RESEARCH AND LEARNING

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Knowledge, attitude, practice, barrier, and motivation in terms of hand hygiene, sanitation, and menstrual hygiene behaviours among the rural people of Bangladesh

under SHOMOTA project

RESEARCH REPORT // JULY 2020

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Acronyms

BCC	Behaviour change communication
CBO	Community-based organisations
DPO	Disabled persons' organizations
GO	Government organization
IDI	In-depth interview
NGO	Non-governmental organizations
PRA	Participatory rural appraisal
UNICEF	The United Nations Children's Fund
WASH	Water, sanitation and hygiene
WfW	Water for Women
WHO	World Health Organization

Glossary

Ara	Bushy areas or bamboo groves where people go for open defecation in Gaibandha
Bhanga	Cloth used for holding menstrual blood, in Satkhira people refer it as *bhanga*
Char	A tract of land surrounded by ocean, sea, lake, or stream water; usually means any accretion in a river course
Gamcha	Traditional thin, coarse cotton towel
Jinn	Supernatural creature
Kacha latrine	A latrine built without septic tank. According to study participants in Gaibandha and Satkhira if a latrine does not have a septic tank it's a *kacha* latrine
Pagar	A small pond where people dump waste, in Gaibandha people refer it as *pagar*
Pucca latrine	A latrine built with septic tank. According to study participants in Gaibandha and Satkhira if a latrine has a septic tank it's a *pucca* latrine
Mense	Menstruation
Tena	Cloth used for holding menstrual blood, in Gaibandha people refer it as *tena*
Septic tank	An underground tank, in which sewage is collected and allowed to decompose through bacterial activity before draining by means of a soak away. According to study participants, septic tank is an underground chamber where latrine waste goes in

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Executive Summary

BBC Media Action conducted in-depth formative research to gain a nuanced understanding of existing knowledge, practices, attitudes and social norms around WASH and menstrual hygiene practices of women and girls in rural Bangladesh. BBC Media Action is an implementing partner of the SHOMOTA project (The Strengthening Gender Equality and Social Inclusion in WASH in Bangladesh) led by World Vision. The findings of this study aim to support the development of communication materials for community volunteers to use in order to encourage safe WASH and menstrual hygiene practices amongst the communities they serve.

Using communication to shift people's practices requires a sound local understanding of people's perceptions, attitudes, concerns, beliefs, knowledge, practices and the wider environments in which they live, study and work. It also involves understanding exactly why they are not changing their behaviour and what may enable them to do so. The research aimed to identify the barriers and enablers to healthier WASH and nutrition behaviour and how these barriers could be addressed through effective communication materials.

The research looked particularly at hand hygiene; practices around open defecation, access to latrines and waste disposal; and menstrual hygiene in Gaibandha and Satkhira district. Both the male and female community members, persons with disabilities and older people were included to understand the hand hygiene and sanitation practice. Adolescent girls, and parents of the adolescent girls including adolescent girls with disability and their caregivers were interviewed to understand menstrual hygiene management (MHM). Participatory rural appraisal (PRA) tools such as group discussions, in depth and paired depth interviews; transect walk and social mapping exercises were conducted in October 2019.

Key findings

Knowledge

- Participants knew the benefits of handwashing. For example, they talked about how it can help with protection from diseases such as diarrhoea and cholera. But they did not have a comprehensive understanding of all the critical times when hands should be washed (for example they talked about washing hands before eating rice or feeding rice to children, after using latrine and if hands are visibly dirty. But they did not know hands should be washed before preparing food, and after disposing faecal waste). They also lacked an understanding of the best process to wash their hands.

- Participants have a perception of cleanliness. They believe cleaning agent need to be used when hands are visibly dirty, there is unpleasant odour or there is feeling of disgust (after using latrine). Most of them perceive cleaning agent as dirt or odour removing agent, when water was perceived as germ removing agent. Therefore, in absence of dirt, odour or feeling of disgust participants thought hands should be washed with water before eating or feeding rice to children using hand. At other times they don't feel washing their hands.

- Participants defined latrine by saying '*kacha*' and '*pucca*', if a latrine has septic tank it is a '*pucca*' latrine, while latrines without septic tanks are referred as '*kacha*' latrines. Most of the participants had no knowledge about the recommended distance to be maintained between a latrine and tube well. They

didn't know what facilities need to be arranged in a latrine such as water, soap, and light. Also, they had lack of knowledge about faeces disposal and faecal sludge management.

- Persons with disability, older people and their caregivers had no knowledge about disability or older people friendly infrastructure for maintaining hand hygiene and sanitation. They also didn't know how excreta can be managed.

- Participants mentioned various sources of information around handwashing and sanitation. For example, participants mentioned about parents as first source of information regarding hand hygiene and sanitation. School and media were also mentioned as some of the sources.

- Adolescent girls had gaps in their knowledge about recommended menstrual hygiene. Most of the participants didn't know much about menstruation before it happens to them, leaving them feeling vulnerable. Though they had knowledge regarding washing and drying cloths but lack knowledge regarding how frequently to change the cloths or pads; proper way to store and dispose of the used cloths or pads. Menstrual blood is seen as 'impure' and menstruation a 'secret matter' for girls, rather than being a natural biological process

- Key information sources for adolescent girls on menstruation are their grandmothers, mothers, same aged cousins and close female friends. However, as discussed above, it was not common for girls to have this information before menstruation started and some still felt embarrassed to talk about this with their mothers when it did happen.

Practice

- Participants' perception of cleanliness shaped their practice. Participants reported washing them using cleaning agent when there is a visible dirt or odour or feeling of disgust. Otherwise participants are using only water to wash hands before eating or feeding rice to children believing water alone can remove germ. Sometimes they are not washing hands if hands seem clean or there is no unpleasant odour. Moreover, they also do not wash their hands at all critical times and do not wash hands following best technique.

- In Gaibandha, open defecation is a common practice. Whereas in Satkhira, participants generally don't practice open defecation. In both locations, most of the participants use *kacha* latrines. Selecting the location of a latrine depends on its type. People build *kacha* latrines in the back yard at some distance from the house, but *pucca* latrines are built near the house. Most of the time, there is no facility inside the latrine including water access, soap and light. Keeping distance between tube well and latrine depends on knowledge of ground water contamination and availability of space. Participants dispose of the waste according to their feasibility- if space is available people bury the waste otherwise, they throw the waste into water body.

- Persons with disabilities, older people and their caregivers struggled to access effective hand washing and latrine facilities. There is a lack of facilities which would mean that they cannot access handwashing and latrine facilities easily and therefore sometimes have to defecate on other places and did not know how to manage excreta safely.

- Adolescent girls mostly use old cotton cloth to absorb menstrual blood. Through they perceive using sanitary pad is better because they are less likely to leak or get displaced, they find buying pad difficult.

As a result, they ration their use for special situations such as going out of the house. They usually wash their cloth near the tube well using abandoned pot or paint container when no male members of the family are around. They dry and store the cloths in places where people do not go or would not find, which are most of the cases unhygienic places. Girls usually throw cloth or pad backyard or in the waterbody unwrapped.

Barrier

- Participants' perception of cleanliness is the major barrier to follow recommended practice of hand hygiene. Participants are not using cleaning agent if there is no visible dirt or unpleasant odour. Lack of knowledge about critical times and right technique of hand washing, traditional practice of when to wash left hand and when to wash right hand are some other barriers. Rubbing only left hand after defecation than rubbing two hands together due to perception of impurity is another barrier. In cultural context of Bangladesh, right hand is used for eating rice, therefore it shouldn't touch something filthy like faeces. As left hand is used for cleaning post-defecation, rubbing both hands together to wash hands is not acceptable. Also, lack of interest in following recommended steps as participants perceived it time consuming is also a barrier. In Satkhira, water limitations due to inability to afford individual water source is a barrier for handwashing.

- Three levels of barriers were found to ensure sanitation, barriers to - shift from open defecation to use latrines, to build latrine and to use existing latrines.

  In Gaibandha people are habituated to go for open defecation. Many participants living in Gaibandha do not prioritise investing in latrines as they are comfortable defecating openly and prefer to spend money on other things. They feel the cost of building, repairing and cleaning a latrine is too high.

  Lack of money and space are stated as key barriers to building latrines, especially for participants in Gaibandha who live in a cramped situation since they were displaced by flooding.

  There are some barriers using latrines in both locations- broken latrine; lack of lighting inside the latrine; fear of attack, ghosts, snakes and insects while going to the latrine at night situated far from home; slippery and dirty latrine during monsoon season as due to lack of roof rainwater enters the latrine; slippery yard to go to the latrine during monsoon season and inaccessible latrine during natural disaster as latrines become submerged.

  Also, lack of knowledge regarding process of waste disposal in both locations is a barrier to ensure safe faecal waste disposal.

- No knowledge about disability or older people friendly infrastructure and facilities are the major barriers to ensure hand hygiene and sanitation of persons with disabilities and older people. Lack of disability or older people friendly infrastructure in both locations is another major barrier. Financial constraint and lack of interest in buying or arranging disability or older people friendly infrastructure and facilities, unavailability of product in local market are some other barriers.

- Lack of knowledge of adolescent girls and caregivers; perception towards menstruation associated with impurity, shame and secrecy; lack of discussion and lack of information source; and lack of facilities hamper menstrual hygiene behaviour.

Motivation

- People's perception of cleanliness needs to be changed to ensure hand hygiene aside from logistic support. People need to be informed about washing hands using cleaning agent and maintaining recommended process at all critical times. They need to be motivated to spend some time to wash hand due to the health benefits. Also, helping people visualize the advantages of maintaining hand hygiene and consequence of not maintaining hand hygiene with visual tools could be helpful.

- Aside from providing logistic support several factors could prevent open defecation and ensure usage of latrine. Making people aware about the harm of open defecation and benefits associated with using latrine is also important, particularly social prestige and maintaining privacy could play a vital role. Informing people about the economic benefit of having a latrine could also be helpful. People need to understand what is considered as improved latrine, how it can be built and what is the minimum cost. People also need to be informed about considering women's concerns and interests while designing, locating and building latrine and flood proof latrine. Also, people need to be informed about correct process of disposing faecal waste and harm of disposing faecal waste in open space.

