



Knowledge and Practice of Personal Hygiene among Primary School Students in Dhaka, Bangladesh

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Abstract:

Background: Proper knowledge and practices of hygiene plays critical role in avoiding communicable diseases and benefit the primary school children to enjoy healthy and productive school life. 31% of all deaths in Southeast Asia are caused by infectious disease. Poor health among school children is results from lack of awareness of the health benefits of personal hygiene. The present study was designed to determine the personal hygiene status in primary school students in Bangladesh.

Methods: The present cross sectional study was conducted among 120 school children in three primary schools. Sample was randomly collected over a period of 2 months. Students were informed about the nature of the research and only consenting students were given the questionnaires. The questionnaire form included the information on the sociodemographic characteristics and includes the questions about the personal hygiene habits. Participants were asked to complete the "Personal Hygiene Status Scale (PHSS)".

Results: This cross-sectional study involving 120 primary school children was conducted in Dhaka, Bangladesh. Out of 120 students, 54 were from grade 4 (45%) and 66 from grade 5 (55%). The mean age for students was 10.92 years. The ability to define personal hygiene was no significantly higher among girls as compared to boys. Parents and teachers were the most common source of knowledge providers about personal hygiene to the participants. With the existing knowledge and practices related to personal hygiene among the students, parents and teachers can play positive and significant role to improve it further.

Conclusions: Regular revision and reinforcement should be done to increase the effectiveness of a health education programme to improve personal hygiene and thereby resulting in a healthy living.

Keywords: Hygiene practices, Sanitation, Communicable diseases, Hand washing, clean water

INTRODUCTION:

The foundations of lifelong responsibility for the maintenance of personal hygiene are laid down in childhood, which is important for a healthy childhood, for a healthy adulthood and for the development of positive values about health and the use of health services.

Poor health among school children is resulted from the lack of awareness of the health benefits of personal hygiene. Lack of proper hygiene and sanitation facilities increases burden of communicable diseases among

developing countries^[1]. Infectious diseases cause 31% of

all deaths in Southeast Asia and this trend is especially notable in developing countries where acute respiratory and intestinal infections are the primary causes of

morbidity and mortality among young children.²

Previously many of the research conducted about hand hygiene indicated that children with proper hand washing practices are less likely to report gastrointestinal and respiratory symptoms. Previous reports suggests that hand washing with soap reduces morbidity due to diarrheal diseases by 44% and respiratory infections by 23%. World Health Organization reports that every year, 3.8 million children aged less than five die from acute diarrheal diseases and acute respiratory tract infections. Globally, 88% of diarrheal deaths are associated with use of unsafe water, inadequate sanitation and poor hygiene practices.³

Hygiene is defined as the science of health encompassing all the factors which contribute to healthy living and has two aspects-personal and environmental.⁴ It aims to

promote standards of personal cleanliness within the setting of the condition where people live which includes bathing, clothing, washing hands after toilet, care of nails, feet and teeth.^{5,6}

Poor environmental conditions along with wrong knowledge, attitude and practice of personal hygiene exaggerate related morbidities like diarrhea, worm infestation, respiratory infections, malnutrition, anemia,

vitamin deficiency etc.⁷ Adolescence is the period of growth and development. Habits inculcated in this period will be carried to the next generation, as adolescent girls

are the future mothers.⁸ With entrance to adult age the habits become relatively permanent. Thus, schools can be

an effective institution for developing healthy practices.⁹

Children in their primary schooling age can learn specific health-promoting behaviors, even if they do not fully understand the connections between illness and behavior.¹⁰

Most of the school children are not adequately aware of their health related needs such as balance diet, personal hygiene and cleanliness, physical exercise, etc. Health is one of the major issues resolving the stage of adolescence.

In spite of much effort from different government and non-governmental organization agencies focusing on different health aspects, their still existence of health related problem among the school children. Primary education is said to be an initial stage of the child's development with regard to their mental, emotional, physical and social health. This is the stage where an

individual child can learn so many new things and it is important for the curriculum framers to include the health awareness as a crucial subject in this stage.

