The Bioscan AN INTERNATIONAL QUARTERLY JOURNAL OF LIFE SCIENCES 20(2): S2: 687-690, 2025 www.thebioscan.com

Evaluation of Pediatricians' and General Dentists' Knowledge and Attitudes toward Infant Oral Health in the Delhi NCR Region

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DOI: 10.63001/tbs.2025.v20.i02.S2.pp691-694

KEYWORDS

Early childhood caries,
General Dentist,
Infant oral health,
Paediatricians.

Received on:

01-02-2025

Accepted on:

18-05-2025

Published on:

08-06-2025

ABSTRACT

Background: Dental health needs to be constructed with oral health as its cornerstone. Infants are examined by paediatricians multiple times in the first and second years of life. For guidance on ensuring their child's appropriate growth and development, parents typically consult physicians. This study aimed to educate parents on the importance of preventive oral health care (OHC) for infants and to assess the attitudes and knowledge of pediatricians and general dentists regarding infant oral health.
Materials and methods: A total of 200 paediatricians and 200 general dentists practicing in the Delhi/NCR region were randomly selected to participate in this cross-sectional study. Participants were provided with a structured, objective questionnaire assessing their knowledge and attitudes toward infant oral health care (OHC). The questionnaire was administered without offering any prior information or guidance related to dental health, ensuring unbiased responses.
Results: Statistical analysis was performed using the paired t-test to evaluate differences between general dentists and pediatricians. To ensure the reliability and agreement of the questionnaire responses, Kappa statistics were also applied.
Conclusion: Paediatricians demonstrated comparatively limited knowledge regarding infant oral health when compared to general dentists. This highlights the need for enhanced oral health education and interdisciplinary collaboration to ensure timely and effective dental care for infants.
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INTRODUCTION

Healthy teeth are a crucial component of overall well-being. Although they represent just one facet of good oral health, active and untreated dental caries are a significant contributor to poor oral and general health in many children [1]. In 1994, the Centers for Disease Control and Prevention suggested using a less precise term, like Early Childhood Caries, as there was general agreement that there was not a direct correlation between bottle feeding and caries. This phrase did not, however, disprove the fundamental causes of dental demineralization in very young children, which include prolonged exposure to a diet high in cariogenic substances and early infection with cariogenic bacteria [2].

Numerous investigations have been carried out to evaluate the occurrence of ECC in India and other nations. In a study by Henry et al [3]. According to the systematic research, 49.6% of Indians are overall affected by ECC [4] The dentistry profession has embraced the idea of the dental home as a result of the ongoing inconvenience of ECC. The goal is to create a relationship between a family and a dentist as early as possible, during which the family will receive dental care, counselling, preventive education, and

guidance for the future. Therefore, establishing a dental home for infants within their first year of life is one of the most effective ways to reduce the incidence of ECC. This approach also facilitates the prevention of dental diseases and enables the early identification of individuals at high risk [5]

Infancy is the first year of life following birth, and a new born child is referred to as an infant from birth to the end of the first year of life. The oral cavity has just gum pads in the first half of infancy, and primary teeth emerge in the second half. [6] The primary goal of paediatric dentists during infancy is to educate and persuade new parents to maintain proper dental hygiene for their infant.

The American Academy of Pediatric Dentistry (AAPD) and the American Dental Association (ADA) recommend that children undergo dental screenings as early as 6 months old, and no later than by their first birthday. Paediatricians have enhanced access to new parents and children aged 6 to 12 months by seeing them for routine health check-ups, and they have the potential to directly improve infant oral health. In 2002, the AAP revised its policy statement, reducing the recommended age for a child's first dental visit from three years to one year for all children, and as early as six months for those at high risk of oral disease. [7].

The AAP now advises that all infants receive an oral health risk assessment by six months of age, using the AAPD's Caries Risk Assessment Tool [8]. The goal is to identify high-risk patients and refer them for prompt dental care. Research indicates that over half of pediatricians still advise waiting until a child's third birthday to schedule a dental visit. Additionally, the AAPD reports that around 20% of pediatric dentists do not conduct infant evaluations. To ensure children receive appropriate care, it is essential for the medical and dental communities to work together and educate one another. [9].

