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Parents' Knowledge and Awareness about the Importance of Primary Teeth and Space Maintainers in Maharashtra

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ABSTRACT

Background: Primary teeth are essential for a child's overall development—they help with chewing, speech, appearance, and guide permanent teeth into place. Premature loss of these teeth can lead to misalignment and other long-term dental issues. Space maintainers are simple devices used to prevent such problems, yet many parents remain unaware of their role.

Methods: A cross-sectional study was conducted among 152 parents of children aged 3–12 years in Maharashtra. A structured online questionnaire assessed their knowledge and awareness about the importance of primary teeth, early tooth loss, and the use of space maintainers.

Results: Most parents (over 90%) acknowledged the importance of primary teeth and agreed they should be treated even if temporary. Awareness about the consequences of early tooth loss was moderate. However, knowledge of space maintainers was low—only 36% had heard of them, and just 28% understood their purpose. Despite this, 86% expressed willingness to use a space maintainer if advised by a dentist.

Conclusion: While general awareness about primary teeth is fairly strong among parents in Maharashtra, understanding of space maintainers is limited. Strengthening dentist-parent communication and incorporating preventive education into routine check-ups could significantly improve early dental care and reduce future orthodontic problems.

Key words: Primary teeth, Space maintainers, Parental awareness, Early tooth loss, Pediatric dentistry, Preventive dental care

INTRODUCTION

Primary teeth, often referred to as “milk teeth,” are more than just temporary placeholders in a child’s mouth. These teeth are essential for speaking, chewing, and maintaining a good appearance, as well as helping guide the permanent teeth as they come in. Beyond their functional role, they contribute to a child’s confidence and social interaction by maintaining a pleasing smile during early years of development[1,2] Losing them too early—whether from injury or decay—can interfere with the normal growth of adult teeth, leading to issues like speech difficulties, crowding, and long-lasting misalignment. [3]

One of the most effective preventive measures to counteract these problems is the use of space maintainers — simple, cost-effective appliances that preserve the gap created by premature tooth loss until the permanent successor erupts[3]. When implemented timely, they can avert the need for complex orthodontic treatment in later years. Despite their benefits, studies across different regions have consistently reported low parental awareness and understanding of space maintainers and the broader significance of primary teeth[3].

Given that parents are the primary decision-makers in seeking dental care for their children, understanding their awareness is critical to designing effective educational interventions and preventive programs. This study seeks to explore how much parents in Maharashtra understand about the importance of primary (baby) teeth and their awareness of how space maintainers can help prevent future dental issues like malocclusion

MATERIALS AND METHODS

Study Design and Setting

This descriptive cross-sectional study was conducted among parents and primary caregivers of children aged 3–12 years residing in Maharashtra, India. Ethical clearance was obtained from the Institutional Review Committee of Krishna Vishwa Vidyapeeth (KVV/EC:097/2024-2025). Permission from the concerned authorities was secured prior to commencement. All participants provided informed consent before enrolment, and those unwilling to participate were excluded from the study.

Sample Size Determination

The required sample size was calculated using the formula:

$n = (4 \times P \times Q) / L^2$

Where:

- P = assumed prevalence of awareness based on previous data = 89%
- Q = 100 – P = 11%
- L = allowable error = 5%

$n = (4 \times 89 \times 11) / (5)^2$
$n = 3916 / 25 = 156.64$

The calculated sample size was approximately 157. For operational feasibility, it was rounded to 150 participants.

Thus, the final sample size included in the study was 150 parents.
A total of 152 parents participated in the study.

Questionnaire Development and Distribution

A structured, pre-tested questionnaire was developed in English. Participation was entirely voluntary, and no incentives were offered. Participants were assured of confidentiality, and no personal identifiers were disclosed. Adequate time was provided to complete the form.

The survey was administered digitally via Google Forms, with the link distributed through WhatsApp and direct emails. The questionnaire consisted of 12 closed-ended questions (Yes/No format) and was divided into three thematic sections:

Section A – Dental Visits & General Awareness

1. Have you ever taken your child to a dentist?
2. Do you think primary teeth (baby teeth) are important for your child's health?
3. Do you believe primary teeth should be treated even if they will fall out later?
4. Do you think regular dental check-ups are important even if the child has no pain?

