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Knowledge and Practice of Hygiene in BRAC's WASH Programme Areas

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ABSTRACT

Improved hygiene behaviour is one of the most effective means of reducing disease occurrence. However, question may arise, which factors did contribute to such improvement? Past studies seldom addressed these issues systematically nor explained the influencing factors that facilitate or impede hygiene knowledge and practice from the perspectives of successful and unsuccessful households. This study, combining qualitative and quantitative methods, measured the changes in knowledge and practice of hygiene and explored factors that facilitate and/or impede hygiene behaviours in water, sanitation and hygiene (WASH) intervention areas of BRAC. In-depth interviews were conducted with 144 purposively selected women. Some of their practices were physically verified to get the proof of their claims. Besides, 30,000 systematically chosen households studied in the baseline were revisited in the midline survey for collecting quantitative data. Results on common variables investigated through both quantitative and qualitative approaches were triangulated. Findings show that respondent's hygiene behaviours were mainly facilitated by improved knowledge and awareness about health and environment-related issues. BRAC's financial assistance had positive impact on latrine ownership resulting in increased privacy and dignity of the households. Latrine or tubewell ownership also increased their social prestige and sense of responsibility. In this regard, maintaining hygiene behaviours for healthy life was perceived as everybody's responsibility. On the other hand, lack of interest in attending cluster meeting, traditional knowledge, poverty, difficulties in carrying water, location of latrine, lack of will to practice, and complex mind-set were the impeding factors to hygiene knowledge and practice. Mainly the psychosocial aspects made the difference between successful and unsuccessful households, as successful households followed hygiene behaviours irrespective of poverty and other barriers. To increase awareness to a further extent and to transform knowledge into practice and practice into habit, more cluster meetings ensuring participation of all including children and home visits by the programme organizers are imperative.

EXECUTIVE SUMMARY

BACKGROUND

Access to safe water and sanitation facilities and better hygiene practices can prevent many diseases. Interventions on these aspects like safe hand washing, handling of food and water, hygienically safe disposal of faeces can reduce disease burden. BRAC initiated the water, sanitation and hygiene (WASH) programme to improve knowledge and practice of safe hygiene among the community people. BRAC has been providing interventions in 150 *upazilas* throughout the country since 2007. Exposure to its different activities might have an impact on knowledge and practice of the community. Such impact on hygiene behaviour is influenced by some factors. Identification of those factors will help improve the programme operations.

OBJECTIVE

This study aimed to compare the status of hygiene-related knowledge and practices between the baseline and the midline surveys, and identify factors that facilitate and/or impede hygiene knowledge and practices.

METHODS

This is a descriptive study combining quantitative and qualitative approaches between the baseline and the midline survey statuses. The quantitative data collected through household surveys revealed relative changes. The baseline and the midline data came from 30,000 households spread in 50 *upazilas* (sub-districts) of the WASH programme. From each *upazila*, 30 villages were systematically selected, followed by 20 households for each village. Data were collected from the same households before the inception and after two years of intervention. Data were analyzed using frequency distribution and bi-variate technique. Calculation of relative change compared the extent of changes occurred in different aspects of the programme, after two years of implementation. Using the purposive sampling method, 12 villages from 6 *upazilas* (2 from each *upazila*) and 144 informants (12 from each village) were selected for in-depth interview. Of the 144 informants, a half were successful and the remaining half unsuccessful as defined by the programme. A woman of the household was considered as a case and interviewed using a checklist. Besides, some of their practices were physically verified. In-depth interview data were transcribed in local language and translated into English. These were processed manually and relevant issues were analyzed thematically to identify and understand facilitating and impeding factors. Results on common variables investigated through both quantitative and qualitative approaches were triangulated.

SALIENT RESULTS

The analysis revealed improvement of knowledge and practices in most of the hygiene behaviours from the baseline to the midline. Improvement was reported in hand washing with soap particularly before eating and after defecation. Hygiene behaviour of covering water container for drinking and cooking was increased during transportation and storage. About 91.2% of the respondents in the midline knew about

wearing slippers, but physical verification found its presence near latrine in 8.3% of the cases. Thus, a gap between knowledge and practice was evident. Some practices were also given more importance than others as evidenced by higher and lower responses of some hygiene behaviours in the midline. Diverse factors emerged from the in-depth interviews that influence the hygiene knowledge and practices. These were labelled as facilitating and impeding factors. Findings depicted that respondent's hygiene behaviours were mainly facilitated by improved knowledge and awareness about health and environment-related issues. BRAC's financial assistance had positive impact on latrine ownership, resulting in increased privacy and dignity of the households. Moreover, latrine or tubewell ownership also increased their social prestige and sense of responsibility. In this regard, maintaining hygiene behaviours for healthy life was perceived as everybody's responsibility. On the other hand, lack of interest in attending cluster meeting, traditional knowledge, poverty, difficulties in carrying water, location of latrine, lack of will to practice, and complex mind-set were the impeding factors to hygiene knowledge and practice. Mainly the psychosocial aspects made the difference between successful and unsuccessful households, as successful households followed hygiene behaviours irrespective of poverty and other barriers.

CONCLUSION

The findings reveal that there were knowledge gap among the respondents and some hygiene behaviours were less practiced compared to others. In spite of the constraints, successful households especially from the poor and ultra poor households proved that their sense of responsibility for healthy life, sense of ownership of latrine or tubewell, willingness to know and practice hygiene behaviours can make a difference. However, to transform the knowledge into practice and practice into habit, continuous learning process through more frequent cluster meetings, home visits by programme organizers, and practical demonstration of some practices are imperative.

INTRODUCTION

Safe water, sanitation and hygiene are indivisible to good health and survival. Access to safe water and sanitation facilities, and better hygiene practices can prevent many diseases by breaking their infection cycle (CDC 2010). Particularly the poor in Bangladesh lack improved sanitation facilities and practices. The quality of life of the poor can be improved by ensuring their access to safe water and sanitation facilities and encouraging them for maintaining improved personal, domestic and community hygiene (Pruss *et al.* 2008). Awareness and perception of people about safe water, sanitary latrine, hygiene and related health issues are considered crucial factors in habituating practice in a particular context (Nath *et al.* 2010).

Hygiene behaviour includes a set of rules or acts encompassing water, sanitation and hand washing which lead to cleanliness and good health. Hygiene practice might be difficult in many parts of the world including Bangladesh due to lack of safe water and soap (CDC 2010).

Strategies of sanitation programmes in some countries quantify sanitation coverage in terms of access to latrines by households, excluding associated behaviours and practices. Access to sanitation facilities does not indicate its hygienic use or the adoption of other hygienic practices (Samanta and Wijk 1998). Improved hygiene behaviours can reduce diarrhoeal illness in spite of absence of latrine (WHO 1993). In changing attitude and behaviours, hygiene education comprising a broad range of activities is essentially needed. It will not only change attitude and behaviours but also will help break the chain of disease transmission associated with inadequate water and sanitation. Hygiene education makes the community members aware of the correct use, storage and disposal of water and general hygiene (Duncker 2000).

Bangladesh has been facing a number of challenges in water, sanitation and hygiene sector mainly because of arsenic contamination, extraction of ground water causing reduction of ground water table, saline water intrusion, and many more. The proportion of population with access to safe drinking water and safe latrines in rural areas increased from 77% in 2006 to 84% in 2007 (UNICEF and WHO 2008) and 81.5% in 2006 to 84.7% in 2007 (BBS and UNICEF 2006). Only 26.7% people wash their hands with water, soap, or ashes after defecation (Kabir *et al.* 2010). The main barrier towards the success of sanitation coverage has been lack of awareness among people about the benefits of safe latrine. The other difficulties are reported as lack of money, lack of space, and preference for open defecation (DPHE 2003 cited in UNDP 2009). In every year, diarrhoeal diseases account for 2.5 million deaths including 115,000 under-five children (Ahmed 2006). Improved water supply and its use for all purposes, and good hygiene practice can avert such deaths to a great extent.

