

# Knowledge Attitudes and Practices (KAP) of Hand Washing among Selected School Children of Dhaka City

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## ABSTRACT

**Background & objective:** Communicable diseases like diarrhoea and acute respiratory tract infection are the commonest cause of morbidity and mortality in children of developing countries. Children are more vulnerable to food and water-borne diseases. Hand washing is an effective method for preventing communicable diseases particularly water-borne diseases. The purpose of this study is, therefore to evaluate the knowledge, attitudes, and practices (KAP) of hand washing among selected primary-level school children of Dhaka City as a mode of disease prevention.

**Methods:** From January 1<sup>st</sup> to June 30<sup>th</sup>, 2016, primary school students (only those in the fifth grade) in Dhaka City participated in this descriptive, cross-sectional survey. Following ethical approval from the school authority, the local guardian of the children, a total of 252 children were purposively enrolled from various elementary schools in Dhaka City. The knowledge of hand washing included in this study comprises information on cleaning hands before meals, after urinating, defecating, and playing, procedures for washing hands, information about World Hand Washing Day, instructions for washing hands, facilities for washing hands, and materials for washing hands. We offered each respondent ten questions, with a mark of 1 for each accurate response, to gauge their degree of expertise.

**Results:** Over 70% of the respondents were 11-12 years old with the mean age of the respondents being  $10.8 \pm 0.7$  years. The boy-to-girl ratio was roughly 11:9. While respondents' fathers were primarily service-holder (about 55%) mothers were generally housewives (70%). Sixty percent of the respondents had 3-4 members in their family. The majority (98%) of the respondents knew about hand-washing. However, over two-fifth (42.2%) of them were completely unaware of the steps of hand-washing, and nearly 70% did not know the minimum hand-washing time to wash out the bacteria attached to the hand surface. Overall, 55.2% of the respondents had good knowledge, 32.5% had adequate knowledge, and 12.3% had excellent knowledge about hand-washing.

**Conclusion:** The study concluded that most of the students usually wash their hands in critical times; however, they do not know the correct way and steps of hand washing. So, more attention is to be paid to training children to adopt healthy hand-washing behavior. The importance of hand washing should be included in their regular curriculum.

**Keywords:** Knowledge, attitude and practice, school children, hand washing etc.

## INTRODUCTION:

Hand washing is a time-tested method for preventing communicable diseases.<sup>1</sup> Communicable diseases like diarrhoea and acute respiratory tract infections are the commonest causes of morbidity and mortality in children of developing countries. Several studies have shown that children with proper hand-washing practices are less likely to suffer from gastrointestinal and respiratory symptoms.<sup>2</sup> Children are more vulnerable to food and water-borne

diseases. Every year more than 3.5 million children aged less than 5 years die from diarrhoea and acute lower respiratory tract infections. This high incidence of diarrhoeal diseases and other communicable diseases among school children may be due to poor knowledge and practice of personal and environmental hygiene.<sup>3,4</sup> Hand-washing with soap has been reported to reduce diarrhoeal morbidity by 44% and respiratory morbidity by 23%. However, globally, the rates at which hands are washed with

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soap range from only 0-34% at all critical times when hand-washing is a must.<sup>4,5</sup>

Water and sanitation-related diseases are considered one of the most significant child diseases in Bangladesh. Non-fatal chronic conditions e.g., diarrhoea, worm infestations, and others may follow bad sanitation practices. Transmission occurs mainly through fecal-oral route and respiratory droplets. Unwashed or improperly washed hands after returning from the washroom or before taking food frequently carry the bacteria or viruses for diarrhoeal and respiratory diseases. As the infections caused by enteroviruses can be prevented to a large extent through hand-washing, it is of paramount importance in decreasing the incidence of diarrhoeal diseases.<sup>6</sup> A study showed that rural Bangladeshis commonly wash their hands with only water and rarely wash their hands with soap water. As hand washing with soap-water after defecation is extremely low, it is more likely that children are susceptible to acquiring diarrhoeal diseases.<sup>7</sup> Although hand-washing is considered as one of the most effective hygienic promotion activities from public health perspectives in developing countries, it is disappointingly low in practice.<sup>4,8</sup>

Hand-washing practice is strongly influenced by education, media access, better economic conditions etc. Moreover, some relevant issues to hand washing, such as, latrine ownership, tube well ownership, water/soap availability in or near the latrine are also associated.<sup>9</sup> In 2019 World Health Organization (WHO) declared 15<sup>th</sup> October as Hand-washing Day. Since then, every member country of the United Nations has been observing the day as the "Hand-washing Day" to motivate and mobilize people around the world to improve their handwashing habits. However, many schools in our country do not observe the Global Hand Washing Day and some school authorities even do not know that such a day exists in the month of October.<sup>9</sup> Faced with this backdrop, this study was carried out among children to assess their hand-washing behaviour. As children contribute about half of the population and childhood is the formative period when they can develop the practice of hand washing. So, promoting hand washing practices among

children and knowledge learned during this stage of life will be permanent, which will ultimately help them lead a healthy life – a prerequisite to building a healthy and disease-free nation.

