



Problems associated with oral health and knowledge of causes and prevention among children of a primary school of Meerut : An interventional study

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ABSTRACT

Oral health is fundamental to general health and well being. Schools can provide a supportive environment for promoting oral health. The children tend to be more vulnerable to dental diseases due to social, economic and demographic factors like lack of awareness, limited access to professional dental care, lack of perceived need for dental care. The objectives of the study were:(1) To know their knowledge and attitude regarding oral hygiene status after educational session . (2) To assess the problems associated with oral health among children in Meerut. A total 112 Children between the age group of 5 and 13, who attended the Subharti Primary school were recruited into the study. The subjects completed an interview schedule that aimed to evaluate young children's, knowledge and attitude. Oral hygiene habits, oral health knowledge, awareness and practices among school children in peri-urban slum was poor and improved by educational session. Knowledge, attitude, and practices among the children with regarding oral health was poor in peri urban school children. Children and their parents attitudes towards oral health and dental care need to be improved and school-based oral health education program should be recommended.

INTRODUCTION

Oral health is an integral part of the general health and well-being of an individual. Oral health promotion through schools is recommended by the World Health Organization (WHO) for improving knowledge, attitude, and behaviour related to oral health and for prevention and control of dental diseases among school children.[1] School children tend to be more vulnerable to dental diseases due to social, economic and demographic factors like lack of awareness, lack of transportation, limited access to professional dental care, lack of perceived need for dental care.[2]

In order to assess the magnitude of the preventive task it is necessary to know the extent and severity of the disease. Schools are the best centre for effectively implementing any comprehensive health care programme as children are easily

accessible at school and they represent a larger population. There exists a need to change the unhealthy practices regarding oral hygiene into healthy ones, and targeting school children is an important and effective strategy. So this study was designed with the following objectives:

(1) To know their knowledge and attitude regarding oral hygiene status after educational session .

(2) To assess the problems associated with oral health among children in Meerut.

MATERIALS AND METHODS

The study was a cross-sectional interventional study. A total 112 Children between the age group of 5 and 13 years were selected for dental check up in Primary school of Meerut for the study. These children come to this school from Labour Basti

(Labour Residential Community) of Subharti Puram Meerut in the month of October 2012 . A written consent was obtained from the school authorities before the commencement of the study. Each respondent was examined by a qualified dentists. All the intraoral examinations were done according to WHO oral health survey methods using mouth mirror, explorer and natural illumination, after seating the subjects on a chair. Chemical methods of disinfection of instruments was followed by using Dettol diluted by adding 1 part to 9 parts of potable water. Modified WHO Oral health assessment from knowledge, awareness, practices questionnaire designed was used for assessing the oral health status among the children. Oral hygiene

status was measured using the Oral Hygiene Index simplified. (OHIs). [3]

A educational session of thirty minutes duration, in comprising of lecture with the use of charts, in local language (Hindi) on various aspects of oral hygiene practices, was done for the children in groups of 20-30 was conducted. Re-assessment for the oral hygiene practices was done after a period of one month. Data was entered in MS Excel spread sheet and analysed using EPI Info for Windows. Z test for proportions was used to test the difference in the proportions and a p- value of less than 0.05 was considered as statistically significant.

RESULTS

Table 1: Socio- demographic status of Children

1	Socio demographic status	Total and percentage
	Total Students	112
	Mean age of Students	8.5 years
2	Sex wise Distribution	
	Male	72 (64.29 %)
	Female	40 (35.71 %)
3	Educational Status	
	Class I	15 (13.40 %)
	Class II	20 (17.85 %)
	Class III	22 (19.64 %)
	Class IV	25 (22.32%)
	Class V	30 (26.78%)
4	Any dental problem in last 06 months	
	Yes	54 (48.22%)
	No	58 (51.78%)
5	Dental Check ups if Problem occurs	
	Dental Surgeon	19 (16.96%)
	Any Doctor	12 (10.71%)
	Traditional Treatment	23 (20.54 %)
	Don't Know	58 (57.78 %)

A total of 112 children aged 5-13 years of age were examined. Of these 72 were males (64.29%) and 40 were females (35.71%). Children were students of primary to Vth standard. Out of them ,54 (48.22%) of the children reported that they had suffered from some of dental problem in the last six month., 19 (16.96%) consulted the dental surgeon, 12 (10.71%) consulted any doctor for consultation and remaining 23 (20.54%) used traditional or herbal treatment when they experienced any dental problem.

