Original Article

Community and Public Health Nursing
Vol. 4 No. 2, May - August 2019
DOI: http://dx.doi.org/10.21088/cphn.2455.8621.4219.5

Effectiveness of Demonstration on Skill in Tooth Brushing Technique among Primary School Students

Preethy Jawahar[1], Leenu KJ[2], Linta V Jacob[3], Mariya Raju[4], Phebha Ann Chacko[5], Neethu Jacob[6]

How to cite this article:

Preethy Jawahar, Leenu KJ, Linta V Jacob *et al.* Effectiveness of Demonstration on Skill in Tooth Brushing Technique among Primary School Students. Community and Public Health Nursing. 2019;4(2):87–90.

Abstract

Introduction: The oral hygiene practices are very low among primary school students and the incidence of dental problems is high. *Objective:* To assess the skill in tooth brushing technique and to evaluate the effectiveness of demonstration on skill in tooth brushing technique. *Methods:* One group pretest posttest design was used in the study. Forty primary school students were selected using non probability convenience sampling technique from Govt. lower primary School Kadayiruppu, Ernakulam district, Kerala. The data was tabulated and analyzed using differential statistics like frequency (f), percentage (%), mean, standard deviation (SD) and inferential statistics paired "t" test. *Results:* The mean post test skill score (17.5) was greater than the mean pre test skill score (9.5). There was significant difference between pretest skill scores and posttest skill scores ($t = 21.62$, $p = 0.001$). *Conclusion:* The study has shown demonstration on skill in tooth brushing technique among primary school students was effective in terms of improving their skill level. There is an immense need of creating skill among primary school students regarding brushing technique to keep their teeth strong and healthy and nurses are in the best position to reach and teach the students.

Keywords: Demonstration; Tooth brushing technique; Primary School Students.

Introduction

Healthy, clean, strong and good teeth are like a valuable possession, but usually people don't care for the protection of tooth.[1] Adequate oral hygiene was achieved and maintained by means of effective tooth brushing and other mechanical measures. A simple and effective means of removing plaque is by tooth brushing. The prevalence rate of periodontal disease in the general population was very high and it indicated that tooth-brushing performance was inadequate among general population. The most efficient means of cleaning the tooth by the device named tooth brush. In most of the studies, brush design and mechanization of the brushing process has been included. Different variety of designs of tooth brushes are recommended to enhance the mechanical removal of dental plaque.[2] In children, tooth brushing remains the most efficient and long term method to remove the dental plaque. Individual dexterity and motivation of children also determines the capacity to use the toothbrush. Use of toothbrush also varies according to the age of the children.[3]

The reason for widespread dental problems before the age of three was due to neglected oral health of the children. Fifty percentage of two year

Author's Affiliations: [1]Assistant Professor, Dept. of Community Health Nursing, [2-6]Fourth Year B.Sc Nursing Students, M.O.S.C. College of Nursing, Kolenchery, Kerala 682311, India.

Corresponding Author: Preethy Jawahar, Assistant Professor, Dept. of Community Health Nursing, M.O.S.C. College of Nursing, Kolenchery, Ernakulam, Kerala 682311, India.

E-mail: preethyj001@gmail.com

Received on 04.04.2019, **Accepted on** 04.05.2019

old children had one or more cavities and ninety percentage of four year old children had dental decay. The primary teeth are lost and replaced by permanent teeth and that is the factor that precipitates development of periodontal disease followed by tooth decay. Periodontal disease affects the tissue surrounded by teeth and can lead to the loss of teeth. Many studies showed that 65% of children had periodontal disease.[4]

Gingivitis is a mild form of periodontal disease which can be prevented by engaging in daily oral hygiene routines. Adequate oral hygiene regimens will help in reducing dental plaque. Many research studies showed that twice a day brushing is sufficient to maintain good oral health and to prevent dental plaque. The important distinction between merely brushing and brushing effectively should be made. Tooth brushing is not effectively executed, then the functional value of tooth brushing is null if the individual may brush his or her teeth twice a day.[5]

In paediatric dentistry, oral hygiene can be promoted in children by means of instruction, supervised brushing, training, modeling, and reinforcement. Most of the dental programs provided in the schools consisted of a single lecture and demonstration. Single lecture and demonstration are not sufficient to promote the cleanliness of children's teeth. It is the responsibility of the parents to teach their children how to brush, or assist them in doing so.[5] With proper training only children will perform tooth brushing effectively. The major deficits identified among children and adolescents were inadequate duration of brushing and lack of systematic approach to brushing. Research study findings showed that deficits in oral hygiene skills are more in children. To train daily living skills adequate time and effort is required. Effective training methods are needed to train good skills.[5]

Materials and Methods

One group pretest posttest design was used in the study. Forty primary school students were selected using non probability convenience sampling technique from Govt. Lower Primary School, Kadayiruppu, Ernakulam district, Kerala. Structured checklist on skill in tooth brushing technique was used to collect data. The content validity of the tools were obtained. Tool was translated to Malayalam and pretesting was done on 5 samples, to determine the clarity of items. The reliability of the tool was tested by administering the tool to 10 samples by using inter observer method. The reliability coefficient of the tool was r = 0.95. Pilot study was conducted among 10 samples to assess the feasibility and practicability. Informed consent were obtained from the participants and parents. The data was tabulated and analyzed using differential statistics like frequency (f), percentage (%), mean, standard deviation (SD) and inferential statistics paired "t" test.