This study aimed to assess the knowledge and attitudes of pediatricians and general dentists regarding newborn oral health while also educating parents about the significance of preventive oral health care (OHC) for infants.

1. MATERIAL AND METHODOLOGY

This cross-sectional survey was carried out in the Delhi NCR region which involved 200 pediatricians who had a Postgraduate Diploma degree (DCH), along with 200 general dentists. Ethical clearance was obtained from institutional review board of swami vivekanad subharti university. Confidentially of the participants were maintained. A self-designed questionnaire was prepared and online circulated to 12 participants for assessing the validity of questionnaire. The questionnaires were circulated in both English and hindi language with closed ended options.

The included questionnaire dealt with OHC in infants. The proforma questionnaire was developed independently (Table-1). To assess its validity, a test-retest reliability analysis was conducted, yielding a measured Kappa (k) of 0.86 and a weighted Kappa (k) of 0.9. The internal consistency of the questionnaires was evaluated using Cronbach's Alpha (α), which recorded a value of 0.78. The collected data were organized into a table using Excel and subsequently analyzed statistically. Descriptive statistics were analysed using SPSS 20 software

Table 1: Questionaries

S.No	Questions	Responses
1.	When is the appropriate age for children to visit the dentist?	A) 2 years B) 1 year C) 6 months
2.	Which has a greater influence on how dental caries develops?	A) Usage of sugar B) How often you consume sugar
3.	What are the differences between breast milk and bottle feeding in terms of how they affect dentition?	A) Yes B) NO
4.	What age does a youngster start to get over thumb sucking?	A) With the completion of primary dentition B) Before the eruption of the permanent incisor C) With the development of the permanent canines
5.	When should a youngster have their first dental appointments?	A) At 2 years B) At 1 year C) At 6 months
6.	Does a child who doesn't have dental cavities need to go to the dentist?	A) Yes B) No
7.	What is the recommended dosage for toothpaste application?	A) Full length B) Pea size
8.	At what age should a child begin brushing their teeth?	A) After the eruption of primary molars (around 2 years old) B) B) After the eruption of a primary tooth (between 6 months and 1 year)

9.	Are you familiar with pit and fissure sealants?	A) Yes B) No
10.	Is it necessary to clean the gum pads?	A)Yes B)No
11.	Do you routinely evaluate your patients' skeletal and dental ages, as well as their oral cavity and dentition?	A) Yes B) No
12.	Do you believe you are qualified to respond to parents' dental health questions?	A) Yes B) No
13.	Do you think fluoride supplements should be recommended to children?	A) Yes B) No
14.	Do you recommend cariogenic foods in your patients' diets?	A) Yes B) No

2. RESULTS

Two hundred general dentists and two hundred paediatricians participated in a cross-sectional questionnaire survey. The data analysis was conducted using SPSS version 20.0 for Windows (Statistical Package for the Social Sciences, SPSS Inc., IBM, India). We calculated the mean and standard deviation (SD) for each clinical metric. The collected data were initially entered into an Excel table and then analyzed using nonparametric statistical tests, including the Chi-square test. A significance level of $p \leq 0.05$ was set for all statistical tests.

After statistical analysis of the data, it was determined that paediatricians knew less than general dentists, although both groups lacked knowledge of themes that are currently being discussed in paediatric dentistry. The table and figure below demonstrate that although paediatricians had a mean knowledge score of 17.11, dentists had a higher mean knowledge score of 22.23% regarding OHC. The statistical analysis indicated a significant difference in knowledge ($p < 0.05$) (Table 2 and Fig. 1).

Table 2: The relationship between the knowledge scores of general dentists and pediatricians concerning infant oral health care by using chi square test.

