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Original Research Article

A study to assess the knowledge and practice regarding sanitation and hygiene among women living in selected areas of Dhaka city

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ABSTRACT

Background: Access to improved sanitation and hygiene is one of the prime concerns around the globe. This study aimed at assessing knowledge and practice regarding sanitation and hygiene among women living in selected areas of Dhaka city.
Methods: A community-based cross-sectional study was conducted in the urban slums of Vellore using the systematic random sampling method. Data was analyzed using frequency and WASH scoring. Further bi-variate and multivariate analyses was done using chi-square test and logistic regression. A total number of 140 households were surveyed using a semi-structured, pilot-tested questionnaire.
Results: The 230 participants, with a mean age of 43.2 years, who were mostly from nuclear families (72.6%) and had monthly family incomes of at least 20,000 BDT, were included in the study. The 37% of respondents had hygienic sanitation facilities, while 42% of respondents had access to Kacha latrines. 69% of the participants used sandals while defecating, and 64% washed their hands with water and soap or ash. A significant association between WASH practices and household members with less than five members and upper middle SES group was found by multivariate logistic regression analysis, with a significance level of less than 0.01.
Conclusions: Since good hygiene will stop the spread of infectious diseases, knowledge and practice of proper personal hygiene and sanitation are essential in day-to-day living. Comprehensive knowledge, more awareness programs, and subsidy policies should be implemented in order to improve sanitation and reduce the burden of transmissible diseases while taking into account regional variations in hygiene practice.

Keywords: Sanitation, Hygiene, Knowledge, Practice, Dhaka

INTRODUCTION

Globally, one of the biggest concerns is access to better sanitation and good hygiene.[1] Maintaining sanitation and hygiene standards is essential to the general well-being of the population.[2] Recurrent cases of water and sanitation-related diseases are certain to happen again unless there are functional sanitation and proper hygiene practice facilities that are compounded with the right type of hygienic practices. These are the fundamental factors that determine human development and quality of life.[3] A significant barrier to reducing poverty is the consequences of poor sanitation and hygiene, which have an impact on all facets of health and development as well as social and economic advancement. Acute respiratory tract infections and diarrhea have their roots in inadequate hygiene and sanitation, which is why these diseases spread.[5] Safe fecal disposal, frequent hand washing with disinfectant, and safe drinking water treatment and storage are the three essential hygiene practices for lowering the risk of diseases that are transmitted through water.

Approximately 1.7 billion people (21%) worldwide do not have access to basic sanitation.[6,7] Basic sanitation includes the safe disposal of human excreta, directing the handling of industrial hazardous waste, the treatment and disposal of waste water, and the maintenance of hygienic conditions through garbage disposal. The 2.3 billion people (or 29% of the global population) lack the resources to practice good hygiene. For hand washing, these include soap and water.[8] Water, sanitation, and hygiene, or WASH, must be adequate and safe in order to prevent many diseases, including schistosomiasis, helminthes, trachoma, and diarrheal deaths. Basic sanitation facilities, like latrines or private restrooms, are still unavailable to more than 1.7 billion people. Approximately 45% of the wastewater produced by households worldwide is still released into the environment untreated.[9]

Even though poor hygiene habits, particularly when it comes to feeding and food preparation, can raise your risk of contracting other infections as well as diarrhea, up to 70% of diarrhea episodes are brought on by contaminated food and water.[10] While hygiene refers to the practice of washing hands with soap after defecating and disposing of child feces, before preparing and handling food, before eating, and in healthcare facilities, before and after examining patients and performing medical procedures, sanitation involves the provision and use of facilities and services that safely dispose of human urine and feces, thereby preventing contamination of the environment.[11] It is believed that many factors are related to maintaining sanitation and hygiene. According to Akter and Ali, barriers to practicing good hygiene include things like availability, water sources, poverty, lack of awareness, and lack of willingness.[12] In a study on teenage girls in multiple schools in Dhaka, Bangladesh, Rizwan et al discovered that approximately 80% of the girls used sanitary napkins, while approximately 95% of the non-users used pieces of cloth.[13] They included that there is no correlation between the mother's educational attainment and the use of sanitary napkins and the parent's income, occupation, and access to water sources. On the other hand, a study on three deprived areas in Dhaka city revealed that 59.2% of the residents cleaned their hands with soap after using toilets and 59% of them used sanitary latrines. Sixty-seven percent of those who live in deprived areas wash their hands before eating. Subsequent investigation revealed a favorable correlation between education and personal hygiene knowledge and practice.[14]

