



## Knowledge, attitude and practices among pediatricians on early childhood caries and infant oral health care in Mangaluru

### KEYWORDS

Early childhood caries, Pediatricians, Infant oral health care

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**ABSTRACT** *Background: The medical office is considered an opportune site to reach large numbers of children. Pediatricians can assess risk for dental problems and counsel parents and children about the prevention of these problems. A key element of comprehensive care for children thus involves the coordination of services between medical and dental providers so that the appropriate health care professionals can provide appropriate services at the appropriate age.*

*Aim: To assess the Knowledge, attitude and practices among Pediatricians on Early childhood caries and Infant oral health care in Mangalore.*

*Methodology: Printed questionnaire was distributed to Pediatricians in Mangalore regarding, their knowledge level and attitude about Early childhood caries and their approach towards pediatric dentistry.*

*Results: The findings suggest that pediatricians are knowledgeable about ECC and infant oral health. The majority of paediatricians considered their role in children's oral health as important and reported certain aspects of oral health in child visits. However, a reported lack of dental knowledge and training appeared to pose barriers, limiting paediatricians from playing a more active role.*

### INTRODUCTION

Early childhood caries (ECC) is a particularly virulent form of dental caries affecting the primary teeth of infants and toddlers. Prolonged bottle-feeding with sugar-containing fluids, especially before sleep, and delayed weaning are frequently cited ECC risk factors. In developing countries and within disadvantaged populations in developed countries, the prevalence of ECC is as high as 70%.<sup>[1]</sup>

Although the American Academy of Pediatric Dentistry calls for every child to have a dental visit by the time the first primary tooth erupts and to have access to preventive dental care throughout childhood, the reality is very different, especially for children in low-income families. Despite the decline in caries rates achieved in recent decades with the use of fluorides, disease rates remain high in these populations.

Children <5 years of age see a pediatrician more often than they do a dentist. So they have the opportunity to see the oral health of children because of their early and frequent contact during well-child and chronic condition visits. The strategy of utilizing primary care medical providers to promote oral health is particularly necessary in rural regions where there are few dentists and even fewer pediatric dental specialists.

Before primary care practitioners and pediatricians can be expected to increase their involvement in oral health prevention, such practices must be incorporated into medical education. Family medicine's focus on maternal and infant care promotes targeting the origin of pediatric oral health

problems, including transmission of cariogenic bacteria from mother to infant as well as parental attitudes, knowledge, cultural practices and behaviors associated with oral disease. The family medicine setting provides opportunities to intervene with pregnant women whose oral disease may place them at increased risk for premature labor and low birth weight babies.

Dental professionals often assume that medical professionals have adequate knowledge about infant oral health and will refer children before it becomes irreversible. Even though they are the first health professionals in contact with expectant parents, parents of infants and infants, they are not well informed about dental health and do not appropriately refer children with dental disease.<sup>[2]</sup>

Therefore this study was conducted to evaluate Knowledge, attitude and practices among Paediatricians on Early childhood caries and Infant oral health care in Mangaluru.

### MATERIALS AND METHODS:

A cross-sectional survey was done among 120 Pediatricians at Mangaluru city of the Karnataka state. A self-administered questionnaire with 20 items was prepared based on studies done by (Yahya et al, Gabriella D et al, Lewis W et al et al and Prakash et al ) was distributed to 120 pediatricians (Private practitioners and post graduates) and all were participated in the study. The Survey questions were divided into 4 domains.

**1. Individual details including:** name age, sex, medical background.

**2. KNOWLEDGE QUESTIONNAIRE ITEM :** To assess the knowledge regarding infant dental status, early childhood caries (ecc) and its preventive strategies . This session consists of 13 questions of which 7 questions were evaluated choosing one of the options Agree, Disagree or Not sure and remaining 6 multiple choice questions.

**3.CONFIDENCE QUESTIONNAIRE ITEM:** To access the confidence level of Paediatricians in identifying dental caries and to counsel parents regarding home dental care for their children, which were evaluated by choosing one of the options ,Yes or No.

**4. PRACTICE QETIONNAIRE ITEM:** consists of 5 questions which includes the oral health related activities carried out during baby visits by paediatricians, which were evaluated by choosing one of the options Yes or No.

