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KAP STUDY ON HYGIENE AND SANITATION IN A SELECTED RURAL AREA OF BANGLADESH

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Abstract: UN General Assembly explicitly recognized the human right to water and sanitation which is also essential to achieve target six of sustainable development goals. This descriptive type of cross sectional study was carried out to observe knowledge, attitude and practice on hygiene and sanitation in a selected rural area with a sample size of 247 which was purposively selected. The age structure of the respondents showed that 47.4% belonged to 34-48 years and43.3% belonged to 19-33 years' age group with mean age 35.53 ± 9.11. Among the respondents 78.1% were Muslim, 62.8% and 37.2% were female and male respectively. Study revealed that of the respondents 56.3% thought germ free water as safe, 11.7% opined it as smell free,14.2% replied it as both smell and germ free but 17.8% didn't know about it. About sanitation, 48.2% mentioned hygienic latrine, 11.3% mentioned clean environment and 28.3% did not know about it. Among them 49.0% respondents cleaned drinking glass by only water, 32.0% by soap/detergent with water. Of them 80.6% cleaned water storage container by only water and 13.8%by soap/detergent along with water. Among respondents 36.8% had under five children in family, 30.4% defecated in open place, 6.4% used latrine for defecation and 30.4% didn't use soap after bottom cleaning. There was significant association between education and knowledge on sanitation and safe water (p=< 0.001).Bangladesh Poverty Reduction Strategy has included water and sanitation as an important issue which has got due attention by stakeholders and international development organizations.

Keywords: Knowledge, Practice, Sanitation, Hygiene

Introduction

A large fraction of the world's diseases and deaths are attributable to communicable diseases.1 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.2A survey showed that half the respondents drank water straight from the tap without filtering or boiling it, while 27% rated the water quality as poor.3Inadequate sanitary conditions and poor hygiene practices play major roles in the increased burden of communicable disease within these developing countries.

The effects of poor sanitation seep into every aspect of life - health, nutrition, development, economy, dignity and empowerment.4 With a little less than a year left to achieve the Millennium Development Goals (MDGs), 2.5 billion people are still out of improved sanitation facility.5,6The MDGs target 7.C called for halving the proportion of the population without sustainable access to basic sanitation between 1990 and 2015. But use of improved sanitation facilities rose from 54 percent to 68 percent globally at the end of MDGs period; which was less than the set global MDGstarget. Still 40% people of this region are using unimproved sanitation facilities.7

Globally, water and sanitation hygiene practice are responsible for 90% of diarrhea-related mortality, which is much higher than combined mortality from malaria and HIV/AIDS. Although piped water facility in the rural regions almost doubled in past two decades, there are still 171 million people in rural regions who use surface

water as the primary source.8Despite limited improvement in drinking water facilities in rural regions, 68% of the world's population had access to improved sanitation facilities in 2015.9

Bangladesh has experienced one of the highest urban population growth rates (around 7%) in the last three decades compared to a national population growth rate of about 1.5% per year. An estimated 3.4 million people live in the overcrowded slums of Dhaka, and many more live in public spaces lacking the most basic facilities.10

A large number of people in this country don't get access to potable drinking water. Among them, urban slum dwellers face the greatest challenges. Their water quality is affected by unsafesupply, poor sanitation, improper waste management, unhygienic practices particularly with regard to hand washing, poor socio-economic backing, and overcrowded living conditions.11 The people in these high-risk areas often suffer from diarrhea and other water borne diseases. Due to lack of education, knowledge and basic awareness, people often have a poor understanding of the relationship between health, hygiene, water and sanitation.12

Communicable diseases continue to be the major contributor to global morbidity and mortality.13 In Africa 62% and south-Asia 31 % of all deaths are due to infectious diseases.14 According to WHO estimates, 3.8 million children aged less than five die each year from diarrhea and acute respiratory tract infections.15 An estimated worldwide 88%deaths from diarrheal disease are attributable to unsafe water, inadequate sanitation and poor hygiene.16 Clean water and proper hand-washing are viewed as the most cost effective intervention for preventing diarrheal diseases.17 Various studies have highlighted that simple act of hand-washing and basic hygiene practice could prevent diarrhea, acute respiratory infection and skin infections.18,19Despite much evidence supporting the effectiveness of personal hygiene behavior, it is yet to be practiced widely.20

The research question of the study was, 'What isthe knowledge, attitude and practiceon Hygiene and Sanitation among people in a Selected Rural Area of Bangladesh'? and the objective of the study was, 'to assess the knowledge, attitude and practice on water and sanitation among the people residing ina selected Upazilla (sub-district) under Gaibandha District'.

Materials and Methods

It was a descriptive type of cross sectional study with a sample size of247, selected from Sadullapur Upazilla of Gaibandha district from August to November in 2016.

