

## Health Education Intervention on Hand Washing in a selected Primary School Children

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### Abstract

*It was a quasi experimental type of study with the objective of finding to assess the effects of health education intervention on hand washing among the primary school students. The study was carried out 75 students of a selected Bari gaon Primary school, Dhamrai, Dhaka. Students were respondents from class four and five. Education intervention was planned, organised and conducted on baseline data. Intervention method was making some lesson plan by the student group using some poster, flip chart, role-play, etc. The findings showed that out of 75 students 42(56%) were female and rest of them 33(44%) were male. Majority of the respondents 48(64%) were in the age of 8-10 years and 27(36%) were in the age of 10-12 years. Out of 75 respondents 32(43%) were muslim and 43(57%) were hindus. Out of 75 respondent's parent 29(39%) were illiterate, 24(32%) were primary pass, 17(23%) were SSC pass, 04(5%) were HSC pass and only 01(1%) were graduate. Out of 75 respondent's parent occupation 15(20%) were business, 14(19%) were service, 21(28%) were day labour, and 25(33%) were others occupation. Out of 75 respondent's parent monthly income 08(11%) were less than 5000 taka, 51(68%) were in between 5000-10000 taka, 16(21%) were above 10000 taka. Among all respondents 97% told hand wash before meal, 80% after defecation, 100% told hand wash with soap, 9% told with ash. Before intervention only 11% told hand wash for 20 seconds but after intervention which were improved to 86%, and regarding steps of hand washing, before intervention only 1% told eight steps of hand washing but after intervention which were improved to 100%. At the end of the study it may concluded that though the intervention period was too short to grip but it is effective in the long run.*

### Introduction:

Hand washing with soap is a low-cost intervention of documented efficacy that has been of proven worth for more than a century, but has often been neglected for more glamorous, expensive, and less effective. Hand washing is simple and common practice in our daily life. Sometimes we do it carefully and sometimes carelessly but we think proper hand washing is a very

simple weapon to defend deadly enemies. Improving hand washing practices remain one of the central challenges for the public health community in the 21<sup>st</sup> century<sup>1</sup>.

Each year over 5 million children in developing countries die from either diarrhoea disease or acute respiratory infections (ARI)<sup>2</sup>. Around the world, hand washing practice with soap is the most effective ways to prevent diarrhoea diseases, ARI, Swine flue, Avian flue etc. Hand washing with soap after contact with faces and before contact with food can reduce rates of diarrhoea among the under five by 42-47%<sup>3,4</sup>.

As estimated 1.9 million children less than 5 years of age die annually from diarrhoeal disease and an additional 2 million die of pneumonia. Small scale studies in settings where diarrhoea and respiratory disease are leading causes of death show that households that receive intensive hand washing promotion report less diarrhoea and respiratory disease compared with control households. However, in settings where diarrhoea is an important cause of child mortality, the prevalence of hand washing with soap after contact with feces as assessed by structured observation is typically <30%. A primary objective of intervention is to increase the promotion of persons who wash their hands at key times, i.e., before preparing of food, before eating, before feeding a child, after defecation and after cleaning a child's anus. Diarrhoea and ARI are responsible for the

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majority of child death in developing countries specially in Bangladesh. Only hand washing can reduce morbidity and mortality by 42% of the affected individuals. Proper hand washing can prevent 33% occurrence of communicable diseases<sup>5</sup>.

Every year, Ghana suffers an estimated 9 million episode of diarrhoea and 8400 diarrhoea death among children less than 5 years, at an estimated annual cost of US\$3 million. Traditionally hygiene promotion programmers have relied on an educational approach, operating on the assumption that simply increasing hygiene knowledge understanding of biomedical models of disease transmission, and providing hand washing facilities with result in improved hand washing behavior. Many hospital based studies suggest such intuition represents over-simplification<sup>6</sup>. Improvement of hand washing behavior among health care staff when a hospital moved to new premises with a sink beside each and every bed<sup>7</sup>. In this study we revisited some of the factors. We hypothesized that mothers hand washing practice would be determined by factors both extrinsic and intrinsic to her. Extrinsic factor investigated that were expected facilitate or constitute barriers to practicing hand washing included: the site of defecation, the method of stool disposal, and the age of index child. Intrinsic factors included mothers formal education, her health consciousness and knowledge of the most important times to wash her hands, her activeness to the index child and her disgust score<sup>8</sup>.

Food production workers and food service personnel must be taught to use correct hand washing by management, in preparation for work. Regulatory authorities do not require the use of fingernail brush; however correct use of fingernail brush to wash hands and finger tips the best way to assure removal transient microorganisms. The incidence of diarrhoea in two day care centres with a hand washing program was half that of two control centres for an entire 35 week study period. Employees in the hand washing program washed their hands before handling food after arriving at the day care centre, used the toilet, were diapered, or prepared to eat, employees washed their hands bar soap paper towels<sup>9</sup>.

