



Navigating Primary Tooth Treatment Options: A Cross-sectional Study on Parental Knowledge and Attitudes in Raipur, Chhattisgarh

Neha Rani^{1*}, Milind Wasnik², Sopan Singh³, R.K Chevuri⁴, Abhinav Parakh⁵, Aruhi Sinha⁶

^{1*} Postgraduate Student, Department of Public Health Dentistry, Government Dental College, Raipur, Chhattisgarh, India.

² Professor and Head, Department of Public Health Dentistry, Government Dental College, Raipur, Chhattisgarh, India.

³ Assistant Professor, Department of Public Health Dentistry, Government Dental College, Raipur, Chhattisgarh, India.

⁴ Professor, Department of Public Health Dentistry, Government Dental College, Raipur, Chhattisgarh, India.

⁵ Resident, Department of Public Health Dentistry, Government Dental College, Raipur, Chhattisgarh, India.

⁶ Postgraduate Student, Department of Public Health Dentistry, Government Dental College, Raipur, Chhattisgarh, India.

Corresponding Author–

Name- Neha Rani, Department of Public Health Dentistry, Government Dental College, Raipur, Chhattisgarh 492001, India

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KEYWORDS

Parental knowledge, awareness, acceptance, primary teeth, oral health, treatment options.

ABSTRACT:

Introduction

Primary teeth play a vital role in a child's oral health, nutrition, speech development, and the proper eruption of permanent teeth. Parental knowledge, awareness, and acceptance of available treatment options are crucial for timely and effective dental care in children. Understanding these factors can guide targeted interventions to promote better pediatric oral health outcomes.

Objectives

This study aimed to assess parental knowledge, awareness, and acceptance of primary tooth treatment options among parents in Raipur, Chhattisgarh.

Methods

A descriptive, cross-sectional survey was conducted among 150 parents of children aged 6 months to 12 years attending the outpatient unit of Government Dental College, Raipur. A pretested, structured questionnaire collected data on demographic characteristics, parental knowledge of oral health, awareness of treatment options, and acceptance levels regarding various dental procedures for primary teeth.

Results

The study revealed notable findings regarding parental knowledge, awareness, and acceptance of dental care for primary teeth. Over half of the parents (55.7%) were unaware of fluoride's role in preventing tooth decay, and 54.4% did not understand the potential consequences of early tooth removal, such as malocclusion. Despite these knowledge gaps, 86.9% of parents demonstrated awareness by seeking immediate care for dental trauma, and 87.6% were willing to permit dental X-rays for diagnostic purposes. When presented with treatment options for severely decayed primary teeth, 45.8% of parents preferred pulpectomy over extraction, indicating a moderate level of acceptance for restorative procedures.

Conclusion

The study highlights significant gaps in parental knowledge and awareness of pediatric oral health and treatment options. However, a high level of acceptance for preventive and restorative procedures indicates a positive attitude toward improving children's oral health. Targeted parental education programs are essential to bridge knowledge gaps, enhance awareness, and support informed decision-making, fostering better collaboration between parents and dental care providers.



1. Introduction

Oral health is a pivotal indicator of overall well-being, with its neglect posing significant risks to general health and vitality. Dental issues in children, particularly concerning primary teeth, are often underestimated. Primary teeth play a crucial role in speech development, mastication, and phonetics. However, they are frequently overlooked due to the misconception that their natural shedding negates their significance. Such neglect can result in adverse outcomes, including misalignment of permanent teeth and other developmental complications.^{1,2}

Preventing dental caries remains a challenge, necessitating parental education on strategies like healthy dietary practices, use of fluoridated toothpaste, proper brushing techniques, and professional preventive treatments such as fluoride varnishes and sealants.³ Parents are instrumental in shaping young children's oral hygiene and dietary routines, serving as primary influencers during early socialization.^{4,5}

Early childhood caries (ECC), a condition marked by rapid decay, often compromises aesthetics and causes significant pain, leading to poor nutrition and increased risk of malnutrition.⁶ The first dental visit, ideally by age one, is critical for education and early intervention, fostering lifelong oral health.¹

Despite its importance, literature assessing parental knowledge of preventive and restorative care for primary teeth remains limited.

2. Objectives

This study aims to evaluate parental knowledge, awareness, and acceptance of treatment options for primary teeth in Raipur, Chhattisgarh, to inform targeted educational strategies that improve children's oral health outcomes.

3. Methods

The study was descriptive, hospital-based, cross-sectional survey, conducted at the Government Dental College and Hospital in Raipur, involving 150 parents over a three-month period. The study targeted parents with children aged 6 months to 12 years attending the outpatient unit.