The objective to plan the study was to assess the knowledge, attitude and practice of water and sanitation among the people residing in the Sadullahpur Upazilla (sub-district) under Gaibandha District'. A non-randomized, purposive sampling technique was applied by the investigator. A semi-structured, pre-tested and modified questionnaire was used to collect data.

A written consent form was obtained from every respondent before data collection. Permission from ethical committee was also duly obtained. Physically and mentally handicapped persons were excluded from the study.

All data collected were checked and entered into software SPSS 16.0. It was then analyzed. Cross tabulation and association was determined by using Chi-square test. And the results were presented in tabulated/ graphic forms.

Results

Table 1: Distribution of the respondents by Socio-demographic variables (n=247)

	Variables	Frequency	Percent
Age	19-33	107	43.3
	34-48	117	47.4
	49-62	23	9.3
	Total	247	100.0
	Mean ± SD=35.53 ± 9.110		
Religion	Muslim	193	78.1
	Hindu	41	16.6
	Christian	4	1.6
	Others	9	3.6
	Total	247	100
Gender	Male	92	37.2
	Female	155	62.8
	Total	247	100.0

From Table-1 it was found that 47.4% of the respondents belonged to 34-48 years 'age group,43.3 % belonged to 19-33 years and 9.3% belonged to 49-62 years' age group with mean age 35.53 ±9.11 years. Majority of the respondents were Muslim (78.1%), 16.6 % were Hindu, 1.6% were Christian and 3.6 % were from other religions. Among them 62.8% were female and 37.2% were male.

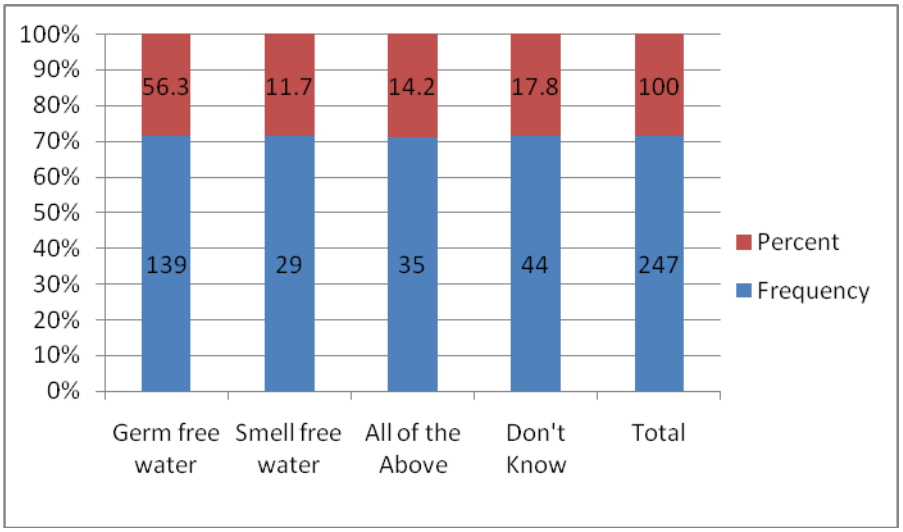

Fig. 1 Distribution of the respondents by Knowledgeabout safe water

Figure no 1 finds the knowledge about safe water where majority of the respondents (56.3 %) opined safe water as germ free water, 11.7% opined it to be as smell free, 14.2% opined it to be both germ and smell free but 17.8 % did not know about it.

Table: 2 Distribution of the respondents by knowledge about sanitation (n=247)

Knowledge about Sanitation	Frequency	Percent
Hygienic Latrine	119	48.2
Clean Environment	28	11.3
All of the Above	30	12.1
Don't Know	70	28.3
Total	247	100.0

Table-2 shows that 48.2% of the respondents had opined sanitation is to be hygienic latrine, 11.3 % opined as clean environment, 12.1 % replied it to be both hygienic latrine and clean environment. But 28.3 % did not have any knowledge about it.

Table: 3 Distribution of the respondents by practice related variables (n=247)

	Practice related variables	Frequency	Percent
Water Container cleaning materials	Only water	199	80.6
	By Soap/Detergent	34	13.8
	By Straw/Leaf with ash	14	5.7
	Total	247	100.0
Glass Cleaning Materials	Only Water	121	49.0
	Soap/Detergent	79	32.0
	Straw/Leaf with ash	47	19.0
	Total	247	100.0

From table no 3,it is found that 80.6% of respondents cleaned water pot by only water, 13.8% used soap/detergent and 5.7 % did it by straw/leaf. It was also revealed that 49.0 % of the respondents cleaned glass by only water, 32.0% used soap/detergent and 19.0 % did it by straw/leaf.

