Effect of teaching on dental practice in fifth standard of MCD primary school children of south Delhi, India

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ABSTRACT

Objective: To study the effect of teaching on dental practice in fifth standard of MCD primary school children of south Delhi, India.

Design: cross sectional study.

Method: This study has been carried out in two MCD primary schools (morning and evening shifts) among the age group of 9-15 years of both sex of Zakir Nagar and Okhla village, Jamia Nagar, New Delhi, India. The Data was collected of 180 children in two stages; i.e. the pre-teaching assessment by WHO structured questionnaire in local language and at the end of 30 days in post teaching assessment with same questionnaire was done after providing dental health education for one hour by doctor and health workers.

Results: The maintaining healthy mouth, teeth, oral cavity, oral habit and habit of taking snakes specially in between meal were 81.11%, 66.11%, 27.78%, 37.22% and 36.67% in pre teaching assessment respectively while 99.44%, 96.67%, 90.0%, 90.56%and 90.0% in post teaching assessment respectively. The knowledge of teeth cleaning twice a day, in morning only and don’t clean were 28.89%, 60.0% and 11.11% in pre teaching assessment respectively while in 63.33%, 36.11% and 0.56% were in post teaching assessment respectively. The awareness of tooth brushing less than one minute, one minute only and more than one minute were 40.56%, 29.44% and 30.0% in pre teaching assessment respectively while 15.0%, 30.56% and 54.44% were in post teaching assessments respectively.

Conclusion: There are significant improvements in the practice of the teeth and oral cavity cleaning along with eating habit by teaching to the children.

Key words: Oral cavity, plaque, hygiene, mouth wash, gingival.

1. INTRODUCTION

The WHO expert committee (1965) considered that dental health was concerned with the functional efficiency not only to the teeth and supporting structures but also the surrounding parts of the oral cavity and of the various structures related to mastication and the maxillo-facial complex [1]. Poor oral health has also been related to poor social relationship and permanent disabilities that affect the ability to learn and grow. Children with chronic dental pain might also have to limit their food choices because of chewing problems. Inadequate childhood nutrition can affect school readiness, school performance and behavior [2]. Personal oral hygiene practices comprise the thorough daily removal of dental plaque and other debris by tooth brushing, flossing, and mouth rinsing and auxiliary aids [3]. Tooth brushing is the most widely used mechanical method of personal plaque control in the world (Account for less than 17% of usage in India), but has a very limited excess to the wide approximal surface of molars and pre-molars.

2. OBJECTIVES OF TOOTH BRUSHING

The following are the main objectives of tooth brushing:

- To clean teeth and interdental spaces of food remnants, debris and stain, etc.
- To prevent plaque formation
- To disturb and remove plaque
- To stimulate and massage gingival tissues
- To clean the tongue

2.1. Tooth brushing methods

During the last 50 years many tooth brushing methods have been introduced, and most are identified by an individual’s name as Bass, Stillman, Charters, or by a term indicating a primary action to be followed, such as roll or scrub but unfortunately no one method shows consistently better results in removing plaque. Various method of toothbrushing have been recommended by many workers. All tooth brushing methods mainly consist of the following four basic motions or their combinations [3,4]

- Scrub or horizontal reciprocating back and forth
- Vertical sweeping.
- Vibratin
- Rotary (Clockwise and anticlockwise) [3,4].

According to “American academy of paediatrics” (1998) only pea sized portion of toothpaste should be used on a tooth brush or a child starting at the age of 2 ideally, the tooth paste should be specially designed for children and recommended by the American dental association. Victor L. (1996) emphasized on choosing the right tooth brush:

- Soft bristles made of nylon filaments and round ends are preferred.
- American dental association has described the range of dimensions of brushes between 25.4-31.8 mm long, 7.9-9.5 mm wide and having 2-4 rows of bristles with 5-12 tufts per row.
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- Handle of the tooth brush should give tight grip
- One brush should wear out within three months. Tooth brush that provides maximum user comfort and supporting structures of the tooth should be chosen [5]