Section B – Awareness of Consequences of Early Tooth Loss

5. Are you aware that early loss of primary teeth can affect permanent teeth?
6. Do you think losing primary teeth early can lead to crooked permanent teeth?
7. Have you ever received information about child dental care from school or doctors?
8. Do you feel confident in your knowledge about your child's dental needs?

Section C – Knowledge of Space Maintainers

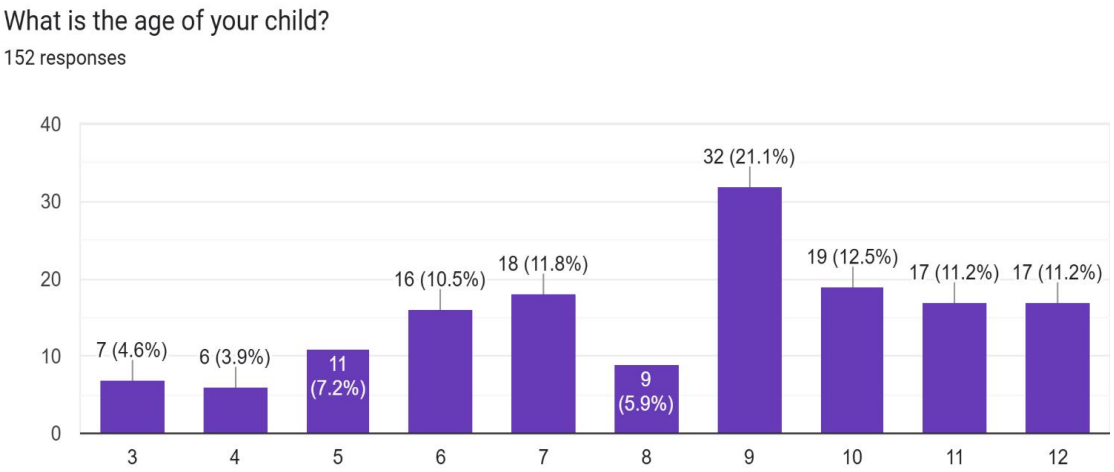
9. Have you heard of a dental device called a space maintainer?
10. Do you know that space maintainers are used after early loss of primary teeth?
11. Have you ever been advised by a dentist about space maintainers?
12. Would you be willing to get a space maintainer if recommended by a dentist?

RESULTS AND INTERPRETATION

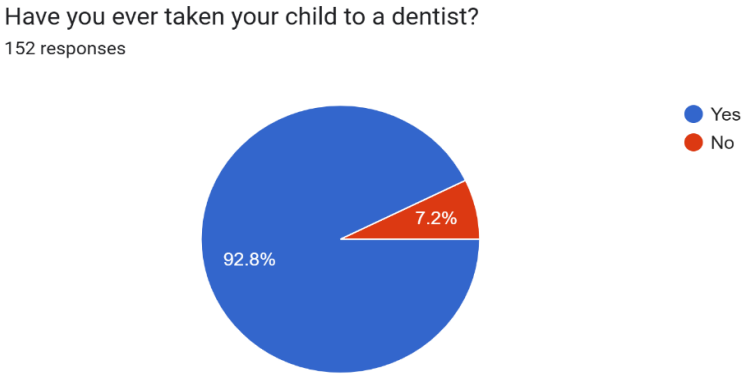
Demographic Characteristics

A total of 152 parents of children aged between 3 and 12 years participated in the study. The mean age of the children was 9 years. The age distribution is shown in Table 1.