To this end, the Bangladesh government initiated a programme to achieve 100% sanitation by 2013. Various non-government organizations (NGOs), including BRAC came forward to implement programmes to achieve the 100% sanitation coverage in the country. BRAC has been offering comprehensive interventions on water, sanitation, and hygiene (WASH) since 2007 in 150 *upazilas* (sub-districts) throughout the country. The programme aimed to improve the health situation of the rural poor. The major interventions include i) provision of access to sanitation services for 17.6 million people, ii) promotion of safe hygiene behaviour through an education campaign

for 37.5 million people, and iii) provision of safe drinking water for 8.5 million people (1 million through new supplies and 7.5 million through repair of existing facilities). The overall strategy of the programme is focused on creation of conditions for behavioural change and sustaining these new behaviours (Kabir *et al.* 2010). Village WASH Committees are formed based on community participatory process to improve hygiene situation in the community through different activities such as organizing meeting for progress and problem identification, as well as organizing popular theatre, film shows, and folk songs.

The intervention is being offered in the community, and religious and educational institutions. The major activities include installation of sanitary latrines and tubewells as well as imparting health education. Health education is provided intensively to men, women, children, adolescents, and village leaders to facilitate sanitation and hygienic practices. It includes awareness on safe hand washing, safe water source, water collection and storage, as well as safe latrine use.

A quantitative baseline survey was conducted before the WASH intervention. Results of baseline survey indicated knowledge gap among rural women in water contamination, disease occurrence and its prevention. Besides, less than one-third of the people had access to sanitary latrines (WASH Research Team 2008). To examine the effect of intervention, a midline survey was conducted in 2009 after two years of WASH intervention. It indicated significant improvement in sanitation, hand hygiene and prevalence of water-borne diseases. But question may arise, which factors did contribute to such improvement? Thus, to answer to this question we, assessed the changes in knowledge and practice of hygiene and explored factors that promote or impede hygiene knowledge and practices. The past studies rarely addressed these issues systematically nor explained the influencing factors which might have influence on improved hygiene behaviours, necessitating a study combining both quantitative and qualitative methods.

OBJECTIVE

The general objective of this study was to assess the level of hygiene knowledge and practices, and to understand factors that influence knowledge and practice from the perspective of the successful and unsuccessful cases in the WASH intervention areas. The specific objectives were to:

- assess knowledge, perceptions, and practices of hygiene behaviours;
- compare the status of hygiene-related knowledge and practices between the baseline and the midline surveys; and
- identify the facilitating and impeding factors of hygiene knowledge and practices.

METHODS AND MATERIALS

QUANTITATIVE PART

Study design and area

This is a population-based cross-sectional study with a pre-test and post-test design. BRAC WASH programme started intervention in 150 *upazilas* in three phases (50 *upazilas* in each). During November 2006-June 2007, a baseline survey was conducted in 75 *upazilas* (50 from first phase and 25 from second phase) before the intervention, followed by a midline survey during April-June 2009 in 50 *upazilas* of the first phase. The aim of the midline survey was to assess the effects of intervention after two years of the programme.

Sample and sampling techniques

Using the two-stage sampling method, 30 villages from each of the 50 *upazilas* were systematically selected, followed by 20 households from each village. Hence, the total sample size was 30,000 households. In the midline, the same households were surveyed after two years of the BRAC WASH programme implementation.

Data collection and quality control

A structured pre-tested questionnaire was used for data collection during the baseline and midline surveys. Four trained interviewers (2 males and 2 females) worked in each *upazila* and collected data through interview visiting households. In both the surveys, respondents were the adult female members of the households who had knowledge of day-to-day household activities related to water, sanitation and hygiene. Possible variables were physically verified. For quality data, different measures were taken at various stages of the study: i) The team leaders acted as immediate monitors. They closely monitored the daily activities of the teams, ii) The field supervisors oversaw all the field activities, iii) Managers from head office routinely visited and checked the field team activities, and iv) The senior researchers from the head office frequently visited field to supervise the activities, also continuously monitored data processing and analysis. Informed consent was obtained verbally from the study participants before data collection. It was made clear to them that any refusal would not affect their receiving the BRAC services, anyway.

Data processing and analysis

The survey data were edited, coded, entered in computer and cleaned using the Stata software. About 20% of the questionnaires were rechecked to identify discrepancy, if any. Relative changes were computed to assess the level of differences between the baseline and the midline survey data. The extent of significance in the relative difference was compared using chi-square test. Relative difference was calculated using the following formula: Relative Difference (RD) = $\frac{(\text{Status in midline} - \text{Status in baseline})}{\text{status in baseline}} \times 100$

QUALITATIVE PART

Study design and area

The study embraced a qualitative descriptive design and it was conducted in 12 villages spread in six upazilas of WASH intervention, including Srimangal, Fenchuganj, Parbatipur, Durgapur, Gauripur, and Patiya. Parbatipur and Gauripur represented the first phase, Srimangal and Durgapur the second phase, and Fenchuganj and Patiya the third phase of the programme. *Upazilas* were selected from different geographical areas in Bangladesh to capture diversity in views and experiences.

Sample and sampling techniques

Upazilas, villages and households were purposively selected. Due to time limitation, the study villages were selected from around the WASH *upazila* office.

Based on the programme record, the households were classified into ultra poor, poor and non-poor. According to BRAC WASH programme, the criteria of selecting hardcore poor were: i) Landless household, ii) Homeless household, iii) Day labour household head, iv) Possesses less than 10 decimals of agricultural land, v) No fixed source of income, and vi) Disabled or 65+ years old female-headed household. A household is defined hardcore poor if at least two of the last three conditions are present. The criteria of being poor household were: i) Possesses up to 100 decimal of land (agricultural and homestead), and ii) Sells manual labour for living. The non-poor include households that do not fall under any of the above categories (WASH Research Team 2008). From all economic groups, 144 households were selected purposively.

Each economic group represented successful and unsuccessful households. They were identified initially by asking WASH Programme Organizers (PO) and WASH Managers working in the field. Based on their long working experience with the households, they categorized successful households according to i) Regular attendance in cluster meeting, ii) Knowing and believing the health messages, and iii) Practice them accordingly. On the other hand, unsuccessful households were identified as i) Irregular attendance in cluster meeting, ii) Lack of knowledge on health messages, iii) Deny some of the messages to practice, and iv) Despite having affordability, irregular in practice (such as buying soap, ring slab). Identified households were validated by visiting to and interacting with them in the field.

Two villages were chosen from each of the six *upazilas*. From each village, 12 households were selected (four from each of the ultra poor, poor and non-poor categories). Among the four households representing ultra poor or poor or non-poor, two were successful and two were unsuccessful households. Thus, there were 144 households (72 successful and 72 unsuccessful) in the study (Table 1).

Table 1. Distribution of households across the economic groups

No. of <i>upazila</i>	No. of village	Distribution of households according to economic classes					
		Ultra poor		Poor		Non-poor	
		Successful	Unsuccessful	Successful	Unsuccessful	Successful	Unsuccessful
3	6	12	12	12	12	12	12
3	6	12	12	12	12	12	12
6	12	24	24	24	24	24	24
Total				144 households			

Data collection and quality control

Data were collected using in-depth interview. Physical verification was done on certain verifiable indicators such as cleanliness of latrine, existence of soap, slipper, stored water and latrine water pot in or near the latrine, platform and cleanliness of tubewell surroundings as well as place of storage of drinking water at home, and covering the water-container's opening.

The interview checklist (Table 2) was pre-tested in the field setting nearby Gazipur and necessary changes were made. Inquiries were made on different aspects of safe water use, latrine use and hand washing. Six trained interviewers with master degree in anthropology conducted the in-depth interviews and took notes verbatim in Bangla. Immediately after the interview, a summary of collected field notes was made and transcribed to get the sense of respondents' knowledge and perceptions about hygiene practices. The principal author routinely visited the field sites to supervise the quality of work.