Table 4: Distribution of the respondents by under five children in the family (n=247)

Under-five children in the family	Frequency	Percent
Yes	91	36.8
No	156	63.2
Total	247	100

It was found from table 4 that 36.8% of the respondents had Under 5 children in the family and the rest did not have under-five children in the family.

Table 5: Distribution of the respondents by place of defecation and hand washing after defecation (n=247)

Place of Defecation	Open Place	76	30.8
	Latrine	16	6.4
	Not Applicable	156	62.8
	Total	247	100.0
Hand washing after defecation	Yes	16	6.4
	No	75	30.4
	Not Applicable	156	63.2
	Total	247	100.0

It is revealed from Table-5 that 30.8% of the respondents used open place and 6.4% used latrine for defecation. Hand washing practice was observed by 6.4% respondents while 30.4% did not do so.

Table 6: Distribution of the respondents by defecation related variables

	Defecation related variables	Frequency	Percent
Respondents works in field	Yes	127	51.4
	No	120	48.6
	Total	247	100.0
Defecation during field work	Open Place	127	51.4
	Use of latrine	0	0

It was also found from the study that 51.4% of the respondents used to work in the field and all of them who worked in the field used to defecate in an open place during field work. (Table-6)

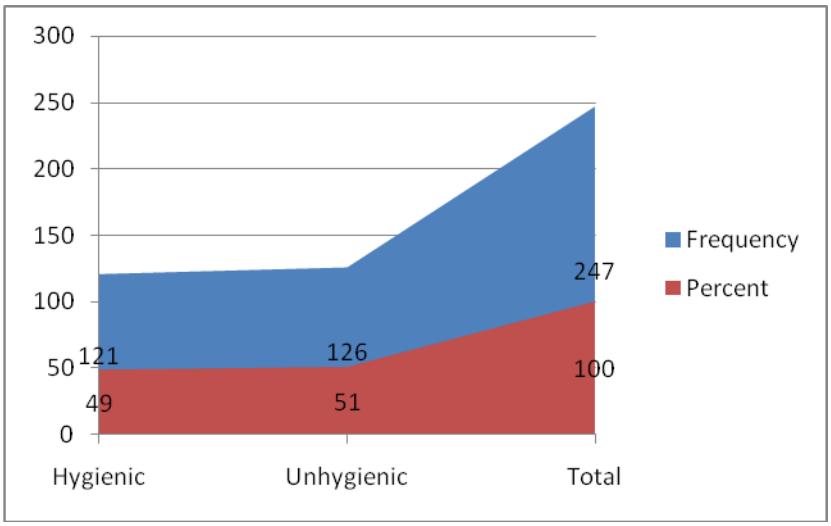

Figure 2: Distribution of the respondents' latrine by sanitation status (n=247)

During observation it was found that more than half of the respondents' latrine (51%) were in unhygienic condition and it was determined by stinky smell, clay water around pan, feces were present in some toilet but 49% were in hygienic condition (Fig-2)

Table 7: Distribution of the respondents by association between level of education and knowledge on sanitation (n=247)

Level of Education of the respondents	Knowledge on Sanitation				p- value
	Hygienic Latrine	Clean Environment	Both 1 & 2	Don't Know	
Primary	37	7	5	14	0.001
Secondary	44	5	6	37	
HSC	29	16	19	15	
Graduation & Above	9	0	0	4	
Total	119	28	30	70	

A significant association is found between education level and knowledge on sanitation with a p-value=0.001.(Table-7)

Table8: Distribution of the respondents by association between level of education and knowledge on Safe Water (n=247)

Level of Education	Knowledge on Safe Water				p- value
	Germ free water	Smell free water	Both 1 & 2	Don't Know	
Primary	28	5	13	17	0.001
Secondary	64	11	3	14	
HSC	35	13	19	12	
Graduation & Above	12	0	0	1	
Total	139	29	35	44	

Similarly, a significant association between level of education and knowledge on safe water is also found with p-value= 0.001. (Table-8)

Discussion

This descriptive type of cross sectional study was conducted in order to find out the knowledge, attitude and practice on sanitation and hygiene in a selected rural area of Gaibandhadistrict in Bangladesh. It was found that 47.4% respondents belonged to 34-48years' age group, followed by 43.3 % with 19-33years age group with mean age 35.53 ± 9.110 years. Among them 62.8% and 37.2% were female and ma**l**e respectively. These findings are close to the findings of a study in carried out in India in 2015.[8]

Study also revealed that 56.3 % of the respondentsopined safe water as germ free water, 11.7% opined smell free water, 14.2% opinedboth germ free and smell free and rest of them (17.8%) did not have any knowledge about it. Among respondents 87% used latrine for defecation and 13% did it in open places. A similar cross-sectional study was conducted in Thandalam village, Chennai, India and the findings were closer the findings of the present study.[8]