The effectiveness of the simple intervention of hand washing with soap and water in preventing the spread of shigelosis was investigated. Secondary infection rates within families in Bangladesh due to transfer of pathogenic bacteria decreased, when people were taught to wash their hands after defecation and before eating. The study population was comprised of confirmed cases of shigelosis. These and matched

controls were followed up for 10 days. Several pieces of soap and earthenware pitchers for storing water were provided to the study families and they were advised to wash their hands with soap and water after defecation and before eating. Compliance was daily monitored by observing the size of the soap and residual water. Rectal swabs of contact of both of the groups were obtained daily for culture. The secondary infection rate was 10.1% in the study group and 14.2% in the control group. These results suggest that the hand washing has a positive interrupting effect, even in sanitary environments<sup>10</sup>.

In prospectively designed studies with appropriate control groups, interventions that promote regular hand washing with soap consistently reduce both diarrhoeal and respiratory diseases<sup>11</sup>.

### Materials and Methods:

This Quasi-experimental study on health education intervention on hand washing among primary school students was carried out at the Barigaon koilas charda high school, Dhamrai Thana of Dhaka District. Study Period was from 5<sup>th</sup> March 2010 to 30<sup>th</sup> April 2010. 75 students of Class iv & v of Barigaon koilas charda high school were selected for the study. The sample was collected by Non-probability Purposive sampling technique. A pretested structured questionnaire was used for collection of data. Data were collected by the researcher himself through direct interview of the respondents. After collection of base line data health education intervention program was conducted by preparing a lesson plan according to the objectives, after that post intervention data was collected. Data analysis was done manually by sample statistical technique and Presented in table, pie chart, bar diagram etc.

### Result:

**Table 01: Distribution of respondent by the knowledge on Causes for hand washing pre&post intervention**

N=75

Causes of hand washing	Pre-intervention		Post-intervention	
	Count	Percentage	Count	Percentage
For personal care	03	04%	12	16%
For cleanliness	45	60%	75	100%
To prevent contamination	27	36%	46	61%
Others	02	03%	00	0%

**Table: 1** Shows among 75 respondents 3 (4%) told hand washes for personal care, 45 (60%) for cleanliness, 27 (36%) for prevention of contamination, 02(3%) for other purpose, before intervention. Some respondents answered two or more at a time so the total exceed 100%.After intervention which were improved to 12 (16%), 75 (100%), 46 (61%), 00 (0%) respectively and all the respondents known about the causes for hand washing.

**Table 02: Distribution of respondent by the knowledge on Timing of hand washing pre&posts intervention**

N=75

Timing of hand washing	Pre-intervention		Post-intervention	
	Frequency	Percentage	Frequency	Percentage
Before meal	73	97	46	61
After defecation	60	80	75	100
After cleaning latrine	23	31	75	100
Don't know	00	00	00	00

**Table: 02** Shows among 75 respondents 73(97%) told hand washes before meal, 60(80%) after defecation, 23(31%) after cleaning latrine, 00(0%) didn't knew the timing of hand washing, before intervention. Some respondents answered two or more at a time so the total exceed 100%.After intervention which were improved to 46(61%), 75(100%), 75(100%), 00(0%) respectively and all the respondents known about the timing of hand washing.

**Table 03: Distribution of respondent by the knowledge on Materials used in hand washing pre&post intervention**

N=75

Materials of hand washing	Pre-intervention		Post-intervention	
	Frequency	Percentage	Frequency	Percentage
Soap	75	100	75	100
Ash	07	09	14	19
Soil	02	03	00	00
Only water	02	03	00	00

**Table: 3** Shows among 75 respondents 75(100%) told hand washes with soap, 07(9%) with ash, 02(03%) with soil, 02(3%) with only water, before intervention. Some respondents answered two or more at a time so the total exceed 100%.After intervention which were improved to 75(100%), 14(19%), 00(0%), 00(0%) respectively and all the respondents known about the appropriate materials to used in hand washing.

**Table 04: Distribution of respondent by the knowledge on Duration of hand washing pre&post intervention**

N=75

Duration of hand washing	Pre-intervention		Post-intervention	
	Frequency	Percentage	Frequency	Percentage
20 seconds	08	11	64	86
1 minutes	33	44	03	4
2 minutes	30	40	04	5
3 minutes	04	5	04	5

**Table: 04** Shows among 75 respondents 08(11%) told hand washes for 20 seconds, 33(44%) for 1 minute, 30(40%) for 2 minutes, 04(5%) for 3 minutes, before intervention. After intervention which were improved to 64(86%), 03(4%), 04(5%), 04(5%) respectively and most of the respondents known about the appropriate duration of hand washing.