Results

Section 1: Description of sample characteristics based on age, gender, religion, occupation, education, type of family and tooth brushing

Table 1: Frequency and percentage distribution of samples characteristics based on age, gender, religion, occupation, education, type of family and tooth brushing (n = 40).

SI. No	Sample Characteristics	Frequency (f)	Percentage (%)
1	*Age (in years)*		
	8	17.00	42.50
	9	17.00	42.50
	10	06.00	15.00
2	*Gender*		
	Male	21.00	52.50
	Female	19.00	47.50
3	*Religion*		
	Hindu	25.00	62.50
	Christian	11.00	27.50
	Muslim	04.00	10.00
4	*Father's occupation*		
	Employed	38.00	95.00
	Unemployed	02.00	05.00
5	*Mother's occupation*		
	Employed	14.00	35.00
	Unemployed	26.00	65.00
6	*Father's education*		
	Primary	01.00	2.50
	Upper Primary	10.00	25.00
	High School	18.00	45.00
	Higher Secondary	10.00	25.00
	Diploma	01.00	02.50
7	*Mother's education*		
	Primary	02.00	5.00
	Upper Primary	04.00	10.00
	High School	19.00	47.50
	Higher Secondary	11.00	27.50
	Diploma	03.00	07.50
	Graduate	01.00	02.50
8	*Family type*		
	Joint	13.00	32.50
	Nuclear	27.00	67.50

9	*Type of tooth brush used*		
	Soft	13.00	32.50
	Medium	19.00	47.50
	Hard	08.00	20.00
10	*Type of material used for brushing*		
	Tooth Paste	40.00	100
	Powder	00	00
11	*Number of times brush per day*		
	Once	17.00	42.50
	Twice	23.00	57.50
12	*Duration of changing the brush*		
	3 months	10.00	25.00
	6 months	12.00	30.00
	1 year	18.00	45.00
13	*Awareness about brushing technique*		
	Yes	17.00	42.50
	No	23.00	57.50
14	*Presence of dental problems*		
	Yes	12.00	30.00
	No	28.00	70.00
15	*Consulted doctor for any dental problems*		
	Yes	10.00	25.00
	No	30.00	75.00

Table 1 showed that, out of 40 samples 42.5% belongs to the age group of 8-9 years, 52.5% were males, 62.5% belongs to Hindu religion, 95% fathers were employed, 35% mothers were employed. 67.5% belongs to nuclear family. 47.5% uses medium bristled and all students use tooth paste for brushing. 57.5% brushes twice daily, 45% students change their brush every year and 25% students consulted doctor for dental problems.

Section 2: Distribution of subject according to overall level of skill in brushing technique before and after demonstration

Table 2: Pretest and posttest scores in tooth brushing technique (n=40)

Sl. No	Category of skill	Frequency (f)		Percentage (%)	
		Pre-test	Post-test	Pre-test	Post-test
1	Excellent	0	0	0	0
2	Good	0	38	0	95
3	Average	11	02	27.5	05
4	Below average	29	0	72.5	0

Table 2 showed that, none had good skill in brushing technique during pretest and 95% had good skill in brushing technique during post-test.

Section 3: Evaluate the effectiveness of demonstration on skill in brushing technique among primary school students

Table 3: Comparison of mean difference of pre-test and post test skill (n=40)

Skill score	Mean	Standard Deviation (SD)	t - value	p - value
Pre-test score	9.5	1.89	-21.62	0.001
Post-test score	17.5	0.44		

Table 3 showed that, the mean posttest skill score was 17.5 and the mean pretest skill score was 9.5. There was a significant difference between pretest skill scores and posttest skill scores (t = 21.62, p = 0.001). Hence the research hypothesis was accepted.

Discussion

A study was conducted among 508 children between the age group of 5–10 years regarding the prevalence and treatment needs of dental caries in the rural school in Tamil Nadu. Prevalence rate of dental caries was 71.7%. The study stated that, dental caries is an important public health issue and recommended an extensive health system to provide oral health care in the rural areas of India.

A cross-sectional survey was conducted among 5 to 6 years old children and 12 to 13 years old school children in Central and West Nepal. 2177 children between the age group of 5 to 6 years and 3323 school children between the age group of 12 to 13 years from urban and rural areas were examined. The survey showed that the dental caries prevalence of 5 to 6 years old was 67% (urban 64% and rural 78%) and 12 to 13 years old was 41% (urban 35% and rural 54%). The study revealed that an appropriate oral health care based education is needed in the school to prevent dental caries.

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