Lack of knowledge, attitude, and practice (KAP) on Sanitation and hygiene is one of the most important factors contributing to the rapid propagation of infectious diseases.[15] The availability of facilities for sanitation and hygiene is necessary for its effectiveness, but individual compliance is even more crucial. Merely having access to services does not guarantee that health issues linked to contaminated water, inadequate sanitation, and poor hygiene will be minimized unless people possess the necessary knowledge, attitudes, and practices regarding sanitation and hygiene.[16] The degree to which people practice safe sanitation and hygiene can be ascertained by looking at their knowledge and habits in these areas.[17] Thus, present study was conducted to obtain baseline information on the existing knowledge, attitude and practices in relation to sanitation and hygiene in target household population living in selected slum areas of Dhaka city.

METHODS

The study was conducted among marginalized communities in two thanas located in the metropolitan area of Dhaka. First, interviews are conducted with the slum households in Karaiganj, then with the households in Shyampur. The entire time frame for covering the data collection was March 2023 to November 2023. The regions were specifically chosen to find out the level of knowledge and the practice pattern of women who are fertile and have children regarding sanitation and hygiene in order to establish program goals. A convenient sample of 230 people who were at least 20 years old, living in an urban poor slum, and who provided informed consent were selected from the slums. The study excluded participants who were unable to participate due to physical or mental limitations or who were enrolled in clinical trials during the study period. An interviewer used a semi-structured questionnaire to gather data. Throughout the course of the ongoing data collection process, the survey coordinator and the data quality control administrator kept an eye on the consistency of the data remotely. Households from every slum were chosen at randomly for the purpose of gathering data. Each slum's households with at least one participant who was 20 years of age or older were included in the sampling frame that was set up. Interviews with the female member of the household were attempted. The spouse was interviewed if she was unable or unwilling to take part. In the event that the spouses were not present, an interview was conducted with the next immediate resident who was at least eighteen years old.

Knowledge regarding water and sanitation was categorized based on the qualities of knowledge present.

Insufficient knowledge: less than 50% of the total score. Moderate knowledge: between 51 and 75 percent of the total score. Adequate knowledge: more than 75% of total score. The data were examined, validated, and altered following collection. The data was compiled and tabulated using a computer and calculator based on important variables. Tables and diagrams were utilized to present the data according to their nature.

RESULTS

A total of 230 participants were enrolled in the study conducted in March to November 2023, in urban poor slum settings in Dhaka, Bangladesh.

Table 1 shows that majority of participants (53%) were in 20 to 39 years' old followed by 40 to 59 years' group (34.8%). Rest of the participants (12.2%) were aged 60 or more. In this study, 89.1% of participants were female and 10.9% were males. About 47.8% participants have attended primary education followed by matriculate (18.3%) and high school (13.5%). About 15.2% respondents were illiterate and those who have graduate level education was only 5.2%. Majority of them were Muslim (85.2%) and rests were non-Muslim (14.8%). More than two third of the participants (72.6%) had nuclear family and only 27.4% belonged to extended family. About 38.3% of the respondents had monthly income more than 20000 BDT taka followed by collective of 27.8% of participants have income about 10001 to 20000. Rest of the participants have earned less than 10000 BDT monthly. Participants (38.3%) earning money more than 20000 BDT were grouped as upper middle class followed by lower middle those who have earning 15001-20000 BDT Tk. Lastly lower class group was positioned into earning capacity less than 15000 BDT tk.

Table 1: Socio demographic distribution of study participants.