**Table 05: Distribution of respondent by the knowledge on Disease transmission due to improper hand Washing pre&post intervention**

N=75

Transmitted disease	Pre-intervention		Post-intervention	
	Frequency	Percentage	Frequency	Percentage
Typhoid	14	19	75	100
Diarrhoea	70	93	75	100
Dysentery	36	48	73	97
Others	06	8	00	00

**Table: 05** Shows among 75 respondents 14(19%) told typhoid transmitted due to improper hand washing, 70(93%) told diarrhoea transmitted due to improper hand washing, 36(48%) told dysentery transmitted due to improper hand washing, 06(8%) told other diseases, before intervention. Some respondents answered two or more at a time so the total exceed 100%.After intervention which were improved to 75(100%), 75(1%), 73(97%), 00(0%) respectively and most of the

respondents known about the diseases which transmitted due to improper hand washing.

**Table: 06 Distribution of respondent by the knowledge on Steps Of hand washing pre&post intervention**

N=75

Steps of hand washing	Pre-intervention		Post-intervention	
	Frequency	Percentage	Frequency	Percentage
Six	29	39	00	00
Seven	04	5	00	00
Eight	01	1	75	100
Don't know	41	55	00	00
Total	75	100	75	100

**Table 06:** Shows among 75 respondents 29(39%) told six steps of hand washing, 04(5%) told seven steps, 01(1%) told eight, 41(55%) didn't knew, before intervention. After intervention which were improved to 00(0%), 00(0%), 75(100%), 00(0%) respectively and all of the respondents known about the steps of hand washing.

#### Discussion:

This quasi experimental study was conducted among the primary school children of the Bari gaon primary school, Dhamrai with a view to assess knowledge about hand washing. A total 75 students were interviewed using structured questionnaire in class iv and v.

Out of 75 respondents 3(4%) told hand washes for personal care, 45(60%) for cleanliness, 27(36%) for prevention of contamination, 02(3%) for other purpose, before intervention. Some respondents answered two or more at a time so the total exceed 100%. After intervention which were improved to 12(16%), 75(100%), 46(61%), 00(0%) respectively and all the respondents known about the causes for hand washing. (Table:01)

This study revealed among 75 respondents 73(97%) told hand washes before meal, 60(80%) after defecation, 23(31%) after cleaning latrine, 00(0%) didn't knew the timing of hand washing, before intervention. Some respondents answered two or more at a time so the total exceed 100%. After intervention which were improved to 46(61%), 75(100%), 75(100%), 00(0%) respectively and all the respondents known about the timing of hand washing. (Table:02)

This study shows among 75 respondents 75(100%) told hand washes with soap, 07(9%) with ash, 02(03%) with soil, 02(3%) with only water, before intervention. Some respondents answered two or more at a time so the total exceed 100%. After intervention which were improved to 75(100%), 14(19%), 00(0%), 00(0%) respectively and all the respondents known about the appropriate materials to used in hand washing. (Table:03)

This study shows among 75 respondents 08(11%) told hand washes for 20 seconds, 33(44%) for 1 minute, 30(40%) for 2 minutes, 04(5%) for 3 minutes, before intervention. After intervention which were improved to 64(86%), 03(4%), 04(5%), 04(5%) respectively and most of the respondents known about the appropriate duration of hand washing. (Table:04)

This study shows among 75 respondents 14(19%) told typhoid transmitted due to improper hand washing, 70(93%) told diarrhea transmitted due to improper hand washing, 36(48%) told dysentery transmitted due to improper hand washing, 06(8%) told other diseases, before intervention. Some respondents answered two or more at a time so the total exceed 100%. After intervention which were improved to 75(100%), 75(1%), 73(97%), 00(0%) respectively and most of the respondents known about the diseases which transmitted due to improper hand washing. (Table:05)

This study shows among 75 respondents 29(39%) told six steps of hand washing, 04(5%) told seven steps, 01(1%) told eight, 41(55%) didn't knew, before intervention. After intervention which were improved to 00(0%), 00(0%), 75(100%), 00(0%) respectively and all of the respondents known about the steps of hand washing. (Table:06)

#### Conclusion:

The population of Bangladesh is increasing so fast day by day as a result, most of the people come to school from different religious and different school place there is no proper hand washing facilities. After all majority low income people were live in village. This study shows that out of 75, 27(36%) students used soap for hand washing after defecation and 33(42%) did not used no materials for hand washing after defecation. Before intervention out of 75, 30(41%) knew that diarrhoeal disease could be prevented by proper hand washing where as after intervention 54(71%) knows diarrhoeal disease can be prevented by proper hand washing after defecation. So from this experience it is observed that the health education component must be integrated with all our health programmes for their effective

implementation. There is a great need and profitability in employing educational approach to solve our essential health problems. This study shows there is more chance of the success in solving our health problems. The Educational approach is very much helpful in eliminating ignorance of people and creating strong motivation to adopt the appropriate health practice. The study also demonstrates the importance of involvement of professional health education in all stage of health problem administration. From this study, in conclusion we feel that if appropriate health education programme is developed and attach to our essential health problems, we are confident that we can achieve our millennium development goals of health sector 2015.

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