- People need to be informed about simple and cost-effective hygiene and latrine facilities for older and persons with disability. Caregivers and head of the households need to be included in intervention programmes. As caregivers are often responsible for ensuring health hygiene and sanitation and heads of the household are the ultimate decision makers of the family and influence how resources are used, they need to be included in the discussion.

- To ensure menstrual hygiene practice, society's perception about menstruation needs to change. Normalizing menstrual hygiene is important among people. Formal education needs to be provided early and extensively; facilities need to be provided to enable safer menstrual hygiene behaviour.

Chapter 1: Introduction

Background

The Strengthening Gender Equality and Social Inclusion in WASH in Bangladesh (SHOMOTA) Project is being implemented by World Vision Bangladesh from July 2018 until June 2022, under the Australian Aid-funded Water for Women (WfW) Fund. The goal of this work is to improve gender and disability inclusive WASH in schools and communities in Satkhira, Jamalpur and Gaibandha districts of Bangladesh.

As an implementing partner, BBC Media Action is supporting World Vision through carrying out formative research, providing training on interpersonal communication and carrying out audience pre-testing of draft communication products.

BBC will provide training on interpersonal communication and mentoring support to project staff and members of Disabled persons' organizations (DPOs) and community-based organisations (CBOs). This will involve developing training tools and conducting the training as well as providing remote and face to face mentoring support. Activity will draw on the insights from formative research, as well as BBC Media Action's well-developed understanding of global level behaviour change communication (BCC) theory and research. BBC will also provide material development support to World Vision by designing and implementing audience pre-testing for draft communication products. This activity will allow communication tools to be tested with a selection of potential beneficiaries, as part of a user-centred, iterative design process.

This report presents the findings of the formative research carried out by BBC Media Action to understand knowledge, attitudes, practice, motivation and barriers in terms of hand hygiene, sanitation and menstrual hygiene behaviours among rural people of Bangladesh. The findings of this study will support the development of communication material for community volunteers to use to encourage safe hand hygiene, sanitation and menstrual hygiene behaviour. The research was conducted with adolescent girls and their parents, persons with disabilities, older people and the wider community people in Gaibandha and Satkhira district.

Research objectives

The research questions this study sought to answer are as:

- To what extent do rural people know about which behaviours can lead to improved hand hygiene, sanitation and menstrual hygiene?
- What is the attitude of rural people towards hand hygiene, sanitation and menstrual hygiene?
- What, if anything, do rural people currently practice in support of hand hygiene, sanitation and menstrual hygiene?
- What influences and inspires behaviours that are connected to hand hygiene, sanitation and menstrual hygiene?
- What are the challenges and barriers that rural people face in accessing information about hand hygiene, sanitation and menstrual hygiene?

Research methodology

Qualitative research methodology was used to gather an in-depth understanding of the perspectives of each target audience group.

- **Sample selection and inclusion criteria**

This study was conducted with:

- Adolescent girls aged 15-17 years
- Mother and father of the adolescent girls
- Persons with physical and intellectual disability and their caregivers
- Older people who are unable to use the latrine without help and / or are suffering from temporary urinary incontinence, when health condition deteriorates.[1]
- Male and female community members

- **Methods for data collection**

A literature review was carried out to understand the gaps and used to contextualise the primary data collected through the study, with the WASH situation in the study areas documented in other research studies.

For primary data collection, participatory rural appraisal (PRA) methods were used which included transect walks, social mapping, group discussions, and in-depth interviews. Although it was not planned, some paired depth interviews were conducted instead of in-depth interviews in Gaibandha to make adolescent girls and the mothers of the adolescent girls to feel more comfortable.

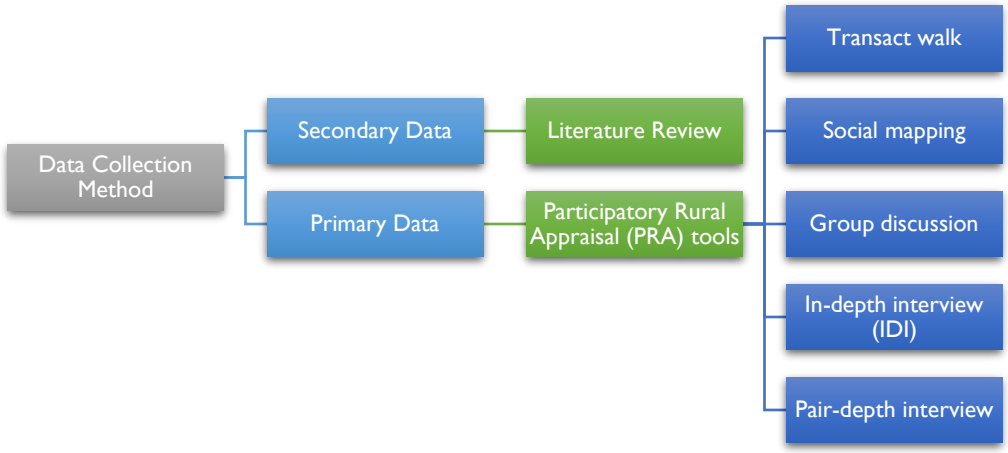


Figure 1: Data collection method

[1] Urinary incontinence is the involuntary leakage of urine. It means a person urinates when they do not want to. Control over the urinary sphincter is either lost or weakened.
https://www.medicalnewstoday.com/articles/165408

A **transect walk** was conducted with the community elders to understand where and how the community lives and existing WASH facilities and challenges. This tool was used to gather the framing and context for the rest of the research. During transect walk researchers also observed local market to check availability of facilities such as bed pan, adult diaper for persons with disability and older people and product for menstrual hygiene.

Social mapping was carried out with the community people for getting better understanding about the community people and for identifying resources and hazards related to hand hygiene and sanitation practice.

Group discussions with community members were conducted in the study locations to discuss existing knowledge, attitudes, practices, challenges and motivation around hand hygiene and sanitation issues within the community. Researchers asked participants to demonstrate hand washing process which was checked by the researchers to compare it with recommended practice.[2]

Pair depth interviews were conducted with persons with disabilities and older people and their caregivers to understand existing knowledge, attitudes, practices, challenges and motivation around hand hygiene and sanitation issues.

In-depth interviews were conducted with adolescent girls, and with the mother and father of adolescent girls to understand existing knowledge, attitudes, practices, challenges and motivation around menstrual hygiene issues. Some paired depth interviews were conducted in Gaibandha with adolescent girls, mothers of adolescent girls, adolescent girl and mother.

Table 1: Focus area for different target groups

Target group	Theme		
	Hand hygiene	Sanitation	Menstrual Hygiene Behaviour
Adolescent girls	✗	✗	✓
Parents of adolescent girls	✗	✗	✓
Persons with disability	✓	✓	✓
Older people	✓	✓	✗
Community people	✓	✓	✗

In order triangulate data, more group discussions, and IDIs and informal discussion were carried out during the fieldwork.

Table 2: Participant matrix of group discussions and in-depth interviews

Data collection tool	Participant	Location		
		Gaibandha	Satkhira	Total number of participants
Group discussion	Community members	7 (3 male groups, 3 female groups and 1 mixed group. In each	4 (2 male groups, 2 female group. In each	11 (approximately 165 people)

[2] At design level researchers planned to observe hand washing practice of the participants in their day to life, but later that plan was changed. Participants were told to demonstrate how they wash hands.

		discussion at least 15 people were present)	group at least 15 people were present)	
Paired depth interview (PDI)	Adolescent girl	1	-	2
	Mother of adolescent girls	1	-	2
	Adolescent girl and mother	1	-	2
In-depth interview (IDI)	Adolescent girl	2	5	7
	Parents of adolescent girls	2 (1 male and 1 female)	3 (1 male, 2 females)	5
	Persons with disabilities	3 (1 male and 2 females)	2 (1 male, 1 female)	5
	Older people	2 (1 male, 1 female)	2 (1 male, 1 female)	4
Total number of participants				192 (approximately

- **Study location**

This study was conducted in two intervention districts: Gaibandha and Satkhira for getting diversified viewed. The reasons of selecting these districts were:

- From *'SHOMOTA: Strengthening Gender Equality and Social Inclusion in WASH in Bangladesh'* report situation of Satkhira and Jamalpur were known. But information about Gaibandha was not found as the study was not include it. Hence, for getting to understand about the existing situation, Gaibandha was selected as study location.

- The geographical location and characteristics of Gaibandha and Satkhira are different. Gaibandha is located at northern part and Satkhira is located at southern part of Bangladesh. Gaibandha is *Char* area. On the other hand, Satkhira is coastal area.

- The nature of natural disasters is different in these two locations as well. Gaibandha is mostly affected by flood and flesh flood whereas Satkhira is affected by cyclone.

Strengths and limitations of the study

Strengths of the study

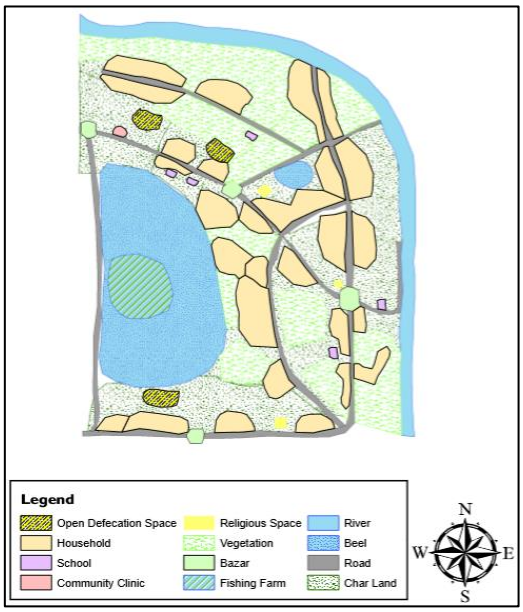
- ✓ This study helped to explore perceptions of different target groups, including persons with disabilities.
- ✓ As different types of research tools were applied in the study, and secondary data was used, the team was able to triangulate and contextualise different perspectives from different levels of the community to get a holistic picture.