Zhu, L, Petersen, P.E et al (2003) conducted a national representative study to describe oral health behaviour, illness behaviour, oral health knowledge and attitudes among 12-18-years old children [6]. They reported that 44.4% of the respondents brushed their teeth at least twice a day but only 17% used fluoridated toothpaste. Subjects who saw a dentist during the previous 12 months or two years were 31.3% and 35.3% for 12-year and 22.5% and 20.2% for 18-year, respectively. Nearly one third (29%) of 12 year olds and 40.5% of 18-year-olds would visit a dentist in case of signs of caries but only when in pain. Nearly half of the participants (47.2%) had never received any oral health care instruction. Significant variations in oral health practices were found according to province and regular dental care habits were more frequent in urban than in rural areas. Mahmoud K, Al-Omari, Ashed M. et al (2005) conducted a study to assess the knowledge, attitude and behaviour among school children of an average 13.5 years [7]. They reported that 69% of the study sample brushed their teeth at least twice daily, while 17% reported irregular tooth brushing. Approximately 83% of the subjects reported using a toothbrush and toothpaste to clean their teeth. 2% reported using dental floss, 6% reported using mouthwash, and 7% using tooth pick as extra aids for oral hygiene. The study population did not brush their teeth at a similar time during the day. However, most subjects brushed their teeth before going to bed and / or in the morning. About 71% of the subjects took at least 2 minutes to brush while 15% took less than one minute. School children are considered to be an important target group for various health education activities with underlying objective of indicating healthy lifestyle practices to last for a lifetime. Effectiveness of educational interventions among school children is depend on environmental factors such as source of information, dental experience, residence status etc [8].

3. MATERIAL METHOD

This cross sectional study was conducted in two MCD primary schools of Zakir Nagar and okhla village, JamiaNagar, New Delhi from September to November 2009, keeping in mind the feasibility of research. The study group was students of class fifth of two primary schools (morning and evening shift) in the age group of 9-15 years of both boys and girls. The total no of children were taken 180 in the study.

Inclusion Criteria:
(i) Students of the 5th class
(ii) Who can understand questionnaires?
(iii) Who are voluntarily willing to participate in study programmed?

3.1. Exclusion criteria
(i) Students of other than class 5th.
(ii) Who have very serious dental problems

(vii) Not willing to take part in study

The data was collected in two stages, in the pre-teaching assessment, the WHO structured questionnaire in local language was given to the students for the assessment of oral health knowledge about structure, function and essential elements of teeth and gums and dental practice in the average time of one hour. At the end of 30 days in the post teaching assessment with same questionnaire for one hour was done after providing dental health education by doctor and health workers. The dental health education was given with the help of chart, models, and audiovisual aid followed by open question answer session. The data was analyzed in SPSS-12 package. The statistical test such as Chi-square test was applied besides taking frequency and percentage analysis. The P value of > 0.05 and > 0.01 is considered as significant and highly significant respectively.

4. OBSERVATION AND DISCUSSION

Table 1 Distribution of children by their attitude about maintaining the oral hygiene during pre & post teaching (n=180)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-teaching</th>
<th>Post-teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys No (%)</td>
<td>Girls No (%)</td>
</tr>
<tr>
<td>Q25</td>
<td>67 (83.75%)</td>
<td>79 (79.0%)</td>
</tr>
<tr>
<td>Q26</td>
<td>47 (58.75%)</td>
<td>72 (72.0%)</td>
</tr>
<tr>
<td>Q27</td>
<td>29 (36.25%)</td>
<td>21 (21.0%)</td>
</tr>
<tr>
<td>Q29</td>
<td>32 (40.0%)</td>
<td>35 (35.0%)</td>
</tr>
<tr>
<td>Q30</td>
<td>28 (35.0%)</td>
<td>38 (38.0%)</td>
</tr>
</tbody>
</table>

Table & Fig. 1 depicts that in the pre-teaching assessment 81.11% knew that maintaining oral health is there responsibility while in post teaching 99.44% knew the same which was statically significant ($\chi^2 = 0.155 \leq 0.005$). In pre teaching 66.11 & 27.78% of children knew that the maintaining of oral health is in their own control in two different questions while in post teaching the awareness has increased 96.67% and 90.0% respectively, which was highly significant ($\chi^2 = 0.259 \leq 0.007 \leq 0.01$). It is also indicates in pre teaching assessment that 37.22% about good habits which was highly significant in post teaching ($\chi^2 = 0.210 \leq 0.01$). It also found that 36.67% knew of children knew about bad habits which having adverse effect on oral health in pre teaching but in post teaching it is increased up to 90% and there was no significant difference in pre and post teaching assessment. The almost similar finding were observed by Grewal H et al (2006-07) 57.7% of children believe there is no harm to eating snacks in between meals which is bad habit and affect the teeth. This figure is slightly higher because the study was conducted in large population of all age group.

