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Educational Intervention on Hand Washing among the School Children in a Rural Area of Bangladesh

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Abstract:

Objective: *The purpose of the study was to assess level of knowledge and practice on hand washing among school children of class 9 and 10.*

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Method: *Base line and end line survey conducted on the basis of which an educational intervention programme was planned, implemented and evaluated. The total number of respondents was 51, which includes boys and girls who were selected purposively. Data were collected through a structured questionnaire before and after intervention. Intervention programme was conducted through face to face interview and group discussion using flip charts, pamphlets, brouchers, and chalk board, as teaching aid.*

Result: *The study shows more than 70 % of children didn't know that proper hand washing can prevent skin diseases and more than 85 % didn't know that cough is prevented by hand washing. After the intervention every student became familiar to the name of diseases spread through improper hand washing. Response of the participants was quiet satisfactory.*

Conclusion: *From the findings we can conclude that educational intervention programme is an effective method for improving knowledge and practice among the school children. Students have to be educated on the importance of hand washing and have to be encouraged to do them.*

Key words: Hand wash, School children, Educational intervention.

Introduction

Hand washing with soap is the most effective and inexpensive ways to prevent diarrheal diseases and pneumonia, which together are responsible for the majority of child deaths. This behavior is projected to become a significant contribution to meet the Millennium Development Goal of reducing deaths among children. Appropriate hand washing can prevent infectious diseases, including diarrheal and respiratory diseases. These effects have been demonstrated in both clinical and community settings around the world. According to a study of Utah, Hand washing, when done correctly, is the single most effective way to prevent the spread of communicable diseases.

Good hand washing technique is easy to learn and can significantly reduce the spread of infectious diseases in both children and adults[1]. The greatest burden of diarrheal disease and respiratory disease resides in developing countries, where health impacts of large scale hand washing programs have not been evaluated[2]. The Government of Bangladesh, Department of Public Health Engineering in collaboration with UNICEF and with support from the Department for International Development (DFID) of the British Government has launched a programme, `SHEWA-B' (Sanitation, Hygiene Education and Water supply-Bangladesh) that was among the largest intensive hand washing, sanitation and water quality improvement programmes ever attempted in a developing country. The intervention was targeting 30 million underserved people in Bangladesh. A primary objective of the intervention was to increase the proportion of persons who wash their hands with soap or ash at key times, i.e. before preparing food, before eating, before feeding a child, after defecating and after cleaning a child's anus. There were some data from Bangladesh that suggest that washing hands with ash reduces the concentration of fecal organisms on hands[3, 4, 5]. The 2001 U.S. Food and Drug Administration (FDA) Food Code describes hand washing as:

1. Vigorous friction on the surfaces of the lathered fingers, finger tips, areas between the fingers, hands and arms for at least 10 to 15 seconds, followed by;
2. Thorough rinsing under clean, running warm water; and
3. Immediately follow the cleaning procedure with thorough drying of cleaned hands and arms using individual disposable towels, a continuous towel system that supplies the user with a clean towel, or a heated air drying device.

Several sources, including the Utah Department of Health (2001) add to the above procedures to let the rinse water run back into the sink, not down to the elbows and then turn off the water with a paper towel and dispose in a proper receptacle. Drying hands properly after washing is important for several reasons: (a) Proper drying helps prevent hands from chapping, (b) recontamination is reduced because damp hands can pick up more bacteria and viruses than dry hands, and (c) the drying process further removes bacteria and viruses [6,7,8,9].

Hand washing is recognized by the Centers for Disease Control and Prevention (CDC) as one of the most important means of preventing germs from spreading. CDC recommends washing hands with soap and water for at least 15 seconds[10,11].

The effect of school hygiene promotion through participatory and practical methods has been studied in developed as well as in developing countries. These studies indicated that practical exercises and approaches can change schoolchildren's hygiene behaviour and those children and teachers were enthusiastic about action-oriented lessons due to clear goals and observable results[8].