Limitations of the study

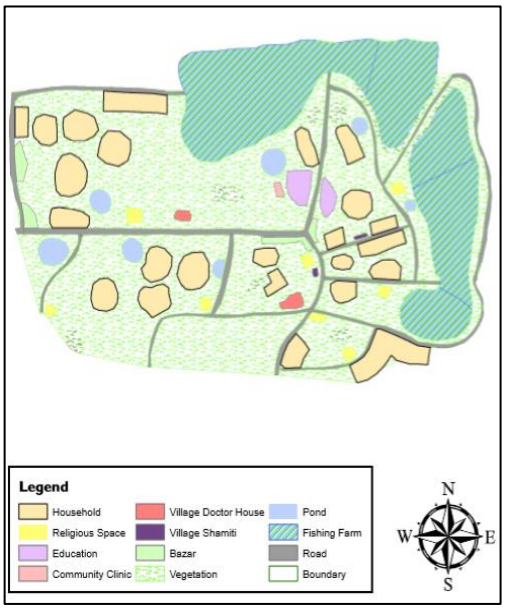
- ✓ Due to time and resource constraints, this study covered could not covered the three intervention districts.
- ✓ As it was a qualitative study, no quantitative survey data was collected, findings cannot be presented as nationally representative.
- ✓ As part of data collection, hand hygiene practices of community people were not observed because of time constraint and the study had to depend on the reported practice of the people.
- ✓ This study only included people with physical disability who face difficulty to walk and caregivers of person with mental disability. But study did not include persons with other types of disability.
- ✓ This study did not cover schools in terms of understanding menstrual hygiene management. Therefore, facilities in school in terms of understanding menstrual hygiene was not covered. Also, knowledge, attitude and practice of schoolteachers was not covered.

Background of the study locations

According to study participants, most of the community people in the study locations were involved in agricultural work. In Satkhira involvement in shrimp farming alongside was common as well. Internal migration to urban areas was common in study locations: people from Gaibandha migrated to work in factories and people from Satkhira migrated to work in brick fields. Both areas were disaster prone: flash floods in Gaibandha, and water logging in Satkhira occurred frequently. The level of NGO intervention focusing on WASH was low in Gaibandha, but high in Satkhira, where it was mostly focused on logistic support for ensuring handwashing and sanitation, but their BCC interventions were not enough.



Map 1: Baguria village, Gidari union, Gaibandha Sadar, Gaibandha



Map 2: Agardari village, Kullah union, Assasuni upazilla, Satkhira

Chapter 2: Research Findings

Section 1: Hand Hygiene

A study shows that around 59 per cent of people in Bangladesh practice handwashing with soap and water at critical times.[3] Previous studies carried out on handwashing in rural Bangladesh found people believe it is important to wash their hands before eating or before feeding a child by hand to prevent diarrhoea. However, studies have found people do not systematically use soap: they believe water is a potent purifying agent[4], and they would only use soap to remove visible dirt or faeces[5], or to remove unpleasant faecal odour. Accordingly, hands which have been rinsed with water alone and which show no visible contamination are considered clean[6]. Sometimes people wipe their hands on the ground or use soil rather than washing[7]. Aside from the belief that water is enough, other barriers to hand washing with soap were found to include: the absence of hand washing facilities, giving not importance to hand washing in all critical times[8]; perceptions of frequent content with water as a health threat[9]; inability to afford soap; and the cultural norm of using the right hand for eating and the left hand for cleaning post defecation[10].

This section details participants' knowledge, attitude, practice, barrier and motivation regarding hands hygiene.

Research Findings

Participants had lack of knowledge regarding when and how hands need to be washed, means they are not washing hands at all critical times and not following recommended process of hand hygiene

Study participants knew that by washing their hands, they will be able to protect themselves from different diseases like diarrhoea and cholera. They also mentioned about getting rid of odour as another benefit.

"We wash our hands because many germs remain hidden into the hand and if we do not wash hands properly it will affect our stomach." -Male, Gaibandha

[3] Bangladesh Bureau of Statistics and United Nations Children's Fund (2015) *Multiple Indicator Cluster Survey 2012-2013* (pp vi). Bangladesh: Bangladesh Bureau of Statistics and United Nations Children's Fund [Online]. Available from: https://www.unicef.org/bangladesh/sites/unicef.org.bangladesh/files/2018-08/MICS_Final_27-04-2016_Low.pdf
[4] Halder et al. (2010) Observed hand cleanliness and other measures of handwashing behavior in rural Bangladesh (pp 8), *BMC Public Health,* 10:545.
[5] Parveen et al. (2018) Barriers to and motivators of handwashing behavior among mothers of neonates in rural Bangladesh (pp 5), *BMC Public Health*, 18:483.
[6] Halder et al. (2010) Observed hand cleanliness and other measures of handwashing behavior in rural Bangladesh (pp 8), *BMC Public Health,* 10:545.
[7] Hoque B. A. (2003) Handwashing practices and challenges in Bangladesh (pp S83), *International Journal of Environmental Health Research,* 13.
[8] Max Foundation (2016) *Situation Analysis and Needs Assessment for MaxWASH II Programme (Child Nutrition and SRHR sensitive) in the Southwestern Coastal Blue Gold Polders in Bangladesh* (pp 5), Bangladesh: Max Foundation.
[9] Parveen et al. (2018) Barriers to and motivators of handwashing behavior among mothers of neonates in rural Bangladesh (pp 11), *BMC Public Health*, 18:483.
[10] Hoque B. A. (2003) Handwashing practices and challenges in Bangladesh (pp S81-S82), *International Journal of Environmental Health Research,* 13.

However, study participants in both locations had lack of knowledge about critical times of hand washing. According to UNICEF[11], people need to wash their hands at five critical times: before preparing or serving meals; before eating meals; before feeding children; after using the latrine; and after disposal of faeces, including children's. But due to lack of knowledge, study participants don't wash their hands at all the critical times. They wash their hands before eating rice or feeding rice to children using hand, after using latrine and when dirt is visible on the hands or generating an unpleasant odour. They do not wash their hands before or after eating any other type of food other than rice for example dry food and fruits, before cutting or preparing food and after disposing faeces.

This study also found that the participants lack knowledge about effective hand washing i.e. how hands should be rubbed and how long hands should be washed. Recommended process of washing hands[12] according to WHO are following

Duration of the entire procedure: 40-60 seconds

- Wet hands with water;
- Apply enough soap to cover all hand surfaces;
- Rub hands palm to palm;
- Right palm over left dorsum with interlaced fingers and vice versa;
- Palm to palm with fingers interlaced;
- Backs of fingers to opposing palms with fingers interlocked;
- Rotational rubbing of left thumb clasped in right palm and vice versa;
- Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;
- Rinse hands with water;
- Dry hands thoroughly with a single use towel;
- Use towel to turn off faucet;
- Your hands are now safe.

After comparing study participants knowledge of hand washing process with recommended process, it was found that they lack knowledge about how to rub hands and how long they should wash hands. Both in Gaibandha and Satkhira, study participants do not follow recommended process of washing hands.

Participants had knowledge about different alternatives of cleaning agents such as soap, detergent, ash and soil. But they did not know that they need to use cleaning agent to wash hands at all critical times. In both study locations if there is no visible dirt on hand or if there no unpleasant odour participants do not use any cleaning agents to wash hands.

Regarding drying hands, participants knew how hands should be dried. They said that one should use *gamcha* (type of traditional towel) to dry their hand. And this *gamcha* should be washed with soap or detergent powder. However, participants tend to dry their hands on the clothes they are wearing for example women dry their hands using their sharee, scarf and men dry their hands using the *gamcha* they carry on their shoulder.

[11] UNICEF [Online]. Available from: https://www.unicef.org/uganda/key-practice-hand-washing-soap-and-water
[12] World Health Organization (2009) [Online]. Available from: https://www.who.int/gpsc/5may/Hand_Hygiene_Why_How_and_When_Brochure.pdf

Perception of cleanliness influence on hand hygiene practice. Cleaning agents are perceived as dirt or odour removing agent whereas water is perceived as germ removing agent

Across the study areas, participants felt they need to use cleaning agent when they find their hands are visibly dirty and there is unpleasant odour as for example after eating oily food, mud plastering, touching cow dung and cutting fish, participants use cleaning agents and rub two hands together to wash their hands because there is visible dirt or odour. In both study areas cleaning agents are also used after coming from latrine as they feel disgust because they think they have touched something filthy. But, in this case they do not rub their both hands together because of their perception of impurity. In cultural context of Bangladesh, right hand is used for eating rice, therefore it shouldn't touch something filthy like faeces. As left hand is used for cleaning post-defecation, rubbing both hands together to wash hands is not acceptable.

"If I see dirt on my hand then I need to use soap to wash my hands." -Female, Gaibandha

Participants in Gaibandha and Satkhira think that using only water is enough if there is no visible dirt or unpleasant odour and they also believe by using water germs will be removed from hands. Usually, they wash their right hand with water before eating rice or feeding children rice by mixing with curry using their hand.

No dirt, odour, feeling of disgust or need to remove germ means no washing hands

However, participants do not feel the importance of washing their hands neither with cleaning agent nor only with water, when there is no visible dirt, unpleasant odour, feeling of disgust or they are not using their whole hands to eat something such as before eating or feeding children dry food or fruits.

