

Original Research Article

Parental attitude and knowledge towards saving primary teeth in Ahmedabad: a questionnaire-based survey

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Received: 30 January 2026

Revised: 10 March 2026

Accepted: 12 March 2026

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ABSTRACT

Background: Primary teeth play a crucial role in a child's growth, development and oral health. Despite their importance, many parents perceive them as temporary structures that do not require adequate care, leading to increased risks of early childhood caries and associated complications. This study aims to evaluate parental knowledge and attitude toward saving primary teeth using a structured questionnaire-based survey.

Methods: A cross-sectional survey was conducted among 582 parents of children under 12 years. The validated questionnaire assessed socio-demographic data, knowledge about primary teeth and attitudes toward their treatment. The questionnaire was distributed via Google Forms to parents visiting dental college, local schools and community centers. Descriptive statistics were used to analyze the data.

Results: It was observed that of the total 582 participants, a majority (63.2%) were females that aged between 26-30 years (33.5%) and 52.1% held postgraduate degrees. While 66.3% correctly identified primary teeth as the first dentition, only 55.3% knew the correct number and 61.3% the eruption timeline. Although 66% acknowledged the need to treat decayed primary teeth, 57.7% sought care only when problems arose. Willingness to spend on treatment was reported by 42.3%, with 41.1% being symptom-dependent.

Conclusions: The present study concluded that parental knowledge regarding primary teeth is inadequate and observed association between parental age, education and occupation with knowledge and attitude towards saving primary teeth highlighting the significant influence of sociodemographic factors on parental decision-making.

Keywords: Deciduous dentition, Parental knowledge, Pediatric dentistry, Preventive dental care, Primary teeth

INTRODUCTION

The American Academy of Pediatric Dentistry (AAPD) emphasizes that the guidance of eruption and development of the primary, mixed and permanent dentitions are an integral component of comprehensive oral health care for all pediatric dental patients.¹ The eruption of primary teeth typically begins around six months of age and is completed by approximately three years. A complete set of primary teeth is an essential prerequisite in learning correct pronunciation, developing

mastication, guiding the permanent dentition to a proper occlusion and good aesthetics. Although permanent teeth are already partly formed in children aged 0-3 years, eruption occurs from about 6 years. As the first molar erupts, the oral cavity constitutes of mixed dentition, thus heightening the risk of caries. Therefore, it is imperative that the primary dentition is maintained in good health and preserved until normal exfoliation.

The functions of primary teeth extend well beyond their temporary presence. They act as space maintainers

preventing malalignment of permanent teeth, assist in speech development by supporting articulation, contribute to effective mastication for adequate nutrition and maintain facial structure by supporting musculature. Premature loss of primary molars, often due to caries, leads to substantial space loss in the dental arch especially in the mandible resulting in crowding and orthodontic complications.² Moreover, premature loss is associated with midline shifts, supra-eruption of opposing teeth and compromised occlusal function, complicating normal development and occlusion.³

Parents and family members are considered the primary source for knowledge about child rearing and health habits for children, which undoubtedly have a long-term influence in determining a child's oral health status.⁴ Parental knowledge of oral health differs widely around the world, with studies reporting on parental attitudes regarding primary teeth showing controversial results. There are studies reporting that many parents believe that primary teeth are not important and do not require dental treatment (Sheetal et al, Al-Batayneh et al), while in others, parents clearly support their importance and need for treatment (Hussein et al, Vittoba Setty and Srinivasan).⁵⁻⁸ These differences have been attributed to variations in beliefs and cultures across different populations, where primary teeth are considered replaceable and their loss, even prematurely, is viewed as normal and harmless.⁹

With the rise of digital media and internet resources, parents now access a vast array of health information, which includes both accurate evidence-based guidance and material that may perpetuate misconceptions. The interplay between reliable recommendations and misleading claims has a substantial effect on the development of parental attitudes and behaviors concerning children's oral health. Systematic evaluation of parental knowledge and perceptions of primary teeth is essential to reveal existing insufficiencies and misunderstandings. This process forms the basis for designing targeted educational strategies capable of advancing the preservation and appropriate management of primary teeth. The present study aimed to address these issues by examining the current status of parental knowledge and attitudes, supporting the development of informed, effective interventions to improve pediatric oral health outcomes.