**RESULTS:**

The obtained data was analyzed using chi square test.

**Table:1**  
**KNOWLEDGE QUESTIONNAIRE ITEM :**

	AGREE		DISAGREE		NOT SURE	
	Count	N %	Count	N %	Count	N %
A. Baby tooth are important even though they fall out.	109	90.80%	7	5.80%	4	3.30%
B. First signs of tooth decay are white lines or spots on tooth surfaces	60	50.00%	11	9.20%	49	40.80%
C. Untreated dental decay could affect the general health of a child.	110	91.70%	10	8.30%	0	0.00%
D. Bacteria that cause decay can spread from mother to child.	45	37.50%	36	30.00%	39	32.50%
E. Only bottle fed babies are affected by Early childhood tooth decay	12	10.00%	92	76.70%	16	13.30%
F. Fluoride decreases dental caries.	83	69.20%	30	25.00%	7	5.80%
G. Counselling on feeding & weaning practices decreases early childhood caries.	98	81.70%	11	9.20%	11	9.20%

The majority of respondents were aware of, the importance of baby teeth (90.80%), the effect of untreated dental decay on the general health of the child(91.7%) and (98%) agreed that counselling on feeding & weaning practices decreases early childhood caries. About 60% believed that transmission of bacteria from mother to child that causes tooth decay, and 69.20% reported that fluoride helps to prevent decay. Whereas 40.80% of paediatricians were not sure that white spots or lines on tooth surfaces were the first signs of tooth decay and 30 % were unsure about the transmission of bacteria from mother to child causes tooth decay.

**Table:2**  
**MULTIPLE CHOICE QUESTIONS**

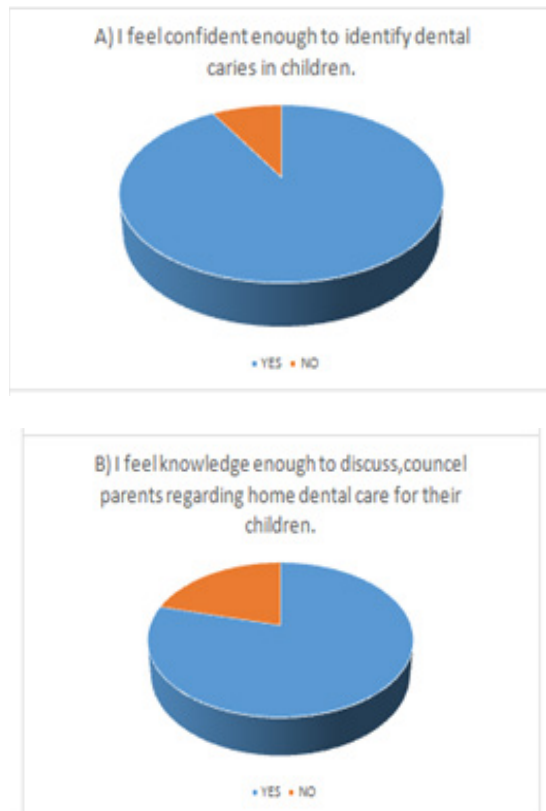
		COUNT	PERCENTAGE
A. When does first tooth erupts?	8-12 MONTHS	20	16.70%
	6-10 MONTHS	86	71.70%
	9-10 MONTHS	14	11.70%
B. Tooth not present in deciduous dentition.	PREMOLARS	55	45.80%
	CANINES	26	21.70%
	MOLARS	39	32.50%
C. Most common dental diseases	GINGIVITIS	12	10.00%
	DENTAL CARIES	108	90.00%
	PERIODONTITIS	0	0.00%
D. Causative Organism of Early childhood caries.	ACTINOMYCES	7	5.80%
	NEISSERIA	13	10.80%
	STREPTOCOCCUS MUTANS	100	83.30%
E. When should a toothbrush be recommended.	BEFORE 2 YEARS	20	16.70%
	AFTER 2 YEARS	90	75.00%
	AT 3 YEARS	10	8.30%
F..First dental visit recommended for children	YOUNGER THAN 1 YEAR	17	14.20%
	1-2 YEARS	70	58.30%
	OLDER THAN 3 YEARS	33	27.50%

Out of 6 questions, majority of Paediatricians reported correct answers which includes: **90%** answered that most

common dental disease is dental caries. 83.30% choose the correct option that main causative organism of early childhood caries is Streptococcus mutans. According to **71.7%**, First baby tooth erupts by 6-10 months of age and **45.80%** answered that Tooth not present in deciduous dentition is Premolars.