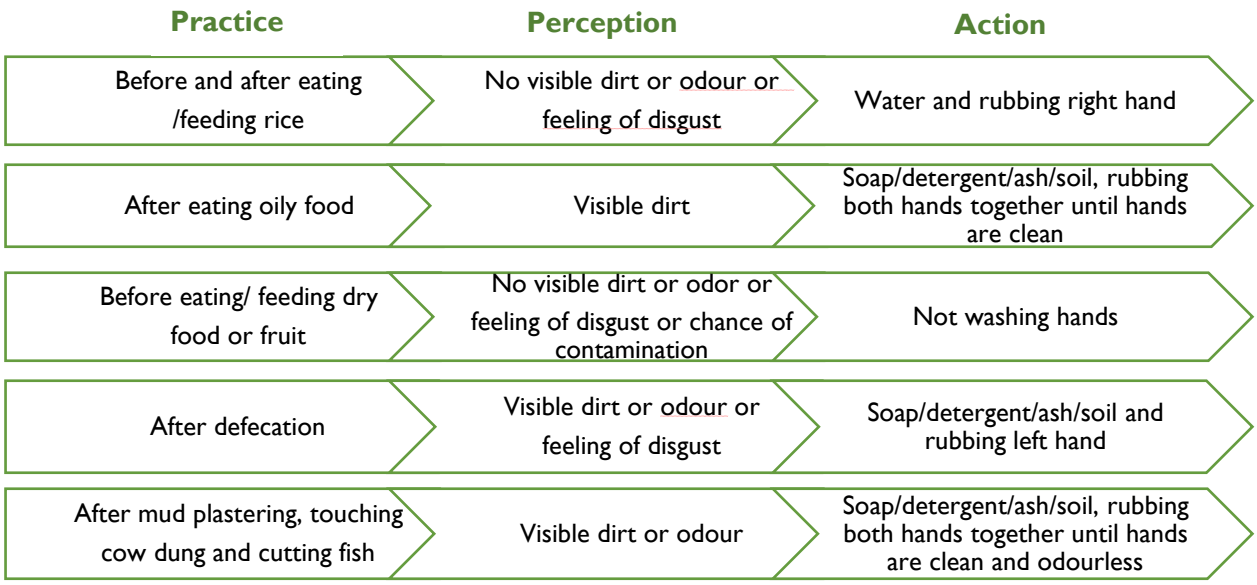


Figure 2: How perceptions of cleanliness influence practice

Participants do not usually have separate arrangement to wash their hands

Participants do not have any separate place or corner at their home for washing hands. They wash their hands next to the tube well, beside the house or in the corner of the yard.

Usually, they do not buy any soap for hand washing purpose. When the shower soap gets small, they start using it for hand washing. Some mentioned that they use the same soap to bathe and wash their hands. In both locations, participants said they do not face difficulties for buying soap because of the low cost and availability of shop in the village shop and local market.

Home was the first place for learning about washing hands, but school and media also played a role

In both study locations, participants' learning about handwash started from their parents, like- washing right hand before eating, washing left hand after defecation. They also learnt from teachers at school during their childhood about when and how hands should be washed and the benefit of washing hands. Advertisements were stated as another source of information, particularly those with celebrities in which people remembered, and some mentioned the Meena animated film series[13] from where they have known about hand hygiene. Some said the village doctor informed them about hand hygiene. At the mosque Imam informed men about hygiene issues and its importance in Islam which also includes washing hands. Few said in Satkhira that, they learnt about hand washing from training and seminars conducted by different NGOs.

During natural disaster hand hygiene is not a matter of concern

Participants of both study locations explained that during a natural disaster, they are more concerned about saving their lives, collecting food and drinking water, rather than thinking about maintaining hand hygiene. Though participants of Satkhira didn't face any severe natural disaster in recent times, but they recalled their experience during cyclone happened few years back. But as participants of Gaibandha often face flood, they mentioned about their experience during those times. In Gaibandha, during flood water sources often become damaged and submerged, leading to scarcity of water. Shops often become flooded, making buying soap impossible, so they can't maintain hand hygiene in the same way during a natural disaster.

Barriers and motivations of hand hygiene

Perception of cleanliness is the major barriers to follow recommended practice of hand hygiene

Participants generally do not wash their hands when it seems clean or there is no odour or there is no feeling of disgust. Lack of knowledge regarding critical times of washing hands and process of washing hands is another major barrier. There are some other issues work as barriers-

- Traditional practice of when to wash only right hand and when to wash only left hand.
- Perception of impurity works as a barrier. After defecation participants don't rub two hands together to wash hands, they only clean left hand because left hand is used for cleaning post-defecation.

[13] UNICEF [Online]. Available from: https://www.unicef.org/bangladesh/en/meena-and-unicef

- Participants expressed their lack of interest in following the steps as to them it seemed time consuming after seeing the steps of washing hands showed by the researchers. They mentioned, they have lots of work to do and spending so much time to wash hands is not practical.
- Due to financial inability participants in Satkhira are not able to manage their own source of water. They collect water from ponds or another people's tube well and keep it in bucket. They use that water for all the household activity. So, they ration to use that limited amount of water.

To ensure hand hygiene logistical support does not suffice: people's perception of cleanliness needs to be changed

People need to be informed about washing hands using cleaning agent and maintaining recommended process at all critical times. They need to know about existence of germs even when their hands seem clean or there is no unpleasant odour. They also need to know water alone is not enough to remove germ. They need to be motivated to maintain hand hygiene by spending some time to avoid germ or diseases. Helping people visualize the advantages of good hand hygiene and the dangers of poor hand hygiene using visual aids like flash card or video could be helpful. Also, community people need to be informed about how they could access to cleaning agent or what could be alternative of cleaning agent during flood.

Section 2: Sanitation

In 2015, open defecation has reduced from 34 percent to just one percent of the national population[14]. A national focus on sanitation carried out by the Government of Bangladesh at all levels likely helped to shift social norms around open defecation and sustain latrine use at large scale[15]. Access to local, private sector providers of sanitation goods and services helped enable increased latrine to use at scale.

Social norms around open defecation and latrine use have positively changed, which likely was a result from sanitation and hygiene promotion, including a pervasive behaviour change communication campaign directed toward households. Formerly, latrine use had been the norm mostly among upper-income groups: now it is a socially accepted practice at all levels of society, including the poorest wealth quintile. In many places those who continue to practice open defecation are socially criticized. Marriage arrangements, village respectability, and village purity for religious events are widely assumed to require use of "hygienic/health-enhancing" latrines.[16]

Studies have found that disease prevention, elimination of bad smells, and environmental improvement were identified as the principal benefits of being free from open defecation. Social honour and dignity, peace and prestige were also identified as popular benefits.[17]

However, the quality of sanitation coverage is an emerging area of concern, with more than 40 percent of all latrines in 2016 classified as "unimproved."[18] Unimproved sanitation facilities are those that do not hygienically separate human excreta from human.[19] Six to eight percent households in Satkhira and Patuakhali don't have their own latrine and they either use their neighbour's latrine or defecate in open places. Lack of affordability and having other priorities are the main reasons stated for not having an improved latrine. Community toilets are not often constructed in consideration of the needs of persons with disability. Poor and disadvantaged groups still need special support i.e. financial assistance, soft loan or grants for availing of improved WASH facilities.[20]

Apart from using special pots (often spittoons) as bedpans, no technological innovations were found to support latrine use by the persons with disability or very elderly people. The most common arrangements seem to be either escorting them to a defecation place or allowing them to defecate in a courtyard or on a polythene sheet near the bed, and a household member cleaning up the faeces later, in much the same manner that very young children's faeces are managed.[21]

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[14] The World Bank (2016) [online]. Available from: https://www.worldbank.org/en/results/2016/10/07/bangladesh-improving-water-supply-and-sanitation

[15] Islam, Rafique (2016) *Open defecation ends in Bangladesh – almost* [Online]. Available from: https://www.thethirdpole.net/en/2016/03/03/open-defecation-ends-in-bangladesh-almost/

[16] Dr. Hanchett, Suzanne., Dr. Krieger, Laurie., Kahn, Mohidul Hoque., Kullmann, Craig. and Ahmed, Rokeya. (2011) *Long Term Sustainability of Improved Sanitation in Rural Bangladesh (*pp 77-78). Bangladesh: World Bank.

[17] Dr. Hanchett, Suzanne., Dr. Krieger, Laurie., Kahn, Mohidul Hoque., Kullmann, Craig. and Ahmed, Rokeya. (2011) *Long Term Sustainability of Improved Sanitation in Rural Bangladesh* (pp 43). Bangladesh: World Bank.

[18] The World Bank (2016) [online]. Available from: https://www.worldbank.org/en/results/2016/10/07/bangladesh-improving-water-supply-and-sanitation

[19] World Health Organization [Online]. Available from: https://www.who.int/water_sanitation_health/monitoring/jmp2012/key_terms/en/

[20] Max Foundation (2016) *Situation Analysis and Needs Assessment for MaxWASH II Programme (Child Nutrition and SRHR sensitive) in the Southwestern Coastal Blue Gold Polders in Bangladesh* (pp 5-8), Bangladesh: Max Foundation.

[21] Dr. Hanchett, Suzanne. Dr. Krieger, Laurie. Kahn, Mohidul Hoque. Kullmann, Craig. and Ahmed, Rokeya. (2011) *Long Term Sustainability of Improved Sanitation in Rural Bangladesh* (pp 34). Bangladesh: World Bank.

This section details participants' knowledge, attitude, practice regarding open defecation, latrine usage and waste disposal. Also, barrier and motivation regarding latrine usage and waste disposal.

Research findings

In Gaibandha and Satkhira, participants defined latrine by saying '*kacha*' and '*pucca*'. According to participants, if a latrine has septic tank it is a '*pucca*' latrine, while latrines without septic tanks are referred to as '*kacha*' latrines. They mentioned as '*pacca'* latrines have septic tank, faecal waste goes in the tank. As a result, '*pacca'* latrine doesn't spread odour and it doesn't overflow. Whereas in '*kacha'* latrine faecal waste remains in the rings underneath the slab. According to participants having '*pacca'* latrine has some other benefits as well- bringing prestige in the society. Because *'pacca'* latrine is perceived as a good quality latrine in both study location.

Open defecation is a common practice in Gaibandha, but this is not the case in Satkhira

In Gaibandha, men, women and children go to bushy areas or bamboo groves (*Ara*) or empty lands for open defecation. Men practise open defecation more often than women, as women are more concerned with maintaining privacy and ensuring safety from harassment and assault.

Picture 1: Open defecation place in the study are of Gaibandha

Habit is the main reason behind practicing open defecation as it has been practiced for generations. As they count open defecation as an option, despite having a latrine at home whether *pacca* or *kacha*, they go for open defecation for the following reasons-

- When they are worried about filled up latrine, because cleaner needs to be hired to clean which costs money. To not let it fill up fast, they defecate in open spaces.
- When latrine filled up with waste, and they wait for it to be cleaned up they defecate in open space during that time.
- When latrine is occupied by someone - especially when a female family member goes to the latrine, male family members go to open space.
- Poor condition of latrine due to breakage and blockage.
- A few male participants said they feel comfortable to do open defecation because air passes.