Oral health knowledge	N	Mean	S.D	p- value
Dentist	200	22.23	3.4	0.0001
Pediatrician	200	17.11	6.8	

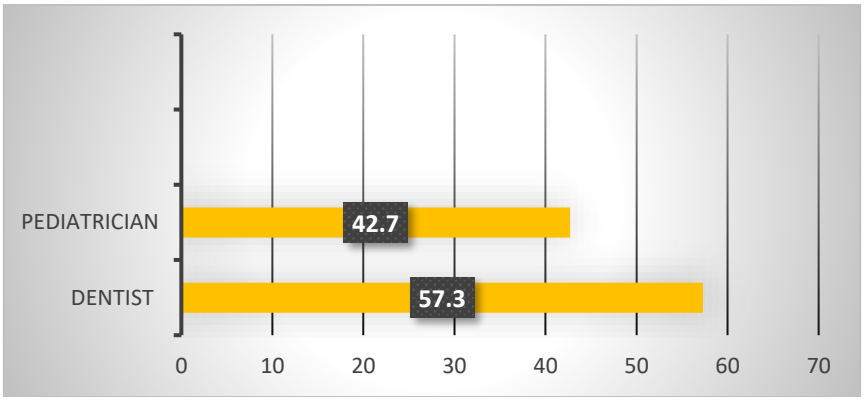

Figure 1: The relationship between the knowledge scores of general dentists and pediatricians concerning infant oral health care.

General dentists demonstrated significantly higher scores than pediatricians in both knowledge ($p < 0.01$) and attitude ($p < 0.05$). Pediatricians with more than five years of experience had better knowledge scores compared to those with less experience ($p < 0.05$).

Comparing paediatricians to general dentists, the former showed less attitude. The following table demonstrates that, with a mean score of 0.140, dentists had a higher mean attitude score toward OHC than paediatricians, who had a mean score of 0.07. There was a statistically significant difference in knowledge ($p < 0.05$). (Table 3)

Table 3: The relationship between the attitudes of general dentists and pediatricians regarding infant oral health care by using chi square test.

Oral health attitude	N	Mean	S.D	p- value
Dentist	200	3.95±1.41	0.140	0.0001
Pediatrician	200	4.86±1.36	0.07	

DISCUSION

Oral health is a fundamental component of overall health in both pediatric and adult populations. However, despite its recognized importance, the frequency of consultation with pediatric dentists remains significantly lower than with pediatricians. This disparity has contributed to suboptimal oral health outcomes in infants and

young children, ultimately affecting their general health and well-being.

This cross-sectional study sought to evaluate and compare the knowledge and attitudes of general dentists and pediatricians in the Delhi NCR region regarding the first dental visit for infants. Findings indicate a significant knowledge gap, particularly among pediatricians, concerning the importance of early dental intervention and infant oral health care (OHC). General dentists demonstrated higher mean knowledge scores (22.23) compared to pediatricians (17.11), a difference that was statistically significant ($p < 0.05$).

In the Indian context, dental caries remains highly prevalent, affecting 85%–90% of young adults, with a substantial proportion (60%–80%) being children. This underlines the urgent need for early preventive strategies, which must be emphasized equally by medical and dental professionals. Despite international guidelines by the American Academy of Pediatric Dentistry (AAPD) recommending the first dental visit by the age of one, pediatricians in several regions, including Jeddah, have shown limited support for this standard. Similar trends were observed in earlier studies, where only 2.7% to 57% of pediatricians recommended a dental visit within the first year of life. Interestingly, all participants in the present study—both dentists and pediatricians—recommended the first dental visit at six months of age, suggesting a potential shift in awareness, albeit possibly influenced by response bias.

Limitations

1. The use of self-reported questionnaires may have introduced response bias.
2. The findings are specific to the Delhi NCR region and may not be generalizable to other geographic or demographic populations.

CONCLUSION

This study highlights the need for improved knowledge and attitude among Pediatricians and General Dentists towards infant oral health in the Delhi NCR region. While both groups recognized the importance of infant oral health, significant knowledge gaps and variations in attitude were observed. General Dentists demonstrated better knowledge and attitude scores compared to Pediatricians, emphasizing the need for interdisciplinary education and training. The findings suggest that targeted interventions, such as workshops and continuing education programs, are necessary to enhance the knowledge and confidence of Pediatricians and General Dentists in providing infant oral health care. By addressing these gaps, we can work towards improving infant oral health outcomes and promoting a cavity-free future for children in the Delhi NCR region.