Table 1: Age distribution of children

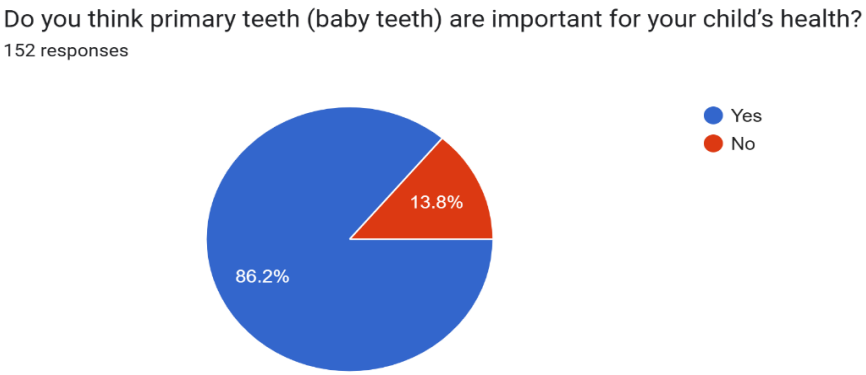


Out of 152 parents, 118 (78.6%) reported that they had taken their child for at least one dental visit, showing a fairly good level of engagement with dental care. [Graph 1]



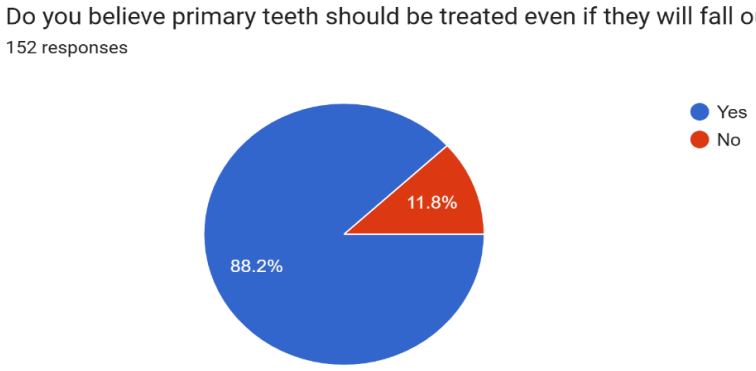
Graph 1- Have you ever taken your child to a dentist?

A total of 139 parents (92.6%) recognized the role of primary teeth in overall health, indicating strong baseline awareness. [Graph 2]



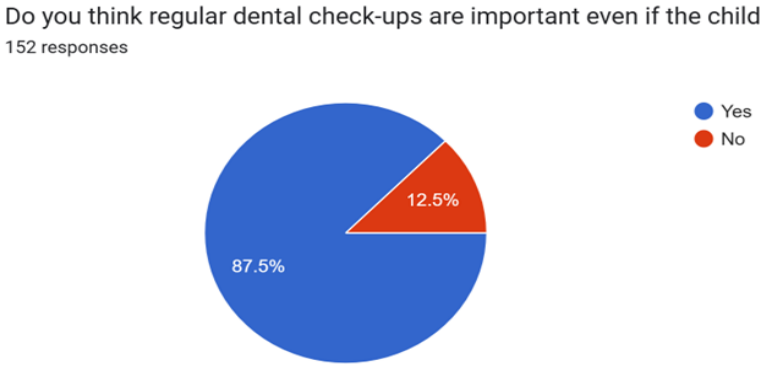
Graph 2- Do you think primary teeth (baby teeth) are important for your child's health?

The majority, 127 parents (84.6%), agreed that primary teeth require treatment if problems arise, showing value placed on preventive and restorative care. [Graph 3]



Graph 3- Do you believe primary teeth should be treated even if they will fall out later?

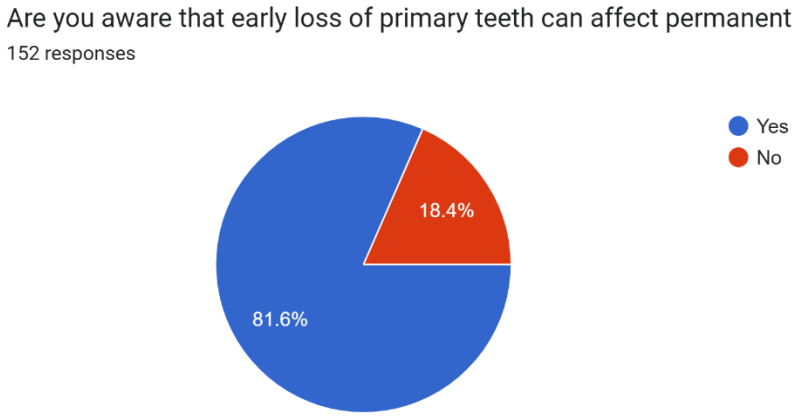
Most parents, 121 (80.6%), supported the idea of routine dental visits for prevention rather than only for emergencies.[Graph 4]



