

Evaluation of a Faith Based Behavior Change Intervention to Improve WASH Facilities and Practices in Bangladesh, Indonesia and Nepal

Draft Report

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Executive Summary

Faith-based programmes were successful to improve general health maintenance, cholesterol and blood pressure levels, weight, and cardiovascular health previously, but have been unheeded to improve water, sanitation, and hygiene (WASH) status. We designed a Before-After-Control-Impact (BACI) to evaluate the effectiveness of a faith-based intervention.

We designed a faith-based WASH behavior change intervention to improve the WASH situation in Islamic schools, their associated mosques and corresponding Muslim communities in Bangladesh, Indonesia and Nepal. We included two Christian communities from Bangladesh and two from Indonesia. We selected ten villages from Bangladesh, six from Indonesia and two from Nepal as study clusters. Half of the villages received the intervention and remaining were set to control. We conducted a baseline survey in all clusters and delivered the intervention for six months and then conducted the endline survey among 192 respondents from Bangladesh, 236 from Indonesia and 248 from Nepal. A structured questionnaire was used for the data collection to determine current hygiene practices, facilities and knowledge. The data collector conducted face-to-face interviews, spot checks and hand washing demonstration and data was analyzed using STATA (version 13).

Using the Islamic and Christian textbooks, the intervention package was developed and was reviewed by community representatives before finalization. The dissemination protocol allowed teacher and students groups in Islamic schools, preachers in the mosque, and peer educators in the Muslim community and Priest and WASH leaders in the Christian community to deliver the BCC package. All of these people delivering the intervention were trained through formal sessions on effective WASH awareness dissemination. The students' groups were trained to arrange monthly students' meetings; teachers were requested to conduct the monthly session, and preacher to talk during Friday prayers on WASH. The peer educators conducted one community meeting using flip charts in each community among adult and adolescent women focusing on safe water, hygienic toilet, child feces management and menstrual hygiene management. We conducted training of trainers session for Christian communities where we described the importance of WASH, and procedure of proper hand washing.

In Bangladesh, our intervention improved the hand washing behaviour, increased the use of improved toilet, increased the knowledge on safe water and increased the practice of washing rag with soap which was used for managing menstruation. In Indonesia, our intervention increased the use of improved toilets, increased the use of potty for children of <3years age, caregivers were more likely to dispose child faeces into pit or toilet and increased the knowledge on safe water. In Nepal, more children of <3years age used a potty, more people gained knowledge on safe water due to our intervention and women and adolescent girls significantly reduced the use of old cloth as absorbent during menstruation. Our intervention improved the perception of safe water, perception on water borne disease, knowledge on importance of hand washing among beneficiaries. Our community meetings and adolescent student group meeting increased knowledge, awareness, and practice on proper menstrual hygiene management among adolescent girls and adult women.

The results suggested improvement in knowledge, attitude and practices in the communities which indicates that this mechanism of using mosques and Islamic schools could be effective for improving hand washing practices and child faeces management. This is the first study focused on the Islamic faith-based approach to design and promote WASH interventions, which could be further tested as part of a broader intervention.

Background

Due to diarrheal disease worldwide 2,200 children are dying every day [1]; inadequate water, sanitation and hygiene contributed to 88% of these deaths [2]. While an improvement in water and sanitation infrastructures collectively reduces the diarrhea prevalence by 6% [3], hand washing intervention alone reduces the risk of diarrhoeal disease by 23% [4]. A well designed behaviour change intervention along with WASH infrastructural improvements could reduce the disease burden. An intervention based on emotional drivers, focusing on school-based events among school children aged 8–13 years demonstrated a 31% ($p=0.02$) improvement in hand washing with soap in the intervention schools compared to the controls [5]. Although faith is considered a powerful tool for attitudinal change to engage with members of the community [6-9], the faith based approaches have largely been underutilized in contemporary WASH projects.

Studies show that faith-based programmes can improve health outcomes, which were mostly delivered through churches in African American communities [10-12]. Most faith based programmes focused on primary prevention (51%), general health maintenance (26%), cardiovascular health (21%), or cancer (19%) and the reported significant effects include reductions in cholesterol and blood pressure levels, weight, and disease symptoms [13]. Therefore, if we develop an intervention based on emotional drivers, specifically a faith based one and deliver that through institutions, it will likely change people's behaviour greater than infrastructure development interventions.

A one year project was proposed by the UK based aid organization named Global One and the overall aim of the study was to decrease the incidences of water-borne diseases by improving WASH practices in three different countries: Bangladesh, Indonesia and Nepal. The approach of the study was faith based which aimed to provide the WASH education, required infrastructural improvements and training of *Imams* of Mosques, and Priest and WASH leaders in the Christian community to build up the awareness and practices of WASH. In addition, to determine the strength and acceptability of this approach, Global One was also interested to measure the uptake of the intervention and changes in WASH knowledge, facilities and practices.

Global One executed the study jointly with Global Interfaith WASH Alliance (GIWA) and icddr,b and local partners in the three individual countries, UNAS from

Indonesia and Hands International in Nepal. icddr,b led the data collection activity for Bangladesh and Global One led the other countries, i.e. Indonesia and Nepal, with technical support from icddr,b and local partners. Furthermore, icddr,b led the entire data analysis, report writing, and writing manuscript for publication for all three countries.

Objectives

1. To assess the uptake of the faith based WASH intervention
2. To assess the effectiveness of the faith based WASH intervention in improving knowledge, facilities and practices

Methods

Study Design

To compare the prevalence of baseline and end line data, Global One initially recommended a before and after design. But through this method, separating the general secular change over time is complicated; and to address this weakness a Before-After-Control-Impact (BACI) design has been proposed by icddr,b. This design would control the secular trends by which the measured changes could be highly attributed to the intervention. The proposed plan was costly but in context of measuring the impact of intervention this approach refers to a scientifically rigorous study design.

This study was conducted in Muslim and Christian communities and the term faith-based organization was used for a mosque or madrasa and church. Mainly the *Imams* were in focus from Muslim communities as they had the proficiency in Hadiths including quotes from the Qur'aan and Priests from Christian communities. In addition, they were supposed to get more acceptances to the communities than others. During Friday prayers the *Imam* of the mosque proclaimed regarding WASH education to the Muslim devotees and Priest trained others from the community. The *Imam* mentioned pertinent quotation from the Holy Qur'aan and the Hadiths in support of his speech and The Priest used Bible as reference.

Study sites and surveys

Global One identified study sites from three countries: Jokiganj, Sunamganj, Moulavibazar and Sylhet from Bangladesh, West and Central Java from Indonesia and Kathmandu from Nepal; according to the working area of partner organizations and

convenience. The local partners were Center for Islamic Studies, Universitas Nasional from Indonesia, Hands International from Nepal and Global One Country office from Bangladesh.