## METHODS:

This descriptive, cross-sectional study was conducted on primary school children (only children of 5<sup>th</sup> grade) of Dhaka City from 1<sup>st</sup> January to 30<sup>th</sup> June, 2016. Having obtained ethical clearance from the school authority (as the local guardian of the children), a total of 252 children were enrolled purposively from the different primary schools of Dhaka City. In this study, knowledge on hand washing includes knowledge regarding hand washing before meals and after defecation, after playing, procedures of hand washing, knowledge about World Hand Washing Day, steps of hand washing, facilities available for hand washing, and substances used for hand washing. To assess the knowledge level of the respondents, we asked each respondent ten questions, each of which was marked 1 for each correct answer and 0 for each wrong answer. Respondents who answered up to 6 questions correctly were considered to have poor knowledge. If 7-8 answers were correct, the knowledge was considered adequate or good and if 9-10 answers were correct, the knowledge was termed excellent. Data were collected through face-to-face interviews with the respondents (school children) using a semi-structured questionnaire and a checklist and were processed with the help of a software, SPSS (Statistical Package for Social Sciences), version 25.0. The test statistics used to analyze the data were descriptive statistics (frequency with corresponding percentages and mean and standard deviation from the mean).

## RESULTS:

The socio-demographic status of the respondents is summarized in Table 1. Over 70% of the respondents were 11-12 years old with the mean age of the respondents being  $10.8 \pm 0.7$  years. Over half (54.4%) of the respondents were boys with boy-to-girl ratio being roughly 11:9. In terms of occupation, about 55% of the fathers were service-holders, 34.5% were businessmen and the

rest (11.1%) were other occupants like doctors, teachers, shopkeepers, painters, etc. Over 70% of the mothers were housewives, 23% were service-holders and the rest (6%) were engaged in other occupations. Sixty percent of the respondents had 3-4 members, and 40% had 5 members in their family (Table I).

The majority (98%) of the respondents knew about the importance of hand-washing. Of them, over 70% mentioned that they used to wash their hands for disease prevention, 15.1% for personal cleanliness, and 14.3% for prevention of diseases. Nine percent of the respondents informed that hand-washing is needed only before eating. A few respondents held the view that hand-washing should be done before preparing food and after playing. However, the majority of them (88%) agreed that hand-washing is mandatory with all of these activities. Asked about how much time should be spared for hand-washing, nearly one-third (31.3%) correctly answered (at least 20 seconds), 43.3% said one minute, 21.4% two minutes, and only 4% said 3 minutes. About 45% of the respondents opined that there were five steps of handwashing, 8.7% said four steps and 4.4% said six steps. Over 40% of the respondents were completely unaware of the steps of hand-washing. Sixty percent of the respondents were unaware that there was a World Hand Washing Day, 20.2% correctly mentioned that the 15<sup>th</sup> of October was the global hand-washing day; some 12.5% and 7.3% wrongly mentioned the 10<sup>th</sup> of November and 20<sup>th</sup> of September respectively as World Hand-washing Day (Table II).

In an opinion-seeking effort on whether hand-washing could prevent gastrointestinal and helminthic diseases, over 60% of respondents thought that hand-washing could prevent those diseases, 31.2% strongly agreed and 7.3% disagreed. Over 70% of respondents agreed that hands should be washed after playing with toys, 27.4% strongly agreed and only 2.5% disagreed with the statement (Table III). Overall, more than 55% of the respondents had poor knowledge, 32.5% had good and 12.3% had excellent knowledge about hand-washing (Fig.1).

**Table I. Socio-demographic status of the respondents (n = 252)**

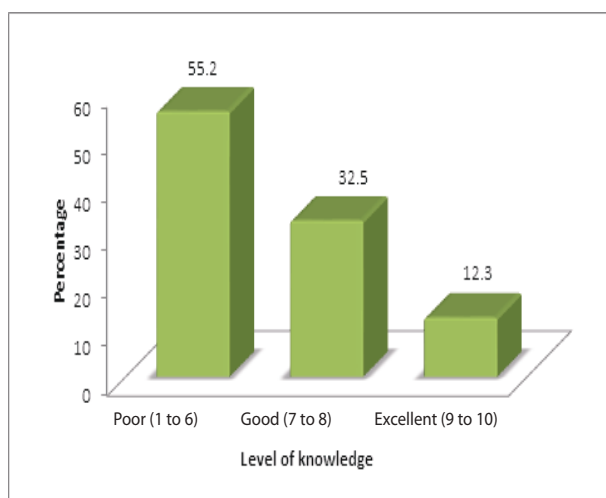
Socio-demographic status	Frequency	Percentage
<b>Age (years)</b>		
9-10	71	28.2
11-12	178	70.6
> 12	3	1.2
<b>Sex of the respondents</b>		
Boy	137	54.4
Girl	115	45.6
<b>Father's occupation</b>		
Service holder	137	54.4
Business	87	34.5
Others	28	11.1
<b>Mother's occupation</b>		
Housewife	179	71.0
Service-holder	58	23.0
Business and others	15	6.0
<b>Family members</b>		
3-4	151	60.0
5	101	40.0