Graph 4- Do you think regular dental check-ups are important even if the child has no pain?

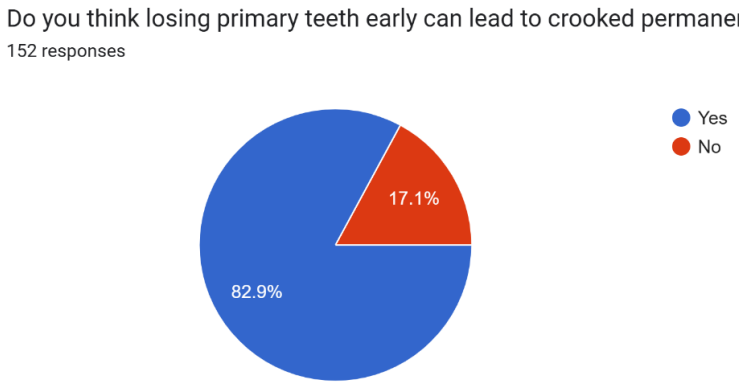
Section B: Awareness About Consequences of Early Tooth Loss

A total of 112 parents (74.6%) were aware that premature loss could influence permanent dentition development. [Graph 5]



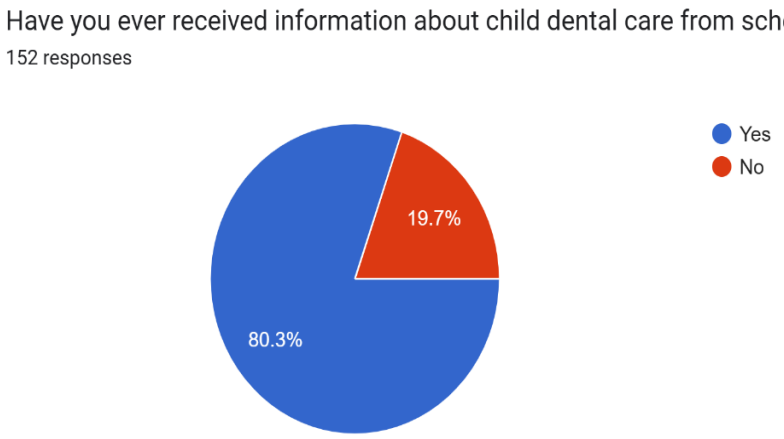
Graph 5- Are you aware that early loss of primary teeth can affect permanent teeth?

Ninety-eight parents (65.3%) recognized malocclusion as a potential outcome of premature loss. [Graph 6]



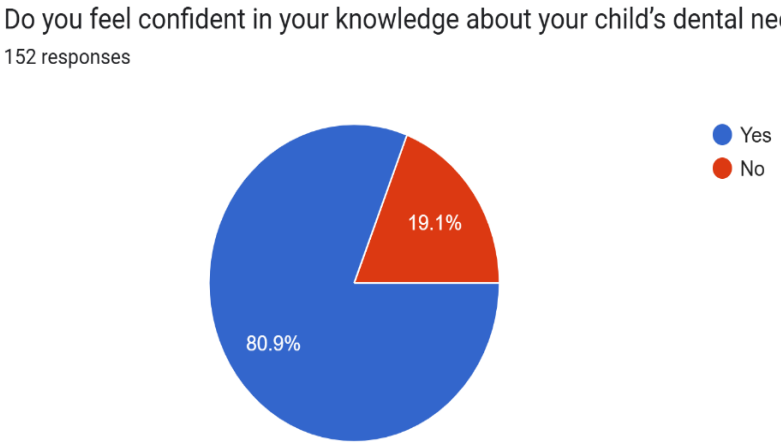
Graph 6- Do you think losing primary teeth early can lead to crooked permanent teeth?

