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A study on the evaluation of tooth brushing skills and its relation with the age and gender of children

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Abstract---The present study was undertaken for studying tooth brushing skills and its relation with the age and gender of children. A total of 100 school going children were assessed during the study period. A questionnaire was framed and was given to all the participants. The questionnaire included detailed knowledge about their brushing habits. Type of brushing habit was assessed among all the children. Also assessment was done in relation to age and gender. All the results were analysed by SPSS software. 41 percent of the subjects gave history of brushing once daily. Combined method of

brushing was seen in 36 percent of the subjects while 35 percent of the subjects gave history of brushing with horizontal method. Non-significant results were obtained while assessing the tooth brushing skills in relation with the age and gender of children. Brushing regularly is a low-cost, effective strategy to reduce the risk of childhood caries. Community-based efforts can help parents achieve this important health behaviour.

Keywords--brushing skills, tooth, children.

Introduction

Elementary school students will eventually want to be independent from their parents, so that they will have the freedom to decide for themselves. Moreover, they can analyse their own behaviour due to the development of their cognitive structures.^{1, 2} It is the time for students to learn skills related to personal hygiene management and to form health habits that they can benefit from their entire life. In establishing a foundation for lifelong oral health, it is very important for them to acquire the basic knowledge and skills for oral health care, such as the proper way to brush their teeth as part of their everyday life. Proper tooth brushing method and time occupy the most important part of dental health in order to prevent dental caries, which is one of the major oral diseases, and it keeps the oral cavity clean.^{3, 4}

Caries can be prevented through regular use of fluoridated toothpaste. Frequency matters. Brushing teeth more than once a day, versus less often, reduces the occurrence of caries. Evidence suggests relatively few parents meet this recommendation although the estimates of brushing frequency, and the research methods and questions used to derive this information, vary. One of the risk factors of caries is inadequate oral hygiene practices. Several studies show an association between dental caries and brushing habits. An explanation for this association is the constant removal of plaque accumulation as a result of frequent brushing reduces the chances of dental caries.^{5- 7} Hence; under the light of above mentioned data, the present study was undertaken for studying tooth brushing skills and its relation with the age and gender of children.

Materials and Methods

The present study was undertaken for studying tooth brushing skills and its relation with the age and gender of children. A total of 100 school going children were assessed during the study period. A questionnaire was framed and was given to all the participants. The questionnaire included detailed knowledge about their brushing habits. Type of brushing habit was assessed among all the children. Also assessment was done in relation to age and gender. All the results were analysed by SPSS software. Chi-square test was used for evaluation of level of significance.

Results

A total of 100 children were assessed. Mean age of the subjects was 13.5 years with majority of the subjects belonging to age group of 10 to 13 years. 67 percent of the subjects were boys. 41 percent of the subjects gave history of brushing once daily. Combined method of brushing was seen in 36 percent of the subjects while 35 percent of the subjects gave history of brushing with horizontal method. Non-significant results were obtained while assessing the tooth brushing skills in relation with the age and gender of children.

Table 1
Demographic data

Variable		Number	Percentage
Age group (years)	Less than 10	35	35
	10 to 13	39	39
	14 to 16	26	26
Gender	Boys	67	67
	Girls	33	33
Brushing frequency	Several times a week	21	21
	Once a day	41	41
	Two or more times a day	38	38
Brushing technique	Circular	19	19
	Horizontal	35	35
	Vertical	10	10
	Combined	36	36

Table 2
Correlation of tooth brushing skills and its relation with the age of children

Brushing technique	Less than 10 years	10 to 13 years	14 to 16 years
Circular	7	7	5
Horizontal	14	11	10
Vertical	4	3	3
Combined	10	18	8
p- value	0.078		

Table 3
Correlation of tooth brushing skills and its relation with the gender of children

Brushing technique	Boys	Girls
Circular	12	7
Horizontal	21	14
Vertical	5	5
Combined	26	10
p- value	0.118	

Discussion

Tooth decay is a multifactorial disease that is preventable through regular toothbrushing. Studies report 80% of children brush twice daily, but actual rates may be lower because of overreporting. Many caregivers experience difficulties enforcing toothbrushing habits and an older study demonstrated children commonly miss tooth surfaces during toothbrushing. These factors highlight the importance of developing strategies to improve toothbrushing in childhood. Efforts to improve toothbrushing in children have focused on health education based on the premise that inadequate knowledge is the main barrier. However, findings from a recent systematic review indicate that health education alone does not significantly improve toothbrushing attitudes or behaviors. Most caregivers know toothbrushing is important, but lack self-efficacy and other skills to enforce toothbrushing habits.⁶⁻⁹ Hence; under the light of above mentioned data, the present study was undertaken for studying tooth brushing skills and its relation with the age and gender of children.

A total of 100 children were assessed. Mean age of the subjects was 13.5 years with majority of the subjects belonging to age group of 10 to 13 years. 67 percent of the subjects were boys. 41 percent of the subjects gave history of brushing once daily. Das UM et al evaluated tooth brushing management and ability of children in relation to age and gender. The study population consisted of 45 children. Children were divided into three groups according to age: Group I: 3-5 years, Group II: 6-8 years, and Group III: 9-11 years. Each child selected his/her favourite toothbrush and brushed his/her teeth under supervision of one instructor. The grip type during tooth brushing was recorded on a videotape and duration of tooth brushing also was noted. The required manual dexterity for tooth brushing was present in younger age groups.⁵

Combined method of brushing was seen in 36 percent of the subjects while 35 percent of the subjects gave history of brushing with horizontal method. Non-significant results were obtained while assessing the tooth brushing skills in relation with the age and gender of children. Huebner CE et al tested an intervention to help parents establish a routine of brushing their young children's teeth twice a day. Intervention participants were 67 primary caregivers of children under six years of age. Of the 67 initial participants, 50 completed a post-intervention questionnaire administered 4 to 8 weeks following the intervention. The proportion of parents who reported brushing their young children's teeth twice a day increased significantly from 59 per cent prior to the intervention to 89 per cent post-intervention. There were concomitant and statistically significant increases over the study period in parents' confidence for brushing twice a day, attitudes about the importance of brushing and their self-efficacy for tooth brushing. Parents' knowledge of children's oral health, assessed by a 15-item scale developed for their study, also increased significantly.

Twice daily tooth brushing is a low-cost, effective strategy to reduce the risk of childhood caries.¹⁰ In a similar study conducted by Pujar P et al, authors evaluated the tooth brushing skills in children aged between 6 and 12 years and its relation with age, type of grip used, duration of brushing and gender. A total of 105 children aged between 6 and 12 years were divided into seven groups and

their plaque scores, type of grip used and duration of brushing were assessed. The most preferred grip was the distal oblique (58.1 %). Oblique, distal oblique and power grips were more efficient (plaque reduction up to 70 %). Plaque removal efficacy improved with age (57 % in 6-year-olds and 82 % in 12-year-old children). Plaque reduction was greater when the duration of brushing was longer (82 % plaque reduction when the brushing time was >2.5 min). Overall, the mean duration of tooth brushing in children aged 6-12 years was 1.71 min (103 s). Tooth brushing skills improved with age and the duration of tooth brushing made a significant difference to the oral hygiene status of the child.¹¹

Conclusion

Brushing regularly is a low-cost, effective strategy to reduce the risk of childhood caries. Community-based efforts can help parents achieve this important health behaviour.

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