METHODS

The present study employs a cross-sectional survey design to assess parental knowledge towards primary teeth and their attitude towards treatment needs in children. The survey was carried out at Ahmedabad Dental College and Hospital over a period of 3 months from November 2024 to January 2025. The study population included parents and guardians of children from various educational and community centres to

ensure a diverse representation of participants. Ethical clearance for the study was obtained from the Institutional Ethics Committee (IECADC/0114/2024). A sample size of 580 participants was determined based on 45% of satisfaction rate regarding patients' satisfaction with 10% of relative precision and 95% confidence and sample selection was done using a convenience sampling method. Parents or guardians willing to participate were included in the study, whereas those unwilling or who had previously completed the survey were excluded from the study.

The structured questionnaire form consisting of 24 multiple choice questions was prepared using Google forms to qualitatively assess parental knowledge pertaining to primary teeth and their attitude towards treatment needs. The questionnaire highlighted following information: Demographic details such as the parent's age, gender, education, occupation and income as well as the child's age and gender. Knowledge-based questions assessed parental understanding of the number, eruption sequence and shedding of primary teeth along with their functions related to mastication, speech, aesthetics and guidance of permanent teeth. Attitude-based questions evaluated parent's views on the importance of treating decayed primary teeth, willingness to spend on dental care, frequency of dental visits, reasons for delaying or avoiding treatment and belief in the systemic effects of untreated oral infections.

For validation of the questionnaire the created draft survey instrument was provided to 30 parents that were randomly chosen to evaluate the survey instrument to ensure its clarity, relevance and acceptance.

The questionnaire was distributed to 650 parents in order to attain the required sample size. A brief introduction to the study was presented at the beginning of the questionnaire and informed consent was obtained through digital signature from all participants. Participation was voluntary, responses were anonymous and only one parent per household was permitted to complete the survey. Repeated reminders were sent at regular intervals through email and social media platforms which led to a total of 582 responses. These repeated reminders led to a response rate exceeding the initially estimated sample size. The collected data was subjected to statistical analysis.

Statistical analysis

The statistical package for the social science program (SPSS version 27.0) for Microsoft Windows was used to statistically analyze the data. The inferential statistical comparison of the categorical variables was done using Chi-squared test. A 95% confidence level was used in the investigation and p value of ≤ 0.05 was considered as statistically significant.

RESULTS

A total of 582 parents from Ahmedabad participated in the study. The demographic characteristics related to the children and their parents revealed that majority of parents (51.5%) had annual income above 5 lakh, 46.7%

were working professionals with majority of them having education up to post graduate level (52.1%). Other parameters such as gender and age of the parents showed almost equal distribution of the participants as shown in Figure 1.

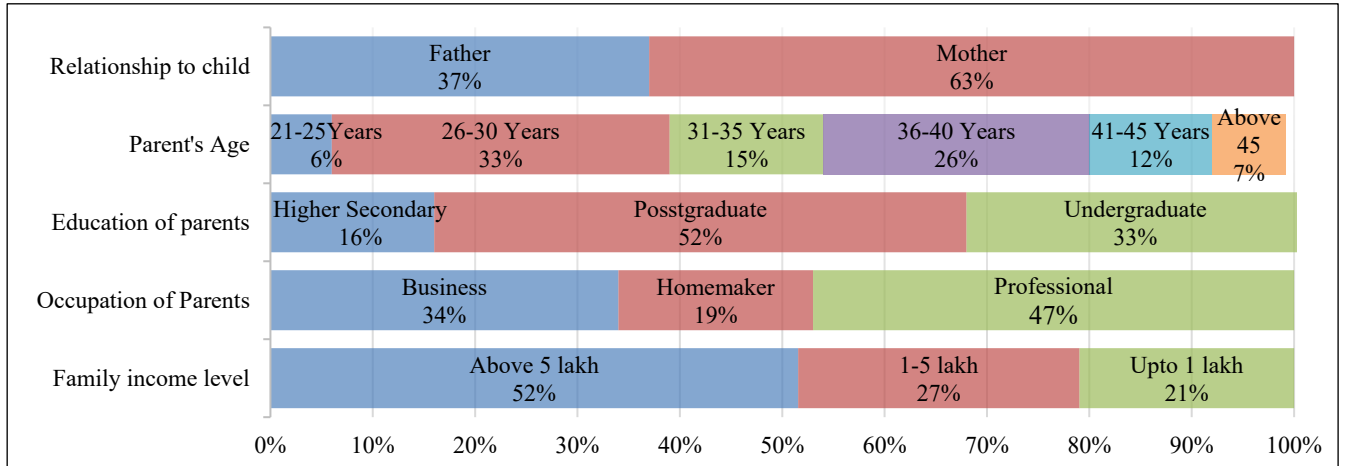


Figure 1: Demographic data of study population.

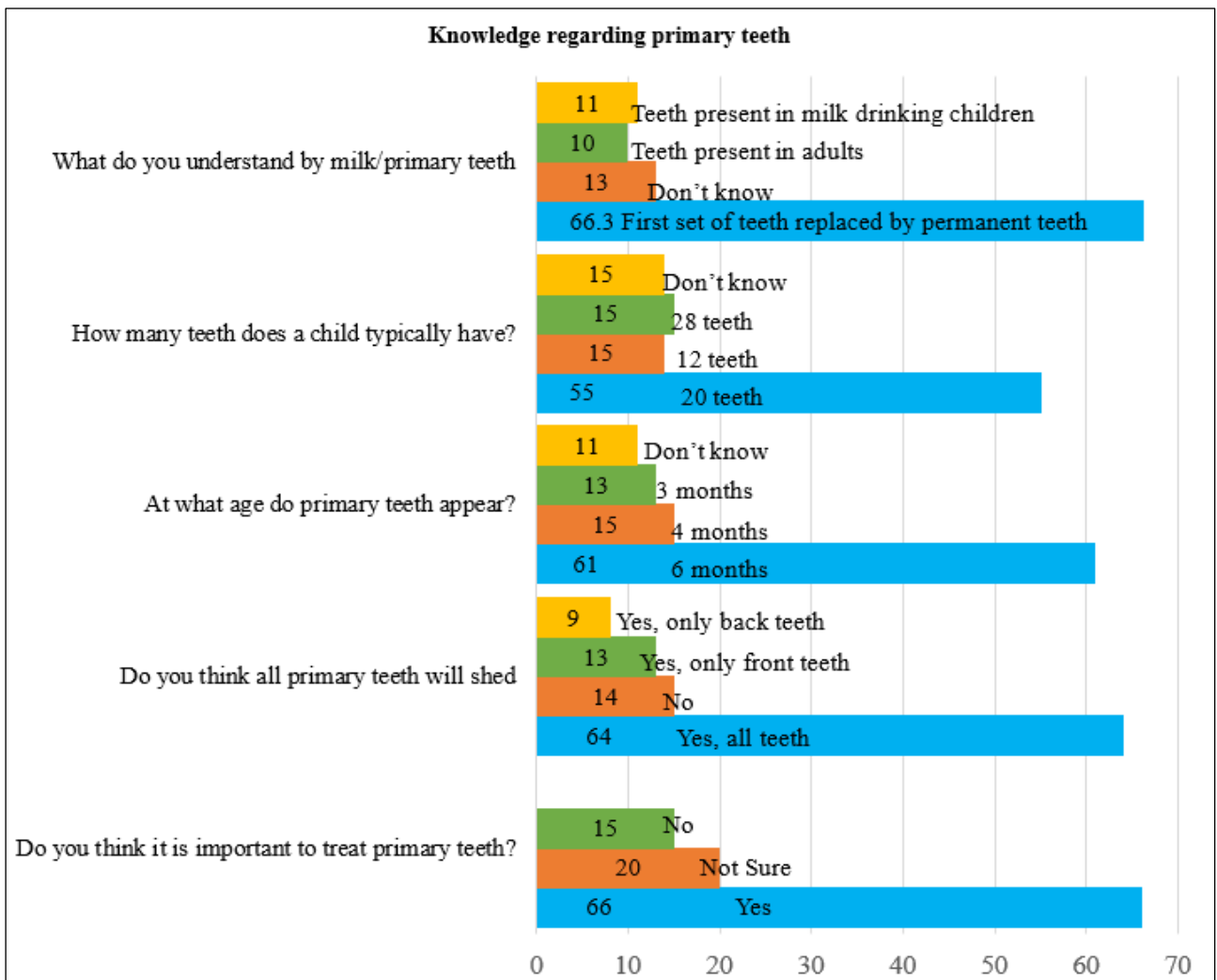


Figure 2: Knowledge about primary teeth.

