

Understanding, Perception, and Investment Willingness of Parents in Primary Oral Health Prevention for their Preschool Children – In Bhopal City

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Abstract

Background: Parental knowledge, perception, and willingness to put up effort, money, and time are crucial for preventing childhood oral diseases. The current study's objective is to assess parents' knowledge, perception, and willingness to invest in their kids' primary oral health in terms of both money and time. **Materials and Methods:** A cross-sectional questionnaire study was carried out with parents (*n*=310) of preschool children enrolled at public and private preschools. **Result:** Of the parents surveyed, about 71.0% were willing to visit a dentist for a routine checkup at least once a year. 70% of those with higher qualifications are willing to spend between 100 and 1000 rupees, give up one or two dental visits annually, and devote 1 or 2 min each day to brushing their children's teeth to maintain the primary oral health care of their offspring. **Conclusion:** Parents have a favorable attitude and perception about their children's oral health in terms of cost, time, and dental clinic visits.

Keywords: Preschool children, Primary oral health, Willingness to pay

INTRODUCTION

All facets of the population are affected by the important public health issue of oral health. Poor oral health in childhood and throughout adulthood is closely related to poor oral health outcomes in the early years because people who have poor oral health in their childhood are more likely to develop dental problems later in life.^[1] Even when they attend pre-schools or nurseries, children under the age of 5 spend the majority of their time with their parents or other adult caregiver. The earliest childhood rituals and behaviors are learned during these "primary socialization" years.^[2]

As the child's primary oral health care during the first 3 years of life and the preschool years, parents play a critical role in ensuring the child has good dental health. It depends on the knowledge and conduct of parents and older siblings. This includes the child's eating and drinking habits as well as healthy behaviors instilled as household norms.^[3,4] Adopting preventive behaviors is crucial to ensure that kids have good dental health. The prevention behavior dimension is concerned with things such as oral hygiene, access to dental care, adequate tooth and gum care, using the right cleaning tools, and using

toothpaste. To avoid the development of health issues in the body, these components of oral care specialization, together with visits to the dentist, must be carried out on a regular basis starting at a young age. Tooth decay is caused by poor dental hygiene; if not treated appropriately, it can result in tooth loss. Parents, particularly mothers, have a significant impact on how their children behave when it comes to their dental health because they help them develop regular behavioral habits.^[5] According to studies, parents' negative attitudes toward their children's oral health and the occurrence of caries are related.^[6]

If left untreated, oral diseases in childhood can cause general health issues, pain, and suffering, as well as disruptions to daily activities such as eating and speaking and a reduction in productive school hours. This can carry over into adulthood and

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result in poor oral health-related quality of life, which can have an impact on economic productivity.^[7] Preschoolers frequently struggle with oral health issues such as malocclusion, dental caries, and traumatic dental injuries.^[8] Given that preschoolers are unable to express their feelings verbally, parental views are especially crucial during this stage.^[9] Parents must encourage youngsters to visit the dentist on a regular basis and to develop good eating and oral hygiene habits.^[10] Since children must rely on their parents to take them to the dentist, the traits, perceptions, and attitudes of parents can directly affect how often their kids use dental services.

Therefore, parental willingness to put up effort, money, and time is crucial for preventing childhood oral diseases. A technique known as “Willingness to Pay” is employed in the

study of health economics to calculate the financial value of health benefits.^[4,5] This technique involves asking the parents how much money they would hypothetically be willing to spend on better health or a health program for their child. The dentist can help parents overcome obstacles to receiving dental treatment for their children by comprehending how parents view their kids’ oral health and the factors that influence these beliefs.^[7,8]

It is yet unknown whether or how parents willingness to pay contributes to the prevention of childhood oral health problems due to the paucity of research on the subject. As a result, the current study’s objective is to assess parents’ knowledge, perception, and willingness to invest in their kids’ primary oral health in terms of both money and time.