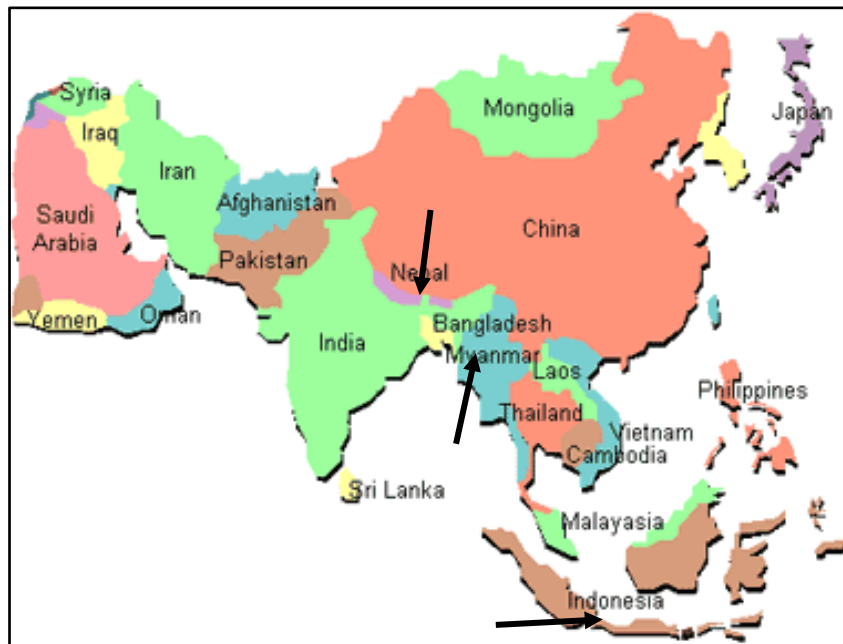


Figure 1: Study sites (Bangladesh, Nepal and Indonesia)

Each village with at least one mosque was considered as a distinct cluster. If there were multiple mosque or mosque adjunct with madrasa in one village, we included all of them in our study. We kept 500 meters buffer zone between the clusters. We selected 10 villages from Bangladesh, 6 from Indonesia and 2 from Nepal for this study; in total 18 villages were enrolled based on partner organizations' working area and convenience.



Figure 2: Bangladesh field sites- Districts of Sylhet Division

After the baseline survey, we randomly assigned half of these villages in each country to intervention and the other halves to the control group. Then the intervention was delivered through mosque for six months. Intervention group received behaviour changes messages or hardware to support WASH. We conducted an endline survey after the intervention period.



Figure 3: Indonesia field sites

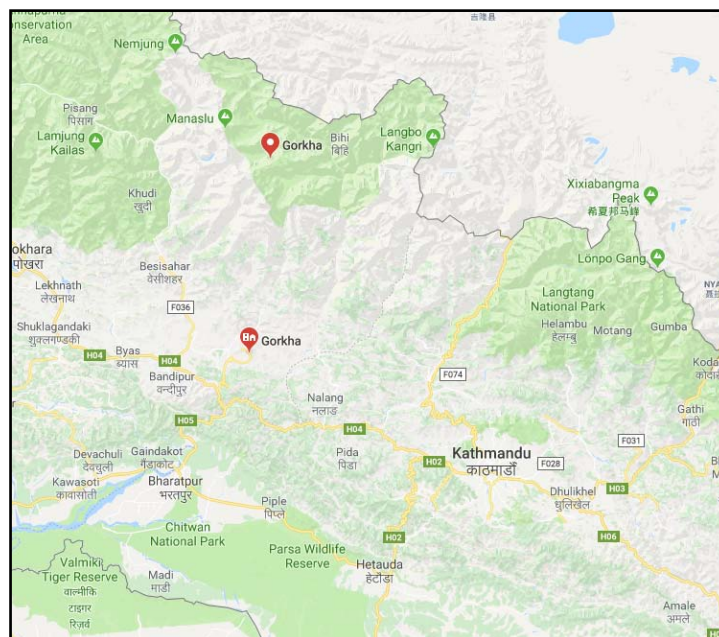


Figure 4: Nepal field sites

To assess the current knowledge, facilities and practices regarding water, sanitation and hygiene prior to the intervention, a baseline survey and a qualitative assessment were conducted in both the intervention and control villages. The baseline survey covered the WASH awareness, facilities and practice and prevalence of diarrhea. A diarrhea history of last 3 days' episodes were recorded in baseline and endline during face-to-face interviews, and additionally through cell phone interviews each month during the intervening periods.



Figure 5: Data collection in Bangladesh

To measure the current hygiene practice and attitude related information, a spot check for WASH facilities and a demonstration for hand washing were conducted in the household. Both the survey and qualitative assessment in Bangladesh were led by icddr,b and also analysed all data from all the three countries.



Figure 6: Spot check of facilities in Bangladesh

Similarly, to assess WASH perceptions and behaviours among the community residents, separate focus group discussions (FGD) with adult males and females were conducted.



Figure 7: Group discussion with male in Bangladesh

Sampling

Selection of quantitative survey respondents

To identify the respondent for the survey, the team visited the selected mosques. A list of adults was prepared with the help of *Imam* who attended for Friday prayer and listen to the lectures on regular basis in that mosque. The entire listed persons were informed verbally about the study objectives. After that a random number was generated to select the respondent from the list. Then the team visited the household and after taking written informed consent we interviewed any female adult member from the enrolled household. In case of refusal, another household was chosen from the random list. Thus the team completed the required 24 interviews from a cluster in Bangladesh, 124 from each cluster of Nepal and 59 respondents from each cluster of Indonesia. In the context of more than one mosque in a particular village, the team considered that mosque which had the top presence in Friday.

Selection of qualitative assessment respondents

To assess WASH perceptions and behaviours among community residents, we also conducted focus group discussions separately with adult men and women. However,

qualitative measurement before intervention delivery was not used in developing faith based intervention and approach of their delivery. The team conducted 4 focus group discussions with adult male and 4 focus group discussions with adult female from 4 intervention clusters of Bangladesh. Similarly 4 FGDs were done in Indonesia and 2 in Nepal. We enrolled 12 adult male for male group FGD and 12 adult females for female group FGD for each focus group discussion. We randomly selected adult males for the FGD from the list of those attending the mosque. We selected female participants for FGD from the household members of the selected male participants. We did qualitative and quantitative sampling in a same day in the mosque and both were mutually exclusive.

Data collection

Baseline

Quantitative

We wanted to measure the difference of impact of the intervention for all the three countries; therefore we calculated sample size for each country separately. According to the sample size calculation, we recruited 192 respondents from Bangladesh, 236 from Indonesia and 248 from Nepal; both from intervention and control groups. We selected 18 villages from these three countries, each village was defined as cluster. Each cluster contained at least one mosque and we maintained 500 meters buffer zone among clusters. After defining clusters, we conducted the baseline survey and then randomly assigned the intervention in 9 clusters. Global One delivered the intervention in randomly selected 9 clusters with the help of local partners.

We selected 24 respondents from each cluster of Bangladesh, 59 and 124 respondents from each cluster of Indonesia and Nepal accordingly. We went to the selected clusters and then selected the households for interview as described above for Bangladesh. If in the households male members agreed, then we interviewed the adult female member of that household. We checked for WASH facilities, and conducted the survey. In this way, we selected required number of households from each cluster until we enrolled required sample households.



Figure 8: Data collection training in Indonesia

Qualitative

In the baseline, FGD with adult male groups and adult female groups were conducted separately from the intervention clusters in Bangladesh.



Figure 9: Data collection team of Nepal in front of partner office

Data collection matrix

Table1: Data collection matrix

Key activities	Techniques	Country			Source
		Bangladesh (10 clusters)	Indonesia (6 clusters)	Nepal (2 clusters)	
Project and other relevant documents	Literature review				Project document
Baseline survey	Structured interview, spot check	240	236	248	Baseline survey
Qualitative assessment	Focus group discussions (14)	Female (4)	Female (2)	Female (1)	Baseline qualitative assessment
		Adult male (4)	Adult male (2)	Adult male (1)	Baseline qualitative assessment
Endline survey	Interview, spot check	240	236	248	Endline survey
Endline qualitative assessment	In-depth Interview (7)	<i>Imam</i> (4)	<i>Imam</i> (2)	<i>Imam</i> (1)	Endline qualitative assessment
	Focus Group Discussion	Adult male (4)	Adult male (2)	Adult male (1)	Endline qualitative assessment
	Focus group discussions	Female (4)	Female (2)	Female (1)	Endline qualitative assessment

Intervention delivery



Figure 10: Demonstration of proper Hand washing in Bangladesh

Study local partners arranged training session for Imam and informed them on the content of the intervention, which were relevant Hadith and quotes from Qur'aan related to water, sanitation and hygiene issues. Global One prepared training manual and handbook for training. Intervention was delivered only during Friday prayers. It included the production of a series of faith based WASH materials targeted at different beneficiary groups; men, women and children and based on quotes from Qur'aan and Hadith.