Data processing and analysis

All the narrative data collected under three pre-determined broad categories (e.g. safe water use, sanitation and hand washing) were repeatedly read by the authors. Data were translated from Bangla to English and checked for completeness. Relevant issues under corresponding sub-themes such as hygiene indicators, perception on practices and health-related issues, and perception on services and support system were sorted out manually. Moreover, proposed course of actions from respondents' point of view were identified with the assumption that they could best describe their own problems and needs from their context. The inner meanings of the narratives on the issues were analyzed to identify and understand factors influencing their knowledge and practice. Identified facilitating and impeding factors were described under some broad factors which were emerged from the in-depth interviews and quantitative surveys. Qualitative responses were quantified in frequencies in possible cases. Results on common variables investigated through both quantitative and qualitative approaches were triangulated.

Table 2. Checklist of in-depth interview by themes and sub-themes

Broad theme	Sub-theme	Issues
Safe water use, sanitation and hand washing	Hygiene	-Type of hygiene messages -Medium of knowing -Attendance in cluster meeting -Reason of non-attendance
	Perception on practices	-Hygiene behaviour before knowing -Changes after knowing -Adoption or rejection -Reason of adoption or rejection -Problems towards behaviour changes
	Perception on health related issues	-Types of diseases -Medium of its occurrence -Past history of death and disease occurrence (if any)
	Perception on WASH services and support system	-Perception on BRAC's facilities -Problems in getting facilities
	Strategical suggestion	-Possible steps to be taken

RESULTS

BACKGROUND CHARACTERISTICS OF THE RESPONDENTS

In quantitative survey, about 90% of the study participants were adults (age group 20-59 years) and 3% belonged to 60 years or older groups. Twenty percent of the respondents were ultra poor, 27% poor and 53% non-poor. Most participants were housewives (92%). Over a half of the (56%) respondents passed at least grade 1. Half of the respondents were members of at least one NGO.

Most of the in-depth interviewees were married. The age of the respondents ranged between 20 and 65 years and by occupation, they were mainly unpaid household workers. Household work included cooking, cleaning, rearing livestock, taking care of children, while few of them worked in farm land. Their husbands were mainly farmers, small businessmen, school teachers, peons, carpenters, drivers, overseas employees, workers in fishing farm etc. Majority of the respondents had primary education (44.4%), while 22.2% had no education.

IDENTIFYING THE FACTORS INFLUENCING HYGIENIC PRACTICES

From the in-depth interviews a wide array of factors emerged and these were grouped into broad categories of factors such as knowledge, financial, physical infrastructure and living environment, personal and family aspects, social recognition as well as services and support system (Table 3). Factors which are facilitating or acting as barriers towards the success of cases are described under these broad categories found from in-depth interviews, physical verification and quantitative survey.

Table 3. Factors influencing hygienic practices

Broad factors	Facilitating	Impeding
Knowledge and awareness	-Diverse means of getting information and improved knowledge -Awareness about germs and health related issues	-Lack of interest in attending meeting -Traditional knowledge hinders hygiene behaviours
Financial	-BRAC's financial assistance	-Poverty and lack of affordability
Physical infrastructure and living environment	-Prevention of environmental pollution and disease occurrence	-Location of latrine -Difficulty with getting available water
Services and support system	-Frequent home visits -Materials support	-Different mind-set
Personal and family aspects	-Sense of responsibility and ownership -Convenience and privacy	-Lack of will
Social recognition	-Social status -Children's well-being	-Stealing

FACILITATING FACTORS

1) Knowledge and awareness

Diverse means of getting information and improved knowledge

BRAC's frequent cluster meetings, home visits and other interventions such as posters, guide books, folk songs, popular drama related with health and hygiene education were instrumental to improve the knowledge of respondents on different types of hygiene, such as use of safe water and safe latrine, their importance and practice. A successful ultra poor respondent said:

"WASH brothers and sisters (e.g. BRAC staff) taught us in meeting and during home visits that using soap was safe in hand washing. They told us to follow hygiene messages showing pictures on guide book. All family members even children are conscious now."

Retained knowledge of the quantitative survey results corroborated the above statement. Retention of knowledge about safe hand washing especially before eating and after defecation was the highest in the midline (97% and 95.8%, respectively). Relatively lower responses were observed about safe hand washing before feeding babies and before serving food (5.3% and 11.3%, respectively) (Table 4).

Table 4. Hand washing knowledge

Indicators	Baseline (%)	Midline (%)	Relative Difference (%)	P-value
Before eating	92.3	97.0	5.1	P<0.001
After defecation	90.8	95.8	5.5	P<0.001
After cleaning bottom of babies	10.9	9.4	-13.8	P<0.001
Before feeding babies	5.8	5.3	-9.3	P<0.01
Before cooking	30.4	44.3	45.7	P<0.001
Before serving food	10.6	11.3	6.6	P<0.01
After eating	66.8	66.6	-0.3	P>0.05

In case of safe hand washing practices, majority of respondents in the midline reported about using soap in hand washing especially after defecation (73.7%) and after cleaning babies' bottom (68.1%). But, soap was used comparatively less in hand washing during food handling (e.g. before eating, cooking, serving and after eating food), though there was an improvement in safe hand washing practices at critical times from the baseline to the midline (Table 5).

Table 5. Self reported hand washing practices

Indicators	Baseline (%)	Midline (%)	Relative Difference (%)	P-value
Before eating	8.5	20.4	140.0	P<0.001
After defecation	62.4	73.7	18.1	P<0.001
After cleaning bottom of babies	58.8	68.1	15.8	P<0.001
Before feeding babies	16.7	29.6	77.2	P<0.001
Before cooking	10.3	15.9	54.4	P<0.001
After eating	5.0	7.1	42.0	P<0.001
Before serving food	9.1	16.7	83.5	P<0.001

A gap between knowledge and practice had been observed in the midline (Tables 9 and 10). About 91.2% of the respondents in the midline knew about wearing slippers during commuting to and from latrines, but slippers were found available near the latrines in only 8.3% of the cases.

Awareness about germs and health-related issues

Most respondents in all economic groups knew that unhygienic practices produce and transmit germs that would ultimately affect health. According to them, growth and spread of germs might be prevented by keeping the water pitcher in dry and elevated place rather than wet place. They were of the opinion that no fear remained of spreading germs if soap was used in washing hands, while only water was not enough to wash out germs. Some of them, however, mentioned that hygiene behaviours were for their own benefit, as it would prevent disease occurrences, vis-à-vis save money. Poor respondents viewed sickness as a vehicle of wealth erosion of the households. For being more conscious than earlier, the ultra poor households opined that unsafe water contained dirt and germs, thus they used safe water for different purposes. According to most respondents, they were used to use soap in hand washing only after defecation. Such irregular practitioners turned into conscious practitioners after knowing hygiene messages from BRAC activities. Few statements of successful poor and non-poor respondents were:

“Before, people were less conscious and less educated. Even though they had money, they did not build latrine. But nowadays people procure latrine even on loan,” said a non-poor successful respondent.

“We cannot see germs, so soap should be used to remove doubt. No fear remained in mind of removing germs through hand wash with soap,” said a poor successful respondent.

In the midline, the quantitative results showed improvement in covering the containers of drinking water while carrying water (47.3%) and storage (23%), respectively putting cover over water container during carrying and storage of cooking water increased by 37.7% and 22.8%, respectively (Table 6).