The present study revealed that 49.0% of the respondents cleaned drinking glass by only water, 32.0 % used soap/detergent and 19.0 % did it by straw/leaf. These results are consistence with the study findings which was conducted Bhopal City in India in 2014.[21]

Present study further found that only 36.8% of respondents had under-five children, 30.8% defecated in open place and did not use soap after bottom cleaning but only 6.4% used latrine for defecation and used soap. This is supported by a study in Karachi, Pakistan.[18]Among the respondents 46.2% had knowledge that diarrhea is water borne diseasesand this finding is supported by a report of WHO in 2003.[20]

Conclusion

Bangladesh is committed to achieve SDG target 6: Ensure availability and sustainable management water and sanitation by all. The findings of the present study reflected of a real scenario of Water, sanitation and hygiene in rural Bangladesh and knowledge and practice on water and proper sanitation appear behind the target. Further attention and efforts are in this sector to achieve it in time.

Recommendations

Health education should be launched covering general mass in Bangladesh.

Community Mobilization through Community Participation with promotion of hygiene should be emphasized.

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APPENDIX-A

INFORMED CONCENT

I……have read or have had read out for me all the statements in the consent form and I agree voluntarily to participate as a subject in the study of "**KNOWLEDGE, ATTITUDE AND PRACTICE OF SANITATION AND HYGIENE IN A SELECTED RURAL AREA OF GAIBANDHA DISTRICT.**" I have clear idea of this research including its purpose, duration, and the procedures to be followed. I have understood that all information will be keep confidential. My name will not be published in the study report and I will not be entertained with any financial benefits or incentives. I have been given opportunity to ask questions concerning research procedures and for further Questions I may contact the research workers. I have also been given information on the risk and discomforts for participating in this research. I understood that I have the right to leave or cancel my consent and withdraw myself from the study at any time for any reason without penalty. I have been informed that I shall be given a copy of the signed consent to keep. I the undersigned, certify that I have signed this document willingly to participate in the said research work myself or in presence of the following witness.

.....	.....
Participant's signature/Thumb prints	Witness signature
Name:	Name:
Date:	Date:

.....

Investigator's signature

Name:

APPENDIX-B

QUESTIONNAIRE

KNOWLEDGE, ATTITUDE AND PRACTICE OF SANITATION AND HYGIENE IN A SELECTED RURAL AREA OF GAIBANDHA DISTRICT

Name of Interviewer: Name of Interviewee:

Designation: Husband/Wife: Father's Name &

Address:

Socio-Demographic Factors

1. Age :

2. Gender : a. Male b. Female:

3. Educational Qualification:

a. Primary: b. Secondary: c. HSC: d. Graduation & above

e. Illiterate

4. Monthly Family Income:

5. Religion:

a. Muslim b. Hinduism c. Christianity d. Buddhism

Knowledge Related Variables:

6. What is safe water?

a. Germ free water b. Smell free water c. both a & b d.don't know

7. What is Sanitation?

a) Hygienic Latrine b) Hygienic environment c) both a & b d) don't know

8. What are the water borne diseases? ……..

Attitude Related Variables:

9. Do you think it needs to wash water glass regularly? a. Yes b. No

10. Do you use a latrine for defecation? a. Yes b. No

11. Do you think to use open place for defecation? a. Yes b. No

12. Do you think that personal hygiene should be maintained? a. Yes b. No

Practice Related Variables:

13. How often do you wash water container:

a. Regularly b. After one or two days c. Occasionally

14. What type of Material do you use to clean it?

a. Only water b. Soap/Detergent c. Straw/leaf d. Soil

e. Any other

15. How often do you wash water glass?.....

16. What type of material do you use to clean water glass?

a. Only water b. Soap/Detergent c. Straw/leaf d. Soil e. Any other

17. How often do youclean kitchen floor? ……

18. What type of place do you for defecation?

a. Open place b. Latrine

19. If use latrine---what is the condition of the latrine?

a. Hygienic b. Not Hygienic

20. Who is responsible for maintenance the latrine?

a. Wife b. Husband c. Any other

21. Is there any person who work in field for a long time? a. Yes b. No

If Yes

22. Where does he/she defecate? a. Open place b. Latrine

23. Is there any organization or team for follow-up the latrine condition in your village?

a. Yes b. No

24. Have you any under-five children a. Yes b. No

If Yes

a. Where does your baby defecate? a. Open Place b. Latrine

b. Do you use soap after bottom cleaning of your child?

a. Yes b.No

IEC Related Variables:

25. Did you hear about knowledge, attitude and practice on water, hygiene and sanitation?

a. Yes b. No

26. If yes…. what is the source of your information?

a. TV b. Radio c. Peer feedback d. Group discussion

e. NGO worker f. Any other

Signature of the Interviewer:

Date: