International Journal of Community Medicine and Public Health
Reza HM et al. Int J Community Med Public Health. 2019 May;6(5):1873-1879
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20191801

Original Research Article

Knowledge and practices among primary school children regarding use of sanitary latrine in Kushtia municipality of Bangladesh

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Received: 02 February 2019
Revised: 24 March 2019
Accepted: 29 March 2019

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ABSTRACT

Background: The purposes of sanitation are to provide a healthy living environment for everyone, to protect the natural resources such as surface water, ground water, soil and to provide safety; security and dignity for people when they urinate or defecate. Effective sanitation system provide barrier between excreta and humans in such a way as to break the disease transmission cycle. The study was conducted to explore the level of knowledge and practices of primary school children regarding use of sanitary latrine.
Methods: A cross sectional survey was carried out among 372 children in 4 selected primary schools. Data were collected using questionnaires regarding socio-demographic characteristics of children, their knowledge and practices of using sanitary latrine.
Results: Study results showed majority of the students (84.9%) heard the name of sanitary latrine and 15.1% students didn't. The study showed that about 80.1% students had pucca/water seal latrine and 18.8% students had kantcha latrine in their houses. It was found that almost all students (98.4%) use sanitary latrine and only 1.6% didn't. It was also found that about 98.9% students use soap after defecation and 1.1% use only water.
Conclusions: The result shows that majority of the students heard the name of sanitary latrine and almost all students use sanitary latrine. So the knowledge and practices regarding use of sanitary latrine of primary school children is satisfactory.

Keywords: Hygiene, Disease transmission, Sanitation, Sanitary latrine

INTRODUCTION

Bangladesh is a prosperously beautiful country of South East Asia but being over crowded, numerous health hazards are prevailing as communicable, non-communicable and other chronic diseases. The human health largely depends on congenital environment. In fact many human diseases causing ill health can be treated by removing adverse environmental factors such as water pollution, soil pollution, poor housing condition, presence of insect vector of diseases which pose a constant threat to man's health. Often man is responsible for the pollution his environment through their activities.

Poor hygiene practices and inadequate sanitary conditions play major roles in the increased burden of countries.[1] Personal hygiene is one of the important factors that lead to healthful living. Basic sanitation is prime concern that influences human healthy lives. Sanitation generally refers to the provision of facilities and services for the safe disposal of human excreta, safe water supply, maintenance of hygienic conditions through services such as collection and disposal of refuses and effluvia.

There are some variations on the definition of sanitation in use. For example, for many organizations, hygiene promotion is seen as an integral part of sanitation. For this reason water supply and sanitation collaborative council defines sanitation as "the collection, transport, treatment and disposal or reuse of human excreta, domestic waste water and solid waste and associated hygiene promotion."

Human excreta are one of the cause of environmental pollution and a potential source of infection. The health hazards of improper excreta disposal are soil pollution, water pollution, contamination of foods and propagation of flies thus resulting in the spread of diseases like typhoid, cholera, dysenteries, diarrheas, hookworm diseases, ascariasis, viral hepatitis and similar other intestinal infections.[2] The total sanitation approach recognizes that sanitation is both a public and a private element, and that individual's hygiene behavior can affect the whole community- if someone's neighbors defecate in open air, then another child in same community becomes a risk victim of (or susceptible to) excreta-related disease even when the members of that child's household use a sanitary toilet, wash their hands, and practice good hygiene. In this sense "total sanitation" refers to a community-wide ban on open defecation, and requires everyone in the community either owns or has access to a sanitary latrine only.[3]

The sanitary latrine is such type of latrine in which a man can ease himself with complete privacy. Some criteria of sanitary latrine are i). Excreta should not contaminate ground or surface water. ii). should not pollute the soil. iii). should not be accessible to flies, insects, rodents or animals. iv). should not create a nuisance due to odour or unsightly appearance. v). must have superstructure for privacy and protection. Some importance's of sanitary latrine are i). Maintain complete privacy ii). Protection against sunlight, rain etc. iii). Segregation of faeces from outer environment iv). Protection from water supplies and foods v). Maintenance of personal hygiene vi). Control of flies.[4]

In 2015, 68% of the world's population had access to improved sanitation facilities including flush toilets and covered latrines compared with 54% in 1990.[5-7] Nearly one-third of the current global population has gained access to an improved sanitation facilities since 1990, a total of 2.1 billion people. But still 2.4 billion people do not have basic sanitation facilities such as toilets or latrines.[6,7] Of these, 946 million people still defecate in the open place such as street gutters, behind bushes or into open bodies of water. The proportion of people practicing open defecation globally has fallen almost by half, from 24% to 13%. At least 10% of the world's population is thought to consume food irrigated by waste water.[6]

Despite of big improvements, inequalities appears between and within countries and regions. In southern Asia, 47% of the population was using improved sanitation facilities in 2015 compared with 22% in 1990. Sub-Saharan Africa has made slower progress, with sanitation coverage rising from 24% to 30% in 2015. In 47 countries less than half of the population has access to a toilet or an improved latrine.[7]

According to WHO, countries that account for almost three-quarters of the people who practice open air defecation are India (59%), Pakistan (23%), China (1%) and Bangladesh (3%).[8] While 90 million people in Bangladesh have moved away from practicing open air defecation, diarrheal diseases are still the second-leading cause of child and infant mortality, creating an urgent need for greater availability and affordability of hygienic latrines. Through a sanitation marketing program in Bangladesh, supported by the World Bank, IDA and technical assistance from the Water and Sanitation Program (WSP), entrepreneurs learn the importance and construction of hygienic latrines, as well as how to combine marketing approaches to stimulate supply and demand for sanitation facilities that benefits the poor. The program is helping to create a new breed of entrepreneurs skilled at providing much-needed products and services for poor customers.[9]

METHODS

Study area

The study has been carried out by randomly selected four government primary schools namely-20 No. Chourhash Govt. Primary School (Estd. 1937), Udibari Dairapak Govt. Primary School (Estd. 1953), 95 No. Azizur Rahman Govt. Primary School (Estd. 1957), 19 No. Housing Estate Model Govt. Primary School (Estd. 1968) of Kushtia Municipality, Bangladesh.

Study design

A cross sectional survey was conducted from June 2018 to November 2018 to determine the availability of sanitary latrine facilities for use by school children and the level of knowledge and practices among primary school children in Kushtia Municipality. All children of class III-V who were attending selected primary schools at the time of study were the source population. All school children who were randomly selected in the primary schools were the study population. School children who were absent and those who declined to answer the questions were excluded in the study.

Sampling technique

Simple random sampling was used to select the 4 primary schools that took part in the study. Random sampling was also applied to select 372 school children in the selected schools to participate in the study.

Data collection procedure and analysis

The data collection techniques used in collecting the research data was questionnaire. Questionnaire was administered for collection of socio-demographic characteristics, level of knowledge and practices of use sanitary latrine among school children. The quantitative data were coded and analysed using the Statistical Package for Social Sciences (SPSS) software, version 22.0. Percentages in tables were computed for variables.

Ethical consideration

Permission was obtained from District Primary Education Office, Kushtia before data collection. The headmasters of the schools were verbally informed with a permission letter obtained from the distict primary education officer. Verbal consent was obtained from the school children and they were assured of confidentiality.

RESULTS

In Table 1, demographic and socioeconomic characteristics of 372 school children from class three to five were showed. The result of the study explained that 55.6% of the total respondents were boy and 44.4% were girl. Among 372 cases majority 43.5% of the students were in 10-11 years age group, 31.3% were in 8-9 years age group and only 1.3% were in less than 8 years age group. About 28.0%, 28.7% and 43.3% of the students were from class three, four and five respectively. Majority of the students, 90.3% were Muslims. About 71.0% students were from nuclear family and the rest were from joint family. About 57.0% students had less than 4 family members and 25.5% had more than six (6). Again about 32.8% of the respondents were from middle class family whose monthly income level were 9001-14000 BDT. Only about 1.3% of the respondents were from lower class family with the income level of less than 4000 BDT per month.