Also, due to financial constraint some people in the study location of Gaibandha cannot afford building latrine and go for open defecation. Lack of space to build latrine also push people to go for open

defecation, especially for the people who live in a cramped situation beside the river since they are displaced by flooding of *char* land.

As frequent flood is a common problem in Gaibandha, sometimes latrines become damaged and remain unrepair for a time being and people go for open defecation.

During flood time, when open defecation places are also become flooded, participants explained that men make rafts with banana trees. Each person would take turns to travel to an empty, private space to defecate. Women create a place on high land with bamboo/ cloths/ plastic/ quilt/ tarpaulin to create some privacy.

But in Satkhira, participants use latrine all the time. In an emergency adult man practice open defecation, for example when they work in the fields.

In both locations, most of the participants use *kacha* latrine. Improved[22] and unimproved both latrines are counted as *kacha* latrine if septic tank is absent

Material use to build the latrine is dependent on affordability. Banana leaf, cloths, plastic sheet, tin, bamboo, sack, cement bag, brick are used to build cover or wall. Participants use 2-8 concrete rings and put slab on top. Not everyone put a roof on their latrine, and some put a roof on made of polythene or tin. Some of the latrines are connected to pond with a pipe by which faecal waste goes into the water. This type of ponds is used for dumping waste (in Gaibandha people refer it as *pagar*). Water of the ponds are not used for any activity. *Pucca* latrines are built with slabs and a septic tank and had walls build with brick or tin and roof built with tin.

Basically, if a latrine doesn't have septic tank, whether it is improved or unimproved, the latrine counted as *kacha* latrine in both study location.

Picture 2: *Kacha* latrine (according to participants)

Picture 3: *Pucca* latrine (according to participants)

[22] [22] JMP (World Health Organization and UNICEF) [Online]. Available from: https://washdata.org/monitoring/sanitation

In Gaibandha, participants said they usually build their own latrine with or without the help of labourers, by saving money or taking a loan. In Satkhira, some latrines or material for latrines are provided by the government or by NGOs. Rest of the latrines are built by participants with or without help of labour by saving money or taking loan.

No knowledge about the recommended distance (Installing pit latrines or ring slab latrines 30 feet from shallow hand tube well) [23] to be maintained between a latrine and tube well and lack of space often cause building latrine and tube well close to each other

Some participants mentioned that building a latrine at some distance from the tube wells is necessary to avoid groundwater contamination but most of the participants didn't know about it. Depending on the difference of knowledge some participants prefer to build their latrine close to the tube well so that bringing water will be easier, while some prefer to maintain space. However, keeping distance between tube well and latrine depend on availability of space. Lack of space sometimes mean they have to build the tube well and latrine close together.

Selecting the location of a latrine depend on its type

Selection of location for building latrine depends on its type. If a latrine is *kacha*, people consider two issues- avoiding odour and making it not visible from outside. Most of the participants knew that *kacha* latrine should be built at some distance from the home so no odour can be smelt, and to prevent flies spreading germs and causing diseases. They also avoid south side to build latrine as air flows from south side. To make the latrine not visible from outside, they build *kacha* latrine in the backyard. To make the latrine unseen and avoid odour participants select a place to build *kacha* latrine which is the most neglected place of the household area. They also stated that if a latrine is *pucca* it can be built closer to the house as it doesn't spread odour and owning *pacca* latrine means increased prestige in the society. Therefore, *pacca* latrine can be built near the house and can be visible from outside.

"It is better if the latrine is made far from the home otherwise flies would contaminate foods which could cause diarrhoea among the children." -Female, Satkhira

Before building a latrine, participants don't consider keeping facility inside the latrine and making latrine accessible during disaster and by persons with disability and older people

Inside *kacha* latrines, participants do not keep water faucet or water in container. Financial inability works behind not keeping water faucet and lack of space works behind not arranging water inside the latrine. Most of the times participants don't keep water in *pucca* latrine as well due to the causes. They bring water to use in latrines from the tube-wells placed outside the latrines. In Satkhira, participants also bring water from ponds as some of them don't own tube well.

Before building latrine, participants don't consider keeping light inside *kacha* and *pacca* latrine. Having an electric connection in the latrine is difficult as latrines are usually built far from the house and arranging a light inside the latrine is challenging due to the poor structure of the latrine. It will also make it more expensive.

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[23] Installing pit latrines or ring slab latrines 30 feet from shallow hand tube well
Parker, Alison. And Carlier, Ingrid (2009) *National regulations on the safe distance between latrines and waterpoints*. UK: Dew Point [Online]. Available from: https://assets.publishing.service.gov.uk/media/57a08b3c40f0b652dd000ba6/DEWPoint_A0304_Nov2009_National_regulations_safe_distance_latrines.pdf

Participants usually don't keep any cleaning materials inside the *kacha* and *pacca* latrine most of the time. They keep soap, detergent powder, ash, soil outside latrine or near the tube-wells to use to wash their hands.

Also, they don't consider building a latrine that could endure flooding (considering different structure of latrine to protect latrine from flood)[24] and a latrine which is easy to use for persons with disability and older people (see section 3).

Picture 4: Inside of a *kacha* latrine

Picture 5: Inside of a *pucca* latrine

Participants in both locations had knowledge about cleaning latrine and try to maintain cleanliness

Participants knew that latrine surfaces must be cleaned to remove odour and germs. Some prefer cleaning latrine with brush or broom and water. Some of them prefer using detergent powder or mixing ash with detergent powder to clean latrine. Frequency of washing varied, depending on when they find it dirty. It can be between every three to seven days. In Gaibandha, participants said that during harvesting season it becomes difficult to maintain cleanliness of latrine as they become very busy.

Participants mentioned multiple sources to get information about sanitation

In both locations, parents and school were mentioned as the primary sources of information for participants about the benefits of using latrines. In Gaibandha, participants said that NGO officials only discussed the consequences of defecating at open spaces with those who take microcredit. In Satkhira, participants who are members of village association sometimes learnt about sanitation (e.g. cleaning latrines and putting soap in latrines for hand washing) at the meeting. Advertisements and doctors were other sources of information mentioned by participants.

Participants from Gaibandha are more reluctant to repair their latrines compared with participants from Satkhira

In both locations, participants save money or take loan to repair their latrine if latrine's wall or slab get damaged. However, participants from Gaibandha are reluctant to repair latrine because they have lack of interest in investing in latrine. Prioritizing investing money elsewhere and counting open defecation as an option are reasons behind their reluctancy. But participants from Satkhira take initiative soon after they find out their latrine needs to be repaired.

[24] UNEP-DHI Centre on Water and Environment [Online]. Available from: https://www.ctc-n.org/files/resources/flood_proof_sanitary_latrines.pdf.

Participants have no idea about faeces disposal and faecal sludge management. They dispose of the waste according to their feasibility

Some participants knew about harm of disposing faecal waste in water body like flies and mosquitos could feed on the waste and later, contaminate their food. But they did not know about safe disposal of faeces or safe way to manage latrine waste.

Participants mentioned two main ways of waste disposal- burying the waste or throwing the waste into open space or water body.

To dispose of latrine waste once it is full, participants from both locations hire a cleaner who dig a hole next to latrine, put the waste in it and cover with soil. If there is no space, they dig hole in the cultivable land, put the waste in it and cover with soil. When children defecate in open spaces, waste is dig up using a spade and burry in a hole or dispose in the latrine. Some latrines are connected to the small pond through a pipe where the waste get disposed.

In Gaibandha, some septic tanks were built in the pond and a hole was formed in the tank so waste could mix with pond water. In that way, they do not need to worry about the tank filling up and cleaning it. In both locations, when no space is available faeces is thrown into the pond where people dump their waste. The participants who live near the river dispose of their waste in the river as well.

Women are responsible for cleaning and maintaining latrines but are missing from ultimate decision making

In both locations, women preferred using latrines more than men because it provides privacy, ensure safety from harassment or assault and ghost or *jinn*[25] and all the discomfort associate with open defecation, for example getting up in the middle of defecating when someone arrives. Despite women being greater users of latrines, male family members usually take decisions about whether a latrine should be built or not as they control the financial matters.

Although women are involved in discussions about the location of the latrines, often the location selected is not easily accessible for women, as they are usually built far from home to prevent odours reaching the house. This means women find it difficult to go to the latrine at night. Women are not considering their own need while selecting the location but about preventing odour.

The female family members informed if any reparation is needed, but male family members make decisions on when the repairs will be conducted.

"Can we only listen to women and solely depend upon them to make decisions? I need to do it." -Male, Gaibandha

When NGOs provided latrines in Satkhira they conducted discussions with male community members, but women were absent.

[25] Supernatural creature

Barriers and motivations of hand hygiene

Three levels of barriers were found, barriers to - shift from open defecation to use latrines, to build latrine and to use existing latrines

Many participants living in Gaibandha do not prioritise investing in latrines as they are comfortable defecating openly and prefer to spend money on other things. Also, they feel the cost of building, repairing and cleaning a latrine is too high.

Lack of money and space are stated as key barriers to building latrines, especially for participants in Gaibandha who live in a cramped situation since they were displaced by flooding.

There are some barriers using latrines in both locations- broken latrine; lack of lighting inside the latrine; fear of attack, ghosts, snakes and insects while going to the latrine at night situated far from home; slippery and dirty latrine during monsoon season as due to lack of roof rainwater enters the latrine; slippery yard to go to the latrine during monsoon season and inaccessible latrine during natural disaster as latrines become submerged.

Lack of knowledge works as barrier to safe waste disposal

Participants in both locations had lack of knowledge regarding process of waste disposal, as a result people in both locations often dispose waste in open space or water body. Lack of knowledge is a barrier to ensure safe faecal waste disposal.