Table 2: Oral Hygiene Practices among the children (n=112)

No.	Subjects	Frequency & Percentage Pre Test	Frequency & Percentage Post Test	Probability of Z-score (Double sample proportion)	Z- Tab	P- value Significance
1	Practice the clean teeth					
	Brush	40(35.71)	66 (58.93)	3.79	1.96 (.0002)	P<.01 Significant
	Finger	25(22.32)	20 (17.85)	3.01	1.96 (. .0007)	P <.01 Significant
2	Other materials used to clean teeth					
	Datoon (Neem Twigs)	05(04.46)	02 (01.78)	1.78*	1.96 (.0581)	<i>P <.01 Not Significant</i>
	Other Abrasive material	10 (08.93)	04 (03.57)	5.31	1.96 (.0000)	P <.01 Significant
	Don't Know	32 (28.57)	20 (17.85)	4.02	1.96 (.0000)	P <.01 Significant
3	Mouth rinsing after eating					
	Never	75 (66.96)	66 (58.93)	4.39	1.96 (.0000)	P <.01 Significant
	Sometimes	28 (25.00)	19 (16.96)	5.30	1.96 (.0000)	P <.01 Significant
	Always	09 (08.04)	27 (24.11)	8.61	1.96 (.0000)	P <.01 Significant

(The application of Z test for double sample proportion revealed that a significant differences and improvement in oral hygiene practices among the children. All Statistical test were calculated at a significant level of 5%.)

* Not Significant

Practice of clean teeth

In pre test ,various questions were asked regarding the oral hygiene practices, such as how the teeth are cleaned, and what material was used to clean the teeth etc. Only 40 (35.71%) children were using tooth brush while the rest 25 (22.32%) were using finger to clean their teeth. The used of Datoon (Neem twigs) was 05 (04.76%) and other abrasive materials like chalk

powder, sand and charcoal 10 (08.93%) were also seen among the children.

After educational session , 66 (58.93%) children were using tooth brush and 28 (17.85%) were using finger to clean their teeth. Further, the use of practice of Datoon (Neem twigs) was equally effective and not significant in practicing the clean teeth.

Table 3: Problems associated with oral health and Knowledge of causes and prevention among children

No.	Subjects	Frequency & Percentage Pre Test	Frequency & Percentage Post Test	Probability of Z-score (Double sample proportion)	Z- Tab	P- value Significance
1	Common Problems associated with Oral Health					
	Tooth Decay	38 (33.93)	40 (35.71)	4.78	1.96 (.0000)	P<.01 Significant
	Dirty Teeth	12 (10.71)	18 (16.07)	5.10	1.96 (.0000)	P <.01 Significant
	Gum Diseases	05 (04.46)	08 (07.14)	3.70	1.96 (.0000)	P <.01 Significant
	Bad Smell	17(15.17)	20 (17.85)	2.92	1.96 (.0000)	P <.01 Significant
	Cracked teeth	12(10.71)	15 (13.39)	3.06	1.96 (.0000)	P <.01 Significant
	Pain / Toothache	08 (07.14)	09 (08.03)	1.07 *	1.96 (.0430)	P <.01 <i>Not Significant</i>
	Don't Know	20 (17.85)	012 (01.78)	3.59	1.96 (.0000)	P <.01 Significant
2	Major Factors that cause dental Problems					
	Eating Sweets & chocolate etc	32 (28.57)	43 (38.39)	5.70	1.96 (.0000)	P <.01 Significant
	Not brushing regularly	20 (17.85)	27 (24.10)	6.03	1.96 (.0000)	P <.01 Significant
	Germes	05 (04.46)	10 (08.73)	3.81	1.96 (.0000)	P <.01 Significant
	Not Rinsing	10 (08.73)	18 (16.07)	6.02	1.96 (.0000)	P <.01 Significant
	Don't Know	45 (40.17)	14 (12.05)	7.11	1.96 (.0000)	P <.01 Significant

3	Prevention dental problems					
	Avoiding Eating Sweets & chocolate etc	30 (26.79)	43 (38.39)	5.13	1.96 (.0000)	P <.01 Significant
	Brushing regularly	12 (10.71)	25 (22.32)	2.81	1.96 (.0000)	P <.01 Significant
	Visiting dentists	10 (08.93)	18 (16.07)	3.26	1.96 (.0000)	P <.01 Significant
	Taking gargling after food/ Meal	05 (04.46)	15 (13.39)	4.08	1.96 (.0000)	P <.01 Significant
	Don't Know	55 (49.10)	11 (09.82)	6.91	1.96 (.0000)	P <.01 Significant
4	Source of information					
	Parents	30 (26.79)	36 (32.14)	4.69	1.96 (.0000)	P <.01 Significant
	Teachers	27 (24.11)	30 (26.79)	5.18	1.96 (.0000)	P <.01 Significant
	Media	15 (13.39)	22 (19.64)	3.22	1.96 (.0000)	P <.01 Significant
	IEC materials	08 (07.14)	13 (11.61)	4.03	1.96 (.0000)	P <.01 Significant
	Don't Know	32 (28.57)	11 (09.82)	5.11	1.96 (.0000)	P <.01 Significant

(The application of Z test for double sample proportion revealed that a significant differences and improvement in oral hygiene practices among the children. All Statistical test were calculated at a significant level of 5%.)

* Not Significant

Mouth rinsing after eating

75 (66.96%) children replied that they never rinse their mouth after eating while 28 (25.00%) children rinse sometimes and 09 (08.14%) children rinsed always.

Thus children's practice on rinsing their mouth after every meal needs to be improved.

After educational session, 27 (24.11%) children replied that they always rinse their mouth after eating. It was observed that brush was the most effective practice for cleaning the teeth and it was also seen that most of the children always used mouth rinsing after eating.