Permission for the study was obtained from the Department of Paediatrics and Preventive Dentistry and the Institute's Head, with further approval from the Scientific and Ethical Committee. Participants who expressed willingness to participate were provided with detailed study information in their native language through Participant Information Sheets (PIS). Informed consent was obtained before their involvement, ensuring ethical conduct and participant clarity, which contributed to the study's reliability and adherence to ethical guidelines.

The inclusion criteria comprised parents with children below 12 years of age, including those with primary and mixed dentition, who were in a systemically healthy condition. Exclusion criteria involved parents of children with only permanent teeth and those unwilling to participate. These criteria ensured the study focused on the target population, enhancing the relevance and validity of the findings while maintaining ethical considerations regarding participant selection and engagement.

A pretested, structured questionnaire was used, adapted from previous research including Singh et al. (2022)⁶ and Sanguida et al. (2019).⁷ The questionnaire consisted of three sections and a total of 27 closed-ended questions: demographic details, parental knowledge and awareness regarding the child's oral hygiene, and acceptance of different treatment options for primary teeth.

The first section addressed demographic details such as the parent's age, child's age, educational qualification, occupation, monthly income, and the number of children, aiding in understanding the socio-economic background of the participants. The second section focused on parental knowledge and awareness regarding their child's oral hygiene, including the importance of primary teeth, the timing of the child's first dental visit, oral hygiene practices, and awareness of preventive measures like fluoride application. The third section examined parental knowledge and acceptance of different treatment options for primary teeth, exploring their understanding of fluoride's role in preventing tooth decay, the consequences of early tooth removal, willingness to undergo dental procedures such as X-rays or treatments like pulpectomy, and acceptance of interventions like space maintainers or orthodontic treatment. These questions collectively provided insights



into parental perceptions, awareness levels, and attitudes toward oral health and treatment modalities for their children's primary teeth.

Statistical Analysis

Data were initially entered into a Microsoft Excel spreadsheet and subsequently analyzed using SPSS software, version 20. The variance was categorized into two distinct types and summarized through frequencies and percentages. Inferential statistics were calculated using the Chi-squared test, with the significance level set at 0.05.

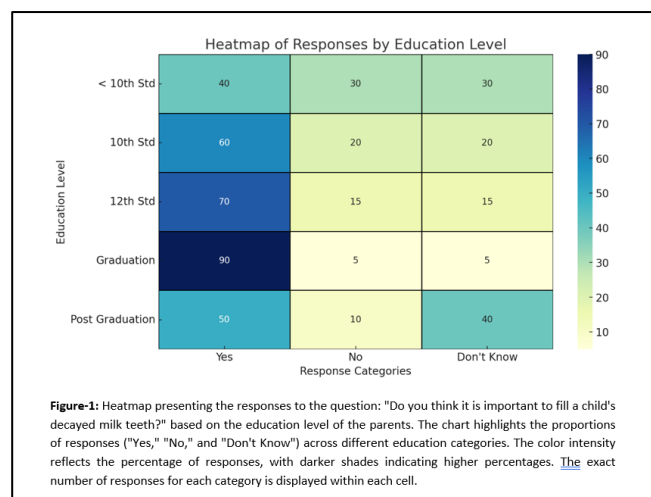
4. Results

A total of 153 parents participated in the survey; however, 3 parents were excluded due to incomplete or improperly filled data, resulting in a final sample size of 150. The demographic characteristics of the respondents are presented in Table 1.

Table-1: Demographic details		
Parent's age (in years)	No. of responses	Percentage
20-29	29	19.4
30-39	37	24.6
>40	84	56
Child's age (in years)		
<1	5	3.4
1-3	24	16
3-6	36	24
6-12	85	56.6
Qualification of Parents		
<10 Std.	16	10.7
10 th Std.	19	12.6
12 th Std.	33	22
Graduation	61	40.7
Post Graduation	21	14
Parent's Occupation		

Self employed	42	28
Service	47	31.4
Housewife	48	32
Others	13	8.6
Income		
<10000	22	14.7
10000-20000	34	22.6
20000-40000	25	16.7
>40000	69	46
Child's Number		
1	44	29.4
2	81	54
3 or more	25	16.6

Regarding the importance of filling a child's decayed tooth, 64.2% of the parents acknowledged its significance. Analyzing this in relation to the respondents' educational qualifications (Figure 1) revealed a significant correlation between education level and awareness about the importance of treating decayed milk teeth ($\chi^2 = 15.924$, $p = .043$). This indicates that higher educational qualifications positively influence parental awareness and knowledge regarding the need to address tooth decay in children.





