

## Understanding the Barriers in Seeking Dental Care among Children in the Mixed Dentition Stage at a Tertiary Care Hospital in Western Tamil Nadu, India: A Mixed-Methods Study

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### Abstract:

**Introduction:** The early years of a child's life are crucial for establishing healthy oral habits and preventing dental issues that can have long-lasting effects into adulthood. Neglecting oral health during childhood can lead to various dental problems, such as tooth decay, gum disease, and misalignment, which can impact overall health and well-being. Despite the significance of dental care for children, several barriers hinder parents and guardians from seeking appropriate dental services for their children. To address this concern, we conducted a study aimed at identifying the barriers in seeking dental care for children during the mixed dentition stage attending a tertiary care hospital in western Tamil Nadu, India.

**Objective:** The objective of this study was to identify the common barriers which prevented the children of mixed dentition stage to seek dental care.

**Materials and Methods:** This cross-sectional study was done among 250 children of mixed dentition stage who attended Paediatric Outpatient Department (OPD) of KMCHIHSR, Coimbatore, Western Tamil Nadu, India, between June 2023 to July 2023. A structured questionnaire was used to collect data.

**Results:** When assessed for the barriers to seek dental care, 21.1% did not visit the doctor due to anxiety. 53.3% did not perceive the need to visit a doctor. 15.9% mentioned they did not have accessibility to visit the doctor. 6.9% mentioned financial constraint was the main reason for not seeking dental care.

**Conclusion:** The barriers to children's access to dental care are complex and multifaceted, impacting their oral health and overall well-being. Addressing these barriers requires a concerted effort from various stakeholders. Initiatives should focus on increasing the availability of dental care providers in underserved areas, implementing school-based dental health programs, and conducting community outreach efforts.

**Keywords:** Mixed Dentition, Barriers, Oral Health, Pediatrics.

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### Introduction

Good oral health is essential for overall well-being, and it begins with proper care from young age. [1] Children are particularly susceptible to specific oral health problems that require attention to ensure optimal dental development and long-term oral hygiene. The oral health of children is of paramount importance as it not only affects their ability to chew and speak properly but also plays a significant role in their self-esteem and social interactions. Also children with impaired speech and hearing development need more meticulous care for their oral hygiene. Moreover, the

foundation for good oral health is established during childhood, shaping their habits and attitudes towards dental care as they grow into adulthood. The early years of a child's life are critical for establishing good oral health habits, preventing dental problems and setting the foundation for lifelong dental care. [2] Primary teeth, also known as milk teeth or deciduous teeth are essential for proper chewing and digestion, enabling children to receive adequate nutrition from their diet. These teeth also play a crucial role in speech development, allowing children to learn and

communicate effectively. Additionally, primary teeth act as placeholders for permanent teeth, guiding their eruption and proper alignment. [3] Neglecting oral health during childhood can lead to dental problems such as tooth decay, gum disease, malocclusion, and subsequent complications that can persist into adulthood, affecting overall health and well-being. The mixed dentition stage refers to a specific period in a child's dental development when they have a combination of primary teeth and permanent teeth. During this stage, some of the primary teeth are being replaced by permanent teeth, resulting in a mixed dentition.

The mixed dentition stage typically occurs between the ages of 6 and 12 years, although the exact timing may vary for each child. It begins when the first permanent molars erupt behind the last primary molars, usually around 6 years of age. [4] As the mixed dentition progresses, other permanent teeth start to erupt, gradually replacing their corresponding primary teeth. The incisors, canines, premolars, and second molars will emerge, and the primary teeth in those areas will be gradually lost. This process continues until all the primary teeth have been shed and replaced by permanent teeth, typically around the age of 12 or 13. [4] It is essential for parents to encourage good oral hygiene habits and regular dental check-ups during the mixed dentition stage to ensure the health and proper development of both the primary and permanent teeth. Due to COVID 19 pandemic there has been severe reduction of oral health care for children and other vulnerable groups. [5]

However, despite the importance of dental care for children, numerous barriers exist that hinder parents and guardians from seeking appropriate dental services for their children. These barriers contribute to gaps in oral health care and can have long-lasting effects on children's oral health, overall health, and development.

The common barriers to seek dental care were identified as lack of knowledge about ideal oral health, anxiety towards dental treatment, availability, and accessibility to a dental service provider in their locality, need to undergo dental checkup, poor dietary habits economic factors involved to treat dental ailments and linguistic and cultural barriers. So this study was undertaken to identify the barriers to seek dental care for children of mixed dentition stage attending a tertiary care hospital in western tamilnadu India.

