

# Improving hygiene behaviours within Rohingya settlements in Cox's Bazar

  
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INSIGHTS  
TEAM

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# Context & Executive Summary

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# BIT worked with BRAC to encouraging handwashing with soap in Rohingya camps

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Bangladesh is the site of [the world's largest](#) settlement for forcibly displaced Rohingya nationals. Since August 2017, hundreds of thousands of Rohingya families have fled genocidal violence in Myanmar. Now, over 1,000,000 people have lived in temporary settlement camps spanning 5,800 acres. BRAC - the world's largest NGO - is the largest responder to the Rohingya displacement crisis, managing a number of camps outside of Cox's Bazar in southern Bangladesh.

In 2021-22, BRAC installed thousands of handwashing stations (HWSs) across the camps. They have also rolled out in-person interventions, digital and mass media campaigns to encourage the use of these HWSs. These outreach efforts have been essential, as research suggests that the provision of soap and water alone is not sufficient to encourage people to practise handwashing with soap in a humanitarian context – the problem is behavioural.<sup>1</sup>

In this project, **the Behavioural Insights Team (BIT) worked with BRAC's Social Innovation Lab (SIL) to encourage handwashing with soap at public HWSs within two camps**. We conducted a series of iterative prototyping cycles to develop BI-informed interventions, and implemented and tested these interventions in the field. We assessed the impact of the interventions on HWS usage as well as implementation fidelity.

We would like to thank BRAC and the Reckitt Global Hygiene Institute (RGHI) for their funding and support in this project. We are also grateful to POKET Software Services Inc. for developing a bespoke digital data collection tool for this study.

# Building HWSs is not enough – camp residents face behavioural barriers to using HWSs

## Residents lacked **opportunities** to wash their hands

1. Residents **lacked access** to functioning HWSs. HWSs were frequently in disrepair as parts went missing, were broken, or there was neither water nor soap.
2. Women and adolescent girls had restricted mobility within the camps due to **cultural norms and safety concerns**.
3. Residents **lacked understanding** of how to use HWSs appropriately to wash their hands effectively.

## Residents lacked **motivation** to wash their hands

1. There were **no social norms** around handwashing and, therefore, no accountability among peers, family and the larger community around hand washing habits.
2. Residents **lacked awareness** about the necessity of handwashing for communicable disease prevention.
3. Residents did not have a **habit** of washing their hands.

# We designed behavioural interventions to overcome behavioural barriers

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BIT and SIL brainstormed and developed behaviourally-informed interventions to mitigate the behavioural barriers to using the HWSs. These interventions were:



## We repaired and maintained HWSs to increase opportunity for handwashing

- We repaired and repainted HWSs, and equipped HWSs with standardised soap bottles. This increased the **opportunity**<sup>1</sup> for behavioural change, as camp residents had greater access to functioning HWSs.



## We used visual and pictorial cues to prompt handwashing

- We placed stickers near the toilets and HWSs displaying hand washing techniques, with arrows pointing towards the HWS. This made HWSs more **salient** to attract camp residents' attention, so that they would be prompted to wash their hands.



## We tapped on community and religious leaders to increase motivation for HWS usage

- We created a sermon (“Khutba”) guide for imams / majhis in the community and asking them to spread the message of handwashing with soap during religious services.
- We held focus group discussions with different groups of influential members of the community to understand the barriers of handwashing, share information on proper handwashing techniques, and promote hand hygiene practices that are culturally appropriate.
- These helped to promote a positive, **injunctive social norm** around handwashing so that camp residents would be more likely to adopt these norms in practice.

# However, behavioural interventions can only be successful with foundational structures and systems in place

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We conducted the trial in the months of **April and May 2023**. Enumerators observed HWSs and recorded data via the app developed by POKET. However, despite POKET's efforts to retrieve data, **we faced multiple challenges in data collection**, such as external events that hindered observations (e.g. cholera outbreak, cyclone, closure of camps during Eid holidays). This led us to focus instead on understanding general handwashing behaviour as well as implementation of handwashing interventions and trials.

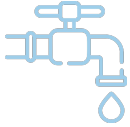
We found that handwashing was hindered because:

1. **It was difficult to maintain functioning HWSs, even with constant repair efforts.** Throughout the trial where we implemented a repair schedule, the proportion of functioning HWSs one a given day ranged from 6 to 16%.
2. **Norms and concerns around safety have reduced vulnerable groups' access to HWSs.** There were reported norms against women leaving the home. Safety was also a concern, particularly with reports of human trafficking. These factors discouraged residents from leaving their shelter to use latrines and HWSs.
3. **External events such as natural disasters and violence further hindered HWS usage.** During the project, there were heatwaves, cyclones and other events that made it difficult for camp residents to venture out to use HWSs.

