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A survey on evaluating the knowledge, attitude and practices regarding infant oral health among Pediatricians of South Bangalore: A pilot study

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Abstract

There is an imprecise tendency for separating Oral health from General health, however oral health forms an integral part of overall health reflecting the general health and wellbeing of an individual. Dental disease is one of the most vulnerable chronic disease affecting children throughout the world. Evidence increasingly suggests that for successful prevention of dental disease its preventive interaction should begin with the 1st year of life. The evidence in literature reveals that when the frequency of visit a to the paediatricians and paediatric dentist are analysed, regardless of the nature of service being sought (public or private), the parents systematically consult paediatricians throughout the 1st year of life, which does not occur in relation to dental queries. Hence, paediatricians are at a unique position to begin the process of early assessment of oral health and provision of anticipatory guidance and educating the parents regarding good oral hygiene, prevention of dental caries, and establishing proper feeding habits.

It is unclear to what degree paediatricians are knowledgeable about preventable oral health and to what extent they are willing to participate in assessment and prevention of dental disease. This survey takes a step forward by examining baseline knowledge, opinions & practice implemented by the paediatricians in their health care professional regarding Infant oral health and identifying the barriers to oral health assessment and to make referrals to the Pedodontists.

Keywords: knowledge, attitude, practices, infant oral health

Introduction

Oral health is an essential component of health throughout life. According to Horowitz and co-workers oral cavity is associated with the development of healthy personality, perceptions, and the overall experiences of pleasure. The ability to chew and swallow is a critical function required to obtain essential nutrients for the body - the building blocks of general health (American Dietetic Association 1986) ^[1]. However there is an imprecise tendency for separating oral health from general health thus millions of individuals suffer from dental caries and periodontal disease. Dental disease being one of the most vulnerable chronic diseases affecting people throughout the world Early Childhood Caries (ECC) is the most prevalent infectious disease and major threat to oral health in infants and children as reported by centre for disease control and prevention and the National institute of health. American Academy of Paediatric Dentistry (AAPD) recognizes that ECC emerges in all the cultural and economic Pediatric population. Although ECC is preventable, more than 50% of the children have caries by the time they reach the kindergarten ^[2].

Evidence increasingly suggests that for successful prevention of dental disease its preventive interaction should begin with the 1st year of life. The American Academy of Pediatric Dentistry (AAPD) recommends that the first dental visit should occur within six months after the baby's first tooth appears, but no later than child's first birthday.

Promotion of oral health and preventive dental care are fundamental concepts in Pediatric dentistry. Today, Pediatric dentistry possess a body of scientific knowledge and technology to assist parents in raising caries-free children. An early screening of children below 1 year of age is an excellent opportunity for the detection of risk factors. The goal is to provide infants and toddlers with a pleasant, non-threatening introduction to dentistry and to establish and reinforce the foundation for sound dental habits. There is a need to move away from the surgical approach of managing oral diseases and embrace the concept of oral care beginning at

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infancy or even prenatally [2].

In today's health care system there are generally two types of health care providers that provide information about oral health care for young children, the paediatrician and the paediatric dentist. The evidence in literature reveals that the frequency of visit a to the paediatrician when compared to a paediatric dentist are analysed, regardless of the nature of service being sought (public or private), the parents systematically consult paediatricians throughout the 1st year of life, which does not occur in relation to dental queries. Unlike dentists, pediatricians see the majority of children periodically during their first years of life and have the opportunity to sensitize parents to the oral health of their children. Primary care providers play an important role in healthy growth and can provide anticipatory guidance and preventive counselling about oral hygiene, diet and fluoride exposure. Hence, paediatricians are at a unique position to begin the process of early assessment of oral health and provision of anticipatory guidance and educating the parents regarding good oral hygiene, prevention of dental caries, and establishing proper feeding habits.

A key element of comprehensive care for children thus involves the coordination of services between medical and dental providers so that they can provide appropriate services at the appropriate ages [2].

However, the extent of paediatricians' knowledge about preventive oral health and their contribution therein and to the assessment of oral health remains to be determined. Moreover, little is known about the incidence of dental problems in Pediatric practice and whether pediatricians perceive barriers to their patients receiving professional dental care. Finally, it is important to know how pediatricians value the promotion of oral health and whether they would be willing to take on additional activities in the field. Limited literature is available on the extent of paediatricians' participation, specifically, with regard to their knowledge, attitudes, and practices with regard to oral health preventive programs. Therefore, the purpose of this survey was to evaluate the knowledge, attitude, and current practices regarding the prevention of dental caries among pediatricians in South Bangalore.

Materials and Methods

A cross sectional survey was conducted among 120 Paediatricians (n=120) practicing in Bangalore city, Karnataka. Prior approval for the study was obtained from the

Institutional Ethical Committee. A self-administered questionnaire with 25 close ended questions were formulated and distributed personally and through online survey methods. The survey questions were divided into 4 domains.