Whereas Only **16.70%** recommended the use of tooth-brush below 2 years of age and Only **14.2%** recommended first dental visit for children under the age of 1 year.

**Figure:1**  
**CONFIDENCE QUESTIONNAIRE ITEM:**



Majority of Paediatricians (91.70%) felt confident in identifying dental caries in children and about 79.20% felt knowledge enough to discuss, counsel parents regarding home dental care for their children.

**Table:3**  
**ORAL HEALTH RELATED ACTIVITIES CARRIED OUT DURING BABY VISITS BY PEDIATRICIANS**

	YES	NO	TOTAL	PERCENTAGE YES	PERCENTAGE NO
A. Visual examination of oral cavity	100	20	120	83.33%	16.67%
B. Lift upper lip of infants and toddlers to check for tooth decay	108	12	120	90.00%	10.00%
C. Consider that they have a direct role in promoting oral health of toddlers and infants as "very important".	91	29	120	75.83%	24.17%

	YES	NO	TOTAL	PERCENTAGE YES	PERCENTAGE NO
D. Advice parents and care-givers regarding preventive dental care aspects for their children.	90	30	120	75.00%	25.00%
E. Reference of suspected cases of Early childhood caries to dental health professionals.	120	0	120	100.00%	0.00%

Most paediatricians (**83.30%**) reported visually examining the oral cavity and inspecting children's teeth. About **75%** lift upper lip of infants and toddlers to check for tooth decay.

**75.83%** Considered that they have a direct role in promoting oral health of toddlers and infants as "very important." **75%** advised parents and care-givers regarding preventive dental care aspects for their children. And all recommended reference of suspected cases of early childhood caries to dental health professionals.

## DISCUSSION

This survey was done to know the relationship between Paediatricians and the pedodontist's and to emphasise on the areas where the Paediatricians need to improve the knowledge of oral health and to recognize the importance of pediatric dentistry.

Results of this survey indicates that the majority of the Paediatricians were aware of, the importance of baby teeth (90.80%), the effect of untreated dental decay on the general health of the child (91.7%) and (98%) agreed that counselling on feeding & weaning practices decreases early childhood caries. About 60% believed that transmission of bacteria from mother to child that causes tooth decay, and 69.20% reported that fluoride helps to prevent decay.

Though the Paediatricians have an overall knowledge on Early childhood caries and infant oral health care, about 40.80% of paediatricians were not sure that white spots or lines on tooth surfaces were the first signs of tooth decay which were similar to the studies done by Lewis et al.<sup>[3]</sup> 30 % were unsure about the transmission of bacteria from mother to child causes tooth decay.

A study done by Lewis C et al found that few paediatricians were aware that caries are a transmissible infectious disease that the child can acquire from the mother, although this information has been disseminated in the dental literature for 10 years. If pediatricians are to provide adequate counseling to their patients in the area of oral health, they need sufficient knowledge of current preventive practices in dentistry.<sup>[3]</sup> It is essential for pediatricians to help mothers to have knowledge about their current oral hygiene, sugar consumption and caries status. As mother's oral bacterial count determines the infant's oral cariogenic bacteria, it is imperative that pediatricians explain the effect of reducing mother's MS level on decreasing infant caries risk.<sup>[4]</sup> Referring the expectant mothers for restoring dental caries and using bactericidal mouth rinse regularly will improve the oral hygiene and reducing the bacterial count. Via prenatal counselling, pediatricians and physicians can discuss poor nutrition during pregnancy and low birth weight as risk factors of ECC.<sup>[5]</sup>

