Orginal Article

# Educational intervention on Oro-dental Hygiene among Secondary School Children at Dhaka, Bangladesh

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**Abstract:**

**Aim:** An intervention study was conducted on oro-dental hygiene among secondary school students in a specific school at Dhamrai, Dhaka of Bangladesh. The main objective was to assess knowledge on oro-dental hygiene among secondary school student and also carry out an evaluation of health education intervention program.

**Methods:** This was a quasi-experimental study. Specific health information messages on oro-dental hygiene were disseminated to 64 students of Kailash Chandra high school at Dhamrai through a group approach using posters, flip charts and dental models.

**Results:** It was observed that 80% of the students heard about the importance of oro-dental hygiene before intervention and that reached to 100% after intervention. Before intervention, 51.7% possessed correct knowledge about oro-dental care and that increased up to 90% after intervention. It was also observed that only 46.7% of the participants knew about the health hazards as consequences of not tooth brushing and it rose up to 80% after intervention.

**Conclusion:** The study disclosed the status of knowledge and practice which greatly improved after dental health educational intervention program. Therefore, the intervention program through child to child education had been found effective in this study.

**Key words:** Respondents, oro-dental hygiene, knowledge, practice, intervention.

## Introduction:

School children should have sufficient knowledge of understanding the value of maintaining health practices, which in turn results healthy children for the nation.[1] To create positive health among them, oro-dental care is to be given as serious thought along with other factors necessary for promotion of health.[2] Therefore, to impart knowledge among students regarding formation of dental hygiene is an effective measure in case of school students.[3] There is no nation free from oro-dental diseases, but the pattern of prevalence of the diseases vary from country to country.[3-5,7,10] Oral hygiene mainly depends on the knowledge of the people. In students, the knowledge and practice of oro-dental hygiene can be raised through child to child education.[8] Student to student education is a relatively new concept for better education.[8-10] Student to student education program is now started in many countries including Bangladesh. In this context, this approach was applied among the secondary school students to educate them on oro-dental hygiene.

## Objectives of the Study:

### General objective:

To study the effect of health educational intervention on oro-dental hygiene among secondary school students in a specific school.

### Specific objectives:

i. To assess the existing knowledge on oro-dental hygiene among secondary school students before and after educational intervention program in a specific school.
ii. To find out the practice of oro-dental hygiene among secondary school students before and after educational intervention program.
iii. To impart knowledge on oro-dental hygiene to the secondary school students through health education.
iv. To measure the impact of interventional approach.

### Explanation of the Key words:

**Respondent:** who were administered under the structured questionnaire was called respondents. The students of class seven and eight were the study population.

**Oro-dental hygiene:** the science concerned with maintenance of health of oral cavity and teeth by oral prophylactic procedure. Oral prophylactic procedure was those designed to maintain oral health and prevent oral diseases.

**Knowledge:** concept about the oro-dental hygiene of the respondent.

**Practice:** dental health activities performed by respondent.

**Intervention:** knowledge dissemination.

### Methodology:

1. Study design:- quasi-experimental study on the knowledge and practice of oro-dental hygiene among secondary school students.
2. Study place:- Koilas Chanrda high school, Dhamrai, Dhaka, Bangladesh.
3. Study period:- 5th April to 30th May, 2010.
4. Study population:- students of class vii and viii.
5. Sample size:- 64 school children.
6. Sampling technique:- non-probability purposive sampling technique.
7. Research instrument:- all the research instruments (questionnaire containing all available information related to the study objectives) were thoroughly pre-tested.[6]
8. Procedure of data collection:- self-administered structured questionnaire.
9. Data analysis:- Data were analyzed manually by simple statistical technique.

### Intervention Approach:

After baseline survey by pre-tested questionnaire, the entire respondents were requested to be present at selected place to participate in the group education. Data were analyzed and found the need of educational intervention accordingly. Then lesson plan was prepared. The group members conducted the educational session by group approach. They imparted the knowledge based on the specific objectives of the study through group approach and using posters, flip charts and dental models.