Bangladesh is a developing country. Bangladesh is the 9th population nation in the world. It has 14.9 million populations with density of 1061 persons per square kilometer. The 63 percent of population is of 15 to 64 years and this young age structure is the main cause of population momentum. The GDP per capita of Bangladesh was US\$ 1211 in 2015. Bangladesh ranked 142th position in HDI [Human Development index] and 112th in HPI [Human Poverty Index].

The results of life in densely populated environment are not surprising: each year thousands upon thousands of people in Bangladesh. Including 50000 children die of cholera, diarrhea, dysentery, typhoid and other waterborne disease due to unhygienic practices.

Primary school age children constitute a substantial fraction of the world's population, numbering about 24% of the population of the less developed world and about 15% of that of the industrialized world. Not only are school age children a much larger population but their number is also growing at a substantial rate [1.4% per year]. The aim of this study was to investigate existing knowledge and practices related to personal hygiene among primary school children between grade 1 and 5. The results from the study will help to understand the factors influencing the personal hygiene behaviors in primary school children and to overcome barriers in acquisition of proper knowledge and practices.

MATERIAL AND METHODS:

Type of study: Community based cross-sectional observational study.

Place of study. Three selected primary school [New model School, Nobarun Bridahnikanu & Sukrabad High school] situated in Dhaka city.

Duration of study. Two months.

Study population: All primary school children in grade I to V from the selected school, where the students come mainly from the neighboring slum locality.

Study tool. A pre-designed, pre-tested and structured questionnaire.

Methodology:

Permission was obtained from the school authority. The questionnaire was drawn up in English, translated in Bengali (local language) and back translated in English to check the translation. Before starting of the study, pre-testing of the questionnaire was done in a different school situated in the same slum locality and accordingly necessary modifications were made and this was finalized.

Analysis of data.

Data obtained were collated and analyzed statistically by simple proportions and tests of significance (Z-test and chi-square test), as and when necessary.

RESULTS:

A quasi-experimental study had been conducted in three primary schools located in a slum area of Dhaka, Bangladesh. A total of 120 students participated in this study, 45 from new model school, 40 from sukkrabad and 35 from nobarun primary school. Majority of children (48.33%) belonged to 11 years of age group and were in 4th & 5th standards, followed by children below 12 years of age, 54 students were from grade 4 (45%) and 66 were from grade 5 (55%). 51.67% were male and 48.33% were female (Table 1).

Table 1: Distribution of cases according to their demographic characteristics.

Variable	New Model[n = 45]	Sukkrabad[n = 40]	Nobarun[n = 35]	Total [n=120]
	Frequency[%]	Frequency[%]	Frequency[%]	
Age Group (years)				
≤ 10	13 [28.88%]	14 [35%]	9 [25.71%]	36 [30%]
11	22 [48.88%]	17 [42.5%]	19 [54.29%]	58 [48.33%]
12	10 [22.22%]	9 [22.5%]	7 [20%]	26 [21.67%]
Gender				
Male	23 [51%]	22 [55%]	17 [48.57%]	62 [51.67%]
Female	22 [49%]	18 [45%]	18 [51.43%]	58 [48.33%]
Standard				
Four	20 [44.44%]	18 [45%]	16 [57.41%]	54 [45%]
Five	25 [55.56%]	22 [55%]	19 [54.29%]	66 [55%]
No. of Family				
<3	9 [20%]	8 [20%]	8 [22.86%]	25 [20.83%]
4	16 [35.56%]	17 [42.5]	13 [37.14%]	46 [38.33%]
≥ 5	20 [44.44%]	15 [37.5%]	14 [40%]	49 [40.33%]
Resident Status				
Own	16 [35.56%]	9 [22.5%]	8 [22.86%]	33 [27.5%]
Rent	29 [64.44%]	31 [77.5%]	27 [77.14%]	87 [72.5%]

We tried to assess the hygiene practices among the school children. Majority of children responded that there were getting knowledge from Teacher 74 [61.67%] (Table 2).

87.50% of children responded that there were sources of clean water at their houses and 82.5% of children responded their school have clean drinking water. Upon asking details about various sources of drinking water, 78.33% students said that they were drinking water from supply water (31.66%) & installed filter water [46.67%] at their houses and schools, 21.67% students said that they are using Tube well water for drinking purpose.