Different factors motivated participants in both locations to shift from open defecation to use latrine

All the participants in Satkhira said that all the people from there locality have shifted from open defecation to using latrine. Participants from Gaibandha said that open defecation reduced in their community over time. In both locations, participants mentioned about some factors that worked behind that shift, such as-

- Increase awareness due to increase literacy. Participants came to know from academic education about benefits of using latrine.
- Improve financial condition to build latrines.
- Shrinking open spaces due to increased density of population, therefore finding a place to defecate openly and in privacy becoming a challenge.
- Pressure from children who are learning about necessity of using latrines in school.
- Having a good latrine increase prestige in society, which motivate participants to build latrines. Without having good latrine people struggle to marry off their children, people check whether potential bride or groom's house has proper latrine.

  "Once a marriage broke between a girl and a boy after seeing a dirty condition (of the latrine)." -Female, Gaibandha

- To avoid safety and security issues defecating openly at night.
- Exposure to latrines while working in other locations is another factor. People in both locations migrate to urban areas to work, where they get exposed to latrines which make them motivated to build latrine at their home.

In Satkhira, the government and NGO intervention started around a decade ago, worked as a major motivational factor. Logistical support such as building latrines, giving material and money encouraged participants to build latrines and made using them normal in the community.

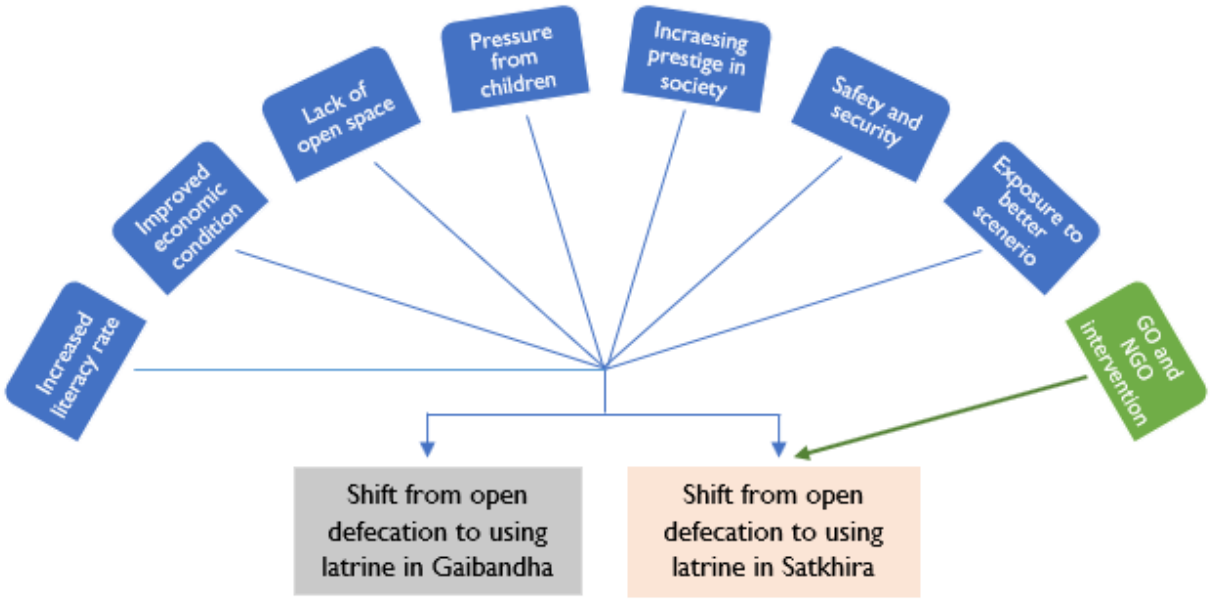

Figure 3: Motivators to shift from open defecation to use latrine

To prevent open defecation in Gaibandha, several factors can act as motivators, aside from providing logistic support

People need to be informed about the harm of open defecation and benefits associated with using latrine is also important, particularly maintaining privacy. Making people aware about the association between using latrine and social prestige could play a vital role to motivate people to use latrine.

Informing people about the economic benefit of having a latrine (i.e. less likely to get sick therefore avoiding doctors' fees) also could play an important role in motivating people to use latrines.

To ensure accessible latrine for everyone people in both locations need to get information to upgrade their latrine

As people are not familiar with improved latrine, they need to understand what is considered as improved latrine, how it can be built and what is the minimum cost.

People also need to be informed about how to build gender sensitive latrine by considering women's concerns and interests while designing, locating and building latrine and flood proof latrine, to motivate them to invest in latrine which will not be destroyed during disaster.

To ensure safe faecal waste disposal correct process need to be informed

People need to be informed about correct process of disposing faecal waste. They also need to be informed about benefits of safe faecal waste disposal and harm of disposing faecal waste in open space.

Section 3: Hand hygiene and sanitation of persons with disability and older people

The study found that hand hygiene and sanitation is a struggle for older people and people with disabilities living in both communities. In these communities, participants experience different barriers to ensure hand hygiene and sanitation, which are barriers for older people and persons with disability as well. Moreover, disability and old age-related health complications make ensuring hand hygiene and sanitation more challenging.

Older people and persons with disability who are participants of this study are mostly reliant on family members, mostly female family members to help them with everything from washing their hands, to going to the latrine.

The following case studies illustrate challenges faced by these families, who do not have any ideas about how they could improve the situation.

Struggle of Bashir: life without disability friendly infrastructure and facilities

- *A person with physical disability, living in a village of Bangladesh [This case study is based on real quotes collected from study participants, without exposing any identifying details of the interviewee].*

Bashir (pseudonym), 45, lives in Satkhira district. He lives with his wife Salma (pseudonym), and two sons. His elder son is the only earning member of the family. Born with a congenital limb defect, Bashir struggles to walk even with the help of cane. His wife takes care of him and he is reliant on her to help him with his hygiene and sanitation needs.

When Bashir needs to wash his hands, Salma takes him to the tube well and pumps the water so he can wash his hands. He struggles to stand without cane, and there is nowhere to sit while washing his hands. Salma also needs to help him when he needs to urinate or defecate. There is a *kacha* latrine at Bashir's house. During the daytime when Bashir needs to defecate, he goes to the latrine with Salma's help but finds it difficult to sit down and stand up in the latrine. Salma needs to bring water for him from the tube well as there is no water available inside the latrine. During the monsoon, going to the latrine becomes more challenging. It is hard for him to walk across the slippery yard. When Salma is not around, he defecates in the back yard, and later Salma throws the faeces in the pond behind the house.

"When I defecate on the ground, faeces is disposed by using spade... to waste disposal area (pond)."

At night, Bashir urinates in a plastic pot Salma keeps in his room. In the morning Salma throws the urine in the latrine.

Bashir and Salma have no idea about how they could make hand washing and latrine usage easier for Bashir. Moreover, they don't know how urine and faeces can be managed other than in the way they are doing it. Also, his son holds the financial power in the household, and he is reluctant to arrange anything for his father.

No age friendly infrastructure and facility: Asia's hardship

- *An older woman, living in a village of Bangladesh [This case study is based on real quotes collected from study participants, without exposing any identifying details of the interviewee].*

Asia (pseudonym), 81, lives in Gaibandha district with her only daughter Fatima (pseudonym) and her son-in-law and grandchildren. Fatima takes care of her mother.

Asia is suffering from old age-related health complications. She struggles to move from one place to another. Fatima helps her to wash hands by taking her to tube well and pumping water. Asia needs help to sit down and stand up to wash her hands. Fatima also takes her to the latrine and brings water for her. However, sitting down and standing up in the latrine is hard for Asia. She holds on to the floor and the wall to stand up as there is nothing to hold in the latrine.

"If there was something to hold (in the latrine), I could sit down and stand up by holding it."

When Fatima is not around Asia defecates and urinates in the yard, later Fatima throws the faeces in the pond. Sometimes her health condition deteriorates she cannot move and suffers from incontinence. When this happens, Fatima puts a plastic sheet on the bed, where her mother defecates. Later Fatima washes the plastic sheet and clothes in the river with detergent powder.

For Asia going to the tube well and latrine is challenging. Fatima also struggles to manage the excreta of her mother. But they have no knowledge of how these issues can be managed better. The family is not financially well off enough to arrange any other infrastructure or facilities to make their life easier.

What will ensure hand hygiene and sanitation of persons with disability and older people

Community people need information about how they could make hand hygiene and latrine facilities more accessible for older people and persons with disabilities. Ideas and solutions need to be simple and cost effective so they can be implemented by families with limited resources.

Caregivers and head of the households need to be included in intervention programmes. Alongside persons with disability and older people, caregivers need to be included in discussions as they are often responsible for ensuring health hygiene, latrine usage and safe waste disposal. Heads of the household also need to be included in intervention programmes, as they are the ultimate decision makers of the family, and therefore influence how resources are used.

Section 4: Menstrual Hygiene

In 2014 Bangladesh National Hygiene Baseline Survey[26] found that a third of the adolescent females and adult women knew about menstruation which is mostly told by female relatives. Disposable pads were used by one tenth of the adolescents (rural: 10%, urban: 21%, p<0.006) and one quarter of adult women (rural: 10%, urban: 33%, p<0.001). The majority used old cloth for menstruation management which was significantly more common among rural adolescents and women.

A 2013 nationally representative survey of adolescent girls in Bangladesh[27] found that 64% of girls reported they had no knowledge of menstruation before they started their menstruation. In the same study, thirty-two per cent of girls reported that menstrual problems interfered with school performance, and 41% reported missing school altogether, an average of 2.8 days were missed per menstrual cycle.

A needs assessment[28] carried out for the *Ritu programme* in 2016 in Kendua Upazilla, Netrokona district found, majority of girls said that they do not attend school for the first 2 -3 days of their periods, and the main reason was because they felt unable to use the toilet facilities. The majority of menstruating girls who participated in the same study reported using sanitary pads, although often they are not exclusively using those, as they also use cloths as well. The same needs assessment found that the main barriers preventing good menstrual hygiene are lack of access to sanitary pads, and a lack of WASH facilities at school and at home. Lack of knowledge, discussion and taboos surrounding girls' behaviour during menstruation also create challenges for girls. These include taboos such as the perception menstrual blood is 'impure'. Girls can also face barriers to what food they can eat and if they are allowed outside of the home, based on social or religious norms.