Table 6. Covering water vessel’s opening for maintaining water safety

Purpose of water use	Self reported covering practice	Baseline (%)	Midline (%)	Relative Difference (%)	P-value
Drinking	Tube well water use in dry season	98.7	99.4	0.7	P<0.01
	Tube well water use in rainy season	98.5	97.8	-0.7	P<0.01
	Cover during carrying	18.4	27.1	47.3	P<0.01
	Cover during storage	31.7	39.0	23.0	P<0.01
Cooking	Tube well water use in dry season	65.1	72.9	12.0	P<0.01
	Tube well water use in rainy season	63.2	69.5	10.0	P<0.01
	Cover during carrying	14.6	20.1	37.7	P<0.01
	Cover during storage	23.2	28.5	22.8	P<0.01

2) Financial aspects

BRAC's financial assistance

Most of the respondents admitted that BRAC's financial help had positive impact on behaviour changes. The poor were motivated through loan support for latrine installation and tubewell platform construction, while the ultra poor were provided with latrines at free of cost. Other poor households, who were not benefited financially, got inspired about hygiene practices by seeing neighbours' practices. This group even procured latrine and/or tubewell on loan from BRAC. Latrine ownership reduced especially women's sufferings from sharing latrine with others or defecating in open places. A successful respondent in poor economic group stated, *"We got motivated for installing latrines by seeing other neighbours' practice of safe latrines. Thus, we procured slab latrines from BRAC on credit and installed. This reduced especially our women's sufferings from defecation in open places or jungles."*

3) Physical infrastructure and living environment

Improved infrastructure such as safe latrine and tubewell was reported to have reduced the difficulties of living environment. Respondents mentioned diverse environmental factors that facilitated their improved hygiene practices included access to and use of safe latrine and tubewell, availability of suitable place for latrine and tubewell installation, maintenance of latrine and water sources, fixed place for disposal of children's faeces. The use of tubewell water for drinking increased to 100% in the midline from 99% in the baseline. Likewise, tubewell water use in cooking was also increased in all economic groups. The maintenance of tubewell improved in the midline from the baseline in terms of concrete built platform, cleanliness of platform and concrete drain by 9.5%, 44.65% and 24%, respectively. Conversely, tubewell with earthen drain decreased by 9.2% (Table 7).

Table 7. Conditions of tubewell

Indicators	Baseline (%)	Midline (%)	Relative Difference (%)	P-value
Concrete built platform	63.4	69.4	9.5	P<0.01
Cleanliness of tubewell platform	31.8	46	44.65	P<0.01
Concrete drain of tubewell	15	18.6	24.0	P<0.01
Earthen drain of tubewell	63.1	57.3	-9.2	P<0.01

Prevention of environmental pollution and disease occurrence

According to many respondents, use of safe latrines could prevent disease occurrence. They said that use of safe latrines would prevent contamination of environment by flies and worms. It would help prevent spread of bad smell in the air. They further noted about an association between environment pollution and defecation here and there. Because of open defecation, the human excreta would be spread anywhere polluting the environment. Human excreta of either children or older people were perceived as equally harmful for health and environment. Chickens and ducks might spread germs, if human openly left excreta. Such unhygienic practices might pollute drinking water and affect health seriously. A non-poor successful respondent said, *"Open defecation is not good for health and environment. Human wastes may enter into pond and pollute water. After drinking dirty water, people may be sick or even die."*

Disposal of children's faeces to a fixed place increased by 78% in the midline compared with the baseline (23.5% vs. 13.2%) (Table 8).

Table 8. Disposal of household wastes at fixed place

Indicators	Baseline (%)	Midline (%)	Relative difference (%)	P-value
Children stool	13.2	23.5	78.0	P<0.001
Livestock waste	65.7	67.5	2.7	P<0.001
Kitchen waste	96.3	95.8	-0.5	P<0.001

4) Personal and family aspects

Sense of responsibility and ownership

Respondents realized their responsibility of practicing hygiene behaviours is for the sake of own benefit. Moreover, to inform other unaware neighbours about hygiene behaviours was said to be everybody's responsibility. Such a feeling triggered to procure and own safe latrines and/or tubewells. Most respondents expressed a strong will to maintain hygiene behaviours in spite of difficulties in buying soap and carrying water. A successful ultra poor respondent said, "*Though we have economic hardships, we buy soap for washing purposes, resulting in improved health. We do not feel it as costlier as medicine. If we do not buy soap spending Tk. 20, how will we buy medicine at the cost of Tk. 500?*"

Convenience and privacy

Majority of the respondents had fear of lack of privacy in case of defecation in open place. Use of safe latrine with fence was reported to be convenient for ensuring privacy. The elements of convenience considered were i) Children could use it easily, ii) The latrine was well surrounded by fence, iii) No need to carry water and latrine water pot from outside the latrine in front of others, and iv) Necessary latrine stuff could be preserved beforehand in or near the latrine. Therefore, latrines with such characteristics would be convenient to use at any time and season.

5) Social recognition

Social status

Issues of social status for having safe latrine and tubewell could be a driving factor to follow hygienic practices. Narratives of respondents indicated that ownership of latrine or tubewell raised their social prestige. It also provided a freedom for using latrine at any time. Defecating in jungle or open place was recognized as normal task before, even though it was awkward sometimes. Now such practice was termed as shameful and risky for health. Children's open defecation was recognized disgraceful to others. Use of safe latrine was believed to be important to overcome the above sorrows. Thus, some felt that owning a safe latrine was matter of pride. A successful respondent in ultra poor economic group stated, "*Defecating in jungle or open place was the tendency in the past. We felt embarrassed in open defecation, but had no alternatives. Now we feel proud for having safe latrine, and sorry for past sanitation system.*" In addition to the latrine, some of them also stated that using soap would not be means of fashion, but cleanliness.

Children's well-being

Most respondents emphasized on hygienic practices as for children's well-being and natural growth in clean environment. They believed that children's learning and practicing hygiene since childhood would help them lead healthy life. They were in the opinion that if parents would follow hygienic practices, children would follow in future as well. The underlying perception was children could learn easily by seeing others. A successful poor respondent said, *"I follow hygiene behaviours and say to my child to do as well. Because, in future, my child will say others that my mother practiced, so I practice."*

6) Services and support system

BRAC's teaching-learning system with frequent visit to homes helped the respondents to remain on continuous learning process and to improve their knowledge base. BRAC's services of hardware facilities did not include material (ring, slab, fence) transport cost and labour cost during latrine installation. The respondents had to bear these expenses from their pockets. In spite of economic barriers, most ultra poor respondents did not hesitate to spend the amount, which was for their own use and for their good health. A successful ultra poor respondent said, *"Apart from BRAC's major help of free materials support, I spent Tk. 500 including material transport cost and labour cost required for latrine installation. I did not feel burden to bear this amount to get a good thing (safe latrine), which was for our own benefits."* But they had different attitude in case of tubewell installation pointing out that BRAC's support in this case was insufficient.

IMPEDING FACTORS

1) Knowledge and awareness

Lack of interest in attending meeting

Poor and ultra poor households had less interest in attending meeting mainly because of leaving children alone at home and household's workload. The non-poor respondents claimed that they knew about hygiene behaviours since childhood from their family sources. This was the main reason for not attending cluster meeting. However, owing to, business and negligence, many of them did not practice hygiene. Lack of awareness about hygiene and health-related issues became explicit through some of their statements. According to a poor unsuccessful respondent who could not attend meeting regularly due to household workload said,

"I did not cover water vessel all the time during transportation of water, while in a hurry. I used to collect drinking water from well and thus brought up eight children. But I did not face any disease. Despite my daughter's family in Dhaka always use boiled water but still suffer from diseases."

Traditional knowledge hinders hygiene behaviours

Some respondents found contradictions between traditional knowledge and hygienic practices regarding water container for collection and storage of water. Some of them had different perceptions about type of pitcher used and its placement at home. According to them, pitcher made of metal was of better quality and more convenient for use than clay pitcher. Besides, metal pitcher could be kept at any place on the floor, not necessary to keep in elevated place. Some of them, however, thought if

there was no visible dirt in hands, only water would be enough to use for hand washing without soap. Varied perceptions were found in case of water use in hand washing from different sources. Some preferred to use soap in hand washing if pond water was used, but not in tubewell water.