Figure 11: Community meeting in Nepal



Figure 12: Intervention delivery in Islamic schools of Nepal



Figure 13: Menstrual hygiene intervention delivery in Nepal

Interventions delivered at Muslim Community

Country	Type of Intervention	Target Group	Number of Participants	Method	Total Number
Bangladesh	Behaviour change communication regarding WASH & Islam	Adolescent Boys	120	Training of Trainers	4
	Behaviour change communication regarding WASH & Islam	Adolescent Girls	120	Training of Trainers	4
	Behaviour change communication regarding WASH & Islam and MHM	Adult women and adolescent girls	120	Monthly community meeting by peer educator	4
	Behaviour change communication regarding WASH & Islam and MHM for female teachers	Madrasah Teachers	120	Training of Trainers	4
Indonesia	WASH	Imams and community	12	Training of Trainers and Community socialization	2
	Behavior change communication regarding hand washing and MHM	Islamic Boarding School students	800	Hand washing campaign	4
	Behavior change communication regarding hand washing and MHM	Community Adult male, women and adolescent boys and girls	100	Monthly community meeting by peer educator	2
	Behavior change education	Islamic Boarding School students	100	Training of Trainers	1
Nepal	Behaviour change communication regarding WASH & Islam	Adolescent Boys	120	Training of Trainers	2
	Behaviour change communication regarding WASH & Islam	Adolescent Girls	120	Training of Trainers	2
	Behaviour change communication regarding WASH & Islam and MHM	Community Adult women and adolescent girls	120	Monthly community meeting by peer educator	2
	Behaviour change communication regarding WASH & Islam and MHM for female teachers	Madrasah Teachers	120	Training of Trainers	2



Figure 14: Menstrual hygiene session in Bangladesh

Using a faith-based approach, the project delivered training in water, sanitation & hygiene (WASH) to Christian and Hindu children, women and community members in Indonesia and Bangladesh. It did so by training Christian and Hindu faith leaders and teachers in each country in using faith-based resources. The overall aim was to reduce the incidence of water-borne, sanitation and hygiene-related diseases, and therefore deaths, in the communities. Our partner the Catholic Diocese of Sylhet works with marginalised tribal groups, mainly Hindu, working in the area's plantations and hill villages.

Interventions delivered at Christian Community					
Country	Type of Intervention	Target Group	Number of Participants	Method	Total Number
Bangladesh	Training of Trainers workshop	Priests, Teachers, Social and NGO workers, University student	14	Training by open discussion and group work	1
	Behaviour change communication regarding Faith Based WASH	Luxmipur Christian Cooperative Credit Union Ltd members	59	Community meeting by trainers with open discussion	1
	Behaviour change communication regarding Faith Based WASH	Youth adult group, teachers and KG to class V students from seven Parishes	45	Training by 2 hours long open discussion and group work	1
	Behaviour change communication regarding Faith Based WASH by priests	Religious leaders (Parish Priest) at Jaflong and Srimongol (Seperately)	56 and 47	Training by open discussion	2
	Behaviour change communication	College and school students	63 and 130	Orientation session	2
Indonesia	Training of Trainers workshop	Priests, Teachers, Social and NGO workers	20 and 48	Training by open discussion and group work	2
	Behaviour change communication regarding Faith Based WASH by trainers	Children in school and parishes	3,845	Training by open discussion and group work	2

Endline

We conducted an endline survey, after 6-months' intervention, in both intervention and control clusters. We conducted the endline survey as well as qualitative assessment after the intervention period in the same households selected at the baseline to assess the impact of the intervention in that particular household.

Quantitative

We followed the same survey questionnaire which was used in the baseline survey, and used all three data collection procedure i.e. spot check, hand washing demonstration and interview. We interviewed one additional respondent from each village during baseline quantitative survey.

Qualitative

To evaluate the acceptability and impact on behaviour of the faith based approach in providing WASH education to Muslim communities in varying cultural contexts, we also conducted 4 focus group discussions with adult males and 4 focus group discussions with adult females after the intervention period similar to baseline. We invited respondents from same households enrolled in baseline qualitative assessment. Finally, we conducted 7 in-depth-interviews with *Imams* from intervention clusters to understand their perspective of delivering faith based intervention at endline assessments. Through this qualitative assessment, we tried to understand the impact of the intervention, scope of revision and strengths of the intervention.

Results

Quantitative

Bangladesh

Results from Bangladesh revealed that people washed both hands with soap [Difference in difference (DID): 20%, 95% Confidence Interval (CI): 01, 40]. They gained this knowledge about necessity of hand washing mostly from the NGO workers (DID: 22, CI: 3, 40). Primary hand washing stations were mostly situated more than 6 feet away from main house, latrine and cooking area and condition improved in intervention wing (DID: 22, CI: 2, 41). Mean distance between primary hand washing station with kitchen and between hand washing station with toilet improved in intervention than control group. Water storages were found covered more in intervention group than control (DID: 11, CI: 10, 32).

In Bangladesh people owned more improved toilet facility (DID: 22%, CI: 6, 39) and gained more knowledge on safe water (DID: 32%, CI: 19, 46) due to our intervention. Knowledge regarding sanitary latrine use and feces disposal mostly improved in intervention group than control (DID: 13, CI: 2, 24) and they got this knowledge from relative, friends, neighbours or parents. Improvement had also been seen in disposing child feces in latrine or specific pit due to intervention (DID: 32, CI: 14, 50). More adult women and adolescent girls used soap to clean rag or old cloth (DID: 16, CI: 3, 35) which was used as absorbent during menstruation.

Indonesia

Results from Indonesia showed that the practice of treating drinking water by boiling improved in intervention wing than control (DID: 11%, CI: 4, 18). In sanitation facilities and practices mixed types of changes have been found in between intervention and control groups. In intervention group the condition worsened than control group in the aspect of defecating outside on the ground (DID: -16%, CI: -31, -0). On the other hand, more under three years children used potty for toileting (DID: 14%, CI: 5, 33), more caregivers disposed child faeces in specific pit or toilet (DID: 42%, CI: 3, 80) in intervention group.

People gained better knowledge on safe water after the intervention provided by Global One than before (DID: 30%, CI: 16, 34). Most of them received this knowledge from Imam or religious leaders or from madrasa (DID: 29%, CI: 11, 47). Results also showed that

there was improvement in the presence of improved toilet in household (DID: 16%, CI: 1, 33). People knew the necessity of hand washing better in intervention group than control (DID: 32%, CI: 19, 46). Media (TV, Radio, Poster, Drama) played as the main role in intervention to improve this knowledge (DID: 36%, CI: 14, 58).

Nepal

Results from Nepal showed that practice of using treated water improved a lot in intervention group than control (DID: 29%, CI: 13, 45). Hand washing facilities did not improve that much even after intervention. Still specific place for hand washing was not found in most of the areas (DID: 12, CI: 2, 22). When the participants were told to demonstrate their hand washing practices after using toilet, significant numbers were found to use soap and water in both hands (DID: 60, CI: 46, 76). The average hands rubbing time they demonstrated were also improved (DID: 53, CI: 33, 73).

In case of defecating outside intervention group has shown improvement than the control group (DID: 21, CI: 4, 37). More under three years children used potty for toileting (DID: 15%, CI: 6, 29), had more knowledge on safe water (DID: 53%, CI: 38, 68). Significant improvement had been found among the respondents regarding knowledge about safe water use after intervention (DID: 59, CI: 44, 73). Mostly they got this knowledge from NGO workers (DID: 78, CI: 61, 94).