36.67% students said that they brush their teeth three times

a day followed by 38.33% & 23.33% students who said that they do it for twice & once in a day. About 83.33% study participants responded that they always wash their hands before eating. 100% study participants responded that they always wash their hands after toilet. 93.33% students responded that they always use soap while washing their hands (Table 4). We also asked about frequency of toilet cleaning at their schools. Most of the participants (57.5%) responded that toilets in their schools are cleaned periodically as per their expectations, while 42.5% students said that it is not cleaned as per their expectations (Table 4).

Table 2: Get the knowledge about personal hygiene

Variables	New Model [n = 45]	Sukrabad [n = 40]	Nobarun [n = 35]	Total [n = 120]
From where did you get the knowledge about personal hygiene				
Parents	15 [33.33%]	11 [27.50%]	11 [31.43%]	37 [30.83%]
Teacher	25 [55.56%]	26 [65.00%]	23 [65.71%]	74 [61.67%]
TV	4 [8.89%]	1 [2.5%]	0 [0.00%]	5 [4.17%]
Books	1 [2.22%]	2 [5.0%]	1 [2.86%]	4 [3.33%]
Others	0 [0.00%]	0 [0.00%]	00 [0.00%]	0 [0.00%]

Table 3: Responses of participants on presence of clean drinking water sources at their school and home.

Variables	New Model [n = 45]	Sukrabad [n = 40]	Nobarun [n = 35]	Total
Is there any source of clean drinking water at school				
Yes	35 [77.78%]	33 [82.5%]	31 [88.57%]	99 [82.5%]
No	2 [4.44%]	1 [2.5%]	0 [0%]	3 [2.5%]
Unsure	8 [17.78%]	6 [15%]	4 [11.43%]	18 [15%]
Is there any source of clean drinking water at Home				
Yes	42 [35%]	36 [90%]	27 [77.14%]	105 [87.5%]
No	0 [0%]	0 [0%]	5 [14.29%]	5 [4.67%]
Unsure	3 [2.5%]	4 [10%]	3 [8.57%]	10 [8.33%]
Source of drinking water				
Filter water	20 [44.45%]	17 [42.5%]	19 [54.29%]	56 [46.67%]
Supply water	11 [24.44%]	16 [40.0%]	11 [31.43%]	38 [31.66%]
Tube well	14 [31.11%]	7 [17.5%]	5 [14.29%]	26 [21.67%]
Others	0 [0.00%]	0 [0.00%]	0 [0.00%]	0 [0.00%]

Table 4: Responses of participants on their various hygiene practices.

Variables	New Model [n = 45]	Sukrabad [n = 40]	Nobarun [n = 35]	Total
Brushed teeth in past week per day				
▪ Not clean	0 [0.00%]	0 [0.00%]	0 [0.00%]	0 [0.00%]
▪ One	16 [35.56%]	9 [22.50%]	5 [14.29%]	28 [23.33%]
▪ Two	18 [40.00%]	12 [30.00%]	16 [45.71%]	46 [38.33%]
▪ Three	11 [24.44%]	19 [47.50%]	14 [40.00%]	44 [36.67%]
Wash Hand before eating				
▪ Yes	38 [84.44%]	32 [80.00%]	30 [85.71%]	100 [83.33%]
▪ No	7 [15.56%]	8 [20.00%]	5 [14.29%]	20 [16.67%]
Used Soap while washing hands				
▪ Yes	13 [34.21%]	17 [53.13%]	18 [60%]	48 [48%]
▪ No	25 [65.79%]	15 [46.87%]	12 [40%]	52 [52%]
Types of Latrine used				
▪ Sanitary latrine	45 [100%]	40 [100%]	25 [71.43%]	110 [91.67%]
▪ Pit latrine	0 [0.00%]	0 [0.00%]	10 [28.57%]	10 [8.33%]
▪ Open place	0 [0.00%]	0 [0.00%]	0 [0.00%]	0 [0.00%]