Furthermore, 61.4% of the respondents were willing to consider treatments under general anesthesia or conscious sedation if their child was uncooperative during dental procedures. Additionally, 70.9% of parents were open to addressing major alignment issues in their child's teeth or jaw, either immediately or after the eruption of permanent teeth. A significant majority also agreed to preventive procedures: 75.7% supported the placement of space maintainers following the early extraction of milk teeth, and 86.2% endorsed the application of pit and fissure sealants to prevent tooth decay.

The analysis of parental behavior concerning their child's first dental visit, including the frequency of visits and the timing of the initial visit, showed notable associations (Figure 2). Among parents who regularly visited the dentist every six months, 66.7% believed that the first dental visit should only occur when a problem arises, while 19% suggested it should be around the child's first birthday. Conversely, of those who only visited the dentist when an issue was apparent, 50% believed the first visit should occur once all teeth had erupted, with 31.8% expressing uncertainty about the timing. Chi-square tests indicated a significant relationship between the frequency of dental visits and perceptions of the appropriate timing for the first visit ($\chi^2 = 31.772, p = .001$), suggesting that parental perceptions of when the initial dental visit should occur were influenced by their established frequency of dental visits.

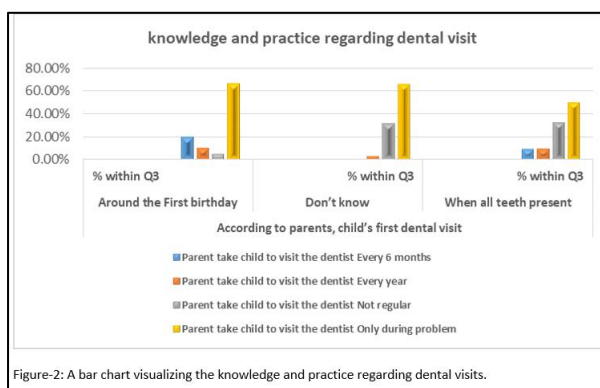


Figure-2: A bar chart visualizing the knowledge and practice regarding dental visits.

The evaluation of responses regarding the frequency of dental visits in relation to income levels (Figure 3) indicated varying patterns, but no significant association was found between income levels and the frequency of dental visits ($\chi^2 = 19.717, p = .34$).

The analysis also explored the relationship between parents' educational qualifications and their preferences for various dental treatment options for preventing dental decay (Figure 4). This revealed a significant association ($\chi^2 = 29.618, p = .003$), suggesting that higher educational qualifications influence preferences for specific preventive treatments. However, when examining preferences for treatment options for decayed teeth (Figure 5), no significant association was observed between educational qualifications and treatment preferences ($\chi^2 = 6.614, p = .579$), indicating diverse but statistically insignificant trends in parental choices for treating decayed teeth.

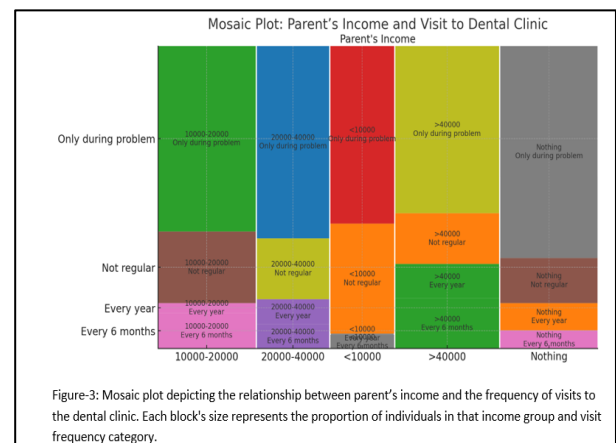


Figure-3: Mosaic plot depicting the relationship between parent's income and the frequency of visits to the dental clinic. Each block's size represents the proportion of individuals in that income group and visit frequency category.

