

Oral Hygiene Maintenance in Children- A Survey of Parental Awareness

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ABSTRACT

Introduction: There has been an increase in occurrence of cavities in preschoolers and a rise in therapeutic rather than preventive dental procedures in children. More than the child, it is the influence of the parents that will determine the future of their children's oral health. The aim of this study is to achieve a better understanding of the parent's knowledge regarding oral hygiene maintenance in children and to educate them on proper brushing habits. **Materials and Methods:** A questionnaire was given to 1000 parents of children who were between the ages of 0-8 years of which 817 completed questionnaires were included in the study. **Discussion and Conclusion:** After surveying the parents, it could be analyzed that 83.7% of the parents said that brushing in the morning is crucial, and 48.2% parents agreed that supervision until the age of eight years is crucial on their part. From the study, it was concluded that 88.2% of the parents desired more information regarding better oral maintenance for their children. Therefore, after collection of the questionnaire, an informative pamphlet was distributed answering all the questions that were asked in the survey. It is imperative that parents and dentists instill proper brushing and oral hygiene habits within the children.

KEYWORDS: Oral hygiene, parental knowledge, brushing

INTRODUCTION

Oral diseases constitute a significant public health problem in developing countries due to their high prevalence, economic consequences, and negative impact on the quality of life of affected individuals.¹ Research suggests that 65% of the general population is affected by dental caries and almost 90% of those suffering from periodontal disease are from the rural population.² Oral diseases adversely affect concentration, interpersonal relationship, and productivity due to the intricate relationship between oral health and general health. According to the most recent surveys conducted,^{3,4} an increase in cavities in preschoolers has been seen. The amount of decay seen is so deleterious that there is a need for deep sedation and general anaesthesia as children are unlikely to sit for extensive treatments.

Early intervention helps in providing an opportunity to educate parents in many areas such as good oral hygiene, the form of proper tooth brushing, use of dental floss, prevention of dental injuries, prevention of nursing caries, reinforcing the importance of dental visits at regular intervals, and proper dietary practices.

Against this background, the survey was conducted to evaluate the parent's knowledge regarding the maintenance of good oral hygiene for their children and to educate the children the correct brushing technique.

MATERIALS AND METHODS

A cross sectional questionnaire study was conducted in

Mumbai over a period of 3 months. Ethical clearance was obtained from the concerned institutional ethical committee. A questionnaire was formulated for the parents to study their awareness about brushing habits in their children between the age group of 0-8 years who were randomly selected and were willing to participate. A pilot study was conducted in the Department of Pediatric and Preventive Dentistry on parents of patients who attended clinics to test the validity and operational feasibility of the study. The questionnaire items were analyzed for difficulty in understanding, interpreting and answering correctly. It was seen that no modifications were required, and the questionnaire was given to the same set of parents two weeks after the initial administration of the questionnaire and internal consistency was found to be good and the proforma was finalized.

A questionnaire consisting of a set of 14 questions was distributed to randomly selected parents who were willing to participate in the survey. Around 1000 questionnaires were distributed, and a total of 817 responses were received, giving a response rate of 81.7%. On completion of the questionnaire, every parent was given an informative pamphlet explaining to them the importance of brushing and maintaining good oral hygiene. All the collected data was statistically analyzed.

Statistical analysis:

All collected data was entered in an excel sheet and

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RESULTS

The present questionnaire survey on awareness of oral hygiene maintenance in children was conducted in Mumbai. Parents of children between the ages of 0-8 years who were willing to participate the survey were asked to fill a set of 14 questions. 1000 parents were given the questionnaire and those with complete responses were 817 which gave a response rate of 81.7%. The frequency distribution of the responses given by parents is displayed in Table – 1.