Using toilet paper after using the toilet				
▪ Yes	26 [57.78%]	23 [57.50%]	15 [42.86%]	64 [53.33%]
▪ No	19 [42.22%]	17 [42.5%]	20 [57.14%]	56 [46.67%]
▪ Yes	45 [100%]	40 [100%]	35 [100%]	120 [100%]
▪ No	0 [0.00%]	0 [0.00%]	0 [0.00%]	0 [0.00%]
▪ Yes	38 [84.44%]	40 [100%]	35 [100%]	112 [93.33%]
▪ No	8 [17.78%]	0 [0.00%]	0 [0.00%]	8 [6.67%]
▪ Yes	28 [62.22%]	29 [72.50%]	12 [34.29%]	69 [57.50%]
▪ No	17 [37.78%]	11 [27.5%]	23 [65.71%]	51 [42.50%]

DISCUSSION

In this study we assessed the knowledge and practices of personal hygiene among 120 primary school students in grade 4 and 5. Schools are the right place to initiate this behavior early in the childhood. In addition, the study observed that around half (61.677%) of the students mentioned their teachers as a source of information regarding personal hygiene (Table 2). These observations clearly demonstrated that the schools and its teachers can play a vital role in imparting the knowledge and practices of personal hygiene very early in the Childs' life. It is well known that children are more receptive to learning and are very likely to adopt healthy behaviors at a younger age.

Various studies have reported that in developing countries like India, communicable diseases arising out of lack of hygiene and sanitation are among leading causes of morbidity and mortality. Children are often considered as frontiers of the nation and still it is a vulnerable group of our society, since they are susceptible to various communicable diseases due to lack of hygiene such as acute respiratory infections, gastrointestinal disorders, worm infestations etc., which are responsible for most of the causes of sickness absenteeism in schools. Hence we conducted the present cross sectional study among school children with the aim of knowing status of various hygiene practices among them, availability of clean water and clean toilets.

Fortunately we found that most of the students were following basic hygiene practices like washing their hands before meals and after defecation. Sarkar in their study observed poor hygiene score among 18% of school children whereas in our study majority of the children were having good personal hygiene scores.¹¹

Sarkar in their study observed that majority of school children had correct knowledge about various hygiene practices such as brushing of teeth, combing hairs, washing hands before meals and after defecation, regular bath but they lagged behind in demonstrating correct practices.¹² In the present study also majority of the students could not elucidate the correct procedures to be employed during hand washing. Use of soap with every hand wash is popular in a little more than 93.33% of students. Deb in her study, observed that girls demonstrated better hygiene practices as compared to males. Regular hand washing after visiting toilet were found among 92.6% girls as compared to 73.8% boys. However, more boys brushed their teeth using toothpaste and toothbrush regularly (67%) as compared to girls

(55.6%).¹² Pati et al also observed similar findings in their study. They observed better personal hygiene practices among school children³.

Almost half of the study participants responded that toilets are not cleaned periodically as per their expectations, which is an important finding to note, since unclean toilets may make students uncomfortable due to disturbing site and smell and also invite public health problems such as communicable diseases. However this finding may be biased since different students may have different opinions regarding ideal sanitation facilities.

Most of the students from the present study appear to use clean water through supply water for drinking purpose. However, the type of technique being employed such as Reverse Osmosis, UV could not be assessed. Though reverse-osmosis types of filters provide pure water, on the other hand it may invite various micro-nutrients/minerals deficiency conditions, since it filters off all the essential minerals like calcium, magnesium, iodine etc. Awareness regarding recommended filtration techniques was found to be lacking even among school teachers.

CONCLUSION

From the present study conducted among school children, Dhaka. It can be concluded that the percentage of hygiene practices among school children was found to be satisfactory, Majority of students seem to use clean, filtered water for drinking purpose, however the filtration methods they were using and reliability of those methods were not studied.

Personal hygiene is not an isolated behavior; instead it varies from person to person according to different factors. Intervention programs raising the awareness and importance of personal hygiene among school children through coordinated education measures by parents, teachers and media will be beneficial to impart these early in life. Based on our research finding we believe that the educational authorities in the country can develop and adopt policies and guidelines that will make way to have adequate access to resources, items and opportunities to maintain personal hygiene at school and home. Schools should provide hygiene education to kindergarten and early grade school children to supplement the training provided by parents and guardians, to ensure that all children learn at an appropriate age how to protect themselves and others from preventable exposure to illness and other hygienic hazards.

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