This suggests that **behavioural change can only be effective if there are sustainable structures for HWSs in place, and systems to maintain these structures and ensure access.**

# Implementing partners should roll-out hand washing interventions in tandem with broader hygiene interventions

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We should **encourage access to sustainable handwashing infrastructure**, both by investing in the design and engineering of more resilient structures (e.g. taps that cannot be pulled off easily or broken), as well as enhancing resident's understanding of handwashing, and improving safety between shelters and HWSs.



We also need to ensure that infrastructure is well-maintained, and that can be done by **encouraging behaviours within the community that promote ownership and maintenance** - by making easy and social to do so (e.g. having a simple reporting process, or rewarding individuals who step up to repair HWSs).



We can go beyond handwashing to consider **encouraging other hand hygiene behaviours** that may be less reliant on infrastructure, such as the use of personal hand sanitisers.



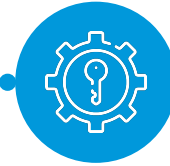
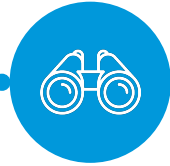
# What We Did

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# We conducted workshops, consultations and a field visit to understand the context and develop behavioural solutions



We conducted a workshop with SIL to **define the behavioural target**

We conducted a workshop and consultations with SIL to **develop user journey maps and identify behavioural barriers**

We conducted a field visit to Rohingya settlement camps to **understand handwashing behaviour through observations**

We conducted a workshop with SIL to **design solutions that addressed identified behavioural barriers**

We **implemented our solutions and measured HWS usage**

# Through our collaborative design process, we identified barriers and developed **three key behavioural solutions**

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## *Behavioural barriers*

People did not have sufficient **opportunity** to wash their hands

People lacked **motivation** to wash their hands

## *Behavioural solutions*



We repaired and maintained HWSs to increase opportunity for handwashing



We used visual and pictorial cues to prompt handwashing



We tapped on community and religious leaders to increase motivation for HWS usage

# We repaired and maintained HWSs to increase opportunity for handwashing

**BARRIER: Camp residents did not have sufficient opportunity to wash their hands**

## Residents lacked access to functional HWSs.

Having functional HWSs is necessary for people to be able to wash their hands.<sup>1</sup> However, during our field visit, only 33% of the camp toilets had functional HWSs nearby. In addition, only 6-16% of HWSs were functional throughout the trial period. Over 70% of observations recorded that HWSs did not have water, and ~40% of observations recorded that the HWS had a damaged pipe, tap or drain. In some cases, the entire HWS had been removed from the site.

## HWS parts went missing, likely due to theft.

Incidents of theft are high in the camps and parts of HWSs are stolen for personal use or for reselling. This contributed towards HWSs' breakdowns, as parts frequently went missing. Breakage also occurred when children misused or played with the HWSs.

## We formed a repair schedule prior to the trial.

We created a plan with BRAC to review every HWS in the trial and restore them to a working condition before implementing our BI-informed interventions. These repairs included: making sure water tanks were **clean and had taps**, ensuring **proper drainage** cover around the HWSs, and **securing water tanks with locks** to prevent disappearance.

## We also ensured soapy water was available at HWSs.

BRAC equipped HWSs with bottles containing **soapy water**. This acted as a visual reminder to encourage camp residents to wash their hands with soap. Soapy water was also more difficult to remove compared to bars of soap.



Refilling a water tank

# We used **visual and pictorial cues** to prompt handwashing

**BARRIER: People were not motivated to wash their hands.**

## People did not notice HWSs.

While HWSs were present in the camps, they were not salient enough to attract attention. Camp residents were therefore sometimes unaware of the HWSs or forgot to wash their hands.

## People did not have a habit of washing their hands.

Handwashing was not a habitual behaviour for many residents. People therefore required accessible and salient cues to prompt handwashing, and positive reinforcement for doing so, to build handwashing into a habit.

## People might not be aware of handwashing technique.

Many camp residents may not be aware of standard guidelines for handwashing (e.g. to use soap and water, to scrub hands for minimum amount of time). These guidelines need to be communicated clearly.