Table 1: Socio-demographic characteristics of the respondents (n=372).

Variables	Frequency	Percentage (%)
Gender		
Boy	207	55.6
Girl	165	44.4
Age range (years)		
< 8	5	1.3
8-9	116	31.3
10-11	162	43.5
12-13	89	23.9
Class of students		
Three	104	28.0
Four	107	28.7
Five	161	43.3
Religion		
Islam	336	90.3
Hinduism	35	9.4
Christianity	1	0.3
Family type of students		
Nuclear	264	71.0
Joint extended	108	29.0
No. of household members		
<4	212	57.0
4-6	65	17.5
>6	95	25.5
Monthly household income (BDT)		
< 4000	5	1.3
4000-9000	86	23.2
9001-14000	122	32.8
14001-19000	95	25.5
>19000	64	17.2
Socio-economic status		
Upper	64	17.2
Upper-middle	95	25.5
Middle	122	32.8
Upper-lower	86	23.2
Lower	5	1.3

Table 2: Socio-demographic characteristics of the respondent's parents.

Characteristics	Father	Mother
	N (%)	N (%)
Educational background		
No formal education	26 (7.0)	48 (12.9)
Primary school	86 (23.1)	191 (51.3)
Secondary school	188 (50.5)	96 (25.8)
Intermediate school	50 (13.4)	22 (5.9)
Graduate and above	22 (5.9)	15 (4.0)
Total	372 (100)	372 (100)
Occupation		
Unemployed	5 (1.3)	0 (0.0)
House wife	0 (0.0)	294 (79.0)
Student	0 (0.0)	8 (2.2)
Teacher	25 (6.7)	20 (5.4)
Farmer	58 (15.6)	4 (1.1)
Trader	82 (22.0)	0 (0.0)
Day labor	96 (25.8)	27 (7.3)
Service holder	42 (11.3)	5 (1.3)
Others	64 (17.3)	14 (3.7)
Total	372 (100)	372 (100)

Table 3: Distribution of sanitation knowledge of the respondents (n=372).

Variables	Frequency	Percentage (%)
Students heard the name of sanitary latrine		
Yes	316	84.9
No	56	15.1
Total	372	100.0
Type of latrine present in student's house		
Kantcha latrine	70	18.8
Pucca latrine	298	80.1
No latrine	4	1.1
Total	372	100.0
Student's practicing sanitary latrine		
Yes	366	98.4
No	6	1.6
Total	372	100.0
Student's habit of open air defecation		
Yes	9	2.4
No	363	97.6
Total	372	100.0
Student's using materials after defecation		
Soap	368	98.9
Water	4	1.1
Total	372	100.0
Student's opinion about sanitary latrine		
Pucca latrine	35	89.8
The latrine has superstructure	1	74.2
Dug well type	10	2.7
No soil contamination	26	7.0
Do not spread disease	62	16.7
No foul smelling	147	39.5
Fly/insect and other animals can't enter	105	28.2
Stool/excreta can't mix with pond or water source	24	6.5
Stool/excreta can't be seen	13	3.5

Continued.

Variables	Frequency	Percentage (%)
Problems of open air defecation		
Foul smell	277	74.5
Unsightly appearance	69	18.5
Causes disease among the people	206	55.4
Causes soil pollution	107	28.8
Causes water pollution	219	58.9
Enhance fly breeding	73	19.6
Spreads diarrhea in the village	204	54.8
Other disease	36	9.7

**(Multiple responses).

Table 4: Distribution of use of sanitary latrine in relation to various variables.