Eighty-four parents (56.0%) had received guidance from schools or healthcare professionals, leaving a considerable portion without structured education on the subject. [Graph 7]



Graph 7- Have you ever received information about child dental care from school or doctors?

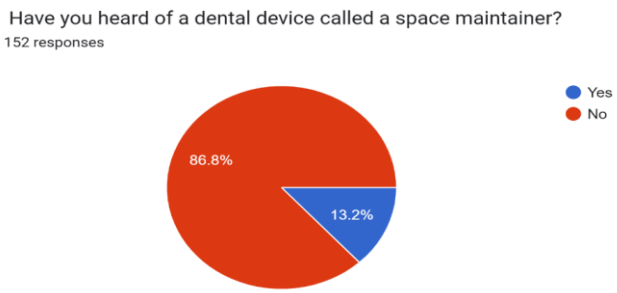
Ninety-one respondents (60.6%) felt confident about their understanding, whereas the remainder acknowledged uncertainty. [Graph 8]



Graph 8- Do you feel confident in your knowledge about your child's dental needs?

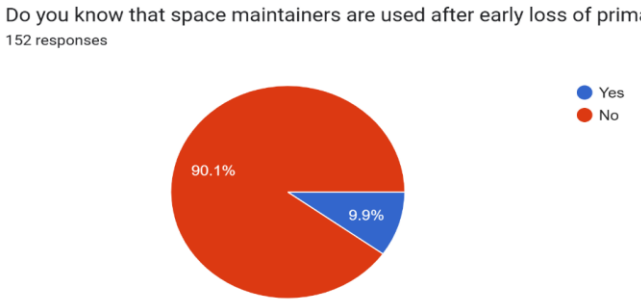
Section C: Knowledge About Space Maintainers

Only 54 parents (36.0%) had ever heard of a space maintainer, showing low awareness levels. [Graph 9]



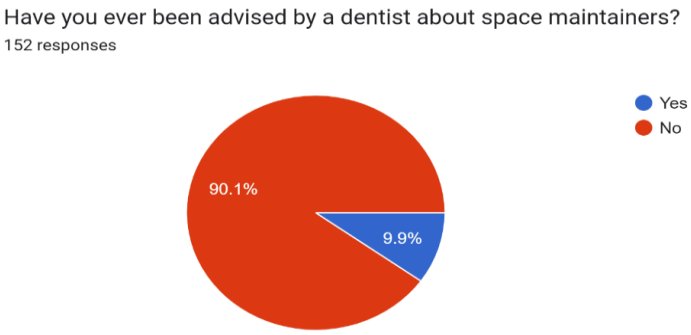
Graph 9- Have you heard of a dental device called a space maintainer?

Among those who had heard of them, just 42 parents (28.0%) understood their correct purpose. [Graph 10]



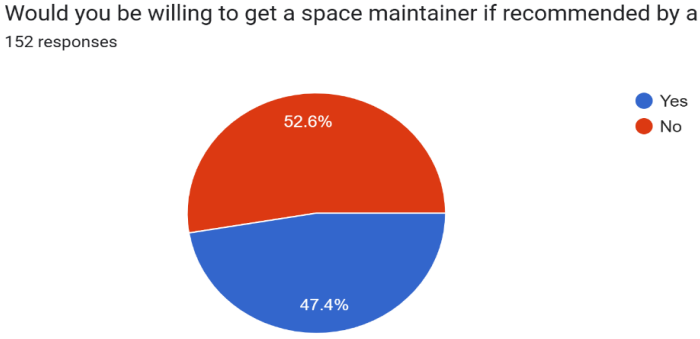
Graph 10-. Do you know that space maintainers are used after early loss of primary teeth?

Thirty-five parents (23.3%) reported receiving direct advice from a dentist regarding space maintainers. [Graph 11]



Graph 11- Have you ever been advised by a dentist about space maintainers?