Methods

The study was conducted at G. R. Institution, Sonargaon which is situated at an eastern part of Dhaka- Chittagong High Way which comes under the Sonargaon, Dhaka. In this study the outcome of educational intervention was obtained by comparing pre and post intervention knowledge on proper hand washing techniques and the study was conducted from July to December 2011. The population of this study was school going children, age group 12-16 years. The sample was taken purposively and the sample size was 51. The researchers used a structured questionnaire for face to face interview to assess the initial knowledge of students on proper hand washing techniques. A

questionnaire prepared with 29 questions to assess the level of knowledge and practice of proper hand washing techniques. The study was conducted in the following 3 phases-

1. Phase of Pre Intervention Data Collection
2. Intervention Phase and
3. Phase of Post Intervention Data Collection.

Pre intervention data were collected form students by face to face interview by researchers themselves. Prior to interview, the students were appraised about the purpose of the study. The information was collected about various socioeconomic factors, illness perceptions, family history, housing condition, source of water, types of toilet, times of hand washing, practice of hand washing etc. on preformed interview schedule by investigator themselves.

Health Education Session:

The participants were divided into two groups, one group made of 25 and another group obtained 26 participants. After assessing their knowledge and practice towards the hand washing they had given health education about hand washing. The health education was given in local language by the researchers. In 40 minutes of each group one health education session following topics were covered like, basic information about hand washing, role of taking appropriate techniques of hand washing, regarding prevention of diseases by proper hand washing, and importance of times of hand washing.

After completion of one month of intervention, information was collected by same questionnaire and the same interview schedule used at the beginning. The collected data were (categorical and numerically) coded and entered into statistical package for social science (SPSS version 16.0). Tables and graphs had been prepared after data analysis depending on the study objectives.

Results:

The knowledge status of study population was decided upon the percentage expressed after analysis. In this study we took 51 students, in which 25 were male and 26 were female students age ranges from 12- 16 years.

The table 1 shows, among the total respondents 27.5% were of age between 12-14 years and 72.5% were of age between 14 -16 years. Majority 43% respondents' fathers were service holder. Most of the respondents (33%) were lived in shed. The above data shows that educational status of respondent father was little much better than mothers' education i.e. among respondents' father 22%were graduated, which was higher than the mothers' education status. 37% were primary educated, 12 % were higher secondary, and 22% were secondary educated. Table 2 shows, only 21.6 % were access to tap water whereas majority 68.6% depends on tube well in discussion. Table 3 shows, 74.5% used sanitary latrine a good indicator of prevention against infectious and parasitic diseases.

Table 4 shows, before intervention more than 70 % of children didn't know that proper hand washing can prevent skin diseases and more than 85 % didn't know that cough is prevented by hand washing. From table 5, all students had good knowledge regarding hand washing before and after intervention. Table 6 shows, knowledge regarding practice of hand washing before and after intervention was good

Discussion:

Decreased rates of illness and absence were consistently reported among intervention schools. When compared with

control schools, those that received the standard handwashing intervention reported lower absence incidence and prevalence; however, these differences failed to attain statistical significance. Expanded intervention school that enlisted student handwashing champions and received soap in addition to the handwashing-promotion program reported 42% fewer absence episodes, 54% fewer days of absence, and 71% fewer in-class illnesses; absence incidence and prevalence differed significantly from control, while in-class illness incidence did not. These differences were observed throughout the study period during 5 months of observation, students who received the expanded hand washing intervention and soap experienced significantly fewer episodes and days of absence than students who did not. Rates of overall illness and absence and syndrome specific illness and absence tended to be highest among children in control schools, intermediate among children in schools that received the handwashing-promotion program, and lowest among children in schools provided with the expanded hand washing-promotion program and soap[12].

Findings from this study indicate the handwashing habits of preschool children can be positively influenced by the use of developmentally appropriate teaching tools for educating preschool children on the importance of handwashing; the relationship between germs, lead, and handwashing; and proper handwashing techniques. Data collected from a trained observer unknown to the preschool children before and after the handwashing interventions and from parent surveys completed before and after the interventions indicated several changes in the handwashing habits of the children at the child care center and at home.