Intervention group got better knowledge than control regarding latrine use and faeces disposal (DID: 33, CI: 19, 47) and this change had also occurred by NGO workers (DID: 62, CI: 45, 79). The improvement in knowledge results in more disposal of child faeces in a latrine or specific pit (DID: 30, CI: 14, 46) and into sanitary latrines (DID: 18, CI: 3, 33). In intervention group now latrine is cleaned properly by both men and women (CI: 16, CI: 3, 29). This sanitary latrine use for defaecation ultimately benefitted by reducing disease among the respondents (DID: 22, CI: 10, 34). Adult women and adolescent girls significantly reduced the use of old cloth (DID: -36, CI: -56, -16) which was used as absorbent during menstruation.

Qualitative

Bangladesh

Drinking water facilities and management

Perception of safe water

The qualitative analysis revealed that there was not much difference in perception of safe water in all the villages of Bangladesh. Both male and female residents defined safe and unsafe water with major four criteria as iron, germ, arsenic and cleanliness. Water free of iron, germs, arsenic, dust and looks clean was perceived as safe, like tube well water, bottled water and boiled water. Whereas some believed rain water was safe as it looks clean.

The perception on importance of drinking safe water largely existed among local residents in all four villages in Bangladesh. Both male and female thought that drinking safe water was important because unsafe water could cause diarrhea, nausea, abdominal pain and other illness. A majority of the residents gathered knowledge on importance of safe water from Bangladesh Television (BTV) while some other portion of residents learned from books and talking to doctor with a visit.

One of the respondents stated, *"To maintain a healthy life drinking safe water is a must (Foroz)"*. Another one quoted in male FGD in Munshibazaar, *"There is no safe water for 95% people of our area but with the grace of almighty Allah we have less disease"*.

In our end line survey almost same ideas or perception regarding safe water came out from the inhabitants of our study site. Mentioning about different sources, most of our respondents counted tube well water as safe water. Some of them owned and some shared tube wells, but those who shared sometimes faced difficulties and thus had to depend on pond water even if they were not intended. Some religious leaders were also interviewed who also agreed about the necessity of safe drinking water, mentioned almost the same sources and defined it as, *"which water does not cause of any disease of the human is safe water. We have to drink safe water for our safe life and to save our body from diseases."* They got this knowledge mostly by reading Islamic books or by training from NGOs.

Perception of water borne disease

Many of the residents had knowledge about water borne diseases in all four villages of Bangladesh. Knowledge on water borne diseases was relatively higher among the residents

of Boruna village compared to other three. They told water contained germ, which could cause skin diseases, stomach disorder and might help to host round worm in human body. Some aged residents could remember the cause of their past event diarrhoea and cholera and they thought drinking pond water caused their diarrhoea and cholera.

Our endline data also showed that people had similar idea regarding water borne diseases. Diarrhea and skin diseases were the mostly perceived results of drinking unsafe water among all groups of participants.

Water source and practices of water collection

In all four villages, mostly drinking water was collected from tube well in silver pitcher. But as the number of deep tube well was less, so in dry season (November, December and January) a large number of residents had to collect water from distant water source where deep tube well was available. Again, during flood, tube wells went under water and the source of drinking water lessened. In Biswanath, many residents had piped water connection and overhead water reservoir collecting water using motor pump with tube well. But in other three villages, though small scale, residents collected pond water for drinking.

In end line almost all of our respondents mentioned that water was collected by female members of the families. Mostly water was collected from tube wells and stored in pitcher. One of the male respondents mentioned that, *“generally there is not this kind of practice in this area that men will collect drinking water because this is the work of women.”*

A different scenario had come up from the madrasah teachers. There mostly students collected water from tube well or filters for themselves and the teachers during meal times and stored in jugs or bottles.



Figure 15: Common water source in Bangladesh

Knowledge and practices on treating water

In all four villages of Bangladesh, majority of residents had knowledge on treating water. Residents knew about using filter kits, alum, and boiling to treat water. The popular method of water filtering was using filter available at local market. Some other practicing methods included- using alum (known as fitkiri), leaving water for 30 minutes so that dirt or iron goes down and boiling. But in Biswanath village it was reported that they could not boil water as they did not have gas connection.

In end line response from the respondents were almost similar to base line. But some added that they didn't think it's necessary to purify or treat tube well water, so they used to drink directly after collection. Filter machine was mostly used in the madrasahs for treating water.

Storing process of drinking water

Storing water in pitcher (locally known as kolshi) was the usual practice among the residents of all four villages. In Biswanath, storing water in filter was more common among residents. Besides, jug, bottle, drum, matka were also used in the villages for storing water. Most of the residents in all four villages had the practice of covering the pitcher with a plastic or silver lid. It had also been found out that local residents had knowledge about keeping the water safe. They kept the pitcher on a high platform from ground level putting a lid over so

that dust could not enter mostly in kitchen. In Munshibazaar, some residents kept pond water in pitcher and left it for a night to let the dust went in the bottom. Then they used to drink that water. Almost all of our end line respondents mentioned pitcher as the most common water storing utensil.



Figure 16: Water collection in Bangladesh

Hand washing practices and facilities of the households

Knowledge and practice of hand wash

At our baseline data hand washing awareness among residents in all three districts was not similar. In Munshibazaar, participants reported that they should wash hands because germs could spread out from hands while in Biswanath residents thought hand washing was required to keep up with the teaching of madrasah (school of religious teaching). In Hobibpur, residents thought hand washing as part of iman (personal loyalty to Islamic belief). On the other hand residents in Boruna thought hand washing was needed to remove dirt and dust from hands. Their knowledge about hand wash was directing to two sides i.e. faith and germs. One of the respondents said, *"As we know that germs spread from hands so we need to wash hands"*. Another one said, *"To clean hands and to keep our selves clean are part of iman (personal good quality) Islam"*.

Residents had knowledge about importance of hand washing after using latrine. One of the residents mentioned, *"After using latrine, everyone should wash their hands with soap, because we get some germs after defecation which is very harmful for us"*. Though they had knowledge about hand washing, they often could not wash hands with soap as they could not

buy and sometimes due to lack of facilities and time. Residents were aware of hand wash of their children. They often told their children to wash hands after they finished playing. Sometimes imam (religious leader) discussed the issue of cleanliness at mosque on Friday.

Residents in Munshibazaar, Biswanath, Hobibpur and Boruna reported that they had learnt about hand washing (before and after eating and after latrine use) from family members at their childhood. Some residents from Boruna reported that their children learned about hand washing with soap from their school where Lifebouy, a soap company demonstrated the way of hand washing with soap at school. Whereas in the end line almost all of our respondents said that they were aware about the necessity of hand washing and try to maintain that. One of them stated that, *“knowledge of hand washing and practicing this is the part of Islam and sunnah (practice of Mohammad sm).”*

In our endline all of the Imams we talked with agreed about the necessity of hand washing. Some of them got this knowledge from religious books or families during childhood and some said they got training by icddr,b from its Global One Project few days ago. They said that their religion also supported that. One of them mentioned that, *“by washing hands we can follow our Islamic path/rules and also protect/save our body from diseases.”* Most of them practiced hand wash before and after taking meals, after going to toilet and during 5 times udhu before prayers. When we asked about their hand washing times one of them replied that, *“after waking up from bed, five times in day during udhu, before taking food and after using toilet...”*

Critical time hand wash

Community had knowledge on critical time hand wash at a low scale in all the villages. Among the critical times hand washing they only emphasized on washing hands after using latrine. In this majority of hand wash practicing residents, most of them did not use soap while a number of them used clay or ash. In this regards, the majority wash hands with only water after latrine use while the practice of using clay for hand wash after using latrine was higher in Munshibazaar. The underlying reasons were lack of knowledge about the importance of hand washing, inability to purchase and belief about using clay as hand washing agent. One of the respondents commented, *“Those who have at least religious teaching, wash hand with clay and those who do not have knowledge on religion unwilling to wash hands with agent.”*

In endline almost similar picture came out from the respondents. Mostly they mentioned about soap as the best way to clean hands after defaecation or before meal, but some male respondents of Hobibpur differed saying that, *“soil is better than soap for hand washing, because soap contains chemical, smell and soil is original, there is no chemical, it is God gifted.”* Almost half of our Imams said they used soap for hand washing before and after taking meal, where as the rest half used just water. But after toilet, mostly after defecation almost everyone used soap.