### Results:

**Table-1: Distribution of respondents' sources of knowledge regarding adverse effects of improper care of teeth and mouth.**

| Sources of Knowledge | Frequency | Percentage (%) |
|---|---|---|
| Class mates | 10 | 15.63 % |
| Radio /TV | 06 | 9.38 % |
| Teachers | 21 | 32.81 % |
| Parents | 18 | 28.12 % |
| From reading books | 09 | 14.06 % |
| **Total** | **64** | **100 %** |

Table-1 shows that among a total of 64(100%) respondents, 10(15.63%) informed they have learnt about the adverse effect of improper care of teeth and mouth from their class mates, 06(9.38%) informed from Radio/TV, 21(32.81%) from their teachers, 18(28.12%) from their parents and 09(14.06%) from reading books.

**Table-2: Distribution of respondents on knowledge in oro-dental hygiene before and after intervention.**

| Knowledge in dental hygiene | Before intervention | | After intervention | |
|---|---|---|---|---|
| | Male | Female | Male | Female |
| No oro-dental disease | 2 (8.0%) | 3 (7.69%) | 00 | 00 |
| Regular cleaning of teeth and mouth correctly | 17(68%) | 31 (79.49%) | 21(84%) | 32 (82.05%) |
| Prevention of accumulation of food particles in between teeth | 4 (16%) | 3 (7.69%) | 4 (16%) | 7 (17.95%) |
| Not known | 2 (8.0%) | 2 (5.13%) | 00 | 00 |
| **Total** | **25** | **39** | **25** | **39** |

Table-2 shows that before intervention among a total of 25 (39%) male and 39 (61%) female respondents, 17(68%) and 31(79.49%) males and females, respectively, thought that regular cleaning of teeth and mouth correctly, 02(8.0%) and 03(7.69%), respectively, thought that oro-dental hygiene means not being diseased in oro-dental, 04(16%) and 03(7.69%), respectively, thought that prevention of accumulation of food particles in between teeth means oro-dental hygiene and 02(8.0%) and 02(5.13%), males and females, respectively, were ignorant about oro-dental hygiene. But after intervention, knowledge level of the respondents in oro-dental hygiene was increased.

**Table-3: Distribution of the respondents by materials used for brushing teeth before and after intervention.**

| Materials used for Tooth brushing | Before intervention | | After intervention | |
|---|---|---|---|---|
| | Frequency | Percentage (%) | Frequency | Percentage (%) |
| Tooth brush and tooth powder | 34 | 53.13 | 14 | 21.88 |
| Charcoal and finger | 01 | 1.56 | 00 | 00 |
| Neem stick | 09 | 14.06 | 04 | 6.3 |
| Tooth brush and tooth paste | 20 | 31.25 | 46 | 71.88 |
| **Total** | **64** | **100 %** | **64** | **100** |

Table-3 shows that before intervention among a total of 64(100%) respondents, 34(53.13%) used tooth brush and tooth powder as brushing materials, 01(1.56%) used charcoal and finger as brushing materials 09(14.06%) used neem stick and 20(31.25%) of respondents used tooth brush and tooth paste. But after intervention, it was showed that the use of tooth brush and tooth paste was increased and the conventional materials which were not suitable for teeth were abandoned by the respondents.

**Table-4: Distribution of respondents' knowledge about causes of dental problems before and after intervention.**

| Knowledge about causes | Before intervention | | After intervention | |
|---|---|---|---|---|
| | Frequency | Percentage (%) | Frequency | Percentage (%) |
| Not cleaning of teeth regularly | 34 | 52.13 | 58 | 90.63 |
| Excess consumption of sweetened food | 12 | 18.75 | 3 | 4.69 |
| Not consumption of nutritive food | 13 | 20.31 | 2 | 3.13 |
| Not visit the dentist | 04 | 06. 25 | 1 | 1.56 |
| Not known | 01 | 1.56 | 00 | 00 |
| **Total** | **64** | **100 %** | **64** | **100 %** |

Table-4 shows that before intervention among a total 64(100%) respondents, 34(53.13%) respondents answered that the cause of dental problems was not cleaning of teeth regularly, 12(18.75%) thought that excess consumption of sweetened food, 13(20.31%) respondents thought not having of nutritive foods, 04(6.25%) thought not visit the dentist and only 1(1.56%) had no knowledge about the causes of dental problems. But after intervention, the results showed that the respondents' knowledge about causes of dental problems was increased.