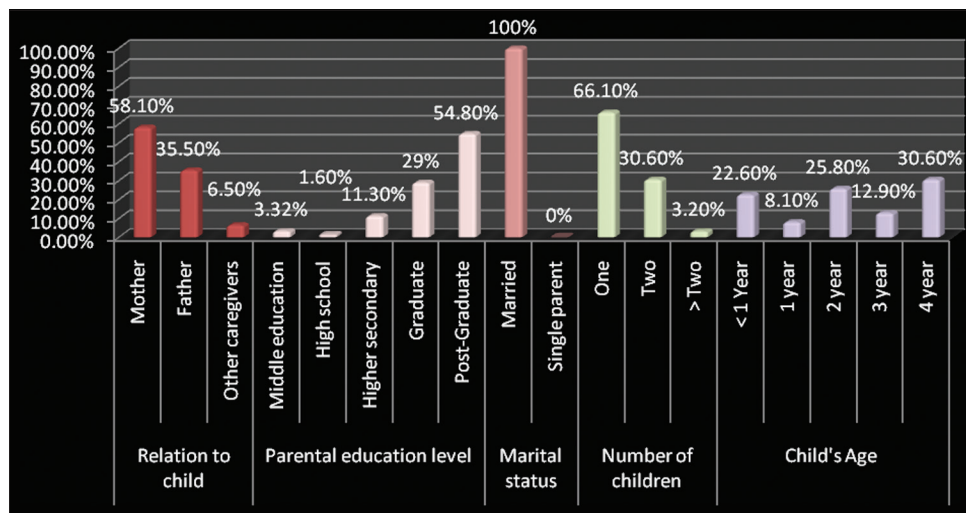


Figure 1: Demographic distribution of study participants (n=310)

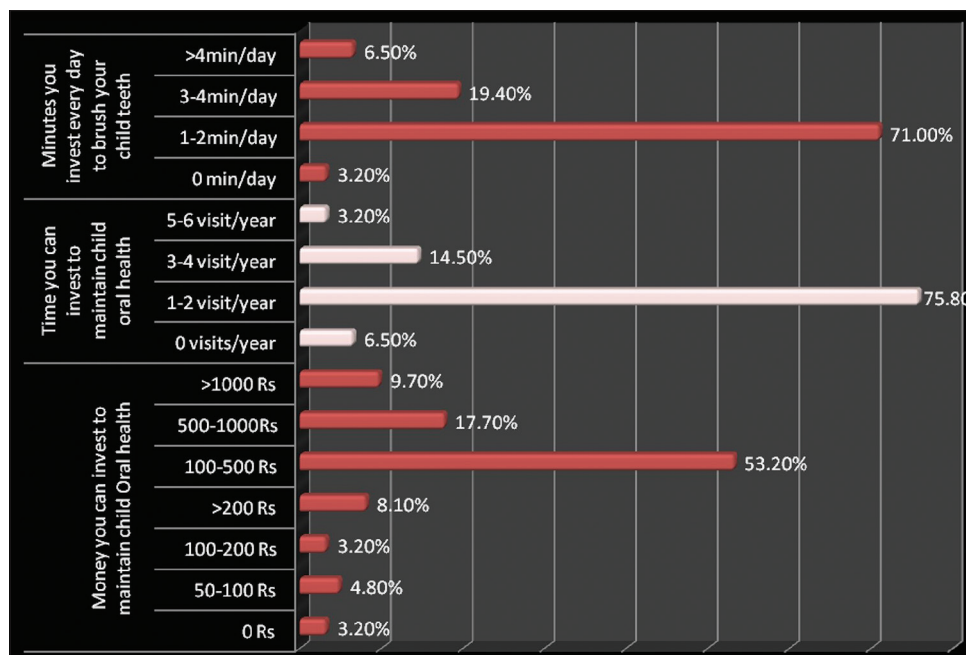


Figure 2: Parents willingness to pay for primary oral health care of children (n=310)

MATERIALS AND METHODS

Study design and study area

A cross-sectional study was carried out with parents of preschool children enrolled at public and private preschools in Bhopal city. Study was conducted from January 1st, 2024, to April 1st, 2024.