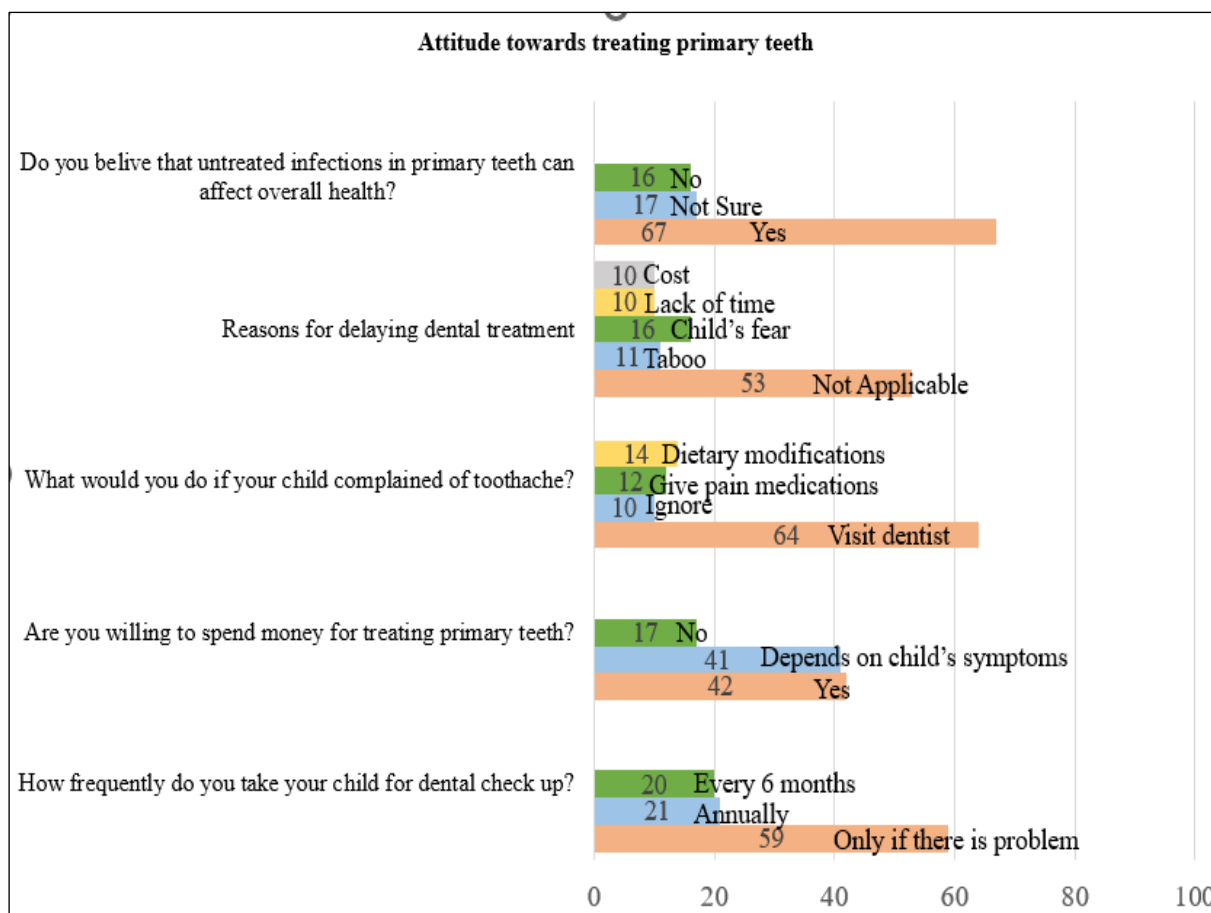


Figure 3: Attitude towards treating primary teeth.

Parental knowledge towards primary teeth revealed that 66.3% parents recognised primary teeth as the first set of teeth replaced later by permanent teeth and 55.3% knew that primary teeth are 20 in number. A majority of parents agreed that primary teeth are important for proper chewing and nutrition (42.3%) whereas other functions such as aesthetic appearance (10.5%), guiding permanent teeth (13.2%), speech development (8.9%) or combination were less cited. With regards to importance of treating decayed primary teeth, among the 582 parents, the majority (66.0%) believed that it is important to provide treatment with 54.8% selecting “all of the above” reasons, indicating awareness of multiple benefits including aesthetics, symptom relief and protection of permanent teeth (Figure 2).

Among the common issues related to primary teeth, most parents (59.8%) identified cavities and decay as the main problem, while others mentioned discoloration (14.9%) and spacing (13.6%). A smaller group (11.5%) were unaware of common issues, indicating gaps in knowledge. The majority (57.7%) visited the dentist only when problems occurred, whereas fewer parents followed regular check-ups. Most (65.6%) believed a decayed tooth should be treated by a dentist, though some felt it could be left to fall out (18.4%) or managed with home remedies (16.0%). While 42.3% were willing to pay for

dental treatment, 41.1% based their decision on symptoms, reflecting a reactive rather than preventive attitude.