Hand washing facilities at household and community level

Both private and shared options of hand wash were found in all four villages. For hand wash, most of the households used tube well. In Biswanath, many of the residents had water tap and basin at their household for washing hands after latrine use. On the other hand, residents in other three villages mostly used tube well. Some residents in all four villages reported that they used pond water kept in a bucket for washing hands after latrine use. But they did not have any specific facility for keeping water for hand wash at kitchen. A majority of the households did not have a specific place for hand wash or hand washing station at household. The commonest hand washing agents in our study site villages were soap, mud and ash. In Hobibpur some residents used laundry soap and detergent powder for hand wash after latrine use while in Biswanath some residents used liquid soap.



Figure 17: Water source at Islamic schools in Bangladesh

Regarding hand washing facilities at household and community some changes had been found during our endline interviews. In Biswanath and Hobibpur most of the residents had either basin inside home or used tube well for hand wash and tried to use soap. One of them from Hobibpur said that, *“in case if soap is finished and can't buy at that moment, we*

use cloth washing soap or we borrow soap from other families to clean hands, anyhow we must wash hands with soap after using toilet.” On the other hand in Zokiganj and Boruna almost no improvements had been found. There most of the families had no hand washing facilities in their households, they washed hands in pond when needed. One of them stated that, *“thinking the shortage of water and other facilities at hand or distance of tube well they often ignore hand washing!”* the Imams who took part in our end line interviews mostly said that there was no special facilities for washing hands, but they had many taps at the place of udhu (udhu khana). But recently they were trying to improve the condition. One of them stated that, *“we have basin system or hand washing place/facilities in new buildings and under construction buildings.”*

Access and barrier to the facilities

Accessing the hand washing facilities even had many reasoned difficulties. In Munshibazaar, residents reported shortage of water during dry season (December, January, February and March) was a barrier for hand washing. Even the distance of water source made hand washing a difficult purpose. In Boruna, residents reported that the lack of continuous access to soap made them switched to use clay for hand wash. Residents from the same area mentioned that the latrine was outside the house and they did not keep soap inside the latrine which ultimately worked as a barrier to wash hands with soap after latrine use. So distance was another barrier for them practicing hand washing with soap.

Our endline data from Bishwanath showed that water was mostly available for hand wash unless there was huge load shedding and they were aware of the necessity of using soap, but sometimes they faced difficulties. One of them mentioned that, *“this is not possible to keep soap beside of tube well or at the pond ghat because soap can be stolen by someone, crow or wasted by children”*. On the other hand people from Boruna had some difficulties in getting enough water and also soap. They said soap was expensive so could not use always for every purpose and sometimes not easily available for distance of shop as well. Differences had been found at the point of access to the facilities in the madrasahs among teachers and students. It was reported that, teachers had no difficulties for washing hands as they had taps and hand washing system in their toilets, where as students faced problems for the lack of their hand washing facilities and that’s why had to go tube wells or ponds for washing hands.

Sanitation practices and facilities of the households

Knowledge and practices on sanitation related hygiene

As the sense of maintaining hygiene even personal hygiene local residents in all four villages washed their hands after defecating and cleaning child anus. Otherwise it might even result in diarrhea. The practice of cleaning baby after it defecated was- mother washed the baby in a bowl. Some residents reported that they sometimes took bath after cleaning the baby because otherwise it might spread germs. Community in all four villages found to have knowledge that germs spread from feces but the practice of washing hands with soap was not reported strongly. But it was mentioned that the existing knowledge on hygiene was acquired from their families. In exception residents from Hobibpur added that their children learned about sanitation related hygiene from schools. But they mentioned that there was no other organization or group that informed them about sanitation related hygiene.

Water shortage was a problem to maintain sanitation related hygiene reported by the residents in Munshibazaar. Even, shortage of water worked as a barrier to use and clean latrine. But in Biswanath, Sylhet, residents reported that they did not have water shortage problem. Some participants quoted that not following the Islamic teaching was the barrier to be hygienic. *"Lack of Islamic teachings, the importance of being sacred comes along the Islamic practice. Those who offer five times pray they take ablution."*

Mostly among households in Munshibazaar, residents used a piece of mud locally known as 'dhila' to be clean after latrine use. They thought it as religiously appropriate to use before using water to be clean. This practice of using 'dhila' also existed in other three villages other than Munshibazaar but not in a large scale.

In our endline most of the residents said they got the knowledge regarding sanitation mostly from families, books or mass media. But people from Bishwanath mentioned "global one training" as a source of this knowledge. Regarding practices almost similar trends like base line had been found. In key informant interviews imams said they got the knowledge of sanitation from common sense, books, mass media and from surroundings. Only one of them from Zokigonj said that they got training from Global One few days ago. But they thought sanitation meant keep toilets and udhu khana neat and clean.

Access and use of sanitation facilities and services

As a broader living pattern multiple families specifically close relatives used to live in same courtyard and shared same latrine. In Biswanath, the use of sanitary latrine was less than the other three villages though many poor households used unhygienic latrine. In Mushibazaar, Hobibpur and Boruna inhabitants mostly used ring slab latrine. In Boruna, some households had hanging latrine too. Sanitary materials like ring slab, plastic pit and particles for wall were available at local markets and accessible as well. In Munshibazaar, it was reported that some poor household dug hole on surface to make a pit as they could not afford to buy all these. In Hobibpur, it was reported that some adult persons who could not sit on commode used a kind of mechanized chair with a commode.

In all four villages, it was found that most of the latrines did not have water point inside the latrine. In Munshibazaar, residents remarked that the distance between latrine and water point was a barrier to practice hygiene. They also added that during dry season the water layer used to go down and water shortage made problem for using water after latrine use. In Hobibpur there were a number of open latrines that deposited feces on the surface and in the rainy season it flew around.

As the emptying and cleaning mechanism, residents hired local scavenger who used a motor run machine. They disposed fecal sludge in rivers and canal nearby their residing village.

Unlike our baseline data in endline we found that most of the people from Biswanath used sanitary latrines. Some of those were shared and some were personal. But in case of personal toilets all the family members used the same one, where there was water taps or sometimes pipe was connected with pond or river. In Hobibpur and Baruna mostly they used ring slab latrine like before. They said when the ring was filled, the dirt was thrown into the nearby canal or hole by sweeper. But some also used harpic, detergent and water for cleaning as well.

Other than Hobibpur, madrasahs in all other three villages had no ring slab or open toilet, they had pan and commode system shared toilets. Mostly teachers and students had separate toilet. In Hobibpur they used ring slab toilet that was located at the bank of the pond in front of the mosque. Religious (Musolli) and local people used this toilet and used pond water after using toilet.

Quality of latrine and maintenance

There were different types of latrine in the study area. The study found latrines with water seal, non water seal latrine, and ring slab latrine. Residents reported that the majority of residents were poor and they had more non-water seal latrine compared to sanitary latrine.



Figure 18: Sanitation facilities in Bangladesh

Generally, females of the house cleaned the latrine with brush, detergent powder or liquid disinfectant. Tube well water was used for latrine purposes where it was located nearby. One resident stated, *"We collect pond water for using latrine. My latrine is little far from the pond and that's why I need to carry one bucket of water at a time and then we all household members use the latrine with this water"*. Shortage of water used to be a barrier for cleaning the latrine. As number of latrines were insufficient compared to users they needed to empty the pit frequently. Residents in Boruna reported that they needed to do it once in every six months period. In rainy season, sometimes pit overflow. Same quality and maintenance procedure had been reported in our endline data as well.