Sr.no	Options	Frequency (%)
1	When did you start using toothbrush on your child's teeth?	
	• As soon as 1 st tooth erupted	166 (20.3)
	• 1 year of age	258 (31.6)
	• Above 1 year of age	393 (48.1)
2	Does your child use a mouth wash	
	• Yes	287 (35.1)
	• No	490(60)
	• May be	40(4.9)
3	How often do you change your child's brush?	
	• 3 months	453 (53.8)
	• 6 months	47 (29.7)
	• As soon as it gets frayed	389 (47.6)
4	Does your child perform tongue cleaning	
	• Yes	676 (82.8)
	• No	90 (11)
	• I don't know	51 (6.2)
5	Does your child floss?	
	• Yes	119 (14.6)
	• No	553 (67.6)
	• Sometimes	102 (12.5)
	• I don't know	43 (5.3)
6	How many times does your child brush his or her teeth in a day?	
	• 0	3 (0.4)
	• 1	281 (34.4)
	• 2	512 (62.3)
	• 3	24 (2.9)
7	Does your child rinse his mouth after every meal?	
	• Yes	548 (67.1)
	• No	214 (26.2)
	• I don't know	37 (4.5)
8	Till what age do you think you should brush or supervise your child's brushing?	
	• 2 years	128 (15.7)

	• 4 years	226 (27.7)
	• 7-8 years	394 (48.2)
	• I don't know	69 (8.4)
9	How long does your child brush his/her teeth?	
	• 30 seconds	67 (8.2)
	• 1-2 minutes	292 (35.7)
	• 2-3 minutes	428 (52.4)
	• I don't know	30 (3.7)
10	How does your child brush?	
	• Horizontal	103 (12.6)
	• Vertical	104 (12.7)
	• Circular	69 (8.4)
	• All directions	541 (66.3)
11	When do you think it's most important to brush?	
	• Morning	684 (83.7)
	• Night	133 (16.3)
12	What kind of toothpaste do you use for your child?	
	• Fluoridated	301 (36.8)
	• Non-fluoridated	122 (14.9)
	• I don't know	394 (48.3)
13	On what basis would you choose toothpaste for your child?	
	• Price	56 (6.90)
	• Brand	182 (56.1)
	• Taste	38 (4.7)
	• Colorful packing	6 (0.7)
	• Dentist advised	402 (49.2)
	• Fluoride concentration	36 (4.4)
	• Belief	73 (8.9)
	• Recommendations	24 (2.9)
14	Need more information	
	• Yes	721 (88.2)
	• No	96 (11.8)

Table – 1: Frequency distribution of responses given by parents to the questionnaire

DISCUSSION

Parental opinion is considered a valuable tool in the assessment of the children's condition.⁵ It has been reported that the tooth brushing habits amongst children were significantly associated with the parental attitude towards importance in developing good oral hygiene.^{6, 7}

In the present survey, the parent's children aged between the age group of 0-8 years were included. This is in accordance with the AAPD Guidelines which emphasize that parents should supervise their children's brushing

until the age of 7-8 years. This is the age at which their fine motor skills develop.

Brushing of teeth at least twice a day, in the morning before breakfast and at night after last drink, is an important habit to maintain.⁸ According to Attin T et al. (2005), most patients do not achieve sufficient plaque removal. Therefore, brushing of teeth twice daily is recommended in order to improve plaque control.⁹ Reportedly, 62.3% of the parents in our sample made their children brush twice daily.

Considering the present study, approximately half of the respondents (48%) initiated tooth brushing for their children only after the age of one year. This is in comparison with other studies that have been reported in this regard.^{10, 11} Parents were unaware that brushing of teeth is initiated as soon as the first tooth erupts.

The previous study conducted by Truby RJ et al. reported that frequency of brushing weekly was considerably greater in the mornings than in the evenings.¹² Similar findings were seen in the present study. For example, 684 (83.7%) parents felt that it is important to brush in the morning than in the evening.

Mouth rinsing as a formal practice has its reference credited to Chinese medicine about 2700 BC, for the treatment of diseases of the gums.¹³ It is essential to practice mouth rinsing after every meal, to prevent food lodgement which provides a nidus for bacterial growth. In our study, 67% of the parents have documented to be making their children swish and spit with water after every meal.