Only 15.1% of the respondents in the midline (Table 9) knew about using the right hand in carrying water pot during commuting to and from latrines. The reason behind such low response might be traditional knowledge about using right hand. As the right hand was used for eating rice, they declined to use the same hand to carry water pot for use after defecation. They had firm belief that all stuff used for latrine would have to be carried with left hand.

Table 9. Knowledge on hygienic use of latrines

Indicators	Baseline (%)	Midline (%)	Relative difference (%)	P-value
Wear slippers while using latrine	81.4	91.2	12.0	P<0.01
Take water pot in right hand during commuting to and from latrine	8.7	15.1	73.6	P<0.01
Wash hands with soap after defecation	69.6	77.7	11.6	P<0.01

2) Financial aspects

Poverty and lack of affordability

Poverty was found as lack of ownership of safe latrine, leading to using shared latrine or defecation in open places. A lack of affordability in buying slipper, soap, brush, latrine cleaning materials (harpic, soap powder) was also caused by poverty. Poor and ultra poor households extensively termed poor economic condition as barriers in practicing hygiene messages, therefore, rendering them as unsuccessful practitioners. An unsuccessful participant from ultra poor economic group said:

“Now we need more soap and much water for cleanliness compared to the past. It is hard to buy excess soap, so we cannot keep soap all the time. We are poor, so it is difficult for us to practice hygiene behaviours.”

The quantitative data revealed that in the midline survey, varied responses had been observed in some hygiene behaviours related with safe latrine use. Higher responses had been found in latrine cleaning (50.8%) compared to other hygiene behaviours such as keeping slipper (8.3%) and soap (19.4%) in or near the latrine. The relative difference of behaviour changes from the baseline to the midline indicated an improvement by 51.2% in latrine cleaning, by 84.4% in slipper and by 40.6% in soap keeping around the latrine (Table 10).

Table 10. Physically verified practices of hygiene behaviours on safe latrine use

Indicators	Baseline (%)	Midline (%)	Relative difference (%)	P-value
Toilet was found clean	33.6	50.8	51.2	P<0.001
Sufficient water available nearby the latrine	32.4	37.9	17.0	P<0.001
Soap available nearby the latrine	13.8	19.4	40.6	P<0.001
Slipper available near the latrine	4.5	8.3	84.4	P<0.001

3) Physical infrastructure and living environment

Difficulty in getting water available

One of the crucial factors widely voiced by majority of the respondents was difficulty in getting water available. The underlying reasons were long distance, long queue, shortage of water supply, difficulty with carrying water, and bad feeling in collection water from other's tubewell. Economic factor was also reported to influence the procurement of tubewell to become owner, thus compelling them to collect water from other's tubewell. Few respondents stated that owner of the tubewell often did not allow for collecting water in the evening. Consequently, the respondents were not able to use enough water for latrine cleaning, hand washing and drinking. Hand washing with soap was reported to be uncommon in all economic groups, rather they used increased water for keeping themselves busy whole day for carrying water. An unsuccessful ultra poor respondent cited, "*Carrying tubewell water from distant place was backbreaking. So, we used pond water for washing hands.*"

In some cases, it was reported that the level of ground water sources gone down, risking the path of getting pure water. According to the respondents, there was no surety of getting pure water digging so deep (700-800 feet), though the process was expensive. For this, they used pond water in some household works.

Location of latrine

The respondents who had latrine beside the road, faced difficulties in keeping the latrine clean, keeping soap, slipper, water pot, and preserve water near the latrine. According to the respondents, the outsiders often used the latrine without informing them, and made it dirty. An unsuccessful ultra poor respondent said, "*The latrine is beside the road and outsiders may use it at any time. So, it is not possible all the time to preserve water near the latrine and keep the latrine clean.*"

4) Personal and family aspects

Lack of will

Lack of "will" in practicing some hygiene behaviours, particularly hand washing with soap in critical times, covering water container, and sanitation hygiene-related issues, was perceived as psychosocial aspect. For example, not leaving old unhealthy habit of few people in spite of having affordability to practice was reported by some respondents.

5) Social recognition

Stealing

Some respondents reported that children sometimes steal and sell latrine hygiene-related stuff (e.g. slipper, water pot) for buying sweets or nuts. Such behaviour of children would hamper hygienic use of sanitary latrines. However, few respondents reported to using locker in the latrine or keeping the stuff inside the room or near the tubewell area, as alternatives.

5) Services and support system

Different mind-set

In spite of getting major material support from BRAC, few respondents particularly poor and ultra poor households wished that it would be helpful for them if BRAC could provide soap and latrine cleaning materials free of cost. Few unsuccessful poor households stated that BRAC provided loan to only those who had ability to repay. Thus, they showed lack of interest in getting latrine on loan as they were unable to repay and wanted to own latrine free of cost differing BRAC's rule to provide free support to the ultra poor only.

DISCUSSIONS

The quantitative survey results indicate an improvement in most of the hygiene behaviours, despite the knowledge gap between saying and practicing. Some hygiene practices are given higher emphasis than others as evidenced by varied i.e., higher and lower responses to some practices. Such variations might be influenced by identified facilitating and impeding factors. The strategic implications of study findings may lie particularly in the areas of knowledge gap, impeding factors, and lower responses towards hygiene practices. The key findings generalisable with other researches mostly conducted on different populations like nursing students and health workers in national and international settings, are discussed in the following sections.

FACTORS FACILITATING THE HYGIENIC PRACTICES

The key factors facilitating hygienic practices are improved knowledge on health and environment-related issues, sense of responsibility and sense of ownership of tubewell or latrine, teaching-learning system and financial help of BRAC. Some of the factors such as financial help, cluster meeting with the involvement of men, and women had influenced sense of ownership and responsibility towards health (own and other family members as well as community people) and hygienic practices. The respondents' perceptions on practicing or not practicing hygiene behaviours were found to vary mainly because of psychosocial aspects such as sorrows concerning lack of affordability, doubt in mind about germs and related diseases, sense of responsibility for healthy life, willingness to hygiene practice, interest in attending cluster meeting and expectation from BRAC for additional support. In spite of some difficulties such as buying soap or carrying water, successful households did not consider them as problem and tried to practice for their own and other's (family members) benefit. In other study, variations in hygienic practices between poor and non-poor households

were presumed to be influenced by psychosocial and motivational factors (Rana, 2010). Aunger *et al.* (2010) showed association of psychosocial factors with hand hygiene practices.

Statements of being motivated through BRAC's interventions and paying more attention on hygiene behaviour and its practices compared to the past were found common among the respondents. In this regard, BRAC's financial help and health and hygiene education were critical to change hygiene behaviour. Arif (2010) reported that financial help of BRAC WASH programme had positive effect on latrine ownership. The midline survey (2009) of WASH programme reported increased knowledge, increased access to facilities, and practices of hygienic messages compared to baseline survey (2006). Activities like motivational cluster meeting, home visits, popular theatre and some educational activities contributed to increased awareness among respondents in WASH intervention areas (Rana *et al.* 2010). Another study found that improved knowledge was associated with increased compliance of hygienic practices (Mafuya and Shukla 2005). Sustained and accelerated interactive education through different channels may help the unsuccessful households to practice healthy hygiene.

Less disease occurrence among household members was reported by most respondents comparing with the past, especially, before knowing and practicing hygiene messages. Improved knowledge and practice of hygiene related with health and environment might contribute to develop their general well-being. The success behind increased knowledge influencing hygienic practices in intervention areas can be assumed mainly because of two-way learning system of the WASH programme such as follow-up cluster meeting, home visits and practical demonstration of some practices. Similar essence had been found in other studies as well. Knowledge on water contamination, types of diseases associated with water contamination as well as water purification techniques increased among the respondents from the baseline to the midline (Rabbi and Ali 2010). Nath *et al.* (2010) showed that increased hygiene awareness was associated with increased educational level. Reduction of the occurrence of waterborne diseases over the years was reported in WASH intervention areas (Rana 2009), which might be the consequence of increased knowledge and awareness and increased access to hygiene facilities. Increased use of safe water for drinking and cooking also might have an effect in reduced disease occurrence (Dey and Ali 2010).