Dietary counseling during these visits can help in preventing ECC development by increasing parental information about the influence of improper feeding practices and sweetened drinks during the night time. Mothers should be recommended to hold infant during breast feeding. Bottle feeding may be stopped at the age of 12 months, at which the child is able to drink from a cup. American Academy of Pediatrics (AAP) recommends breast feeding for all, but prolonged, excessive or frequent bottle feeding is discouraged. In order to reduce the risk of ECC, it is advocated to feed the child only with formula or milk and not fruit juice, because of their cariogenic nature.<sup>[6]</sup>

Tooth cleaning/brushing initiation from the eruption of the first primary teeth is a general recommendation that pediatricians can provide to parents. Child's teeth should be brushed after each feeding or at least daily. Tooth brushing should be performed by parents in preschool children.<sup>[6]</sup> However, only 16.70% recommended the use of toothbrush below 2 years of age. As fluoridated materials have significant influence on the prevention of ECC, a pea size amount of dentifrice is recommended for children under 6 years. However, tooth paste should be implemented in children older than 2 years. Also pediatricians should provide information on the timing of the first dental visit and refer affected children to pedodontist for fluoride therapy and other therapeutic measures. Relatively fewer pediatricians were likely to assess a child's fluoride intake to determine the need for supplementation, although this has traditionally been one aspect of oral health for which pediatricians have taken responsibility.<sup>[7]</sup> A greater portion of medical and paramedical students (96%) showed poor knowledge on the role of fluorides in dentifrices as they seem to ignore this fact on selecting dentifrices. More striking result was a large section of paramedical (79%) and medical (36%) have never heard of the term flossing to date in comparison to negligible percentage of dental students (4.7%).<sup>[8]</sup>

Most pediatricians did not agree with the recommendation of the AAPD that children be referred to the dentist by 1 year of age. Pediatricians may not be knowledgeable of the AAPD recommendation and even if they are aware, they may not agree because this represents a change from that which they are accustomed. Some pediatricians may question whether dental assessment and preventive education for very young children require a visit to the dentist because the AAP has identified pediatricians as capable of providing "basic dental care for children under the age of 3."<sup>[3]</sup>

Prakash P et al found that only 2.7% of respondents recommended the first dental visit within the first year, while in two other studies, 14% and 19% of paediatricians recommended the first preventive dental visit before six months of age. A recent survey of American paediatricians and family physicians reported that only 19% of family physicians and 14% of paediatricians would recommend an early dental visit for a child with a low caries risk.<sup>[2]</sup>

In this study majority of Pediatricians (91.70%) felt confident in identifying dental caries in children and about 79.20% felt knowledge enough to discuss, counsel parents regarding home dental care for their children. Most paediatricians (**83.30%**) reported visually examining the oral cavity and inspecting children's teeth. About **75%** lift upper lip of infants and toddlers to check for tooth decay. **75.83%** Considered that they have a direct role in promoting oral health of toddlers and infants as "very im-

portant.75% advice parents and care-givers regarding preventive dental care aspects for their children. And majority (100%) recommended reference of suspected cases of early childhood caries to dental health professionals.

The majority of Paediatricians reported that they play an important role and are involved in promoting the oral health of children in their practices. 83.30% of paediatricians performed oral examinations during children's physical examinations which is similar to study done by Sanchez et al.

Sanchez et al. recognized that Paediatricians received inadequate information about pediatric preventive dental care during training. Although the majority of paediatricians encounter dental problems on a regular basis, their knowledge and familiarity with basic oral health-related issues were limited, this limits paediatrician's effectiveness in the promotion of oral health in their practices. [9]

Both groups, Physicians and Pediatricians reported receiving little training in oral health-related topics in medical school and residency. Those physicians who felt confident and received some form of training in medical school or residency were more likely to report including oral health-promotion activities. Lack of training and unfamiliarity with oral health issues may make it difficult for primary health care providers to assume a more active role in the oral health promotion of children. [10]

## CONCLUSION

The findings of the present study suggest that paediatricians are knowledgeable about some aspects of ECC and infant oral health but not the identification of ECC. The majority of paediatricians considered their role in children's oral health as important and reported certain aspects of oral health in well child visits. However, a reported lack of dental knowledge and training appeared to pose barriers, limiting paediatricians from playing a more active role.

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