Common problems associated with oral health

On questioning about the common problems associated with mouth and teeth, before educational session it was seen that 38 (33.93%) children were aware about tooth decay. The other problem like 12(10.71%) dirty teeth, bad smell 17 (15.17%) tooth ache 08 (07.14%), Gum disease 05 (04.46%) and cracked teeth 12 (10.71%) were also known by the children. The number of children were unaware of the common problems associated with mouth and teeth were 20 (17.85%). After educational session, it was seen that 40 (35.71%) children were aware about tooth decay, 18(16.07%) dirty teeth, bad smell 20 (17.85%) tooth ache 09 (08.03%), Gum disease 08 (04.46%) and crooked teeth 15

(13.39 %) were known by the children. Oral health problems among children was statistically significant. After educational session the common dental problems like toothache / Pain in teeth were equally effective and not significant

Major factors that are causes of dental problems

Children's opinion on the major factors that cause dental problems revealed that, 32(28.57%) were aware that eating sweets and chocolates can cause dental problems. 20(17.85%) told that not brushing regularly can be one factor and 05(04.46%) said germs and 10 (08.73%) said not rinsing can cause dental problems. After educational session, children's opinion on the major factors that cause dental problems revealed that, 43(38.39%) were aware that eating sweets and chocolates can cause dental problems. 27(24.10%) told that not brushing regularly can be one factor and, 10(08.73%) said germs and 18(16.07%) said not rinsing can cause dental problems.

The major factors that cause dental problem was observed to be eating sweets and chocolate and its problems among children was statistically significant to the associated oral hygiene.

Prevention of dental problems

With regard to the prevention of dental problems, 30 (26.79%) children knew that avoiding sweets and chocolates will prevent dental problems, 12 (10.71) children were aware that by regular brushing of teeth can be prevented, 05(04.46%) children suggested that regularly gargling after food can prevent many oral diseases and only 10 (08.93%) knew about the importance of visiting a dentist regularly.

After educational session, with regard to the prevention of dental problems, (38.39%) children suggested that avoiding sweets and chocolates will prevent dental problems, (22.32%) children were aware that by regular brushing of teeth can be prevented, (13.39%) children suggested that regularly gargling after food can prevent many oral diseases and only (16.07%) knew about the importance of visiting a dentist regularly. Thus according to the students prevention of dental problems can be controlled by avoiding the sweets and chocolates.

Source of Information

Parents 30 (26.79%) were an important source of information to the children, followed by teachers 27 (24.11%) media 15(13.39%), and IEC materials 08(07.14%).

After educational session, parents 36 (32.14%) were an important source of information to the children, followed by teachers 30 (26.79%) media 22(19.64%), and materials 13(11.61%).

DISCUSSION

The children of this present study come from a very low socioeconomic background and affordability plays an important role. In recent years, there is a growing emphasis on oral health and it is important to focus on the vulnerable groups of the society, especially children belonging to lower socioeconomic status. The study clearly demonstrated the impact of an educational intervention on the level of knowledge in causes, prevention, treatment of oral hygiene, and oral health among the children. Studies have shown that health education can improve the knowledge and to some extent behavior regarding healthy oral hygiene practices [4]. Another study revealed by Chaudhary F from Delhi have reported an improvement in the knowledge regarding oral health after health education [5]

Practice regarding oral health among students was poor before the educational session. This study suggested that 35.71% children were using tooth brush and 22.32% of children were using fingers to clean their teeth. It was observed after educational session, that tooth brush was the most effective practice for cleaning the teeth. Using a brush for cleaning the teeth have been reported as 62.96% and 71.4% among school going children by Punitha VC[6] and Mehta A[7] respectively. These figures are higher than that reported in the present study. Other abrasive materials like chalk powder, and charcoal (08.93%) were seen among the children. This holds true with the study done by Mahesh Kumar et al in Chennai, where in their study population also children resorted to the use of charcoal as a medium to brush their teeth.[8] Another study from South India have also reported use of charcoal for brushing teeth among school going children.

After educational session the common dental problems like toothache / Pain in teeth were equally effective and not significant. A Study conducted by Al-Omiri et al has also proved in their study that pain is the main driving factor for children to visit the dentist.[9]

The prevention of dental problems were controlled by avoiding the sweets and chocolates. Children's practice on rinsing their mouth after every meal improved after educational session. The parents (32.14%) was most powerful source of information for oral hygiene practice for maintaining among the oral health. The change to healthy attitude and practice can be occurred by giving adequate information, motivation and practice of the measures to the subjects. [10]

CONCLUSION

The present study indicates that participants were mainly from lower socioeconomic status. Overall, the level of oral health knowledge among the surveyed children was low.

The change to healthy attitude and practice can be occurred by giving adequate information, motivation and practices of the measures to the subjects.

Improvement in oral health-related knowledge is considered to be an essential prerequisite for improving oral health in a community. The study clearly demonstrated the impact of a simple, educational intervention on the level of knowledge, causes, prevention, treatment of oral hygiene, and oral health among the children, and hence, powerful educational messages can be passed on to them.

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