An assessment[29] carried out in Satkhira found that women use commercially available sanitary pads, and if necessary, men also help them to purchase these. Women who use sanitary pads generally do not throw them in the garbage, but instead bury them in the backyard. The same assessment found that women and girls with disabilities struggle to use toilets as most toilets are outside the house and inaccessible. During their periods, this puts additional pressure on the mother or caregiver to help them.

This section details participants' knowledge, attitude, practice, barrier and motivation regarding menstrual hygiene behaviour.

[26] International Centre for Diarrheal Diseases Research (icddr,b), WaterAid Bangladesh, Policy Support Unit (PSU), Local Government Division Ministry of Local Government, Rural Development and Cooperatives Bangladesh (2014) *National Hygiene Baseline Survey Report* (pp 31).
[27] Alam, M.,Luby,P.S.,Halder,K.M.,Islam,K. Opel,A.,Shoab,K.A.,Ghosh,K.P,Rahman,M.,Mahon,T and Unicomb,L (2017) Menstrual hygiene management among Bangladeshi adolescent schoolgirls and risk factors affecting school absence: results from a cross-sectional survey (pp 4). *BMJ Open,* 7: e015508.
[28] Ritu programme (2016) *Promoting menstrual hygiene management in Bangladesh* (pp 5-6).
[29] World Vision Bangladesh SHOMOTA (2018) *Strengthening gender equality and social inclusion in WASH in Bangladesh: Gender and Disability Analysis Report* (pp 33). Bangladesh: World Vision.

Research findings

Menstruation is perceived as impure both by girls and those around them

The study found that in the communities, menstruation is perceived as an 'impure' and 'secret matter' for girls, rather than being a natural biological process. This perception was present amongst girls themselves, their family members and wider community. The blood is considered as impure and girls are not allowed to pray during menstruation. As a result, they are required to purify themselves when menstruation ends before they can re-enter daily activities, for example they need to sweep and coat their bedroom floor with mud; wash their bed cover, pillow cover, clothes and quilt which they used during that time; wash all the cloths (in Gaibandha people refer this cloth as *'tena'*, in Satkhira as *'bhanga'*) they used; apply shampoo to their hair on the last day of menstruation; shave their pubic hair; and clean their whole body properly.

"If I don't wash everything after our period then it will be a sin and our prayers will not be accepted by to the almighty" -Adolescent girl, Satkhira

"My aunt advised me that I should stay in a way that nobody might understand that I am on my period. She also told me to check my dress before leaving bed in the morning. If there's any stains, then I need to change cloth immediately. Otherwise it would be matter of shame to me." -Adolescent girl, Satkhira

The taboos and norms around menstruation mean there is a lack of discussion around menstruation within families

Because of taboos surrounding menstruation, after providing some basic and necessary information, grandmothers and mothers do not feel it is important to talk more to the girls about menstruation, as they believe girls are being told everything and would ask them if they need more information. However, it was found that; girls seldom proactively ask questions because they are too shy. For example, during paired depth interviews in Gaibandha, mothers claimed their daughters have sanitary pads in stock and they buy them whenever their girls ask, but the girls said they never ask for sanitary pads from their mothers due to shyness.

In both communities' fathers are completely absent from the entire menstrual hygiene process as they believe it is a female issue and therefore it is their wife's duty. It was found that, they never feel it is important to talk about this issue with anyone, and they only become involved if they are informed by their wife and need to accompany their daughter to a doctor or to buy pain killers for abdominal cramp.

"I don't try to know and go to purchase the menstrual hygiene product because I myself feel shy…What's the need for fathers to know about the issue? Mothers can handle it" -Father, Satkhira

Participants said that teachers often skip the topic at school or advise them to read about it at home. Male teachers feel uncomfortable teaching girls about menstruation, and sometimes female teachers get embarrassed to teach it in a mixed gender class. Some participants said girls are taken to different classroom to learn about cleanliness during menstruation, but not in very much detail.

As the discussion is avoided by adults, adolescent girls, then have limited knowledge about menstruation and have to take on the responsibility of their own menstruation hygiene practices without the correct information sometimes. This lack of understanding about correct practices can be fuelled by friends who

they talk to about menstruation (when they feel unsure or unclear) but who also may have the wrong information.

This stigma, taboo and lack of discussion means that when girls have their first menstruation, they are ill equipped to deal with it

Due to lack of knowledge, social stigma and shyness, girls felt they were in a vulnerable situation when they experienced menstruation for the first time. Most girls in the study said they got their first period when they were around 12 years old. They were familiar with the word '*mense*' (menstruation) but they did not have any detailed knowledge about it, so when they got their menstruation for the first time they were scared. They spoke to their mother or grandmother, with whom they had closer relationship, but some girls hid it from others. Mother or grandmother was the main source of information for most girls. As noted above however this information was fairly (length of gap in the cycles, how to use and clean clothes).

However, the girls were also taught from their mothers and grandmothers that they must hide the incident of menstruation from others as it is a private matter, and it is shameful to talk about this issue with others. Therefore, starting puberty was a worrying time for young girls because they felt from now on, they needed to calculate dates and be extra cautious: they feared experiencing shame in front of other people if the blood starts to flow suddenly. Even they did not find any place or person to get the answers of their unknown questions.

"I heard about mense from my cousins and sisters-in-law before having my own menstruation. …… I heard that something like this happens when a girl grows up, but they didn't tell me anything in detail" -Adolescent girl, Gaibandha

Girls' reported that their experience of menstruation continues to be challenging and can cause them to miss school

Adolescent girls in the study said they usually spend their typical days doing different activities such as going to school and private tuition; helping their mother with household chores; looking after younger siblings; hanging out with cousins and sisters-in-law; and watching TV. But during menstruation, their joyful days turn into dull, gloomy and uncomfortable days. They usually spend the first couple of days lying on the bed or sitting idly at home because of abdominal cramps. They miss school and tuition if the pain is severe or they have heavy blood flow. They feel dirty because of the blood and its unpleasant odour and lose their appetite.

Despite these challenges, adolescent girls had some knowledge of menstrual hygiene, though some gaps were identified

Adolescent girls think they have good knowledge about recommended menstrual hygiene, but the study found there are gaps in their knowledge. Most participants do not know there is a normal age for starting menstruation, and they think it could start anytime. Though they have knowledge regarding how to wash and dry cloths but have lack knowledge regarding how frequently to change the cloths or pads, and the hygiene way to store and dispose of the used cloths or pads. Participants' responses are shown in below table –

Table 3: Participants' knowledge regarding menstrual hygiene compared to recommended practice

Recommended menstrual hygiene practice	What people should do	Participants' knowledge
Age of first menstruation	Average age 12[30]	There is no exact age and it might start anytime
What to use	-Commercial reusable sanitary napkins -Locally made reusable napkins -Commercial disposable napkins[31]	Sanitary pads Reasons: • doesn't require washing • never leaks • never feels wet
When to change	After 4-6 hours. In case of excessive blood flow, it can be changed earlier. [32]	Only when cloth or sanitary pad is filled with menstrual blood
How to wash	Use soap and detergent when washing menstrual cloths, wash in normal temperature water. Dettol or Savlon can be used. [33]	Use soap, clean water, warm water and detergent powder to wash cloths.
How to dispose	**Offsite disposal** -communal or town solid waste collection and management system. **On-site disposal** -disposal deep burial, composting, pit burning and incineration. Cloths or sanitary pads need to be wrapped before being disposed of. [34]	Disposing cloths and pads by burial and sometimes in the ponds
How to dry	Menstrual clothes should be dried in areas where there is enough wind and sunshine. [35]	Drying in the sunlight

[30] Alam, M.,Luby,P.S.,Halder,K.M.,Islam,K. Opel,A.,Shoab,K.A.,Ghosh,K.P,Rahman,M.,Mahon,T and Unicomb,L (2017) Menstrual hygiene management among Bangladeshi adolescent schoolgirls and risk factors affecting school absence: results from a cross-sectional survey. *BMJ Open,* 7: e015508, 4.

[31] Menstrual hygiene management guideline [online]. Available from: https://vikaspedia.in/health/women-health/adolescent-health-1/menstrual-hygiene-management [Accessed 24 November 2019]

[32] মাসিকের সময় করণীয় [Online]. Available from: https://rituonline.org/%E0%A6%AE%E0%A6%BE%E0%A6%B8%E0%A6%BF%E0%A6%95%E0%A7%87%E0%A6%B0-%E0%A6%B8%E0%A6%AE%E0%A7%9F-%E0%A6%95%E0%A6%B0%E0%A6%A3%E0%A7%80%E0%A7%9F/# [Accessed from: 24 November 2019]

[33] Pervin,R.,Ferdous,R. and Nahar,S. (2015) *What should adolescents do during menstruation* [online]. Available from: https://www.unicef.org/bangladesh/sites/unicef.org.bangladesh/files/2018-10/Menstrual%20Hygiene%202015.pdf

[34] Menstrual hygiene management guideline [online]. Available from: http://vikaspedia.in/health/women-health/adolescent-health-1/menstrual-hygiene-management#section-2 [Accessed 24 November 2019]

[35] Pervin,R.,Ferdous,R. and Nahar,S. (2015) *What should adolescents do during menstruation.* Bangladesh: UNICEF [online]. Available from: https://www.unicef.org/bangladesh/sites/unicef.org.bangladesh/files/2018-10/Menstrual%20Hygiene%202015.pdf

Where to store	In a safe place[36]	They don't know
Benefits of maintaining menstrual hygiene	No bacterial infection and lower risk of cervical cancer	No skin disease

Social stigma and adolescent girls' lack of knowledge on key areas of menstrual hygiene was also evident in their practices

1. Using sanitary pads is expensive and difficult to purchase

Adolescent girls in this study mostly use old cotton cloths (e.g. old *sharee, kameez* and *scarf)* to absorb menstrual blood. Usually they use the same cloths for a couple of months until they tear or became unusable because they are too stained.