## We repainted HWSs and placed stickers to prompt handwashing

These stickers included images related to proper handwashing technique, germs, or positive reinforcement messages. They acted as **visual cues** to remind individuals to wash their hands. The use of such stickers and messages as visual cues was previously found to be effective in encouraging handwashing in prior studies.<sup>1</sup> In addition, these stickers - together with repainting of the HWSs - improved the overall aesthetic of the HWSs.



*Placement of stickers on HWSs*

# We tapped on **community and religious leaders** to encourage correct and regular HWS usage

**BARRIER:** Camp residents lacked motivation to wash their hands.

**Residents lacked understanding of the consequences of poor hand hygiene.**

Camp residents often lacked awareness of how communicable diseases spread, and understanding of the consequences of poor hygiene. This could lead to low motivation among people to wash their hands to avoid disease transmission.

**Residents lacked social influences to encourage hand washing.**

We tend to adopt and normalise behaviours that are frequently displayed in our surroundings. In the camps, we observed that the frequency of hand washing was very low. This creates a self-fulfilling prophecy. Camp residents don't wash their hands, which means fewer residents observe others washing their hands, in turn fostering a perception that handwashing isn't 'the done thing', deterring even more people from washing their hands.

**Influential community members served as social influences and spread awareness about hand hygiene.**

In our trial, we engaged groups of influential members such as religious leaders, teachers, and health volunteers in focus group discussions to influence and reinforce the importance of good hand hygiene practices, and can help create a deeper understanding and commitment among the community towards adopting these behaviours.

We also created a **religious script (“khotba” guide)** for imams/majhis (religious leaders) to spread the message of handwashing with soap after using the toilets and before meals. This intervention built on our prior work in Indonesia, where local community leaders effectively spread community norms to increase handwashing.<sup>1</sup>



*Imams with the khotba guide*

# Implementation & Testing

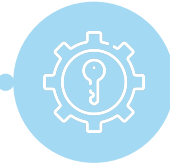
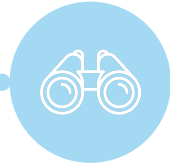
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# After developing behavioural solutions, we **implemented and tested** them in a field trial from April to May 2023

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We conducted a workshop with SIL to **define the behavioural target**

We conducted a workshop and consultations with SIL to **develop user journey maps and identify behavioural barriers**

We conducted a field visit to Rohingya settlement camps to **understand handwashing behaviour through observations**

We conducted a workshop with SIL to **design solutions that addressed identified behavioural barriers**

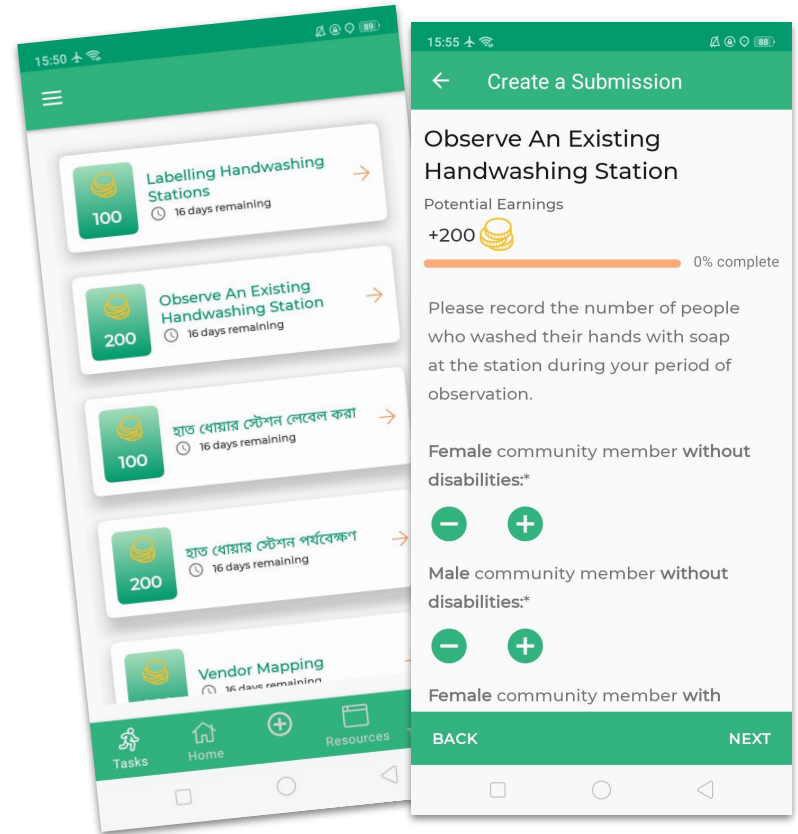
We **implemented our solutions and measured HWS usage**



# We used a **novel data collection tool** developed by POKET

During the trial, enumerators **observed HWSs** in one-hour shifts throughout the day. They recorded the number of people using the HWSs, the difficulties faced by users, the soap levels, and also submitted photos of their observations.