Ethical approval

Ethical approval for the conduction of the research was obtained from the Institutional Ethical Committee of People's

Dental academy, Bhopal, India (IEC/2024/200/01). Prior permission was obtained from the concerned school authorities for conducting the study.

Study population and data collection

The Google survey app was used to construct the questionnaire and valid link was shared through social media. For collection of data, a pre-structured, close-ended questionnaire consisting of 17 questions was shared. Most of the questions were pretested taken from previous studies and used with minor modifications. A pilot study was done 10% of sample size to confirm validity and reliability of remaining questions.

Parents/guardians were briefed regarding the objectives of the study. Parents who gave a voluntary informed consent to participate in the study were included in the study. About 500 parents were contacted, of whom 310 agreed to participate in the study (response rate of 62.0%). The sampling technique used to select the parents was convenience sampling.

The questionnaire was formulated which comprised of two parts: The first portion included the questions related to the demographic information of participants, such as number of children, age of children, relation with children, and education level of parents. The second portion of the questionnaire comprised 17 questions to assess parents', knowledge, perception, and willingness to invest in time and Willingness to pay for primary oral health prevention for their preschool children.

Statistical analysis

Data were entered in Microsoft Excel spreadsheet and descriptive data were analyzed using SPSS software Version 25.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics and Chi-square test were used to analyze the results. For statistical purposes, a $P \leq 0.05$ was considered significant.

RESULTS

The current study included 310 respondents, of whom the majority (58.1%) was mothers, the remaining 35.5% were fathers, and the remaining 6.5% were other carers. Based on marital status, all respondents were married; no single parents participated. In terms of education level, 54.8% of parents were graduates, 29% of parents had higher secondary school diplomas, 11.3% of parents had a higher education degree, and the remaining 1.6% of parents had a high school diploma. The majority of respondents had one child (66.1%) and 33.6% had two children, while the remaining 3.2% had more than two children. The majority of parents had children aged 4 years (30.6%), followed by those with children aged 2 years (25.8%), the younger of less than a year (22.6%), and the oldest with children aged 1 year (8.1%), respectively (Figure 1).

In the current study, nearly 50% of parents said that it was simple to brush their child's teeth at home, and more than 95% of parents expressed concern about the value of their child's oral health. Regarding comparisons of oral health, the majority of parents (54.8%) compared their child's dental health to

Table 1: Knowledge and perception of parents regarding primary oral health care of children (n=310)

Questions	Response	Percentage
Is child's oral health important?	Yes	305 (98.4)
	No	5 (1.6)
	Not sure	0 (0.0)
Is it easy for you to brush your child's teeth?	Yes	175 (56.5)
	No	115 (37.1)
	Not sure	20 (6.5)
Compare your child's oral health to peer group	Better than peers	140 (45.2)
	Same as peers	170 (54.8)
	Worse than peers	0 (0.0)
Rate your knowledge about oral health	Sufficient	220 (71.0)
	Not sufficient	90 (29.0)
Do you need extra knowledge about child oral health	Yes	270 (87.1)
	No	30 (9.7)
	Not sure	10 (3.2)
At what age did you start brushing your child's teeth?	<1 year old	90 (29.0)
	1 year old	120 (38.7)
	2-year-old	100 (32.3)
Do you use fluoridated toothpaste for your child?	Yes	120 (38.7)
	No	80 (25.8)
	Don't know	40 (12.95)
	My child does not use toothpaste yet	70 (22.6)
Do you/partner brush your child's teeth?	Never/occasionally	25 (8.1)
	1 time a day	195 (62.9)
	≥2 times a day	90 (29.0)
Does your child brush their teeth independently?	Never/occasionally	155 (50.0)
	≤1 time a day	135 (43.5)
	≥2 times a day	20 (6.5)
Number of times your child eats snacks or drink milk in between regular meals.	≤4 times a day	210 (67.7)
	≥4 times a day	100 (32.3)
Have you already been to the dentist with your child?	Yes	155 (50.0)
	No	155 (50.0)
Age (in years) at the first dental visit	0–1 year old	100 (32.3)
	2 years old	70 (22.6)
	3 years old	125 (40.3)
	4 years old	15 (4.8)
The reason for a dental visit with your child	Normal check-up	220 (71.0)
	Preventive treatment	90 (29.0)
How often do you brush your teeth?	Never	0 (0.0)
	≤1 time a day	135 (43.5)
	≥2 times a day	175 (56.5)
Total	310	100