It is generally recommended that toothbrush should be replaced after three months of use in order to maintain its efficacy.¹⁴ About 53.8% of the parents said that they replaced their child's brush once in 3 months, whereas 47.6% parents said that they waited for the bristles to get frayed. According to Galgut PN and Daly CG et al. the occurrence of toothbrush wear is highly variable.^{15, 16} Brush used by some individuals show evidence of wear within two weeks of use; for some others, there is little wear over six months.¹⁷ If the toothbrush is getting worn out too early, it could probably be due to the application of a great amount of pressure while brushing and thereby causing damage to the enamel surface which cannot be regenerated or replaced, eventually causing abrasion. On the contrary, if it is still intact after 3 months, it is probable that brushing time is inadequate. The recommended duration for brushing is 2-3 minutes¹⁸ which about 52.4% parents were making their child practice. However, 35.7 % of the parents felt that 1-2 minutes was sufficient enough for achieving proper cleaning.

Fine motor skills such as tying knots or cursive writing or brushing your teeth usually develop around 7-8 years of age and therefore, parents must supervise their child's brushing. In our survey, it was noted that 48.2% of the parents agreed that supervision of brushing is required until the age 7-8 years; however, about 67.1% of the

respondents reported that making their children brush was a tiring task.

According to Frandsen A, who reported that no particular method of brushing is superior to one another.¹⁹ Also, over 90% of people employed their own tooth brushing method using vigorous horizontal, vertical, and circular movements.²⁰ Majority of the parents in our survey reported that their child brushed their teeth in all directions. Hence, there is a general lack of knowledge regarding the method of brushing amongst parents.

Dentifrice is significant in preventing accumulation of dental plaque and therefore, selection of the best dentifrice is important especially for developing teeth. These dentifrices are fluoridated, which, in adequate amount, can prevent dental caries. Almost half of the parents (49%) chose toothpaste on the advice of the dentist and about 182 of the parents were persuaded by brand advertisements. According to mothers in Malaysia²¹ and teenagers in Sweden (Jensen O et al)²², the taste was an important factor in selecting toothpaste for their children. Also, only 36.8% of the parents knew about the significance of fluoride in preventing dental caries which was in disagreement with the previous study conducted by Tay HL et al.²¹

Flossing and mouth washing is an important attribute to oral hygiene maintenance, and only 14.6% of the parents said that their children flossed and 35.1% agreed to have used mouthwash. This contradicts a previous study conducted by Walsh MM in San Francisco²³ where 75% claimed to have used dental floss, at least once a day. However, in Saudi Arabia only 2.3% of the study population used dental floss²⁴ and in South India, floss was reported to be the least used cleaning aid.²⁵ More than half (54%) of the American children were flossing regularly in comparison to the 15% of the Indian children who flossed frequently.²⁶ This could be due to lack of awareness regarding the cleaning of all the surfaces of teeth with dental floss. It is imperative to educate the parents and children in our population regarding the importance and the technique of using the floss.

Tongue cleaning was reported by 82.8% of the parents who made their children practice it regularly. It has been reported that tongue cleaning done by a toothbrush or a tongue cleaner provides an efficient reduction in streptococcus mutant count and a significant reduction in plaque levels.^{27, 28}

It was delightful to see that 88.2% of the parents desired more information regarding better oral maintenance for their child's oral health and therefore, after collecting the questionnaire from the children, an informative pamphlet was distributed answering all the question that were asked in the survey.

Education of mothers increases their knowledge about oral health behavior followed by increasing their ability to supervise hygiene practice of their children. It has been reported that parents with higher education have a more positive attitude and intention to control their children's

health behavior than low-educated parents.¹⁵ In a study conducted by Abiola Adeniyi et al, a significant

relationship was reported between mother's educational level and the oral hygiene status of their children.^{23, 29-31} However, the present study didn't take the level of education into consideration, which forms a limitation to the study.

CONCLUSION

It is essential for the dentist to acknowledge the 'root' of the growing population, which in this case are the children themselves and to help them develop a positive and correct attitude towards oral hygiene as they can grow up. Parents are a major influential figure, and they can certainly reflect it upon their children. Further studies are required to evaluate the educational qualification of parents and oral health behavior of children.

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