### Materials and Methods

A Mixed Method study was conducted in the department of paediatrics during the months of June 2023- July 2023. Ethical clearance was obtained from the Institutional ethics committee. Children with mixed dentition were included in the study. After obtaining informed written consent,

using a structured validated questionnaire, the demographic data and disease characteristics were collected.

Open ended questions were also included to understand the reason for the delay in initiation of treatment if any. The exact words uttered were captured. Children with primary dentition and permanent dentition were excluded from the study. Also, children with special needs irrespective of their dentition were also excluded from the study the consenting individuals as per the inclusion criteria were examined in the room of the principal/ Co investigator to ensure privacy. Initially oral cavity was examined using wooden disposable tongue depressor and interview style of data collection was followed.

A sample size of 203 was calculated according to the study done by Gomes et al[6] where, 32.1% of the study population had impact from poor oral health conditions using the following formula,  $4PQ/L^2$  at a relative precision of 20% and a confidence Interval of 95. The Data collected was compiled in excel sheet and analyzed using SPSS 27 and tabulated as frequency and percentage. The qualitative data was analyzed using manual, theoretical thematic content analysis following the steps endorsed in Braun and Clarke's six-phase framework. [7,8]

The transcripts were read and re-read to ensure familiarity with the data corpus. Also, the notes were made, and early impressions jotted down. The data was then organized in systematic meaningful way by generating codes. Because each open-ended question was thematically enquired about, the data was thematically sorted to start with. However, it was ensured whether the themes make sense, data supports these themes, trying to fit too much into a theme, overlaps, sub themes within predetermined themes, or other novel themes within the data. The results were presented according to themes (Table 2). Under each theme, codes and supportive manually chosen verbatims were provided.

### Results

The study included a total of 250 children, whose age and gender distributions were analysed. The majority of participants, accounting for fell into the age group of 6 to 9 years. The second-largest group belonged to the age range of 10 to 13 years. A smaller portion of the children fell within the age range of 14 to 17 years. Regarding gender, more than 50% of the participants were boys, while remaining were girls. When the dental hygiene habits of the children was examined a significant portion of the children reported brushing their teeth once a day. Also majority of the children demonstrated the ability to brush their teeth independently. When assessed for the barriers to seek dental care, 21.1% did not visit the doctor due

to anxiety. 53.3% did not perceive the need to visit a doctor. 15.9% mentioned they did not have

accessibility to visit the doctor. 6.9% mentioned financial constraint was the main reason (Table 1).

**Table 1: Barriers to Seek Dental Care**

Barriers To Seek Dental Care	No		Yes	
	F	%	F	%
Anxiety	194	78.9	52	21.1
Need	115	46.7	131	53.3
Accessibility	207	84.1	39	15.9
Financial Strain	229	93.1	17	6.9

Based on the responses provided by the participants several views about dental treatment were identified like, the participants express anxiety and fear related to dental visits and treatments. Some participants seem to believe that dental treatment is unnecessary for milk teeth or they might have a perception that dental issues in milk teeth will resolve on their own when permanent teeth grow.

The accessibility issue is raised by a participant who mentions that their village lacks a dental clinic, which can make it difficult for them to access dental care. Financial constraints are evident from the responses. Some participants express concerns about the high cost of dental treatments and prioritize other expenses over dental care. (Table 2)

**Table 2: General perception towards barriers**

Codes	Participant Responses
Anxiety	Verbatim 1.1.1 "I feel afraid to see the dentist" Verbatim 1.1.2 "I am scared to sit in the dental chair"
Need	Verbatim 1.2.1 "I don't think dental treatment is needed for milk tooth" Verbatim 1.2.2 "when new teeth comes the problem will be solved"
Accessibility	Verbatim 1.3.1 "my village does not have dental clinic"
Financial constraint	Verbatim 1.4.1 "I don't have money to afford costly dental treatments" Verbatim 1.4.2 "other expenses are there before dental treatment"

**Discussion**

Oral health barriers for children refer to various factors that hinder their ability to maintain good oral hygiene and access necessary dental care. These barriers can have long-term consequences on a child's dental health and overall well-being. When assessed for the barriers to seek dental care, 21.1% did not visit the doctor due to anxiety. 53.3% did not perceive the need to visit a doctor. 15.9% mentioned they did not have accessibility to visit the doctor. 6.9% mentioned financial constraint was the main reason (Table 1).

These verbatim statements on anxiety highlight the presence of dental-related anxiety or dental phobia, which is a common issue experienced by many people especially children. Dental anxiety can arise from various factors like previous negative experiences at the dentist, fear of dental procedures, concerns about pain or discomfort, and even general anxiety related to medical settings. For children experiencing dental anxiety, the thought of going to the dentist or sitting in the dental chair can evoke intense feelings of fear and apprehension, which might even lead them to avoid dental visits altogether. Dentists and dental professionals are aware of dental anxiety and often employ strategies to help children cope with their fears and feel more comfortable during dental visits. Techniques such as gentle communication,

providing a calm and soothing environment, and offering options for relaxation or sedation can be used to alleviate anxiety and make the dental experience less stressful. Also openly discussing fears and concerns can help the dentist tailor the experience to the children's needs and create a more positive and supportive atmosphere during dental appointments.