Statics

Statistical Analysis

The study data was analysed using SPSS [Statistical Package for Social Sciences] software V.22, IBM. Corp.

Descriptive Statistics

The frequency distribution for the responses provided by the study participants was expressed in terms of number & percentage.

Inferential Statistics

Chi Square Goodness of Fit test was used to find the difference in the distribution of various responses provided by the study participants.

The level of significance [P-Value] was set at $P < 0.05$.

Results

A total 120 pediatricians practicing in south Bengaluru were surveyed. Out of 120 pediatricians filled forms only 100 were considered eligible and taken into statistical analysis as 12 forms were incompletely filled and 8 forms were unanswered. Thus the response rate of the survey was

The material use for the study consisted of 25 close ended questions that were divided into 4 main domains as follows

1. **Individual Details:** Name, age, sex, medical background
2. **Knowledge Questionnaire:** To assess the knowledge regarding infant dental status, early childhood caries (ECC) and its preventive strategies.
3. **Attitude Questionnaire:** To assess the confidence level of paediatricians in identifying dental caries and to counsel parents regarding home dental care for their children.
4. **Practice Questionnaire:** Oral health related activities carried out during outpatient visits by Paediatricians.

Part 1: Characteristics of the paediatrician

Of the sample size of 120 Pediatricians surveyed 58% were females and 42% were males.....

Demographic information of the survey recipients and their practices are summarised in table 1

Table 1: Characteristics of Respondents

Characteristics	Respondents	Percentage
Gender		
A. Male	42	
B. Female		
Years of practice after post-graduation degree/ diploma		
• <10 years	15	39.47
• 11-20 years	15	39.47
• > 20 years	08	21.06
Qualification		
• Diploma	22	57.89
• Masters	16	42.11
Number of patients seen in a work day		
• <20	03	07.89
• 20-30	10	26.33
• 30-40	12	31.58
• >40	13	34.21
Duration of practice per day		
• 3-6 hrs		
• >6 hrs		

Type of practice		
<ul style="list-style-type: none"> • Group practice • Solo practice • Working in an institution 		

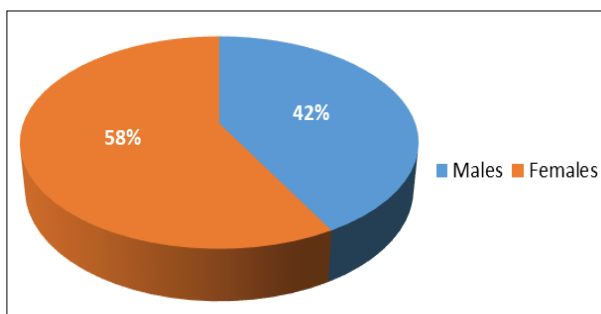


Fig 1: Gender wise distribution of study participants

Part 2: Knowledge Regarding Infant Oral Health

oral health are given in Table 2 and Table 3

Data regarding the Paediatricians' knowledge regarding infant

Table 2: Multiple Choice Questions

	Questions	Options	Count	Percentage	X ² value	P-value
01	Oral hygiene (mouth cleaning) should start	a. Before tooth erupts (gum pads)	49	49%	11.780	0.003*
		b. After 1 tooth erupts	22	22%		
		c. After a few teeth erupts	29	29%		
02	The first dental visit for a child should be scheduled	a. After 6 months of age	31	31%	16.580	<0.001*
		b. After 1 year of age	51	51%		
		c. When there is a problem	18	18%		
03	Dental caries is.	a. Infectious microbial disease.	3	3%	83.542	<0.001*
		b. causes irreversible damage.	4	4%		
		c. Is preventable.	1	1%		
		d. All of the above.	93	93%		
		e. None of the above.	0			
04	Dental caries is caused due to	a. Poor oral hygiene.	8	8%	82.774	0.001*
		b. Frequent intake of sugar.				
		c. Improper dietary habits.				
		d. All of the above.	92	92%		

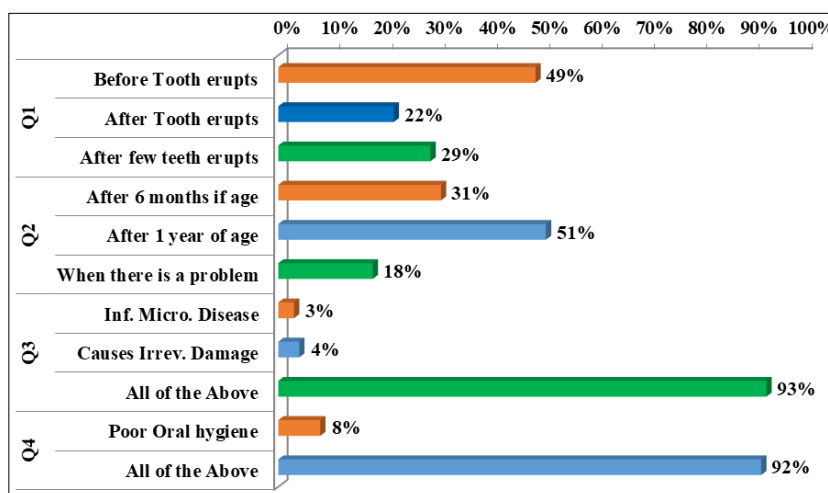


Fig 2: Comparison of the distribution of various responses for the questions by the study participants [Q1-4]