Variables	N	Percentage (%)
Age (in years)		
20-39	122	53
40-59	80	34.8
60 and Above 60	28	12.2
Gender		
Female	205	89.1
Male	25	10.9
Education		
Illiterate	35	15.2
Matriculate	42	18.3
Primary school	110	47.8
High school	31	13.5
Graduate	12	5.2
Religion		
Non-Muslim	34	14.8
Muslim	196	85.2
SES		
Upper middle	88	38.3
Lower middle	38	16.5
Lower	104	45.2
Type of family		
Nuclear	167	72.6
Extended	63	27.4
Family income per month (BDT)		
<10000	78	33.9
10001-15000	26	11.3
15001-20000	38	16.5
Above 20000	88	38.3

Table 2 showed knowledge level of study participants regarding sanitation and hygiene practice. About 92% of the respondents knew that hand should be washed before eating and 70% of the respondents had knowledge about Contaminated water and poor sanitation are linked to transmission of diseases. 85% of the respondents had knowledge about pipe/tap water is safe for drinking. only 28% of the participants had knowledge regarding daily requirement of water, 65% of them had knowledge regarding importance of drinking clean water. 47.8% of the participants had knowledge about water storing processes and 72.6% percent of them were conscious about covering water container to prevent dust & water borne diseases and Keeps water clean. Only 66.7% of the participants were aware that boiling and filtration were water purification methods. 62% of the participants had knowledge of solid waste disposal and 42.6% of the respondents had knowledge of liquid waste disposal. 49% of them had knowledge of importance of latrine.

Table 2: Knowledge regarding hygiene and sanitation.

Parameters	Response	
	Correct (%)	Incorrect (%)
Hand should be washed before eating	212 (92)	18 (8)
Contaminated water and poor sanitation are linked to transmission of diseases	176 (76.5)	54 (23.5)
Pipe/tap water is safe for drinking	196 (85)	34 (15)
Daily requirement of water per person for drinking 2 liters per day	64 (28)	166 (72)
Importance of drinking clean water, prevent water borne disease	150 (65)	80 (35)
Water storing process-bucket with closed lid	110 (47.8)	120 (52.2)
Covering water container-prevents dust, keeps water clean and prevents water borne disease	167 (72.6)	63 (27.4)
Method of solid waste disposal-composting	143 (62)	87 (38)
Method of liquid waste disposal-Mix in drain	98 (42.6)	132 (57.4)
Importance of latrine-proper disposal	112 (49)	117 (51)

Majority of the respondents were lived in pacca house with family members less than 5 in the houses. Majority of them used open drainage (70%) method for waste materials disposal followed by closed drainage (18%) method (Table 3).

Figure 1 shows maximum 72% (n=165) respondents used tube well as a source of drinking water while 28% respondents collectively use pond and tap water as sources of drinking water.

Table 3: Respondents opinion regarding home condition and surrounding.

Variables	N	Percentage (%)
Housing		
Kachcha house	112	49
Pacca house	117	51
Number of people in household		
Less than 5	167	72.6
5-10	63	27.4
Method of waste disposal		
Open	161	70
Closed	41	18
No drain	28	12

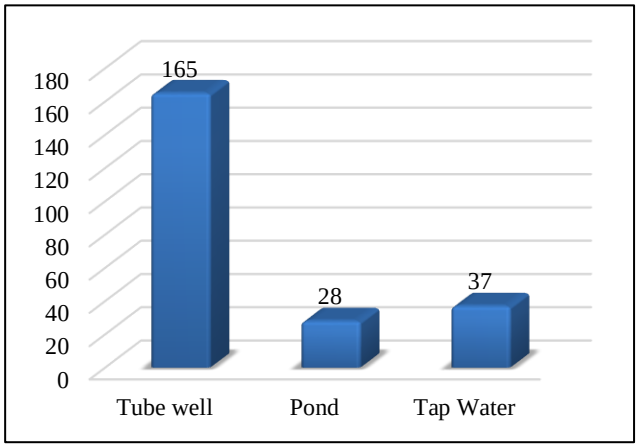

Figure 1: Distribution of respondents according to sources of drinking water.

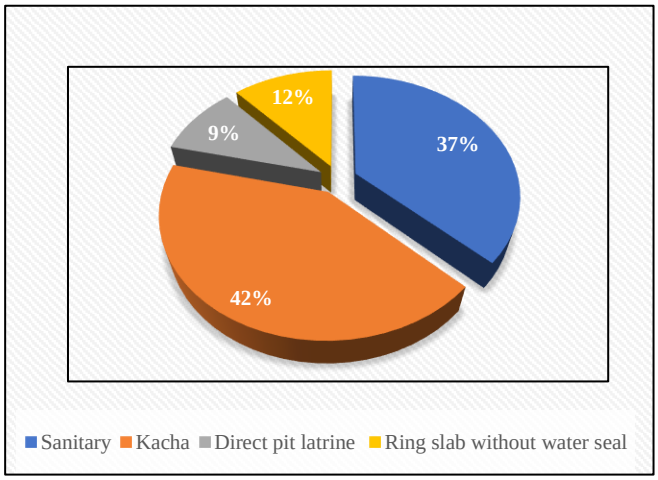

Figure 2: Distribution of respondents according to types of latrines used.