Maintaining hygiene behaviour for healthy life was felt as everybody's responsibility. Such sense of responsibility developed through motivational cluster meeting might influence their understanding about the necessity of latrine ownership. Latrine ownership due to BRAC's financial assistance enhanced their privacy and dignity. Issues of responsibility and latrine ownership are described in other researches as well. Hygienic practices are perceived as individual's responsibility in the study conducted on rural communities of South Africa (Phaswana-Mafuya 2006). In case of latrine ownership, convenience of using safe latrine, avoiding fear and increased privacy were found important considerations among Indian villagers (Singh and Arora 2003).

FACTORS IMPEDING THE HYGIENIC PRACTICES

The factors acting as barriers were mainly poverty and traditional knowledge, irregular attendance in the meeting, lack of awareness on hygiene behaviours, difficulty with getting available water, location of latrines at disadvantaged places, and lack of will. Other issues emerged as an effect for not practicing hygiene messages were

business, forgetfulness, and negligence. Traditional mind-set of rural women drives them to think that all the household works are for women only, not for men. Moreover, most male partners are also less supportive to their female partners in helping household works. Thus, the resulted workloads imposed on women made them busy for most of the time, and kept them often away from attending cluster meeting. Being consistent with few factors obtained in this study, high work loads, forgetfulness, negligence to guidelines were perceived as the reasons of non-compliance among the health workers (Pittet 2001). Moreover, business and lack of knowledge were termed as barriers in hygiene practices (Barrett and Randle 2008). Disagreement with the programme hygiene guidelines was recognized as influencing factor of not following hygienic practices (Boyce and Pittet 2002).

Most respondents said that few people could not give up their old habit of defecating in open place. Men who shared the latrine with others often chose open place as women got the priority of using latrine. Likewise, men working in the farm land mostly use nearby open field for defecation rather than coming home for using latrine. In addition to open defecation, not keeping specific and separate slipper for latrine use and using same slipper worn in the living room revealed their lack of willingness beside lack of affordability. Most respondents used soap in hand washing particularly after defecation rather than during food handling. The reason might be the affordability of soap, as most of them could afford only one soap and kept it in or near the latrine or tubewell, but not in the house. Low income and water scarcity adversely influence adoption of hygienic practices. On the other hand, ownership of latrine or tubewell, regular water supply, and adequate water motivate adoption of hygienic practices (Mafuya and Shukla 2005).

CONCLUSION

The narratives of the interviewees indicate that mainly the psychosocial aspects made the difference between successful and unsuccessful households in hygiene knowledge and practice. The psychosocial aspects, for example, are sorrows concerning lack of affordability, doubt in mind about germs and related diseases, sense of responsibility for healthy life, sense of ownership, willingness to practice, interest to attend cluster meeting, traditional mind-set, and expectation from BRAC for additional support. In spite of difficulties such as lack of affordability and carrying water, successful households kept following hygiene behaviours for healthy life.

Existing knowledge gap and lower responses to some hygiene practices might be the effects of identified impeding factors. Some practices were given more emphasis over others as evidenced by higher responses on hand washing before eating and after defecation rather than before serving and after eating food. Due to the impeding factors, it is not possible to transform the knowledge into practice and practice into habit. In spite of some barriers, there was an improvement in knowledge retention and practice in most of the cases of hygiene behaviours in the midline. Understanding of factors emerged through this study might have implications in planning and strengthening programme's interventions. Frequent cluster meetings and home visits might be one of the promising options to instil consciousness into the respondents. It will help them to remain on continuous learning process and practice hygiene irrespective of poverty and other barriers. In this case few adoptions such as

distribution of posters, guidebooks holding pictures, pictures on the effect of unhygienic practices, announcement through loud speakers might be more effective to turn the irregularities into habit.

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ANNEX

ANNEX 1. CASE STORIES

Case 1. Anwara's story

Economic class: poor, status: successful

Anwara is 45 years old with no education because of early marriage. She lives with her husband, one daughter and two sons in Dighirpar village, Srimongal. Her husband studied up to grade three. Her daughter Shamima (18) passed Secondary School Certificate (SSC) exam and son Shimul (16) will be appearing SSC exam. Youngest son Shahidul (12) studies at grade six. She is home-maker and her husband is a businessman of tea leaves with monthly income Tk. 15,000 (approximately).

Her family members got to know about safe water, sanitation and hygiene from cluster meeting and BRAC school. Female cluster meeting is generally arranged in her house in every two months and her husband is chairman of BRAC school. In addition, all her children received education from BRAC school.

They used to collect water from government tubewell 30 years ago. They had to collect water two times a day, and each time it took half-an-hour including pouring water, standing on queue, going to and coming from water point. According to her, it was common to see few people taking bath at tubewell. So, at that time they had to wait on the queue. If the tubewell became out of order, they went to collect water from Madhab Pasha Government tubewell and it took even more time to bring water. Women were not so conscious at that time. New bride normally did not go out to collect water. The reason was if the outsiders saw her. If there was no drinking water in stock while required, then they boiled and filtered water collected from nearby pond. Frequent sicknesses due to diarrhoea and skin diseases used to occur. She herself had to suffer from skin disease. Her youngest son (5 years old) died 25 years ago of fever within 24 hours. He went to collect water from the tube-well at evening and he got scared seeing a black cow on the way in dark. He fell sick after coming back home. They took him to Srimongal and then to Sylhet hospitals but nobody could cure him and he died at last.

She has own tubewell now. She use tubewell water in her all household works. The tubewell is very close to her house and she can collect water anytime whenever they need. The platform of the tubewell is brick-built and they always keep the platform dirt free. They collect and store water by covering the pitcher, what they did not do in the past. They feel far better than earlier as they drink safe water now. They do not need to boil and drink pond water anymore. Disease occurrences are much less than before.

Case 2. Zaida Begum

Economic class: poor, status: unsuccessful

Zaida Begum (40 years) lives with her husband, two sons and one daughter. Her husband studied up to grade three and he can sign his name only. She completed primary education. According to her, "We the poor could not continue further education." Her elder son Parvez (10) had education up to grade five because he did not want to continue further. Her daughter Tania (8) has been pursuing study in grade three and her youngest son Junayet (7) does not enter into school.

She spends most of the time on household chores like collection of paddy, rearing livestock and cooking for her family. Her husband has a tea stall. He made profit of Tk. 50 per day by selling tea. He gets 160-200 Kg rice per year from cultivation of others paddy field.

Everybody, in her family, got to know about hygiene messages of safe water, sanitation and hygiene through radio, TV, but mainly from BRAC staff. She cannot manage herself to go to cluster meeting, but her husband goes often.

She had a shared latrine along with five other families. It was 200 yards away from her home and it took 5 minutes to go. Carrying water pot from the home, pouring it with water from the pond and maintaining long serial in front of latrine became parts of their daily lives. It was hard to get latrine free during critical time for instant use. In such situation, she had to look for someone else's latrine or open space near canal. At night, they feared to go to latrine alone because of blood sucker insects, snakes and ghost sometimes. She was about to cry with shyness while she was required to carry latrine water pot in front of others. She thought if she had a latrine of her own, she would not have to face such awkward situation. They did not know and practice the rules of using sanitary latrine like wearing slipper, washing both hands, keeping water and soap inside the latrine, using enough water.