They think sanitary pads are safer and more likely to save her from embarrassment of cloths becoming displaced or leaking. However, they reported that sanitary pads are difficult to purchase, and girls felt they had to ration their use to special situations, for example: when they visit a relatives' house or if they have mandatory classes or exams. They are difficult to purchase because:

- Sometimes the village shop or drugstore does not stock them….
- Even if they do, girls feel embarrassed to buy them in their local shop anyway and so ask mothers or grandmother to buy them….
- Mothers and grandmothers also sometimes feel embarrassed to buy from the local shopkeeper who belong to the same community and so travel to the nearest city to purchase pads….
- But this is difficult as often rural women only feel confident to travel to a city if they go with one another which increases costs and time needed to buy such products

2. After cloths are used, cleaning is often not done properly

Adolescent girls in this study mentioned, they use their left hand to wash the cloths because these are considered as impure, and both hands cannot be used until the impure blood is washed away.

"I take my foods with right hand; it would be gross if I use this hand to wash my menstruation cloth which contains blood." -Adolescent girl, Satkhira

Picture 6: Unhygienic place to wash

Picture 7: Unused and unclean container

[36] Pervin,R.,Ferdous,R. and Nahar,S. (2015) *What should adolescents do during menstruation.* Bangladesh: UNICEF [online]. Available from: https://www.unicef.org/bangladesh/sites/unicef.org.bangladesh/files/2018-10/Menstrual%20Hygiene%202015.pdf

Adolescent girls also said, at home they do not have separate arrangement for washing the cloths and they usually wash them near the tube well after all the male members have left home. They are scolded by other women if they go to the pond to wash the cloths, as they contain impure blood. They are also afraid that men might notice and ask them what the cloths were for. It was also found that, girls mostly use an abandoned pot or paint container to wash their cloths.

"I keep my bucket (paint can) which I used for washing menstrual cloths separate from other buckets otherwise family members might start gossiping about my menstruation." -Adolescent girl, Gaibandha

3. Best drying practices are often not followed owing to stigma and shame

Participants were found to be advised to hide the used cloths from others while drying, they dry them in places where family members and others don't go, such as on the top of vegetable trellis or on the fence. During rainy season it is difficult for them to find a place to dry the cloths, so they put them under wet clothes on the rope in the kitchen or outside the house, which means they do not dry properly. Adolescent girls mentioned they rarely dry the cloths in the front yard as they would be embarrassed.

"I dry my rags out of the house on the ropes and cover that with my wet scarf so that my father cannot notice that otherwise it will be a shame for me." -Adolescent girl, Satkhira

Picture 8: Places to dry rags

4. Cloths are stored and disposed of improperly

Participating girls mentioned they store the cloths in places where no-one could find them, even though these places are not the safest places to store them. For example, behind doors, inside sacks and inside trunks.

Picture 9: Places to store rags

Girls throw cloths or pads these into the open space or in the water unwrapped which is mainly used to dump garbage and situated inside the home boundary.

"When the cloth gets stained or torned I dispose it…sometimes bury it or sometimes throw it in the ponds which has never been used for few months" -Adolescent girl, Gaibandha

Picture 10: Places to dispose

Living with a person with disability

-A caregiver of a girl with intellectual and physical disability, living in a village of Bangladesh [This case study is based on real quotes collected from a single study participant, without exposing any identifying details of the interviewee].

Kona (pseudonym), age16, lives in Satkhira district. Born with physical and intellectual disability, Kona lives with her mother Saleha (pseudonym) who works as a day laborer. Saleha takes care of her daughter.

During Kona's menstruation, Saleha doesn't give her any cloth to hold menstrual blood as she doesn't want to keep any extra cloth and pulls off the cloth. Therefore, she bleeds in her regular clothes. During that time, Saleha gives her bath regularly by rubbing her head and body and changing her clothes once or twice in a day to keep her clean. As Kona doesn't understand menstruation and cannot express anything, Saleha checks whether her clothes are stained with blood.

Kona bleeds for 5-6 days and people suggested Saleha to stop the menstruation with medical help. Doctors also suggested her to do it, but Saleha doesn't know how it can be done and what will be the consequence. She is afraid that her daughter will die if her menstruation is stopped. When Kona gets sick during her menstruation, Saleha goes to people who practice Ayurveda (*Kabiraj)* and religious leader (*Moulovi*) to bring holy water (*pani pora*) for her. Earlier she used to go to the village doctors and MBBS doctor, but now due to financial constraints she cannot afford that.

Saleha feels uncomfortable and find it disgusting to clean blood-stained clothes of her daughter. But she has no knowledge about alternative facilities for this type of situation. Also, she is not economically well off to purchase any facility.

Barriers and motivations of best menstrual hygiene management

In both study locations, we found different barriers are impeding menstrual hygiene management for adolescent girls. These barriers were -

- **Lack of knowledge of adolescent girls and caregivers**
  Lack of knowledge amongst caregivers regarding menstrual hygiene management, as well as the practicing of skipping this section by letting it to be learned by students themselves, is resulting in lack of knowledge amongst adolescent girls.

- **Social norms and attitude towards menstruation**
  Social norms regarding menstruation shaped the attitude of participants towards menstruation and hamper good menstrual hygiene practice. Caregivers teach girls that menstruation is shameful and needs to be hidden, especially from men, meaning that girls try to manage menstrual hygiene alone, and practice unsafe practices such as not washing and drying cloths properly.

  Men perceive menstrual hygiene to be a female matter, associated with impurity, shame and secrecy, which they play no role in. At school, teachers feel embarrassed and ashamed to talk about menstrual hygiene management in the classroom in front of the boys.

- **Lack of discussion and no sources of information**
  Discussion about menstruation is not acceptable in the society as it is considered as taboo. It can only be discussed when there is a related health concern. Participants felt they can't go anywhere to get information on this issue - they only discuss with friends or cousins who also have limited knowledge. Household decision makers who are usually fathers always remain silent on this matter, and only become involved when girls need medical attention.

- **Lack of facilities**
  Girls do not have adequate facilities or proper latrines at home to maintain menstrual hygiene. They need to wait until male family members go out of the house to change and wash the cloths because of the social taboos regarding menstruation. Schools have latrines but no facilities for washing or disposing of cloths. When girls have a heavy flow, they do not want to go to school as they need to change the cloth frequently.

  Lack of sanitary products is also a barrier. Local village shops keep a limited stock of sanitary pads; caregivers are embarrassed to buy them locally; and cost is a limiting factor for many families.

What can help motivate people to practice recommended menstrual hygiene?

Society's perception about menstruation needs to change.
Girls need to be taught that menstruation is a normal biological process rather than something shameful. They need to be taught about recommended menstrual hygiene behaviour and the negative consequences of not maintaining proper hygiene. Improving knowledge and attitudes amongst caregivers is also critical: as grandmothers and mothers are the primary sources of information, they can help break the social stigma attached to menstruation.

In order to address the challenges adolescent girls face, educating men about this matter is also vital. Teachers need to involve male students in education on menstruation, so they can gain knowledge. Male members of the families need to be informed that it is not only a matter of girls, they can also play a vital role by providing or arranging facilities for the girls in their family, which will ensure their wellbeing.

Formal education needs to be provided early and extensively.
In Bangladesh, education regarding menstruation starts in class 6, when most of the girls already have started menstruation. It should start from class 5 and teachers need to teach them thoroughly not skipping it for students to be learned by themselves. Also, more information regarding menstruation and menstrual hygiene needs to be included in academic textbooks, so girls would understand it is a normal process, and feel better prepared.

Facilities need to be provided to enable safer menstrual hygiene behaviour.
People in the community need to be informed about what facilities can be put in place to improve menstrual hygiene, such as providing different sanitary products in shops; providing facilities to change, wash, dry and dispose of cloths at home. Schools should ensure appropriate facilities are available, so girls don't need to miss school when they are menstruating.

Chapter 3: Conclusion

This research study aimed to understand knowledge, attitudes, practices, barrier and motivation in terms of hand hygiene, sanitation and menstrual hygiene behaviour of rural people of Gaibandha and Satkhira district of Bangladesh.

In terms of hand hygiene, the study found that participants in both locations perceive that hands only need to be washed with cleaning agent when hands are visibly soiled or have an unpleasant odour or there is feeling of disgust otherwise using only water is fine as water alone can remove germ. To ensure proper hand hygiene this perception needs to be altered, and people need to understand the necessity of using cleaning agent to wash hands at all critical times by following recommended process.

Some similarities and differences are found between the two locations regarding latrine usage. In Gaibandha, open defecation is a common practice but in Satkhira, which received extensive logistic support from government and NGOs, all participants use latrines. In Satkhira when latrines are considered as priority to all people, in Gaibandha the situation is complete not same. Most of the people here prefer to spend money on other things. As they count open defecation as an option, whenever they face any problem to access or use latrine they go for open defecation.

Participants in both study locations lack knowledge about recommended characteristics of a latrine and waste disposal system. Most of the participants use latrines built with only ring, slab and cover without any other facilities. To improve sanitation, providing solely logistical support will not suffice. People need to understand the benefits of using latrines and the risks of open defecation and perceiving an association between having latrine and increased social prestige can help to motivate people.

The study found that participants have no idea how to make facilities accessible for older people and people with disabilities, leaving them reliant on care givers for basic hand hygiene and using latrine. Households need to be provided with ideas about cost effective adaptations they can make, and care givers and heads of the household need to be included in intervention programmes, to gain knowledge, contribute ideas and ensure changes are made.

In rural Bangladesh, menstruation is linked with shame, restriction and fear for adolescent girls. According to findings of this study, lack of adequate education in school, lack of knowledge of caregivers, and lack of discussion in families and the wider community, means that adolescent girls are often unprepared for menstruation, and spread misinformation about menstrual hygiene practices amongst themselves.

Shyness to purchase sanitary pads from local shops, the cost of pads, and lack of availability means adolescent girls mostly use cloths during menstruation. Menstrual hygiene is difficult to maintain because cloths have to be washed and dried in secret due to social taboos, secrecy and embarrassment associated with menstruation. Breaking social stigma around menstruation is necessary, including normalizing discussion about menstruation with male members of the society, to help adolescent girls ensure menstrual hygiene.

Mixed education at school, and more discussion at family and community level would help to create an enabling environment for girls to ask questions and maintain better menstrual hygiene. Provision of sanitary pads in schools or within the community might also improve the situation, as girls could collect them themselves and not have to ration pads.