that of their friends or peer group, while 45.2% compared it better. Of these, 37.5% do not. Nearly 70% of parents said that they knew enough about their child's oral health, but 85% of parents were still interested in learning more, and only 9.7% said that they did not need any additional information to maintain their child's dental health. By the time, they were 2 years old, 32% of youngsters had already begun cleaning their teeth, compared to over 30% at the age of 1 year. Out of the 310 parents, only 38.7% were aware that their child should use fluoridated toothpaste. This suggests that parents are unaware of the significance of fluoride for preserving their child's primary and mixed dentition periods to prevent caries. In addition, over 60% of parents only watch their child brush once a day, while the remaining 29% do so more than twice. Of the parents surveyed, about 71.0% were willing to visit a dentist for a routine checkup at least once a year. It is concerning that nearly 50% of parents had visited a dentist with their child and 50% have not. 50% of the 310 parents are wash their teeth twice a day (Table 1).

The majority of parents (71%) give their children's teeth a daily brushing session lasting 1–2 min. When it comes to the amount of time, parents are willing to spend to keep their child's oral health in check, more than 75.8% of them are willing to spend 1–2 visits annually, 14.5% are willing to spend only 3–4 visits annually, and the remaining <10% want to spend more time than 3–4 visits annually or none. Out of the 310 parents, only 53.20% want to spend between 100 and 500 rupees on dental

care or to keep their child's teeth healthy, while the remaining 17.7% want to spend between 500 and 1000 rupees (Figure 2).

Parents' willingness to pay for their children's basic dental health care based on their educational attainment. Higher-educated parents are more likely to spend more money and time on dental checkups and brushing sessions to preserve their kids' oral health. Of the 310 parents, more than 70% of those with higher qualifications are willing to spend between 100 and 1000 rupees, give up one or two dental visits annually, and devote 1 or 2 min each day to brushing their children's teeth to maintain the primary oral health care of their offspring. In contrast, 50% of parents with middle, higher secondary, and high school education are in this category (Table 2).

DISCUSSION

The goal of this study was to ascertain parents' perceptions, levels of knowledge, and willingness to spend time and money on maintaining their preschoolers' oral health. While most parents in this survey had adequate knowledge about providing their children with basic oral health care, there is still room for improvement in their understanding of children's oral health. A parent who brushes their child's teeth twice a day (56.5%) is the maximum. Latti *et al.*^[11] also observed similar results, while only 38% of parents were reported to brush twice a day by Manohar *et al.*^[12] According to this study, parent's opinions on seeing the dentist are generally favourable. Social media's accessibility has made parents more worried about their

Table 2: Frequency distribution of parents' willing to pay for primary oral health care of children according to their education level (n=310)