Variables	Yes	No	Total
	N (%)	N (%)	N (%)
Class			
Three	103 (99.0)	1 (1.0)	104 (100)
Four	104 (97.2)	3 (2.8)	107 (100)
Five	159 (98.8)	2 (1.2)	161 (100)
Religion			
Islam	330 (98.2)	6 (1.8)	336 (100)
Hinduism	35 (100)	0 (0.0)	35 (100)
Christianity	1 (100)	0 (0.0)	1 (100)
Type of family			
Nuclear	260 (98.5)	4 (1.5)	264 (100)
Joint/Extended	106 (98.1)	2 (1.9)	108 (100)
Mother's education			
No formal education	45 (93.7)	3 (6.3)	48 (100)
Primary school	189 (99.0)	2 (1.0)	191 (100)
Secondary school	95 (99.0)	1 (1.0)	96 (100)
Intermediate school	22 (100)	0 (0.0)	22 (100)
Graduate and above	15 (100)	0 (0.0)	15 (100)

Table 2 showed the percentage distribution of socio-demographic characteristics of the children parents. The result of the study explained that majority 50.5% of their father's educational level was secondary school and 51.3% mothers passed primary school. Majority 25.8% of their father were day labour and 22.0% were trader and majority 79.0% of their mother were house wife.

Table 3 showed percentage distribution of sanitation knowledge of the respondents. Most of the students 84.9% (n=316) heard the name of sanitary latrine and 15.1% students didn't. The study showed that about 80.1% student had pucca/water seal latrine and 18.8% student had kantcha latrine in their houses. It was found that almost all students (98.4%) had used sanitary latrine and only 1.6% didn't. Only 2.4% of the respondents had habits of open air defecation. It was also found that about 98.9% students had used soap after defecation and 1.1% only water. The student gave their opinion about sanitary latrine. Most of the respondents (89.8%) said that sanitary latrine was a pucca latrine and 74.2% said that the latrine had superstructure. Again 39.5% said that there did no foul smell from sanitary latrine, 28.2% said that fly/insect and other animals couldn't enter into sanitary latrine. Only 3.5% respondents gave their opinion that stool or excreta couldn't be seen into sanitary latrine. Students also gave their opinion about the problems of open air defecation. Most of the children (74.5%) said that open air defecation was foul smelling. About 55.4% gave their opinion that open air defecation causes disease among the people, 58.9% and 54.8% students said that open air defecation causes water pollution and spreads diarrhoea in the village respectively.

Table 4 showed percentage distribution of use of sanitary latrine of the children. The study showed that respondent's practice of sanitary latrine was good. By some variables such as class, religion, family type and mother's education, percentage of use of sanitary latrine was about 98-100%. Only children whose mother had no formal education percentage of use of sanitary latrine were low which about 93.7% was.

Table 5 showed percentage distribution of use of material after defecation of the children. The study showed that respondent's practice of use of material after defecation

was good. By some variables such as class, age and mother's education, percentage of use of sanitary latrine was about 98-100%. Only children whose mother had no formal education percentage of use of sanitary latrine were low which about 93.7% was.

Table 5: Distribution of use of material after defecation in relation to various variables.

Variables	Soap	Water	Total
	N (%)	N (%)	N (%)
Class			
Three	103 (99.0)	1 (1.0)	104 (100)
Four	105 (98.1)	2 (1.9)	107 (100)
Five	160 (99.4)	1 (0.6)	161 (100)
Age (years)			
<8	5 (100)	0 (0.0)	5 (100)
8-9	115 (99.1)	1 (0.9)	116 (100)
10-11	159 (98.1)	3 (1.9)	162 (100)
12-13	89 (100)	0 (0.0)	89 (100)
Mother's education			
No formal education	45 (93.7)	3 (6.3)	48 (100)
Primary school	190 (99.5)	1 (0.5)	191 (100)
Secondary school	96 (100)	0 (0.0)	96 (100)
Intermediate school	22 (100)	0 (0.0)	22 (100)
Graduate and above	15 (100)	0 (0.0)	15 (100)

DISCUSSION

The survey on knowledge and practices among primary school children regarding use of sanitary latrine has been carried out by randomly selected four government primary schools namely-20 No. Chourhash Govt. Primary School (Estd. 1937), Udibari Dairapak Govt. Primary School (Estd. 1953), 95 No. Azizur Rahman Govt. Primary School (Estd. 1957), 19 No. Housing Estate Model Govt. Primary School (Estd. 1968) of Kushtia Municipality, Bangladesh. The chief aim of the study was to explore the knowledge and practices regarding use of sanitary latrine among the primary school children in Kushtia Municipality.