**Table II. Level of knowledge about hand-washing**

Knowledge-related variables	Frequency	Percentage
<b>Knowledge about hand-washing (n = 252)</b>		
Yes	247	98.0
No	05	2.0
<b>Reasons for hand-washing (n = 247)</b>		
Personal Cleanliness	37	15.1
Before preparing food	174	70.2
After playing	35	14.3
None of the above	01	0.4
<b>Timing of hand-washing (n = 247)</b>		
Before eating	23	9.3
Before preparing food	03	1.2
After playing	03	1.2
All the above	218	88.3
<b>Duration of hand-washing (n = 247)</b>		
At least 20 seconds	78	31.6
One minute	105	42.6
Two minutes	54	21.8
Three minutes	10	4.0
<b>Steps of hand washing (n = 247)</b>		
Four	21	8.5
Five	111	44.9
Six	11	4.4
Do not know	104	42.2
<b>Knowledge about the observance of World Hand-washing Day (n = 247)</b>		
20th September	18	7.3
15th October	50	20.2
10th November	31	12.5
Do not know	148	60.0

**Table III. Opinion of the respondents regarding the prevention of gastrointestinal diseases through hand-washing (n = 247)**

Opinion-seeking variables	Frequency	Percentage
<b>Hand-washing can prevent GI diseases</b>		
Agree	152	61.5
Strongly agree	77	31.2
Disagree	18	7.3
<b>Hands should be washed after playing with toys</b>		
Agree	173	70.1
Strongly agree	68	27.5
Disagree	6	2.4



**Figure 1: Level of knowledge regarding hand washing**

## DISCUSSION

The present study of knowledge, attitude & and practice of hand washing was carried out among the children studying in class five. Over half of the respondents were boys. The respondents generally belonged to a Muslim family (91%). The majority of them were between 9-12 years old with the mean age being  $10.8 \pm 0.7$  years. Over half of the respondents 55.2% had poor knowledge, 32.5% had good and 12.3% had excellent knowledge about hand-washing. In our study, 98% of the respondents were aware of the importance of hand washing. In contrast, a study conducted in Nepal revealed that 72% of their respondents knew about hand washing.<sup>10,11</sup> Our respondents, therefore, had better knowledge about hand washing than Nepalese children, for their respondents were villagers who

might have a lack of education and/or hand washing facilities. Regarding the reasons for hand washing, most of the respondents (70.2%) in our study said that they wash their hands for disease prevention followed by personal cleanliness (15.1%), and for prevention of disease transmission (14.3%). In contrast, the Nepalese study reported that one-third of their respondents used to wash their hands to keep themselves healthy, 25% to reduce disease, and 6% to keep their hands clean.<sup>9</sup> In our study, the majority (88%) of the respondents felt the necessity of hand washing before eating, after eating, before preparing food, and after playing but some children felt it is to be done only before eating. In the present study, <1% did not know the reasons for hand washing which was much higher in another study (28%), where the respondents did not know about the importance of hand washing.<sup>11</sup>

A study carried out in Garissa district, Kenya showed that about 63% of their respondents used to wash their hands after defecation and 88.6% before and after eating.<sup>7</sup> In this study, the majority (95.6%) of respondents were accustomed to hand-washing with soap and water after using the toilet. It was evident from a study in Kenya, where 71% of respondents realized the importance of hand washing after defecation but only 31% did so,<sup>12</sup> revealing a wide gap between knowledge and actual practice. This finding is far different from that of a study, which was conducted in rural schools of Maval Taluka of Pune district, where only 22% of respondents used to wash their hands after using the toilet.<sup>13</sup> In 2019 World Health Organization declared 15<sup>th</sup> October as Hand-washing Day. Since WHO declared 15<sup>th</sup> October as Global Hand-washing Day, every member country of the United Nations has been observing the day as Hand-washing Day. However, only 20% of the students knew about the day. Again, there are six steps in proper hand-washing, however only a few (4.4%) knew about the day, while the remaining respondents were unaware about it. The low knowledge of the students regarding handwashing day and the steps of hand washing suggests that it should be included in their curriculum.

## CONCLUSION

The study observed that the majority of students used to wash their hands when they should be washed. However, the majority of the children were not accustomed to washing them in a scientifically sound way. So, more attention is needed to educating children both at home and in school to promote appropriate hand-washing behavior among children. Besides, teachers must be trained to disseminate information to children. Observance of the global hand-washing day should be promoted in school, and the importance of hand washing should be taught in their regular curriculum.

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