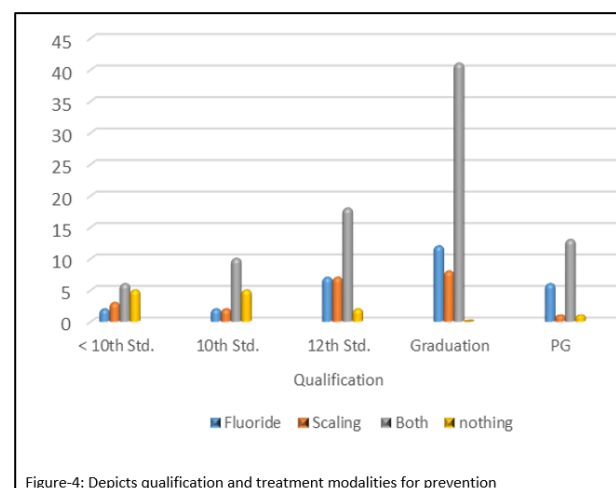


Figure-4: Depicts qualification and treatment modalities for prevention

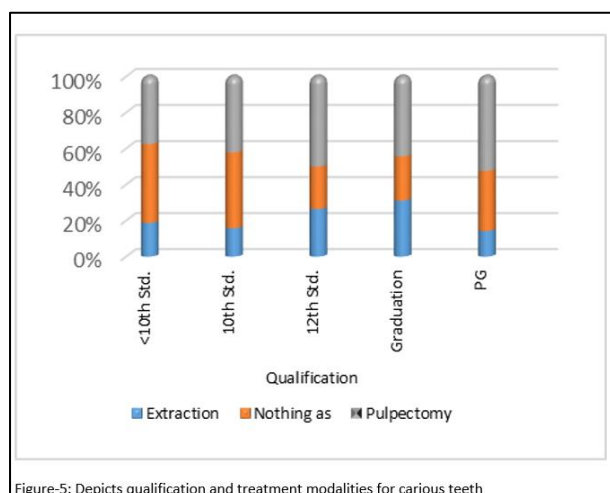


Figure-5: Depicts qualification and treatment modalities for carious teeth

5. Discussion

The ideal timing for a child's first dental visit is a topic of ongoing discussion. Notably, some recommendations suggest that the initial dental appointment should ideally occur during pregnancy. This prenatal visit can provide expectant mothers with essential guidance about the importance of scheduling a dental check-up for their child by six months of age.⁸ However, this study found that the majority of children had their first dental appointment between the ages of 6 and 12 years, which is significantly later than the recommended timeline. This is consistent with global findings, which indicate a general lack of awareness regarding the optimal age for a child's first dental visit. In this study, 46% of parents were unaware of when the first dental visit should occur, echoing the results of a study conducted in Chennai, where 59% of parents believed that the first dental visit should only take place after the eruption of permanent teeth.⁹

Various studies have reported differing typical ages for a child's first dental visit: over 6 years¹⁰, 5–12 years¹¹, 5 years¹², 3–5 years¹³, and 14.92 months.¹⁴ These variations highlight the inconsistent awareness and practices regarding pediatric dental care across different regions and populations.

The primary motivations for initial dental visits are consistent across different studies, often driven by pain due to dental caries, the need for routine checkups, or emergencies such as trauma or infection.^{12,13,15} In this study, the majority of parents (61.3%) reported visiting the dental clinic only when problems arose, rather than for preventive care. This finding contrasts with a study

conducted in Malaysia, where most parents believed that the primary purpose of a child's first dental visit should be for a routine checkup.¹⁰ Similarly, a study at the University of São Paulo found that preventive guidance was the primary reason for seeking dental care, followed by treatment for caries and addressing dental trauma.¹⁴

Awareness about the potential consequences of premature extraction of primary teeth, such as malocclusion, was found in 45.6% of parents in this study. This finding is consistent with a study involving Malaysian parents, where 49% recognized the impact of early loss of primary teeth on the eruption of permanent teeth.¹⁰

Parental knowledge and awareness of their child's oral hygiene are crucial for maintaining oral health. In this study, a significant majority (86.3%) recognized the importance of milk teeth, which is similar to the findings of Singh et al. (2022)⁷, where 84.4% of parents were aware of the significance of primary teeth. Additionally, awareness of fluoride's role in preventing tooth decay was observed in 44.3% of respondents, with 57.3% expressing a willingness to opt for preventive treatments like fluoride application and scaling. This is comparable to a survey conducted in Mumbai, where 49.8% of parents were aware of fluoride's protective benefits, and 55.5% were willing to undergo fluoride and sealant treatments.^{16,17}

Limitations and Future Directions:

One limitation of this study is its hospital-based design, which may not fully represent the broader population of parents in Raipur. Future research could explore similar assessments in community-based settings to capture a more diverse sample. Additionally, qualitative methods could be employed to gain deeper insights into the underlying reasons for parents' attitudes and decision-making processes regarding their children's oral health care. Expanding the study to include fathers, who were underrepresented in this study, could also provide a more comprehensive understanding of family dynamics in pediatric oral health.

Conclusion:

The study highlights the importance of parental education in shaping attitudes and behaviors toward pediatric dental care. While there is a general awareness of the need for treating decayed primary teeth,



misconceptions about the timing of the first dental visit and the value of preventive treatments persist. Dental health professionals should prioritize educational initiatives that address these gaps, particularly targeting parents with lower educational levels, to ensure that all children receive timely and appropriate dental care. Enhanced awareness and understanding among parents can lead to better oral health outcomes for their children, ultimately contributing to improved overall health and well-being.

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Conflict of Interest: The authors declare no conflicts of interest.

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