Potty use and disposal of child feces

In Munshibazaar, it was largely reported that children often defecated in open places like court yard, back yard and in bush while in Biswanath mostly children defecated on potty. One resident mentioned, *“Most of the time children used potty but unfortunately some child defecate inside the courtyard as open space in emergency moment. And the children, who are matured enough, use the same latrine for defecation”*. In all four villages, potty use was not apparent, only those who were economically solvent used potty. The commonest practised places for child feces disposal were khal or river or latrine pit. Again they cleaned the potty with soap or detergent at their tube well used for household purpose.

All participants said that, they removed child feces from the yard as soon as possible after child defecation. Usually, they disposed child feces into the latrine pit, specific place or hole beside courtyard.

Similar scenario had been found in all our study areas. Children mostly defecated in potty and sometimes toilet when they could sit properly. But open defecation was not that uncommon there. In all cases mothers tried to dispose fecal materials early. But almost half of them reported that for disposal they just threw those in open space and rest half in latrine or holes. As of them after cleaning up their babies they washed hands with soap to get rid of germs and dirt. But one of our male respondents differed saying that, *“Soil and ash are better than all, those clean better. But 99% use soap because it is easy to use and it has smell to remove dirt and bad smell.”*

Adolescent and female menstrual hygiene practice and facilities

Knowledge and practice on menstrual hygiene management

In all four villages, female participants had knowledge about the age of menstruation which ranges from 12 to 14 years. They had the idea that they needed to be clean during menstruation. In all four villages the general practice of managing menstruation was using rags or clothes as absorbent. They changed a rag in three or four months after use. They reused those after washing with soap and drying up in the sun. Very few females used sanitary pad.

But the difficulty was they could not dry the rags openly. Even if they faced any physical problem during menstruation, they could not share it with others. Participants in Biswanath told that they could share about physical problems with only their elder sister. For washing the rags some females used laundry soap.

For cleaning the rags most of them used plain water while some other female said they used hot water. Those who used hot water thought that it made the rag sacred. In Biswanath, adolescent girls reported that their mother disposed the rags for them. Some participants said they dug a hole on earth surface and disposed the rags in. In Munshibazaar and Hobibpur adolescent girls said they kept the used rags in a poly bag and disposed the bag somewhere in their back yard and usually washed their hands after cleaning rags. Participants in Hobibpur mentioned that not having water inside the latrine created difficulty to wash rags and get themselves clean. They added that having soap inside the latrine would be helpful to clean rags. Some participants mentioned the need of having antiseptic materials like savlon inside the latrine.

In our baseline data we found that most of the girls knew about puberty or menstruation when they experienced it themselves. Only a few knew it earlier. Surprisingly some adult women thought that it was not necessary to teach or let them be known about this because eventually they would know that from books or other female friends. There was a tendency to hide this matter from children or other male members and discussion was usually made among close female family members or friends. Some unusual perception was found among one or two of our respondents who said, *“They have to maintain their movements restricted during mid noon and twilight/evening to save themselves from jeen/bhoot, because they are impure in the time of menstruation.”* Both sanitary pads and rags were used almost in equal amount. The struggle regarding cleaning or disposals of sanitary products were yet the same as baseline. One of the respondents stated that, *“they cannot share about physical and other social problems during menstruation with all because this is the matter of shame.”* All of our imams said they were aware of puberty and menstruation. They helped their wives by buying sanitary pads at that time. But they focussed on creating more awareness saying that, *“if any trained female person gets responsibility to create awareness or manage training session among adolescent and female of this area this would be better for them.”*

Indonesia

Drinking water facilities and management

Perception of safe water

The respondents counted well and bottled mineral water safe for drinking. Some thought that colorless and odourless water is safer for drinking. One of the respondents stated that, *“For them the healthy or safe water is if the colorless dirty or not smelly like in the well if the rainy season brown water and there is dirt coming from the moss and the leaves and twig (organic waste) plastic waste around the sink or pool in the area near the well.”* Some of them had the idea that drinking unsafe water might cause sickness and they mentioned that, *“We think safe water is important because we don’t want our children will get sick”*.

In our endline data we found that most of the women got knowledge about safe drinking water from their husband and some from university students who worked for Global One project. In Pisang Sambo Village, Karawang everyone said they learned about safe water very clearly from Global One WASH Team. Other than that children learned from school or madrasah and discussed that at home. Though some could not define it properly but one of them said, *“She got messages from her husband that there are categories of water. We should use clean and safe water to drink, cook or wash vegetable and use holy water for performing udhu”*. They also said that, all the family members followed this message, because it gave advantages to all of the family members, gave cleaner and healthy environment around them.

Our male participant said they got knowledge of safe water from lectures given by WASH Team and religious leaders at mosque sometimes after prayer. As a part of our endline interviews we talked with Imams and they said they were aware about safe water. They thought that safe water was the water that was safe to drink. It was important to drink safe water to avoid diseases. They defined it as *“safe water is the colorless and odourless water and ready to use, specially to drink.”*

Water source and practices of water collection

Most of the villagers collected water from well for drinking and all other household works. Some others buy gallon dispenser for getting better water quality. Other than that river had always been a regular source where it was nearby to locality. One of our respondents stated that, *“The well has been there since I was a kid. The society in this village is not easy*

to change their habit. Like for drinking waters, mom, dad and kids are always using gallon dispenser for drinking...”

For udhu most of the respondents used well water located inside the mosque. Some also used water reserved in bucket.

In our endline when we asked about the source of water local religious leaders or Imams replied that their drinking water source for mosque was a dug well with electric pump. Water was collected in a torrent/container and then people used it also for different purpose like udhu. They also added that they used vendor provided water to take bath. The well was already using electronic pump, they just needed to turn the pump on and water would come out.



Figure 19: Water source in Indonesia

Knowledge and practices on treating water

Like Bangladesh people in Indonesia were not aware of necessity and process of water treatment. But some of our participants said that they boiled water before drinking. One of them said that, “*drinking water sources for me is water from well and then I boil the water for drinking*”. Most of our respondents could not mention any specific way to treat water.

Rather one of them said, *“We don’t have special method but often we teach our children ages between 8-12 years to collect water for drinking and washing and how to close the water storage from sun and rain so that they can maintain water quality”*.

In endline our respondents said they usually used gallon water to drink, because they thought that it was safer and more hygienic to use gallon water to drink even if it was more expensive. They did not use water from dug well for drinking because its colour was not good. They bleached the water whenever its colour was yellow or whitish. That was only used to clean the vegetables. To make safer they boiled the water before drinking.

Storing process of drinking water

Unlike Bangladesh in Indonesia both male and female took active participation in collection of water. They said, *“My husband and I collect water alternately. To bring the big bucket or gallon water my husband always does that. But my duty is managing water for drinks, cooking and washing.”* Collected water was usually stored in plastic jug or bucket. Usually they stored drinking water inside home either at kitchen or dining room. But for udhu or other activities water was kept outside. They tried to clean the water container regularly. One of them mentioned, *“Drinking water stored into the bottle from used glass or plastic in kitchen or in dining room. For water drinking storage, they just changed the container (gallon) to the store and they could use the new one. But sometimes they cleaned manually.”*

Hand washing practices and facilities of the households

Knowledge and practice of hand wash

Most of our respondents did not have a habit of hand washing. Some of them said they washed their hands 4-5 times a day. Most of them said that, they washed hands when felt dirty or during food intake. In their words, *“We wash our hands if we want to eat. The rest only if it feels very dirty after coming from outdoors activities only. We wash our hands only by water and if very dirty just use the soap.”*

Other than this some of them mentioned different kinds of hand washing practices. According to them, *“Hand washing is nothing special to do, but often done in wells, if anyone urinate in the river, they just wash hands, but not with soap. Children are taught to wash hands at school and at home sometimes they maintain that. If they buy a snack they do not wash their hands, if it is really dirty from the outside they will just wash their hands very superficially.”*

In endline both male and female participants mentioned that they tried to use soap more these days than before. But when we interviewed imams of mosques most of them said they washed hands without soap before eating, with soap after eating, after finishing work and before prayer. But some also said they used soap both before and after taking food.