REFERENCES

- Patil A, Chavan S, Baghele ON. Awareness of oral health among medical practitioners in Sangamner city — a cross sectional survey. JIDA 2010;4(12):534–536
- Branger B, Camelot F, Droz D, Houbiers B, Marchalot A, Bruel H, Laczny E, Clement C. Breastfeeding and early childhood caries. Review of the literature, recommendations, and prevention. Arch Pediatr. 2019 Nov;26(8):497-503.
- Henry JA, Muthu MS, Saikia A, Asaithambi B, Swaminathan K. Prevalence and pattern of early childhood caries in a rural South Indian population evaluated by ICDAS with suggestions for enhancement of ICDAS software tool. Int J Paediatr Dent. 2017 May;27(3):191-200
- Ganesh A, Muthu MS, Mohan A, Kirubakaran R. Prevalence of Early Childhood Caries in India - A Systematic Review. Indian J Pediatr. 2019 Mar;86(3):276-286.

The current study also revealed that only 50.7% of pediatricians routinely examined the oral cavity, and 57.3% acknowledged the importance of treating deciduous teeth. Although these figures reflect a moderate level of awareness, they remain suboptimal considering the pediatrician's role as the first point of contact for most children. Other studies have reported similar gaps, with approximately half of pediatricians neglecting routine oral examination. While some authors, like Shetty and Dixit, observed higher awareness levels (up to 76%), inconsistencies persist across different regions and healthcare settings.

General dentists, on the other hand, often do not see young children unless prompted by an urgent dental issue, which further delays preventive care. This reactive model underscores the need for proactive oral health promotion by pediatricians during early well-child visits. Furthermore, pediatricians' understanding of dental concepts may be limited or outdated due to lack of formal training or continuing education in pediatric dentistry.

Improved interprofessional communication between the medical and dental communities is essential for promoting early oral health interventions. Pediatricians, gynecologists, and other primary care providers should be encouraged to participate in continuing dental education (CDE) programs to stay informed about current guidelines and best practices in pediatric oral health. Integrating oral health into routine pediatric care and well-baby visits can significantly enhance early detection and prevention of dental diseas

- Girish Babu KL, Doddamani GM. Dental home: Patient centered dentistry. J Int Soc Prev Community Dent. 2012 Jan;2(1):8-12
- T Pruthi, N Srivastava, V Rana, S Gaind Infant oral health care a benchmark to future. Neuroquatology, octobur,2022, Vol. 20, Issue11, 7257-7260.
- Brickhouse TH, Unkel JH, Kancitis I, et al. Infant oral health care: a survey of general dentists, pediatric dentists, and pediatricians in Virginia. Pediatr Dent 2008;30:147–153
- Sanguida A, Vinothini V, Prathima GS, Santhadevy A, Premlal K, Kavitha M. Age and Reasons for First Dental Visit and Knowledge and Attitude of Parents Toward Dental Procedures for Puducherry Children Aged 0-9 years. J Pharm Bioallied Sci. 2019 May;11(Suppl 2):S413-S419.
- Gupta SK, Gupta S, Gojanur S, Kour G, Singh K, Rani P. Pediatricians' view on early childhood caries and oral health in a north region of India: A cross-sectional study. J Family Med Prim Care. 2019 Jan;8(1):220-224
- Pandey P, Nandkeoliar T, Tikku AP, Singh D, Singh MK. Prevalence of Dental Caries in the Indian Population: A Systematic Review and Meta-analysis. J Int Soc Prev Community Dent. 2021 Jun 10;11(3):256-265
- Long CM, Quinonez RB, Rozier RG, Kranz AM, Lee JY. Barriers to pediatricians' adherence to American Academy of Pediatrics oral health referral guidelines: North Carolina general dentists' opinions. Pediatr Dent. 2014 Jul-Aug;36(4):309-15
- Padung N, Singh S, Awasthi N. First Dental Visit: Age Reasons Oral Health Status and Dental Treatment Needs among Children Aged 1 Month to 14 Years. Int J Clin Pediatr Dent. 2022 Jul-Aug;15(4):394-397.
- Shetty RM, Dixit UB. Paediatricians' views on dental and oral health and treatment needs in children. Oral Health Prev Dent. 2011;9(4):315-22.
- Goyal A, Nishant, Morankar R, Gauba K, Jaiswal M. Awareness among pediatricians regarding oral health care in children including those with special health care needs: A cross- sectional survey. J Family Med Prim Care. 2020 Aug 25;9(8):4151-4155.