Table 3: Knowledge Questionnaire

05	Good oral hygiene is important in preventing dental caries
06	Routine dental check-up is important in preventing oral disease
07	Prolonged bottle feeding or breast feeding at night might lead to dental caries
08	Caries causing bacteria can be transmitted from mother to child or Dental caries is infective & can be transmissible from mother
09	Primary teeth (milk teeth) are important as they form a good foundation for the succeeding set of permanent teeth
10	There exists an association with the eruption of primary teeth with systemic manifestations (fever, diarrhoea).
11	Fluoride has a role in reducing or arresting the decay process.
12	Removal of active caries and subsequent restoration are important to minimize the further infection among infants

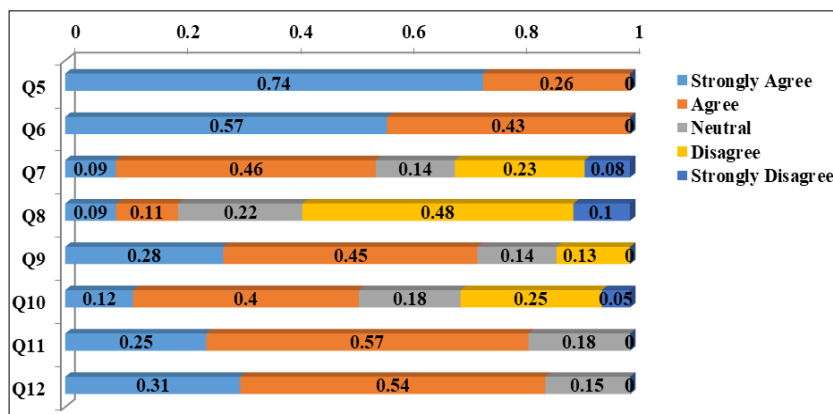


Fig 3: Comparison of the distribution of various responses for the questions by the study participants [Q5-12]

Part 3: Attitude and Clinical Conduct

Table 4: The data on the practices of Pediatricians in relation to the infant oral health are summarised in Table 4

13	The information regarding infant oral health provided in the curriculum of your graduation was adequate/sufficient.
14	Who is responsible for infant oral healthcare
15	Do you refer a child to a dentist/Pedodontists
16	If yes, the reason for referral to a dentist/Pedodontists
17	If no, what according to you are barrier for referral to the dentist/ Pedodontists.
18	Do you perform oral health assessment during routine physical examination
19	Do you counsel parents or care-givers regarding prevention of dental problems
20	When do you advise parents or care-givers the 1st dental visit as a part of routine referral

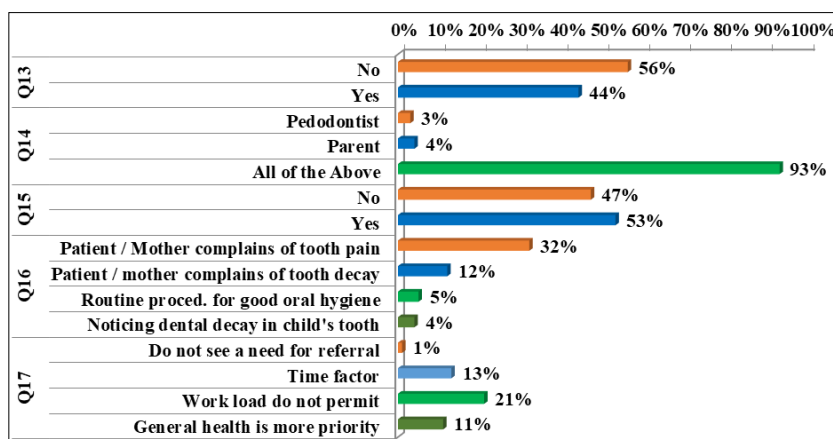


Fig 4: Comparison of the distribution of various responses for the questions by the study participants [Q13-17]

