers in implementation

Most studies have focused on insufficient education and training opportunities for paediatricians, but a paucity of reporting on the most significant impediments impacting oral health and knowledge and practise has been identified in the literature. While the medical and dental communities have established best practises, only 53% of paediatric dentists and 49% of general dentists report frequently conducting examinations for children as young as 12 months old. Because of this, doctors have reported having trouble referring their young patients to the dentist in accordance with AAP recommendations. Understanding the perspectives of dental providers on the evolving involvement of paediatricians and other medical child-care providers in oral health is crucial for successful collaboration between medicine and dentistry to promote change in provider practise behaviours and oral health outcomes. Paediatricians' capacity to refer patients to dentists in accordance with the American

Academy of Pediatrics' (AAP) guidelines relies in part on dentists' acceptance of patients referred by paediatricians. This insight can guide efforts to strengthen the connection between children's medical and dental homes, which is crucial for promoting optimal oral health.

Knowledge of oral health guidelines was low, as reported by a study by Long CM et al. (2014) that focused solely on barriers to the service's implementation. Of the participants in the study, only 35% (n=147) said they were familiar with the AAPD's guidelines, and 35% (n=134) were familiar with the AAP's 2003 or 2008 oral health guidelines. Surprisingly, more than 70% of doctors did not believe that children aged 3 and younger should only be referred when infection is evident. A recent Canadian study conducted in 2019 found that nearly eight in ten caretakers (79.1%, n = 49) said they had been informed by a dentist about when children should get their first dental exam. One respondent (1.6%; n = 17) had been instructed by a prenatal instructor, and just one-third (27.4%; n = 17) had been instructed by a doctor or nurse. Only 23.2% of the kids (n = 13) in the research went to the dentist by the recommended age of one. Furthermore, the authors reported that the majority of respondents had received instruction about oral hygiene homecare for their children and information about cariogenic (cavity-causing) foods and drinks from a dentist (66.1%, n = 41) or a dental hygienist (38.7%, n = 24), followed by a prenatal instructor (4.8%) and a nurse (1.6%), and 8.1% (n = 5).

Lack of training among primary care physicians and paediatricians may be a major obstacle. In a study conducted in Brazil, Balaban et al. (2012) found that 83.4% of medical students rated the amount of time spent learning about oral health as inadequate or nonexistent. Several authors noted that paediatricians benefited from additional training in areas like confidence and dental knowledge; nevertheless, they found no evidence that this training translated into changes in clinical practise.

Time constraints were identified as a significant obstacle to regular practise. The majority of respondents (84%) in survey by Lewis C et al. (2004) provided anticipatory oral health counselling to parents or carers, however only 39% felt they had adequate time to cover all the guidance they wished to impart during a visit. Over 90% of doctors educated families about preventative dental health, according to a follow-up study in 2009 by the same authors. Even when referred by doctors, children in underdeveloped nations like India may not be able to receive dental care due to a lack of dental insurance. It's been reported that similar situations exist in wealthy nations as well. These results are supported by research conducted by Lewis CW (2020) and Hinze ES et al. (2014).

DISCUSSION

The recognition of oral health as an integral part of general health and an aspect that cannot be compromised during the developmental years of a child, had led AAP and AAPD establish dental home and urge dental referrals from primary healthcare providers and pediatricians. The present review highlights the gap in knowledge amongst medical professionals regarding oral health in children and adolescents to perform valid referrals. This may arise from minimal training in medical schools regarding oral diseases, failure on part of the medical professional to keep up with guidelines of AAP / AAPD or simply because of negligent attitude towards oral health of the child patient. The review confirms the limitation in knowledge regarding developmental aspects like timing of tooth eruption, etiology of dental caries eg. bottle feeding causing early childhood caries, transmission of oral bacteria from mother to child, preventative services like topical fluorides and pit-fissure sealants, and several others. Other barriers like limited time for providing anticipatory guidance to parents/guardians/caregivers and lack of insurance have also led to failure of dental referrals. If evidence-based interventions (and the scale of their impact) are poorly understood, or if remuneration for oral health is minimal or non-existent, the value of time spent on oral health may not be

acknowledged to the same degree as the value of time spent on more conventional and familiar activities. If oral health is going to be a part of the care that paediatricians provide, then significant consideration needs to be made to how doctors are going to be encouraged and supported in order for them to do so.

CONCLUSION

The analysis suggests that there is a requirement for improved education and training regarding oral health for paediatricians on a global scale. It is imperative to undertake endeavours aimed at narrowing the lacunae in knowledge and enhancing the attitudes and practises of paediatricians concerning the oral health of children. It is vital to establish collaborative initiatives among paediatricians, dentists, and oral health experts to devise all-encompassing approaches aimed at fostering oral health and averting dental ailments in children.