Regarding delays in treatment, 50.5% of parents reported prompt care, while 22.2% admitted to hesitation. The main reasons for delay were the child’s fear (16.2%), misconceptions about treatment effects (11.0%), lack of time (10.5%), and cost (9.8%). In response to toothache, most parents (64.3%) would visit the dentist immediately, while others preferred home measures. Similarly, 66.0% were willing to complete multi-visit treatments, and 64.3% agreed to extraction if needed. A majority (67.0%) recognized that untreated infections could affect overall health, though some were uncertain or unaware. Overall, while parents generally showed positive attitudes toward professional dental care, misconceptions and reactive behaviors highlight the need for improved awareness and preventive education (Figure 3).

Cross-tabulation analysis between parental education and awareness (Table 1) showed that higher educational levels were associated with better understanding of primary teeth functions and treatment importance. Parents with postgraduate qualifications demonstrated significantly greater awareness of the role of primary teeth in speech development and alignment compared to

those with school-level education with p value 0.0001. Similarly, professional parents showed higher willingness to preserve primary teeth and greater knowledge of available treatment options than homemakers or unskilled

workers (Figure 2). These findings suggested that parental education and occupation substantially influenced awareness and treatment-seeking behavior.

Table 1: Cross tabulation between parental education and knowledge about primary.

		How many primary teeth does a child typically have? (%)				Total (%)	P value
		12	20	28	Don't know		
Education of parents	Higher secondary	25.6	6.2	26.1	29.1	15.5%	0.028*
	Postgraduate	50.0	58.1	38.6	45.3	52.1%	<0.0001*
	Undergraduate	24.4	35.7	35.2	25.6	32.5%	0.078

$\chi^2=50.617, p<0.0001^*$

Table 2: Cross tabulation between parental profession and knowledge about primary teeth.

		What do you understand by the term milk/primary teeth? (%)				Total (%)	P value
		Don't know	Teeth present in adults	Teeth present in milk drinking children	The first set of teeth in children that are later replaced by permanent teeth		
Occupation of parents	Business	28.0	25.9	31.7	37.0	34.2	0.174
	Home maker	41.3	43.1	31.7	9.1	19.1	<0.0001*
	Professional	30.7	31.0	36.5	53.9	46.7	<0.0001*

$\chi^2=78.498, p<0.0001^*$

Table 3: Cross tabulation between parental income and treatment options.

		What will you do if your child complains of toothache? (%)			Total	P value
		Leave it as it will fall out	Use home remedies	Visit dentist immediately		
Income of parents	Upto 1 lakh	21.1	22.4	16.4	20.6%	<0.0001*
	1-5 lakh	30.4	31.0	26.4	28.3%	0.123
	Above 5 lakh	48.5	46.6	57.2	51.1%	<0.0001*

$\chi^2 = 47.874, p<0.0001^*$

Further comparison based on socioeconomic status (Figure 3) indicated that families with higher monthly income displayed better knowledge regarding the preventive and restorative management of primary teeth (p value 0.0001). No statistically significant difference was noted between mothers and fathers in terms of knowledge and attitude scores, implying that both parents contributed equally in decision-making regarding their child’s dental care. Overall, the results highlighted that awareness and positive attitude towards saving primary teeth improved with higher education, profession and income, emphasizing the need for targeted educational interventions among parents with limited access to dental information.

DISCUSSION

It is imperative to understand that parental knowledge and attitude towards primary dentition play a pivotal role in promoting early dental visits, preventive care and timely intervention in pediatric dentistry. During early childhood, particularly under the age of five, children are predominantly influenced by their parents or primary caregivers, especially mothers. This period, known as

“primary socialization” is critical for the establishment of health-related behaviors.¹⁰ These years are foundational for establishing lifelong oral hygiene habits and preventing the progression of dental issues into the permanent dentition. However, despite the critical nature of this phase, multiple studies have highlighted gaps in parental awareness and decision-making regarding the care and treatment of primary teeth. This study aimed to evaluate and bridge these gaps by analyzing the perception, knowledge and behavioral attitude of parents toward the importance and management of their children's primary teeth in Ahmedabad city.