Regarding age distribution it was found that among 372 students majority (43.5%) were in 10-11 years age group. It is usual age distribution of the students because data were collected from students of class three to five. Majority of the students were Muslim and a small group was Hindu. It is similar with the existing religion status in Bangladesh.

From this study we found that majority of the students (71.0%) came from nuclear family and only 29.0% students came from joint family. We can also see that 57.0% family consist of only <4 members. So we can realize that large joint families are now broken down and forming small nuclear family. It is due to modernization and urbanization in the recent time and also due loose social bond.

The study concludes that literacy rate is quite high among the parents in the study area. It is also observed that fathers are more literate than mothers as 93.0% and 87.1% respectively. It may be due to increase awareness about general education among the people and the study area is situated within the Municipality.

Our study postulated that 25.8% students' fathers were day labourer and 15.6% were farmer. The result indicates that farming of land still now is the main income source of the community in our country. It was also found that most of the mothers (79.0%) were housewife and only 5.4% were teacher. So it is a fact that most of the women still remain as housewife during married life and they depend on their husband's economically too much. To ameliorate from these condition women should be encouraged to be educated and creating opportunity to involve in income generating activities.

We found that most of the students (84.9%) heard the name of sanitary latrine and most of them can say the reasons why it is called sanitary latrine. They also can say the problems of open air defecation. Regarding the problems of open air defecation many students mentioned about foul smell, disease causation water pollution and spreads diarrhoea among the people. So from this picture we can easily opine that most of the students have proper and correct knowledge about open air defecation and use of sanitary latrine.

Our study revealed that majority (80.1%) of the students have pucca/water seal latrine in their house and all of them use it. This is a satisfactory result because most of the people have proper knowledge about sanitary latrine and they know the benefits of use.

Bangladesh has made significant progress in reducing open defecation, from 34 percent in 1990 to just one percent of the national population in 2015.[10] Our study shows that among 372 students only 2.4% have habit of open air defecation. It is due to absence of sanitary latrine in their house or due to lack of adequate knowledge about the problems of open air defecation. And also may be due to poor pecuniary of those people. About 98.9% students use soap after defecation. It is very much satisfactory because the primary school going children practicing a good habit and it will minimize the common health problems among the children arising from non-hygienic habit. This knowledge of healthy practice may be achieved from their teacher, parents and peers.

CONCLUSION

Based on the findings of the study, it could be concluded that the knowledge and practice regarding use of sanitary latrine was satisfactory. Majority of the students (84.9%) heard the name of sanitary latrine and almost all students (98.4%) use sanitary latrine. According to the survey, most of the students (97.6%) had no habit of open air defecation. Most of the students (80.1%) had pucca latrine in their house and 98.9% students were using soap after defecation. Though the percentage of using sanitary latrine (98.4%) was satisfactory, due to some barriers like illiteracy, lack of mass media coverage and lack of proper knowledge about sanitation we couldn't reach our cherished goal. By proper monitoring and mentioned about the problems of open air defecation and raising awareness among the school going children is the right way to achieve 100% use of sanitary latrine.

ACKNOWLEDGEMENTS

We are most grateful to Mr. Anando Kishor Saha, District primary education officer, Kushtia and all the school authorities for granting access into the schools to conduct this study. Special thanks to the participants for their time and input in the study.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Reza HM, Saha AK. Knowledge and practices among primary school children regarding use of sanitary latrine in Kushtia municipality of Bangladesh. Int J Community Med Public Health 2019;6:1873-9.