The moderate decrease in the incidence of enteric illnesses at the centers where the hand washing program had been implemented does indicate, however, that handwashing is an important factor in hygiene education. The data from that

group also showed a significant increase in the duration of handwashing. Before the implementation of the interventions, 33.3% of the children washed their hands for 10 second duration. After the completion of the interventions, 100% of the children washed their hands for 10 seconds or more during each hand washing episode[13].

The data from this study showed that compared to the baseline data, the incidence of respiratory infections decreased significantly when the infection control program was implemented. This indicates that an infection control program that emphasizes the importance of proper handwashing has the potential to decrease the incidence of respiratory illnesses in the preschool setting.

A study of Vietnam shows, children gave positive responses on their feelings about the hand washing with soap (HWWS) intervention at school. The main feelings expressed were comfort, excitement and being happy, while no children reported disliking HWWS.

During interviews at homes, all parents expressed a willingness to reinforce HWWS. Observations suggested that there were no infrastructural barriers to HWWS; all 15 households had adequate soap and water available for performing HWWS[14].

Conclusion:

Our study suggests that improved behavior was not guaranteed to be maintained when the activities promoting those behaviors were withdrawn. This didn't mean that improved hand washing practices not to be maintained. Rather it suggests that, like other behaviors change interventions, maintaining effective hand washing behaviors requires focused efforts and research on optimal strategies. Another important pattern in the hand washing data was that poor households were likely to wash

hands than wealthier households. This pattern was consistent across most indicators of hand washing behaviors, except observed hand washing with soap after defecation. Proper hand washing technique prevents diarrheal diseases, helminthes diseases and anemia. Education intervention focused at targeted population significantly increases knowledge, practice regarding correct hand washing technique.

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Table 1: Socio-demographic characteristics, (n=51)

Variables	Frequency (n)	Percentage (%)
Age Group		
12-14 yrs old	14	27.5
14-16 yrs old	37	72.5
Occupation		
Agriculture	6	11.8
Service	22	43.1
Business	14	27.5
Others	9	17.6
Housing status		
Shed	17	33.3
Semi-building	15	29.4
Building	16	31.4
Others	3	5.9
Father's Education		
Graduate	11	21.6
Higher secondary	6	11.8
Secondary	11	21.6
Primary	19	37.3
Literate	4	7.8
Mother's Education		
Graduate	6	11.8
Higher secondary	8	15.7
Secondary	18	35.3
Primary	16	31.4
Literate	3	5.8

Table 2: Distribution of the source of water, (n=51)

Source of water	Frequency (n)	Percentage (%)
Tap	11	21.6
Tube well	35	68.6
Deep tube well	3	5.9
Pond	2	3.9
Total	**51**	**100.0**

Table 3: Distribution of the types of toilet, (n=51)

Types of toilet	Frequency (n)	Percentage (%)

Full sanitary	38	74.5
Semi—sanitary	9	17.6
Kancha	3	5.9
Others	1	2.0
Total	**51**	**100.0**

Table 4: Response regarding prevention of diseases by proper hand washing (n=51)

Diseases	**Before Intervention**		**After Intervention**	
	Frequency (n)	**Percentage (%)**	**Frequency (n)**	**Percentage (%)**
No diarrhea	50	98.0	51	100
No dysentery	40	78.4	51	100
No abdominal pain	48	94.1	51	100
No skin diseases	15	29.4	51	100
No cough	7	13.7	49	96.1
Others	15	29.4	15	29.4

Table 5: Times of hand washing (n=51)

Time	**Before Intervention**	**After Intervention**
	Frequency (n)	**Frequency (n)**
Before food preparing	50	51
Before eating food	51	52
After eating food	46	50
After using the toilet	50	51
After comeback from outside	47	50
Before feeding the child	51	50

Table 6: Practice of hand washing (n=51)

Time	**Before Intervention**		**After Intervention**	
	Frequency (n)	**Percentage (%)**	**Frequency (n)**	**Percentage (%)**
Before eating	50	98.0	51	100.0
After comeback from outside	41	80.4	51	100.0
After using the toilet	50	98.0	51	100.0
Others	21	41.2	24	47.1