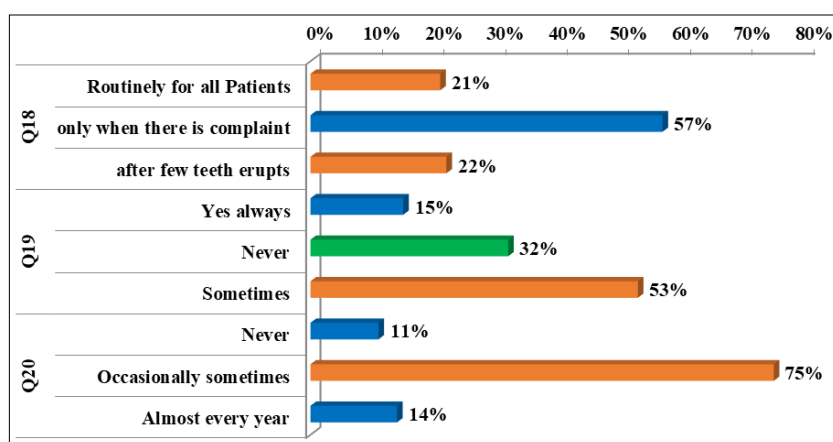


Fig 5: Comparison of the distribution of various responses for the questions by the study participants [Q18-20]

Discussion

Early childhood caries (ECC) is a devastating form of dental decay with multi-factorial origin. ECC is a serious public health problem in very young children, and although it is not

life threatening, if left untreated it may lead to pain, bacteraemia, compromised chewing ability, and toxic overdose of analgesics (acetaminophen) administered during the early stages, followed by malocclusion in permanent

dentition, phonetic problems, suboptimal health, lower self-esteem, and failure to thrive. Also, it has been demonstrated that dental caries can gradually reduce a child's ability to gain weight, which may get reversed after complete oral rehabilitation [3].

Despite the seriousness of the problems due to ECC, the incidence prevalence is still high. A study conducted by Prakash *et al.* concluded that the prevalence of ECC in Bangalore among the preschool children was 27.5%, while the mean deft was 0.854.

Optimally, focus on primary and secondary preventive oral health should occur for all children by both the paediatricians and Pedodontists. Children are exposed to medical care however dental care at an early age is a constraint. Paediatricians have the advantage of establishing their relationships with the parents and their children at a much earlier age than a Pedodontists thus they are at a unique position in early assessment of oral health, provision of anticipatory guidance, educating the parents regarding good oral hygiene, prevention of dental caries thereby emphasizing the importance infant oral health.

This survey was done to know the relationship between Paediatricians and the Pedodontists, their baseline knowledge, opinions & practice implemented in their health care professional regarding Infant oral health and identifying the barriers to oral health assessment and to make referrals to the Pedodontists.

When the specific knowledge of the paediatricians about infant oral health was evaluated, It was observed that majority of the Pediatricians knew about dental caries and its causes. They also supported the fact that good oral hygiene and regular dental check-up is important in preventing dental diseases, however 48% of the paediatricians disagreed that caries is an infectious disease and caries causing bacteria can be transmitted from mother to infants, although this information has been disseminated in the dental literature for more than 10 years. As the mother's oral bacterial count determines the infant's oral cariogenic bacteria, it is imperative that the paediatricians explain the effect of reducing mothers MS level on decreasing infants caries risk [4].

AAPD has recommended that the 1st dental visit occurs within 6 months of the eruption of 1st tooth & no later than 12 months of age however only 31% respondents followed this guidelines. The importance of initiating oral hygiene practice before the eruption of 1st tooth (gum pads) was not seen to be prevalent among the pediatricians as only 49% of them recommended to clean the oral cavity from the time of birth after every feed. Keeping the gums pads clean is a general recommendation that patrician can provide to the parents.

Majority of them 56% felt that the information regarding infant oral health provided in the curriculum of their graduation was not adequate/sufficient. Although 93% of paediatricians felt that it's the combined efforts of both the paediatricians and pedodontists responsible for infant oral health care, their involvements in oral health activities continues to lag their commitment. Only 53% of the Paediatricians counsel parents or care-givers regarding prevention of dental problems which coincides with a study done by Faizal *et al.* were 57% of the pediatricians who participated in the study provided counselling regarding dental problems and preventive measures [5]. 21% of them performed oral health assessment during routine physical examination. Most pediatricians about 53% who participated in this study referred patients to dentists only when there was

an explicit dental complaint. This indicated that the pediatricians may not be aware of American Association of Pediatric Dentistry (AAPD) guideline, endorsed by the American association of pediatricians (AAP), which states that the first examination is recommended at the time of the eruption of the first tooth and no later than 12 months of age. Meaning the remaining 47% of the time there exist no cross referral between a Pedodontists and paediatrician. The most cited barrier to this is time constraint and work load 12% and 21% respectively.

Limitations: These results indicate that paediatricians see it within their purview to educate families about preventive oral health and to assess patients for dental caries, however fewer respondents reported actually performing oral health activities. This discrepancy highlights the complexity of adopting new practices and adhering to the recommendations.

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