A high proportion, 129 parents (86.0%), expressed willingness to proceed if it was professionally advised, reflecting trust in dental recommendations. [Graph 12]



Graph 12- Would you be willing to get a space maintainer if recommended by a dentist?

DISCUSSION

Primary teeth are important for a child's function, aesthetics, and the proper eruption of permanent teeth[1],[2]. Premature loss can disrupt arch integrity and lead to long-term malocclusion[3], making space maintainers a critical preventive tool[4],[5]. Since parents' understanding directly influences timely intervention, assessing their knowledge provides valuable insight into potential gaps in pediatric dental care[6].

In the present study conducted in Maharashtra, most parents demonstrated a clear awareness of the importance of primary teeth in their child's oral health. This finding is in agreement with reports from Redwan et al.[1] and Ramakrishnan et al.[3], where a majority of parents also valued primary teeth for their role in chewing, aesthetics, and guiding the eruption of permanent teeth. While this recognition marks a positive shift from earlier years, several studies have emphasized that such awareness is often general and may not extend to understanding specific preventive measures[12].

A high proportion of our respondents agreed that primary teeth should be treated even if they are destined to exfoliate. This aligns with the shift towards preventive pediatric dentistry observed in recent studies from both Indian[16] and Saudi populations[1], where an increasing number of parents advocate timely treatment of deciduous teeth. This change may be linked to greater public health messaging and improved access to dental care over the last decade.

Routine dental visits, even in the absence of pain, were also widely supported in this study. This is a notable improvement compared to earlier research in Indian and Middle Eastern populations, where dental attendance was largely symptom-driven[16]. Similar positive trends have been documented in urban populations, suggesting that awareness campaigns and school-based oral health programs may be influencing parental attitudes toward preventive visits.

Knowledge about the consequences of premature loss of primary teeth was relatively high in our sample, echoing results from AlMeedani et al.[12], who reported that many parents understand the link between early tooth loss and malalignment of permanent teeth. However, despite this awareness, knowledge about space maintainers remained limited. This mirrors the findings of Linjawi et al.[13] and Ali et al.[7], where only a small proportion of parents had heard of space maintainers or understood their purpose. This gap is significant, as it suggests that while parents grasp the problem, they may be unaware of the available solutions.

Furthermore, few parents in our study reported receiving advice about space maintainers directly from a dentist. This reflects a gap in clinical communication noted in multiple studies, where discussions about preventive appliances are often omitted unless parents actively inquire[1]. Encouragingly, similar to findings by Linjawi et al.[13], the majority of parents expressed willingness to accept a space maintainer if recommended by a dentist, underscoring the importance of professional guidance.

Overall, the results reveal a pattern consistent with the literature of the last decade: general awareness of primary teeth is improving, but detailed knowledge—especially regarding space maintainers—remains low. Targeted educational interventions during routine check-ups, combined with community outreach and school programs, could help bridge this gap. Evidence from prior studies suggests that such strategies not only improve parental knowledge but also increase the uptake of preventive appliances, ultimately reducing the burden of malocclusion in permanent dentition.

CONCLUSION

This study shows that while most parents in Maharashtra understand that primary teeth are important, many are still unaware of what can happen when these teeth are lost too early and how something as simple as a space maintainer can help prevent future problems. It's encouraging to see that parents value their child's dental health, but it's equally clear that more needs to be done to connect that general awareness with specific, practical knowledge.

The low awareness about space maintainers, despite high willingness to follow a dentist's advice, highlights an important opportunity: better communication between dental professionals and parents could make a real difference. When parents are informed and feel confident in their decisions, they're more likely to take early action that can prevent complex dental issues later on.

Simple steps like more guidance during dental visits, school-based programs, and community awareness campaigns can go a long way in filling this knowledge gap. When parents understand not just why primary teeth matter, but how they can protect their child's future smile, everyone benefits.

Improving awareness isn't just about dental care it's about giving children the best start in life, with healthy habits that last well into adulthood.

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