She got latrine on loan from BRAC. She completed all the instalments. She feels much better now because at least she can say that she has a latrine and can use it without competition and she does not pollute environment anymore. She always keeps it clean and has separate soap and slipper there i.e. she keeps all the necessary arrangements inside the latrine.

Case 3. Shipra Bardhan

Economic group: ultra poor, status: unsuccessful

Shipra Bardhan (35) has been living with three daughters in Nizampur village, Fenchuganj. She never goes to school while her two of the three daughters drop out from school after passing grade three and five respectively. In addition to the explanation of her daughters dropout from school, she started saying her poverty with sorrow that, "I have no farm land of my own. I grow paddy and get 600-800 kg per year. Besides, I cultivate vegetables in shared land. I am also busy with household works like cooking, rearing livestock."

She had to go through immense hardship with water collection, poor sanitation and ultimately health problems of her family members. She used to bring water from others tubewell at distant location as she did not have own tubewell. She needed water often in the evening, but she found no water stored at home. Hence, she had to bring water from far. The owner of the tubewell did not allow fetching much water. Somehow, she could manage to pour one pitcher with water. Such circumstance often made her confused whether she would drink, wash hands or face with such small amount of water. The hardship grows even higher in summer. She used to drink less, as she had difficulty in water collection. Her husband helped sometimes in bringing water when he was alive. She never covered water vessel during transportation, but did it during storage at home. Her daughters continued to suffer from diarrhoea one after another.

The latrine which they used earlier was pit latrine with no roof and located in jungle. Jute material which was torn somewhere had been used as fence. She explained her sufferings as, "We felt ashamed of using such latrine as had no privacy. It also took time to go and take water from pond as no water stored inside. It was very dirty and smelled badly. We got wet sometimes during rainy season. We would go there with fear both at day and night if someone would see us. We used to carry light with us at night suspecting if snakes were there. One would go inside the latrine and another used to stand outside."

Now she obtained sanitary latrine free of cost from BRAC, though she had to spend Tk. 600 as transport and installation cost. Managing this amount, however, was hard for her as she said. To manage this amount she was required to sell chickens. So, it would be better if it was

free. Although she said keeping gladness on her face, "Now I cannot express myself in words how happy I am. I pray for BRAC. I have no shame now to use this latrine as everything (soap, slipper, latrine water pot, and water) is already there. No need to carry latrine water pot in front of others. The fence is better quality than before. Also I have my own tubewell now and the platform is brick-built. My brother helped me financially to get this tubewell."

After coming from latrine, she used to wash hands with ash or soil, but never used soap. She did not know earlier, so how to practice. She herself suffered from skin diseases as soap was not used in bathing and water was dirty. She expressed herself after knowing the rules from BRAC meeting, "Now we need more soap and much water to clean. I am poor, so I cannot buy soap all the time. Therefore, it is not possible to maintain hygiene all the time. Help us giving money. If we have money, we will be able to buy soap and can stay clean."

Case 4. Parbati Rani Das

Economic group: ultra poor, status: successful

Parbati Rani Das (35) has four members in her family living in Razpara, Sreemangal. She studied up to grade five. She dropped out as her father could not afford her study cost any longer. Her husband Radha Das (45) can write his name only. Her daughter Prianka Rani (14) studies in grade eight at Shatgaon Losna High School and son Shoikat Das (7) is in grade four at Patrikul Primary School.

They have a small piece of land. Her husband cultivates paddy and sometimes gives labour in others field. He gets Tk. 100 per day. They can somehow manage 3 meals in a day.

Parbati Rani was very eager to share her sad and happy experiences before and after the changes occurred in her family. She had shared latrine on loan with 7 more families and the platform was brick-built. She did not know the rules of hygienic practices. Therefore, she was not habituated to cover the pitcher, keeping the pitcher in dry and elevated place. She used tubewell water for drinking and cooking. Pond water was used for washing utensils and for latrine use. During summer, they were required to go to others tubewell for water collection, as they did not get enough water from own tubewell. There would always be long queue as many villagers rushed to same tubewell. Thus, it hampered accomplishment of household works. She did not know earlier about covering water vessel and not washing utensils with pond water. Pond water was not safe which was not known to her and consequently, her son got diarrhoea. He ate rice in such a plate which was washed with pond water. She spent Tk. 500-600 on his treatment. She did not know about the reason of disease occurrence but she knew afterwards from WASH staff that dirty water caused diarrhoea. They informed her in cluster meeting showing pictures on guide book. Now they always wash utensils with tubewell water.

About the latrine system, she said that it was *kutchha* i.e. not sanitary. Women used to go to such latrine and men to jungle. Children defecate here and there. Fear always remained in mind about insects and falling down while using *kutchha* latrine. Rules of using latrine were not known such as using slipper, water preservation beforehand, and washing hands with soap after defecation. WASH programme gave her latrine free of cost. Now, her family members use this latrine following all the rules. They buy soap and slipper amid poverty only for the sake of good health. She was happy with whatever BRAC gave to her. If BRAC would give latrine to those who are poor, then children would grow up in better environment.

She used soap previously only for bathing. She did not know that soap should be used in other critical work as mentioned by BRAC. If hands are not washed with soap, diarrhoea may occur. After knowing this, they have started using soap since last year. Now they have less disease occurrence. They know all the rules about hand washing now, but building habit is required. According to her like many others, "*It is good to organize meeting with the participation of all. Everybody knows, but do not practice...their own choice. Few say that I do not follow all the messages, but I am still alive. Frequent meeting is required to sensitize such people about the compliance of hygiene messages.*"

Case 5. Lovely Das

Economic group: non-poor, status: unsuccessful

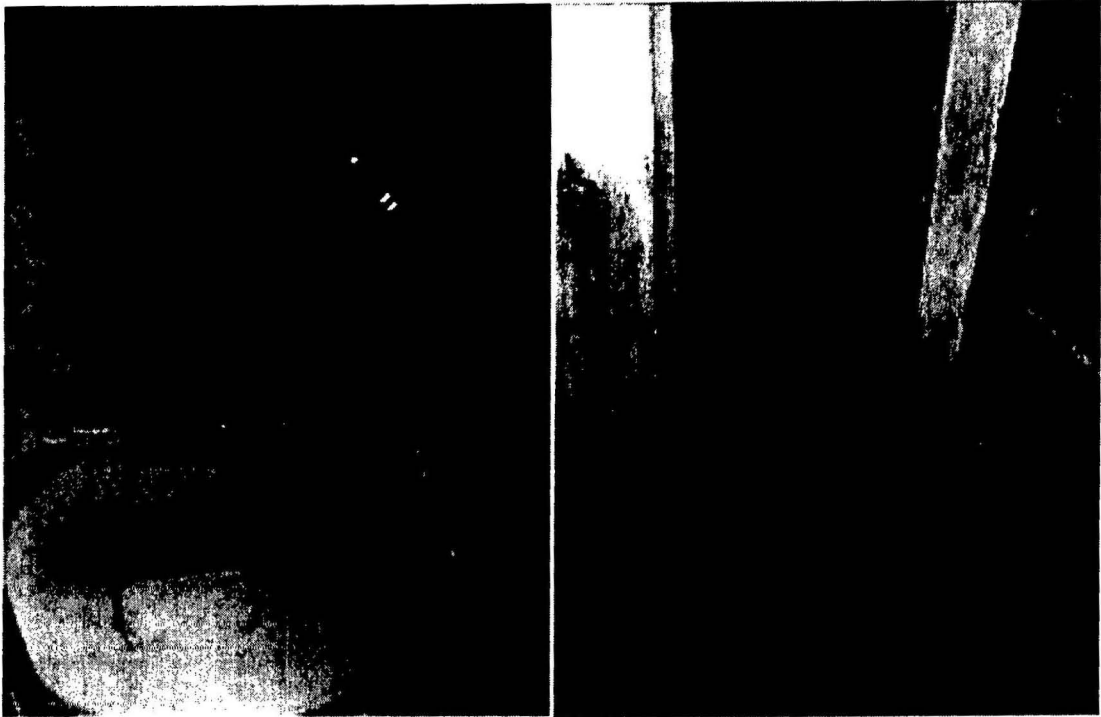
Lovely Das (24) lives in Paikpara village, Patiya with her husband and son. She completed SSC and her husband HSC. Her son (3 years) does not go to school. She said that her husband used to stay abroad and then he had electronic shop in Patiya market. She never went to BRAC meeting. Whatever she has learnt about hygiene messages are mainly from TV, newspaper, reading books and from parents since childhood. She has difficulty in getting adequate water. They have 2 tubewells in their village. They got this tubewell from government 25 years ago. Now enough water does not come out of the tubewell. Also 40-50 households use this tubewell and there is often long queue for fetching water. Many have their own tubewell, but the water quality is not good. So, they collect drinking water only from this tubewell. As this is a government tubewell, so nobody cleans the platform. In addition to the distance of tubewell from her house, it takes about 20 minutes to fill the pitcher with water. So, she uses tubewell water for drinking and cooking. Pond water is used for all other purposes. She knows pond water is not safe, but nothing to do. She wished when she would have her own tubewell, then she could use tubewell water for all purposes.