Critical time hand wash

Some of our respondents gave emphasis on hand washing was a must during food intake. They said, *“Wash hands before meals and after meals as well as and wudhu”*

Whereas some thought that it should be while urinating in the river or in toilet, but they also admitted that sometimes they forget or felt lazy to bring soap and wash hand, as there was no place to put soap in the toilet.



Figure 20: WASH intervention during Friday prayer in mosque in Indonesia

Hand washing facilities at household and community level

Most of the respondents mentioned about hand washing a very casual matter and did not give that much importance. They said, *“They do not have a special hand wash, they do*

random hand washing, either in wells or with water stored inside the house except water to drink.”

Those who used soap said that soaps were available there for regular use. One of them mentioned, *“All the soap is placed near the well and placed in plastic baskets.”*

But most of the respondents said even if they washed their hands irregularly water was kept always at home. They said, *“All have other water sources to wash her hands and family. Bucket made of plastic and usually for hand washing taken lagui by using a smaller bucket. If taken from a well using a bucket attached to the rope in order to fetch water in the well.”*

In endline imams of mosques said there was no special place for washing hands and no soap. If people needed to wash their hands they could use the place for udhu. But they provided plastic bucket and scoop in toilet. The reason for not providing soap was they were afraid that children would play with it.

Access and barrier to the facilities

Our respondents thought that they faced two major issues to get the access to water. One was scarcity of water in dry season and another one was distance of water sources from households. One of our respondents mentioned that, *“collecting water for cooking or bathing is difficult in the dry season around the moon, from the month of May to August...”*. Again another respondent said that, *“The distance of wells are 100-200 meters from the house, the distance of the river can reach 500-800 meters. If the electricity is dead then we are forced to not being able to use electricity to heat water for drinking needs (dispensers need electric power).”*

Regarding difficulties about the access and facilities in our endline imams said that, *“I face difficulties, especially when my hands are dirty but there’s no soap around. It takes longer to clean hands then and sometimes not cleared properly as well.”*

Sanitation practices and facilities of the households

Knowledge and practices on sanitation related hygiene

Few of our respondents had toilet facilities at their home. Mostly people of our study sites in Indonesia went to open places, like river or places nearby to their home for urination or defecation. Women sometimes used public toilets nearest to their home at evening hours.

In endline interviews our male participants said that now they were more careful about sanitation and hygiene. They got messages to build their own toilet at home, not to defecate in the river, and not to throw trash to the river. But unfortunately everyone did not take those messages seriously. One of our respondents said, *“People still throw their garbage in the river, especially at night.”* Imams of mosque said the mosque had two toilets with one bucket and scoop in each toilet. Around 35 people shared these two toilets.

Access and use of sanitation facilities and services

As a broader living pattern multiple families specifically close relatives used to live in same courtyard and shared same latrine. The use of sanitary latrine was less than the other three villages though many poor households used unhygienic latrine. Some households had hanging latrine too. Sanitary materials like ring slab, plastic pit and particles for wall were available at local markets and accessible as well. It was reported that some poor household dug hole on surface to make a pit as they could not afford to buy all these. It was reported that some adult persons who could not sit on commode used a kind of mechanized chair with a commode.

In all villages, it was found that most of the latrines did not have water point inside the latrine. Residents remarked that the distance between latrine and water point was a barrier to practice hygiene. As the emptying and cleaning mechanism, residents hire local scavenger who used a motor run machine. They disposed faecal sludge in rivers and canal nearby their residing village.

In endline our respondents said that they wanted to improve their sanitation status but they still lacked of access to proper sanitation. Sometimes even if they were willing to improve it they could not because of financial status. One of them said that, *“I am facing financial problem to practice the messages I have learnt, but now I am saving money to build my own toilet in his house.”* Imams said they did not face any difficulty to access to

sanitation now. Even their sanitation status had been improved than before because now they knew better.

Quality of latrine and maintenance

There were different types of latrine in the study area. The study found latrines with water seal, non water seal latrine, and ring slab latrine. Residents reported that the majority of residents were poor and they had more non-water seal latrine compared to sanitary latrine. Generally, females of the house cleaned the latrine with brush, detergent powder or liquid disinfectant. Tube well water was used for latrine purposes where it was located nearby. One resident stated, *"We collect pond water for using latrine. My latrine is little far from the pond and that's why I need to carry one bucket of water at a time and then we all household members use the latrine with this water"*. Shortage of water was a barrier for cleaning the latrine. As number of latrines were insufficient compared to users they needed to empty the pit frequently. Residents reported that they needed to do it once in every six month period. In rainy season, sometimes pit overflowed.

In endline local residents and imams of mosque said they tried to maintain their toilets better than before after getting idea from Global One Project. In mosques there was a marbot (cleaning service) who clean up the mosque. Residents said they had enough water to clean up the toilet and personally cleaned the toilets twice weekly using soap and carbol.

Potty use and disposal of child faeces

It was largely reported that children often defecated in open places like court yard, back yard and in bush. One resident mentioned, *"Most of the time children used potty but unfortunately some child defecate inside the courtyard as open space in emergency moment. And the children, who are matured enough, use the same latrine for defecation"*. In all villages, potty uses were not apparent, only those who were economically solvent used potty. The commonest practised places for child faeces disposal were canal or river or latrine pit. Again they cleaned the potty with soap or detergent at their tube well used for household purpose.

All participants said that, they removed child faeces from the yard as soon as possible after child defecation. Usually, they disposed child faeces into the latrine pit, specific place or hole beside courtyard.

Adolescent and female menstrual hygiene practice and facilities

Knowledge and practice on menstrual hygiene management

In all villages, female participants had knowledge about the age of menstruation which ranged from 12 to 14 years. They had the idea that they needed to be clean during menstruation. In all four villages the general practice of managing menstruation was using rags or clothes as absorbent. They changed a rag in three or four months after use. They reused those after washing with soap and drying up in the sun. Very few females used sanitary pad.

But the difficulty was they could not dry the rags openly. Even if they faced any physical problem during menstruation, they could not share it with others. Participants told that they could share about physical problems with only their elder sister. For washing the rags some females used laundry soap.

Nepal

Drinking water facilities and management

Perception of safe water

The respondents of Nepal perceived safe water as the water which was safe to drink. All the male participants had the same opinion on safe water. They said water which looked clean and did not make a person sick when consumed was safe water. They were aware of the necessity of drinking safe water. In our KII according to one Imam, “*safe water is important in order to prevent oneself from water borne diseases.*”

Water source and practices of water collection

The drinking water source included- river located nearby the village, took approximately 30 minutes' walk to reach and spring water which was located 15 minutes away from the village. People used the same source of water for all purposes, such as washing, cleaning, cooking and for religious purpose.

The road that led to the river was muddy and difficult to travel in during the monsoon season. This had made water collection a difficult task. A way to mitigate these problems would be by making water taps available in every household.

Both men and women went to the river and spring and carried water in jars to their home. The jars were kept inside the house closed with lids so that insects could not enter the water. The jars were not regularly cleaned so water carried might get contaminated.

Knowledge and practices on treating water

Regarding water treatment our respondents complained that, there was no filters installed which made the collected water unsafe for drinking purpose. Drinking water was boiled during rainy season and sometimes filtered using a cloth in order to make it safe. It was usually done by women of the households.

The participants got information on safe water and water treatment methods by attending a training conducted by Global One in the village.

Storing process of drinking water

They stored water in jars, which were kept inside the house closed with lids so that insects could not enter the water. The jars were not regularly cleaned so water carried might get contaminated. The problems that were faced during the storage and preservation of water could be mostly mitigated by installing a proper filter which would make the water safe for use. The mosque was in need for a solution to the weekly shortage of water but people did not know how to deal with it.