Question	Responses	Middle education (n=10) (%)	High school education (n=5) (%)	Higher secondary education (n=35) (%)	Bachelor's Degree (n=90) (%)	Master's Degree (n=170) (%)	P-value
Money you can invest to maintain child Oral health	0 rupees	0 (0)	0 (0)	0 (0)	0 (0.0)	0 (0.0)	0.000*
	50–100 rupees	5 (50.0)	5 (100.0)	5 (14.3)	0 (0.0)	0 (0.0)	
	100–200 rupees	0 (0.0)	0 (0)	10 (28.6)	0 (0.0)	0 (0.0)	
	>200 rupees	5 (50.0)	0 (0)	20 (57.1)	5 (5.6)	5 (0.0)	
	100–500 rupees	0 (0.0)	0 (0)	0 (100)	65 (72.2)	100 (58.8)	
	500–1000 rupees	0 (0.0)	0 (0)	0 (100)	15 (16.7)	40 (22.7)	
	>1000 rupees	0 (0.0)	0 (0)	0 (100)	5 (5.6)	25 (14.7)	
Time you can invest to maintain child oral health	0 visits per year	0 (0.0)	0 (0.0)	0 (0.0)	10 (11.1)	10 (5.9)	0.000*
	1–2 visits per year	5 (50.0)	0 (0.0)	15 (42.9)	70 (77.8)	14 (8.3)	
	3–4 visits per year	5 (50.0)	0 (0.0)	20 (44.4)	10 (11.1)	10 (5.9)	
	5–6 visits per year	0 (0.0)	5 (100.0)	0 (0.0)	0 (0)	5 (50.0)	
Minutes you invest every day to brush your child teeth	0 min per	5 (50.0)	0 (0.0)	0 (0)	0 (0)	5 (50.0)	0.000*
	1–2 min per day	5 (50.0)	5 (100.0)	25 (71.4)	70 (77.8)	115 (67.6)	
	3–4 min per day	0 (00)	0 (0.0)	10 (28.6)	15 (16.7)	35 (20.6)	
	More than 4 min per day	0 (0.0)	0 (0.0)	0 (0)	5 (5.6)	15 (8.8)	

*Statistically significant

children's dental health these days, and schools have begun to regularly examine their students. Knowing when to start brushing your teeth is important. In our survey, the majority of parents began brushing their children's teeth between the ages of one and two. Pullishery F *et al.*^[14] published similar results from a study they carried out in Mangalore. When it came to introducing and teaching their children how to brush, mothers were essential. In India, the majority of parents clean their infants' teeth with moist cloths.

The majority of parents brought their kids to the dentist office for routine checkups. Additionally, according to Spreuwel *et al.*^[13] almost 80% of respondents were willing to see a dentist for preventative care no more than twice a year. In the current study, the majority of parents made their first dental appointment when they were three years old, then less than a year old. The reason for this is that the majority of parents consult general practitioners for assistance.

In terms of willingness to pay, parents would prefer one or two trips annually and are willing to pay a modest sum of 100–500 rupees. Compared to parents with less education, those with greater education were more willing to spend and more prepared to see a dentist than parents with lower levels of education. Latti *et al.*^[11] reported similar findings. A child's oral health issues are the primary reason for a dentist visit; most parents took their children to the dentist when they experienced toothaches or dental cavities. According to Chandran V *et al.*^[15] 79% of parents said they would rather see a dentist if they had a dental issue, like a toothache. There are reports that indicate a clear correlation between the parents' income and their willingness to pay.^[16] The way parents treat their teeth can be a good indicator of how well their kids will do with their teeth. Therefore, pediatric dental health care can be greatly impacted by all factors related to the family's purchasing and investment decisions for oral health behaviors. The parents' general level of knowledge is good, but their willingness varies depending on factors like their educational background, socioeconomic standing, the number of children they have, the accessibility of dental care, etc. The government's engagement is also crucial. Nowadays, there are a lot of amenities available, so parents should make use of them. Preventive programmes are essential in the nation like India.

CONCLUSION

According to the study, parents have a favorable attitude and perception about their children's oral health in terms of

cost, time, and dental clinic visits. Planning comprehensive pediatric oral health-care programs to improve children's oral health status can benefit from knowledge regarding parents' opinions of their children's oral health and willingness to pay for dental care.

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