Figure 2 shows that majority 42% had used kacha latrine followed by 37% of the respondents have been accessed to sanitary latrine. Only 21% participants opined that they used direct pit and ring slab without water seal collectively. This study is precisely (in)consistency with the national data of latrine facilities in Bangladesh, sanitary (56.04%), ring slab without water seal (34.58%), direct pit latrine (8.15%) and open defecation (1.23%), respectively (BBS, 2022).

Practice regarding hygiene and sanitation

A total of 141 (61.3%) HHs were using protected water sources (pump/spring) for domestic uses and rests (n=89, 38.7%) were collecting from unprotected (river/spring). Majority, 200 (87%), of the households spent less than or equal to 30 minutes to fetch water and the average consumption of water was less than 10 liters per person per day in the majority of the respondents, 138 (60%). A total of 122 (53%) Households had inappropriate waste disposal practice. About 148 (64%) had handwashing facility with Water and soap/ash and rests (n=82, 36%) were using water only. Majority of the households (n=132, 57.4%) stated to clip hand nails regularly and 69% were used sandal during defecation. About 72% households maintained their household compound clean. Household waste was collected appropriately 49% of the participants. Good practice on WASH was observed in 49% of the respondents.

Table 4: Practice regarding hygiene and sanitation.

Variables		N (%)
Source of water supply	Protected (pump/spring)	141 (61.3)
	Unprotected (river/spring)	89 (38.7)
Time taken to fetch water	≤30 min	200 (87)
	>30 min	30 (13)
Water consumption quantity/person/day	≤10 liters	138 (60)
	10-20 liters	62 (27)
	≥20 liters	30 (13)
Solid waste disposal management	Appropriate disposal	108 (47)
	Inappropriate disposal	122 (53)
Material used for hand washing	Water and soap/ash	148 (64)
	Water only	82 (36)
Respondent clip hand nails regularly	No	98 (42.6)
	Yes	132 (57.4)
Sandal use during defecation	Yes	159 (69)
	No	71 (31)
Cleanliness of the household compound	Unclean	64 (28)
	Clean	166 (72)
Household waste collection	Inappropriate	117 (51)
	Appropriate	113 (49)
Practice on WASH	Poor	117 (51)
	Good	113 (49)

From Table 5, significant association between independent and dependent variable has been identified. Multivariate logistic regression analysis revealed that upper middle SES group and household member having less than 5 members had a significant association with WASH practices with a significance level of <0.01.

Table 5: Logistic regression analysis of study population, (n=230).

Logistic regression analysis					
Univariate analysis of study population					
Good WASH practice		Poor WASH practice			
113 (49%)		117 (51%)			
Bivariate analysis of the study population					
Exposure variable		**Good WASH**	**Poor WASH**	**X^2**	**P value**
Age (in years)	20-39	68	54	2.28	0.266
	40-59	38	42		
	60 and Above 60	07	21		
SES	Upper middle	52	36	3.137	0.067
	Lower middle	20	18		
	Lower	41	63		
Number of household member	Less than 5	98	69	1.79	0.008
	5-10	15	48		
Multivariate logistic regression					
Study population		**Beta coefficient**		**Significance value**	
Upper middle SES group		0.089		0.003	
Household member having <5 members		1.39		0.006	

DISCUSSION

Numerous infectious diseases can be avoided, and the morbidity and mortality that go along with them can be reduced with the help of clean water and optimal sanitation facilities. Women of childbearing age who resided in selected slums of Dhaka city, Bangladesh were the subjects of the current study on cleanliness and hygiene.

According to the study, the majority of the women (89.1%) willingly participated part in the study. The majority of participants (85.2%) belonged to the Muslim belief, and 38.3% of them had a family income of more than 20,000 BDT per month, placing them in the upper middleclass SES category. The participants ranged in age from 20 to 39 years. Of them, 72.6% were in nuclear families and 47.8% had only completed primary school.