Access and barrier to water availability:

The most important problem was weekly shortage of water. Unsafe nature of water came at second. Financial problem leading to water scarcity was marked as the third most important problem of the mosque. Distance to water source leading to long walking time to the river was also mentioned as a barrier.

Hand washing practices and facilities of the households

Knowledge and practice of hand wash

When we asked to the Imam during KII regarding his hand washing practice, he replied, *“I wash my hands more than 5 times a day. Though I know the steps of proper hand washing technique, yet do not always follow the steps while washing my hands.”*

We asked our respondents when any one should wash hands with water and soap, they answered before and after having a meal, after using toilet, after cleaning children's

faeces or whenever hands got dirty. All participants said they washed their hands 5 to 7 times a day on an average. They also said they used mud in absence of water since water was not always available. In the training provided by Global One, they learned about the importance of washing hands with soap and water and learned how hands should be washed every time they got dirty. But on the other hand females said they did not get the opportunity to learn it from anyone.

Critical time hand wash

According to our respondents water was not always available in the mosque. They used ash and mud instead of water during the times of water scarcity.

Hand washing facilities at household and community level

In the mosque of our study area, there were three taps installed two feet away from the toilets for hand washing purpose. There were no other places for hand washing purpose. Soap was not always present in the hand washing station. The reason for the absence was sometimes due to the financial crisis and other times they forgot to put soap out there.

In the community they didn't have a proper place for hand washing purpose. They poured down water from jugs and washed hands outside their house. Soap was not always available. They often used ash instead of soaps.

Access and barrier to the facilities

The major difficulty reported by our respondents was they had to be faced while washing hands is shortage of water. So hand washing with soap could be made easier through provision of soaps and continuous availability of water.

Sanitation practices and facilities of the households

Knowledge and practices on sanitation related hygiene

All the villagers did not own proper toilet facilities. Some had toilets with septic tanks whereas some had pit latrines. Even though they had toilets with soap and enough water was not available every time. Ash was used in the absence of soap and mud was used in the absence of water. Difficulty that has to be faced for maintaining personal hygiene and cleaning/using toilet was the frequent scarcity of water.

Access and use of sanitation facilities and services

The mosque located in our study area owned two toilets with squatting pan connected to a septic tank. But the Imam mentioned that there was no disabled-friendly toilet and the mosque needed to build one. Toilets were located inside the mosque's compound, 12 feet away from the praying building. Around 120 people, including children and adults used the toilets in a day.

Most of the toilets were located outside their houses. Toilets were not shared with neighbours/ friends, only family members used them.

Quality of latrine and maintenance

The Imam mentioned that water was not always available so toilets could not be often cleaned. But water was available everyone living in the mosque cleaned the toilet by rotation. Sometimes cleaning agent such as Harpic was also used. After using the toilet, everyone washed their hands in the hand washing station located nearby. Ash was used in the absence of soap and mud was used in the absence of water.

Similar problem had also been come out from the community. Water was not always available so toilets could not be cleaned regularly. However, there was a bucket placed in the toilet so that people could clean themselves after defecation. After using the toilet, they also tried to wash their hands with soap and water.

Potty use and disposal of child faeces

Young children defecated in a potty and their faeces were immediately thrown into the toilet. If children defecated in their clothes, then the cloth were taken to the river and washed there by their mothers.

Adolescent and female menstrual hygiene practice and facilities

Knowledge and practice on menstrual hygiene management

All women were not comfortable to talk on this subject matter. Among those who answered, they mentioned their age of first menstruation ranging from 12 to 14 years. They said “*menstruation is a natural monthly process that occurs in every woman.*”

They mostly used reusable sanitary cloth during their menstrual period. Some used sanitary pads when they had to travel outside the village. They usually changed their

cloths/pads at least 3 times in a day. There were some who said they changed once in every 3 days. They could privately change their cloths/pads whenever in need. They disposed sanitary pads by throwing them nearby the river and they washed the reusable sanitary cloth with soap in the river. After washing the cloths, they hung them outside their house for them to dry under the sun.

During their menstruation the problem they faced was while washing the cloths as they had to go to the river and often had to face men on the way, which made them feel uncomfortable. They could give more priority to personal hygiene during menstruation if separate taps for men and women became available. Similarly, installing working water taps in their houses would also help them maintain their menstrual hygiene practices.

Conclusion

Many people have knowledge regarding safe and unsafe water and the consequences of drinking. But there are still little gaps in that knowledge. Tube well is the commonest source of water in most of the households. Using pond and tap water was also there in smaller scale. But in dry seasons as water level goes down so people face huge scarcity of water. Water treatment before drinking has improved after intervention. Different methods are used for purifying water, like- filtering, using alum (fitkiri), boiling and mostly stored in silver pitcher.

Again regarding hand washing practice and purpose different perceptions have come out. In Bangladesh hand washing practice with soap has shown improvement and worsened in Nepal in the intervention wing than control. Some wash their hands to get rid of germs and where as some count it as a part of religion. Yet proper hand washing technique was almost unknown to majorities. Mostly people found hand washing a must after defecation. Distance of hand washing facilities, unavailability of water and soap mostly keep them away from regular practice.

Different kinds of latrines were used in rural Bangladesh but proper disposal system was scarce. Major improvement has been found in proper child feces disposal in all the countries. Other than all these a very important issue that is adolescent and menstrual hygiene management was not at all satisfactory. Very few use sanitary pads, whereas most of them use rags or clothes and after washing and drying up.

As a whole the results suggested improvement in knowledge, attitude and practices in the communities which indicates that this mechanism of using mosques and Islamic schools could be effective for improving hand washing practices and child faeces management. This is the first study focused on the Islamic faith-based approach to design and promote WASH interventions, which could be further tested as part of a broader intervention.

Limitations

- As this was a multi countries' study, so communication among the researchers might have been weaker at some point
- There was a time limitation in conducting the study which might have influenced the need to reach data saturation
- During the data collection process, some of our respondents did not open up properly when they were asked with the questions and might have tried to give the ideal answer, did not say what they actually thought
- To minimize our researcher effect we tried to conduct the interviews by same gender interviewer. As there were many interviewers at different levels, so at some level proper probing might have been missed

Recommendations

- Further study should be conducted to generate proper evidence
- Faith-based intervention should be merged with other existing intervention
- Water should be made more available in the households
- Availability of soap and water inside or nearer to toilet can improve the hand washing practices
- Awareness campaign should be carried out about the necessity and proper hand washing system
- Very little work has been done in menstrual hygiene, so this field should be more explored and supports should be provided
- Proper disposal system of human excreta should be there in every household
- A multisystem approach by both government and non-government organizations should be there to improve the existing situation.



Figure 21: icddr,b research team with Global One CEO (Dr. Husna Ahmad)

Contributors to the report and their roles

Mahbub-Ul Alam, Research Investigator; icddr,b	Study design, analysis plans, enumerators training, report writing lead, data collection supervision, data analysis
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Farzana Yeasmin, Research Investigator; icddr,b	Qualitative research design, Qualitative data analysis
Supta Sarker, Research Officer, icddr,b	Enumerators training, Data collection supervision, Quantitative data analysis
Khobair Hossain, Research Officer, icddr,b	Qualitative data collection, Qualitative data analysis
Dr. Md. Mahbubur Rahman, Project Coordinator, icddr,b	Study design, analysis plans, report writing oversight
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Tarique Md. Nurul Huda, Deputy Project Coordinator; icddr,b	Study design oversight, analysis plans
Husna Ahmad; Global One UK	Study design oversight, intervention delivery
Fachruddin Mangunjaya; Universitas Nasional (UNAS)	Intervention delivery, data collection, draft report
Rakesh Rawal; Street Child Of Nepal	Intervention delivery, data collection, draft report

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