The verbatim statement made about need highlights the common misconceptions about the importance of caring for milk teeth. While it is true that milk teeth are eventually replaced by permanent teeth, neglecting dental care for primary teeth can have significant consequences for a child's oral health. Lack of dental clinics in rural or remote areas is a common challenge faced by many communities. Limited access to dental care can have significant implications for the oral health and well-being of the residents mainly children in such areas.

Without nearby dental clinics, children may face barriers to receiving essential dental services, including preventive care, dental check-ups, and treatment for dental issues. Financial constraints can be a significant barrier to accessing dental care for many people. Dental treatments, especially those that are more complex or involve specialized procedures, can be costly. Without adequate financial resources or dental insurance coverage, parents may find it challenging to afford the

necessary treatments, leading to delayed or neglected dental care for their children. Children often lack the knowledge and understanding of proper oral hygiene practices.

They may not be aware of the importance of brushing their teeth regularly, using proper techniques. This lack of dental education can lead to inadequate oral hygiene practices and an increased risk of dental problems. Knowledge and understanding of oral hygiene practices are fundamental for maintaining good oral health throughout life. It involves awareness of the proper techniques and habits needed to keep the mouth, teeth, and gums healthy, prevent dental problems, and promote overall well-being. Knowledge of proper brushing helps remove plaque and food particles, preventing tooth decay and gum disease. [9]

Awareness of the link between oral health and overall health is important. Understanding how oral infections and inflammation can impact systemic health, such as cardiovascular health or diabetes, encourages children and their parents to prioritize their oral hygiene. [10] Limited access to dental care is another significant barrier. In underserved communities or rural areas, there may be a shortage of dentists or dental clinics. This can make it challenging for children to access affordable and quality dental care, including routine check-ups, preventive treatments, and necessary interventions. Without timely care, dental issues can escalate, leading to more severe problems and discomfort for children. In a study conducted by Sabbagh et al they have concluded that access to dental care and lack of education in oral health was a major contributing factor. [11]

Financial constraints also play a role in oral health barriers for children. Dental treatments can be expensive, and many families may struggle to afford them. Additionally, lack of dental insurance coverage further exacerbates the financial burden, making it difficult for children to receive the dental care they need in a timely manner. [12] This can result in delayed treatment, exacerbation of dental problems, and potentially more complex and costly interventions later on. Dental anxiety and fear are common barriers that children face when it comes to oral health. [13] Negative experiences at the dentist or fear of dental procedures can cause children to avoid or delay dental visits, resulting in untreated dental issues. Dental anxiety can be particularly challenging to overcome, requiring special attention and care from dental professionals to create a comfortable and reassuring environment for children. [14] Poor dietary habits also contribute to oral health barriers for children. Consuming a diet high in sugary foods and beverages increases the risk of tooth decay and other oral health problems. [15] Children who have

limited access to nutritious foods or consume excessive sugary snacks and drinks are more susceptible to dental issues. Educating both children and parents about the importance of a balanced diet and its impact on oral health is crucial in addressing this barrier.

Parental knowledge and involvement are essential factors in a child's oral health. Parents who lack knowledge about proper oral hygiene practices or neglect their child's dental needs inadvertently contribute to oral health barriers. It is important for parents to be educated about the significance of oral hygiene, regular dental check-ups, and preventive measures to ensure their child's optimal oral health. [16]

Language and cultural barriers can also pose challenges. In multicultural and multilingual communities, language barriers can hinder effective communication between oral healthcare providers, children, and their families. This can impede access to appropriate dental care and the understanding of preventive measures, leading to unmet oral health needs. [17] By addressing these oral health barriers through comprehensive strategies, such as improving dental education, increasing access to affordable dental care, promoting preventive measures, and addressing dental anxiety, we can enhance children's oral health and set them on a path towards a lifetime of healthy wellbeing.

### Conclusion

School-based dental education plays a crucial role in promoting oral health and instilling positive dental habits among children. It involves integrating oral health education into the school curriculum and providing dental-related programs and services within the school setting.

By incorporating dental education and oral health promotion into the school environment, children receive constant and consistent support for maintaining good oral hygiene practices. School-based dental education can play a vital role in reducing oral health disparities and improving the overall oral health of children. Further studies in this regard encompassing various demographic areas and different age groups of children can be conducted.

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