A scoping review by Lesley et al emphasized that caregiver knowledge, while improving in some regions, is still insufficient globally, especially in underprivileged communities.¹¹ Despite the widespread understanding that primary teeth are essential, many parents underestimate their long-term impact on permanent dentition.

The findings of the current study revealed that 66.3% of parents correctly identified the role of primary teeth and 55.3% knew the correct total number. These values are higher than those reported in earlier studies from

Chennai, Faridabad and Udaipur, suggesting relatively better baseline awareness in this urban sample.¹²⁻¹⁴ Additionally, 61.3% of parents knew the correct eruption timeline, an encouraging trend compared to the 49% reported by Narayanan et al.¹⁵

In the current study 66% parents agreed that primary teeth need to be treated and chewing was identified as the most known function (66.2%). However, awareness regarding the eruption guidance of permanent teeth was relatively low (34.4%), suggesting that functional understanding remains an area needing reinforcement. This aligned with the study conducted by Setty et al they reported that while 86% of parents acknowledged the importance of treating primary teeth, a significant number still visited dentists only when a problem arose, often due to pain.⁸ The study also highlighted that although many parents were aware of the role of primary teeth in chewing, only 39% recognized all their functions.

Interestingly, Narayanan et al also reported that although parents acknowledged children's susceptibility to caries, this knowledge often failed to translate into preventive behaviors.¹⁵ In this study, 65.6% indicated willingness to treat primary caries, reflecting a comparatively proactive approach. Nonetheless, a significant portion (18.4%) still preferred to wait for natural exfoliation, suggesting a lingering reliance on myths.

On evaluation of parental attitude and practice on the primary teeth of their children in Chennai Mounissamy et al revealed that a large percentage of parents (78.3%) sought dental care only when the child experienced pain or trauma.¹² Moreover, only 20.8% of parents believed that treatment for primary teeth was necessary, indicating a substantial knowledge gap. These findings are in contrast with the current study, where a majority of respondents (65.6%) reported that they would visit a dentist upon noticing decay in their child's teeth. This reflects a comparatively better understanding and proactive attitude among parents residing in Ahmedabad.

Parental decision-making is influenced by both knowledge and perception of dental care. Giuseppe et al provided evidence showing parental education positively correlates with regular dental visits and lower caries incidence in children.¹⁶ In this study, limited awareness about preventive care was evident as 57.7% of respondents were reactive, visiting dentists only when necessary.

In the present study parental attitude towards financial investment in child's oral health revealed that only 42.3% were willing to spend money proactively, while 41% would do so only if symptoms appeared. This is in contrast to the study conducted by Berendsen et al where parents showed consistent preventive investment in their children's oral health.¹⁷ This suggests a predominantly reactive approach in the population, highlighting the need

for greater awareness to promote preventive dental care practices among parents.

Thus, in the present study it was observed that despite the encouraging awareness among parents in Ahmedabad city particularly regarding the role of primary teeth and willingness to treat decay; significant gaps persist in understanding preventive care, eruption guidance of permanent teeth and proactive treatment behaviours. These findings, coupled with lingering myths and reactive attitudes, signal the critical necessity for targeted educational outreach.

Limitations

In the present study the data was based on self-reported responses, that may be influenced by recall or social desirability bias. In addition, the use of convenience sampling may limit the generalizability of the results. The survey was conducted online and administered only in English, which may have unintentionally excluded parents with limited internet access or those not comfortable with English, potentially affecting the representativeness of the sample.

CONCLUSION

The present study revealed that while parental awareness of primary teeth is improving, notable gaps remain in attitudes and practices toward early dental care, particularly regarding the full range of primary teeth functions, the importance of preventive measures and the role of early intervention in protecting permanent dentition. Although parents in Ahmedabad city demonstrate comparatively better knowledge and a more proactive approach than reported in several previous studies, a significant proportion still adopt reactive, symptom-driven treatment-seeking behaviors, often influenced by cultural myths, financial constraints, or fear. Addressing these barriers through sustained community-based education programs, targeted parental counseling and integration of preventive oral health strategies into pediatric healthcare services is essential. Future research should evaluate the effectiveness of such interventions in enhancing compliance with preventive care recommendations and fostering long-term positive oral health outcomes for children.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee (IECADC/0114/2024)

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Cite this article as: Padhiar H, Sodani V, Sarvaiya B, Chhabria P, Rajesh S, Joshi T. Parental attitude and knowledge towards saving primary teeth in Ahmedabad: a questionnaire-based survey. *Int J Community Med Public Health* 2026;13:1953-9.