Table 2 Distribution of children by their practices of frequency of cleaning the teeth in a day during pre & post teaching (n=180)

<table>
<thead>
<tr>
<th>Questions</th>
<th>Pre-teaching</th>
<th>Post-teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>Q25</td>
<td>67</td>
<td>79</td>
</tr>
<tr>
<td>Q26</td>
<td>47</td>
<td>72</td>
</tr>
<tr>
<td>Q27</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>Q29</td>
<td>32</td>
<td>35</td>
</tr>
<tr>
<td>Q30</td>
<td>28</td>
<td>38</td>
</tr>
</tbody>
</table>

When do you clean your teeth during pre & post teaching (n=180)

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<table>
<thead>
<tr>
<th></th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No (%)</td>
<td>No (%)</td>
<td>No (%)</td>
</tr>
<tr>
<td>Twice a day</td>
<td>26 (32.5%)</td>
<td>26 (26.0%)</td>
<td>52 (28.89%)</td>
</tr>
<tr>
<td>Only in the morning</td>
<td>45 (56.25%)</td>
<td>63 (63.0%)</td>
<td>108 (60.0%)</td>
</tr>
<tr>
<td>Don’t clean</td>
<td>9 (11.25%)</td>
<td>11 (11.0%)</td>
<td>20 (11.11%)</td>
</tr>
</tbody>
</table>

Table 2 & Fig.2 indicates that in the pre-teaching assessment only 28.89% of children clean the teeth twice a day, 60.0% clean in the morning and very few (11.11%) don’t clean the teeth but in post teaching assessment it shows that 63.33%, clean their teeth twice a day, after giving education the best practice has increased while only 36.11% and 0.56% say they clean their teeth only in the morning and don’t clean respectively. The similar finding was observed by Mahmoud K et al (2005) they found 69% of the study sample brushed their teeth at least twice daily while 17% reported irregular tooth brushing after giving the education [7]. Observation in other studies by Amin TT, Al-Abad BM (2008) & Grewal H et al (2006) they found only 24.4% & 49.2% of the children brush their teeth twice or more while Grewal H et al also found after teaching 71.0% of children says that they brush their teeth twice a day. This means that the impact of teaching is positive as also justified by other studies [9,10].

Table 3 Distribution of children by their practices of duration of cleaning the teeth in a day during pre & post teaching (n=180)

<table>
<thead>
<tr>
<th>How long you brush your teeth</th>
<th>Pre-teaching</th>
<th>Post-teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>Less than one minute</td>
<td>31 (38.75%)</td>
<td>42 (42.0%)</td>
</tr>
<tr>
<td>One minute</td>
<td>25 (31.25%)</td>
<td>28 (28.0%)</td>
</tr>
<tr>
<td>More than one minute</td>
<td>24 (30.0%)</td>
<td>30 (30.0%)</td>
</tr>
</tbody>
</table>

Table 3 & Fig.3 show that in the pre-teaching assessment only 29.44 % & 30.0% of children clean the teeth one minute and more than one minute while majority of children 40.56% clean only less than one minute but after giving the education in post teaching assessment it shows quite high improvement in best practice and more than half of the children 54.44% said they clean their teeth more than one minute. Only 30.56 % and 15.0% said they clean the teeth one minute and less than one minute respectively. The almost similar trend observed by Mahmoud K et al (2005), they observed that 71.0% of subjects took at least 2 minutes to brush while 15.0% took less than one minute.

5. CONCUSSION

There are significant improvement in the practice of the teeth and oral cavity cleaning along with eating habit by teaching to the MCD primary school children.

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