She has water-seal latrine which is 20 years old. It is not completely clean but she tries to keep it clean as much as possible. She wishes to have a new and better latrine, but due to some family problems, they could not make it possible. When she will get good latrine, then she will practice all hygiene rules.

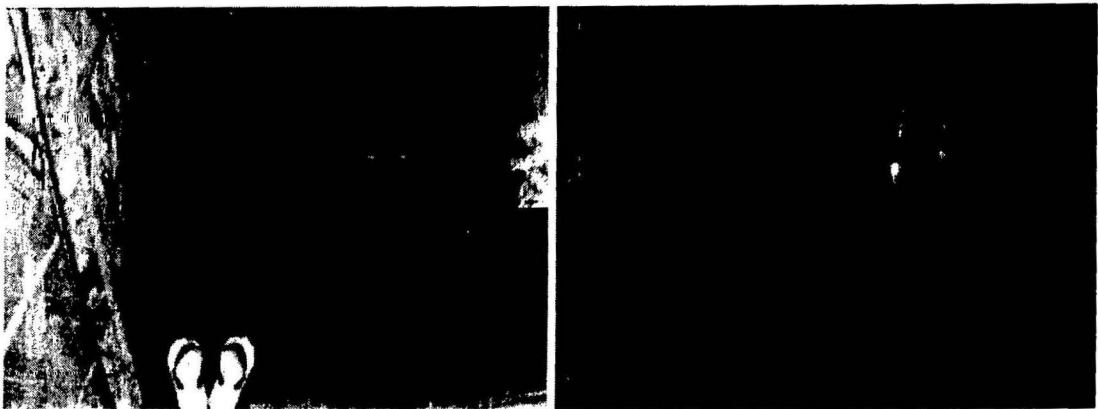
She uses soap for hand washing since childhood. But people were not as conscious as they are now. They did not wash hands with soap during all critical times before. They used soap only after defecation and after cooking. But now they use soap before and after all works. People did not know in the past, that is why they did mistake. Therefore, they used to be sick frequently. But now TV says often about hand washing. People get to learn watching TV. The only problem is that she has to use pond water for hand washing. Washing hands with soap so many times and carrying tubewell water from distant place are difficult. In this case, she would have to be busy whole day carrying water leaving all other work. So, even if it was unsafe she used pond water mainly for hand washing and afterwards, washed hands lightly using tubewell water. When she will get own tubewell, then she will perform everything.

ANNEX 2. HYGIENE PRACTICES OBSERVED IN FIELD

Practices by successful households



Soap, slipper and water stored in or near the latrine



Clean latrine

Covered water and stored in dry and elevated place

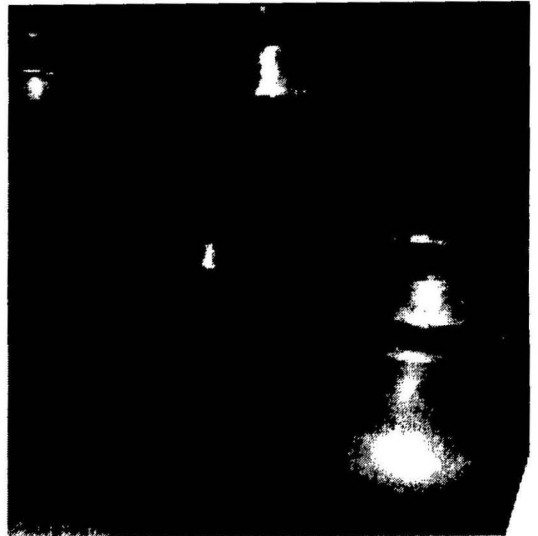


Brick-built and clean platform

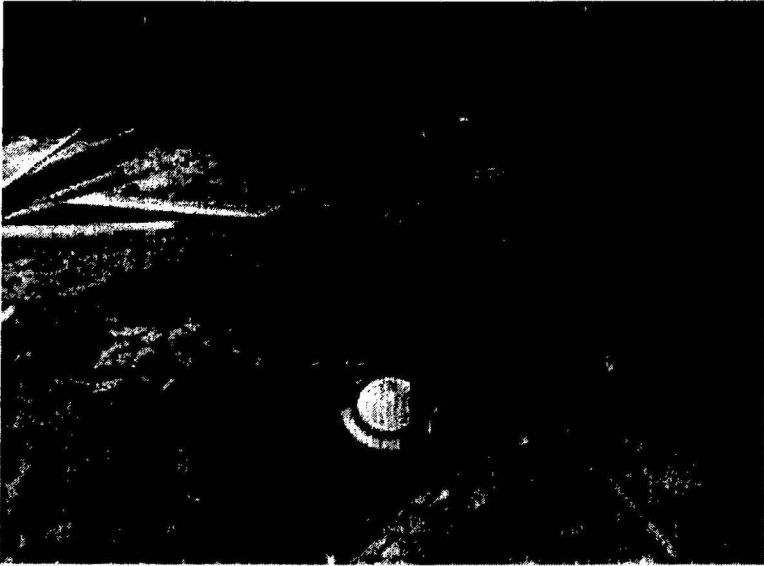
Practices by unsuccessful households



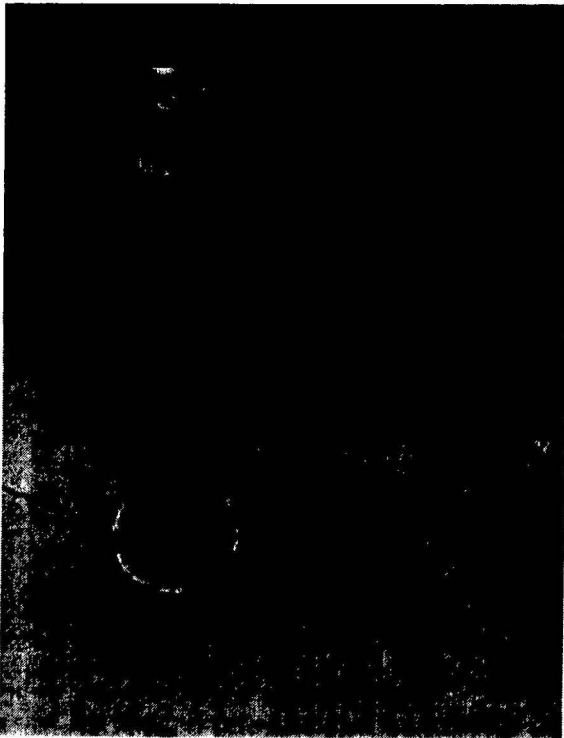
Uncovered water vessel



Covered later



Non-brick-built tubewell



Unclean latrine and no preservation of water