Participants were asked ten questions about sanitation and hygiene to check out their level of knowledge. It became obvious that the majority of participants-between 51 and 75%-had moderate knowledge. The majority knew enough to be aware of the following: 92% of people should wash their hands before eating; 85% of people should drink tap or pipe water; and 76.5% of people knew that contaminated water and poor sanitation are linked to the spread of disease. The importance of latrines, the process of storing water, and the way to dispose of liquid waste were not known to more than half the participants. In Udip district, India, another study on 300 women's knowledge and practices about water and sanitation found that 42% had moderate knowledge, 40% had adequate knowledge, and 18% had inadequate knowledge.[18]

Every aspect of life-including development, economy, health, nutrition, dignity, and empowerment-is influenced by inadequate sanitation. Worldwide, 90% of deaths related to diarrhea are caused by water, sanitation, and hygiene, which is significantly more than the combined death rate from HIV/AIDS and malaria.[19] In our survey, the majority of participants (70%) disposed of their waste using the open drainage method.

In terms of drinking water sources, 71.7% of respondents used tube well water, while 28.3% of respondents used tap and pond water together (Figure 1). In another study, 98% of respondents who were mothers of children under five in a rural Bangladeshi community used tube well water, while only 2% used pond water.[20] From the study of Sah et al in Jhapa district in Nepal found only 40% used tube well water for drinking.[21] According to the type of sanitary latrine that each study participant used, 42% had used a kacha latrine, 37% had access to one, and 21% had used a direct pit and ring slab without a water seal collectively (Figure 2).

Of the respondents, 141 (61.3%) reported using protected water sources (springs/pump) for household purposes, and 87% said that the time it took to get water was less than or equal to thirty minutes. A study by Pathak et al discovered that 87.9% of respondents drew their drinking water from pipes or taps, 32.5 percent required more than 15 minutes each day to obtain their water, and 82% of respondents did not purify their water before consumption. Of those who did, however, 73% used filtration methods.[22] In every household, waste is increasing gradually and it is not possible to build a smart city if this waste is not properly managed. In Dhaka, waste generation is estimated to be 6,500 tonnes per day, and by 2032, that number could rise to 8,500 tonnes.[23] While a large majority of participants (72%) had kept their homes clean, the majority of participants in our study (53%) were found to dispose of waste improperly.

Insufficient logistics and organized waste dumping could be the main cause of proper disposal in the absence of waste segregation. According to a study by Sultana Begum 84% of respondents were aware that they should wear shoes when using toilets, compared to roughly 69% who used sandals to prevent the spread of diseases.[21,24] The 31% of respondents said they only used water to wash their hands, while the majority, 64%, said they used soap and water. These results are nearly identical to the research done in Turkey, where the majority of people, on average, washed their hands with soap and water or just water (37.7%).[25] Similar results were found in a study done in the Keranigonj Upazila health complex in Dhaka, 55%.[24] Similarly, research from Colombia and India showed that, after using the toilet, 82.5% and 86.4% of participants, respectively, wash their hands with soap and water.[26,27] 82% of participants responded on a nail should be trimmed at regular interval of time, which help to prevent from several types of food-borne diseases.[28] A total of 57.4% of the participants in our study regularly performed this task.

Limitations

This study is not without its limitations. The study was conducted using a simple random technique in few slum areas within specific regions of Dhaka, Bangladesh. Hence it cannot be generalized to all the slums of the country. In addition, the WASH practices were self-reported, which means social desirability bias may have been present. As an urban slum, WASH knowledge and practices have not received much attention, but the study adds a great deal to this area of study.

CONCLUSION

The spread of diseases can only be stopped by practicing good hygiene. Individuals ought to be more receptive to learning and are very likely to adopt at an earlier age. It follows that expanding our understanding of these issues thoroughly should be put to use in order to formulate more efficient programs that will considerably lessen the incidence of communicable diseases among rural residents. The mass media has a significant impact on the rural population's access to hygienic education. A comprehensive health education program about sanitation and personal hygiene should be implemented for the general public. The construction of sanitary latrines in this impoverished community should be given sustained attention by both governmental and non-governmental organizations, who should also reinforce the current program. Further study also can be conducted to have greater view regarding the awareness with larger sample size.

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