**Table-5: Distribution of time of the Respondents' brushing teeth before and after intervention. n = 64**

| Time | Before intervention | | After int ervention | |
|---|---|---|---|---|
| | Frequency | Percentage (%) | Frequency | Percentage (%) |
| Before breakfast and after dinner | 34 | 53.13 | 00 | 00 |
| Before going to bed | 13 | 20.31 | 14 | 21.88 |
| Before each meal | 08 | 12.5 | 00 | 00 |
| After each meal | 09 | 14.06 | 50 | 78.13 |
| **Total** | **64** | **100 %** | **64** | **100** |

Table-5 shows that before intervention among a total of 64(100%) respondents, 34(53.13%) used to brush their teeth before breakfast and after dinner, 13(20.31%) brushed their teeth before going to bed, 08(12.5%) brushed before each meal and 09(14.06%) after each meal. Whereas after intervention, the habit of brushing

### Discussion:

Among the total of 25(39%) male and 39(61%) female respondents, study found that 10(15.63%) of them knew about oro-dental hygiene from their class mates, 06(9.38%) from Radio/TV, 21 (32.81%) from their teachers, 18 (28.12%) from their parents and 09(14.06%) from reading books (table -1). Conception on necessity of cleaning teeth referred that 60(93.75%) thought about the necessity of cleaning teeth meant keeping healthy strong and disease free teeth and mouth only 4(6.25%) had no knowledge on necessity of cleaning teeth and mouth.

Respondents' knowledge about the causes of dental problems revealed that 34(52.13%) respondents thought that the causes of dental problem was not

cleaning of teeth regularly, 12(18.75 %) thought the excess consumption of sweetened foods, 4(6.25%) think not visiting the dentist, and only 1(1.56 %) had no knowledge about the causes of dental problem. But after intervention the result showed that the respondent's knowledge about causes of dental problem increased (100%) significantly (table -4).

On the knowledge of maintaining of oro-dental hygiene before intervention, 17(68%) males and 31(79.49%) females thought that maintaining of teeth meant routinely, timely and properly cleaning of teeth. After intervention 21(84%) males and 32(82.05%) females responded correctly and 100% responded as they know about oro-dental hygiene (table-2). About tooth cleaning materials before intervention, 34(53.13%) used tooth brush and tooth powder, 1(1.56%) used charcoal and finger 9(14.06%), used neem stick and 20(31.25%) respondents used tooth brush and tooth paste. After intervention, it was observed that the use of tooth brush and tooth paste increased to 46(71.88%) and the conventional materials which were not suitable for teeth was abandoned by the respondents (table-3). The study found that 44(68.75%) respondents had the habit of having sweetened foods and 20(31.25 %) had no habit of taking sweetened foods. The study results also showed that 40(62.5%) had the habit of cleaning teeth after taking sweetened food and 24(37.5%) answered they had not any habit of cleaning after taking sweetened foods. Before intervention among the respondents, 34(53.13%) used to brush their teeth before breakfast and after dinner, whereas, after intervention the habit of brushing time of teeth was changed (78.13%) towards correct timing (table-5).

In the study, it was observed that 47(73.43%) respondents answered they had have health education in school, on the other hand, 17(26.56%) answered they had have no health education in school. Study also found that among the respondents, 47(73.43%) answered that the school authority took necessary steps about their health problems, on the other hand, 17(26.56 %) answered that school authority did not take any necessary steps for their dental problems. The results of the intervention program increased the awareness level of the respondents significantly.

### Conclusions:

The present study disclosed the secondary school childrens' status of knowledge and practice which greatly improved after dental health educational intervention program. Therefore, the intervention was found effective. The facts regarding methods, frequency, timing and materials used for cleaning teeth have been found out and these are found inappropriate, insufficient and incorrect in most cases before intervention. However, after intervention, the conditions improved dramatically with a few exceptions. The intervention program created awareness among them regarding it especially in health education. The study thus discloses that intervention is essential for solving any problem. The intervention program through child to child education had been found effective in this study. Lastly, for solving the oral and dental health problems, social mobilization regarding oro-dental health education through child to child approach is necessary.

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