The data was recorded via a **bespoke mobile application** developed by POKET Software Services Inc, specifically for data collection in the camps. The app allowed enumerators to operate more or less independently, and receive their pay piecemeal in response to uploads. The enumerators were **trained** to use the app through a workshop conducted in the camps.



# We faced **multiple challenges** in data collection

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Enumerators had difficulty conducting observations due to **external events** that occurred, including

- A cholera outbreak in one of the camps (1 - 5 Apr 2023).
- A heatwave (12 - 30 Apr 2023).
- Camp closure during the Eid holidays (19 - 25 Apr 2023).
- Camp closure due to murder and gun violence (29 Apr 2023, 22 May 2023).
- Cyclone Mocha, pictured (14 - 15 May 2023).



# We faced **multiple challenges** in data collection

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Data submitted by enumerators contained **inconsistencies or were incomplete**, due to

- **Inconsistent soap records:** For example, some enumerators recorded more soap at the end of the observation than at the start, even when no refills occurred during the observation period.
- **Implausible records of HWS usage:** For example, some enumerators recorded that the residents washed their hands with water and soap at the HWS even though they also recorded that there was no water and soap at that HWS.
- **Network connectivity issues within the camps:** Enumerators had difficulty uploading data onto the app when there were network issues.
- **Lack of HWS labels in enumerators' photos:** The app was unable to process the HWS location when the label was not visible in the enumerator's submitted photos.



# Given these challenges, we focused on implementation

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We focused on understanding general handwashing behaviour and implementation factors instead. We sought to understand:

- How handwashing behaviour changed over the course of the trial, for different groups and in response to events.
- The frequency of non-functional HWSs and what difficulties were observed in operating them.
- How HWS functioning interacted with HWS usage.
- The frequency of inconsistent or incomplete data submissions.



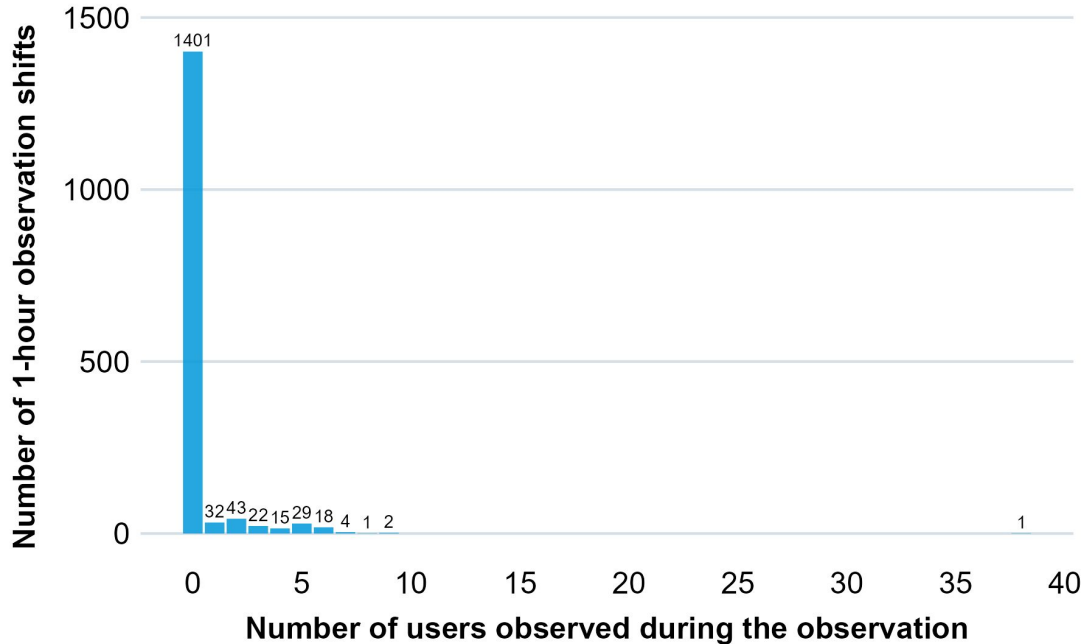
# Insights

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# Handwashing remained low due to structural and systemic barriers that remained

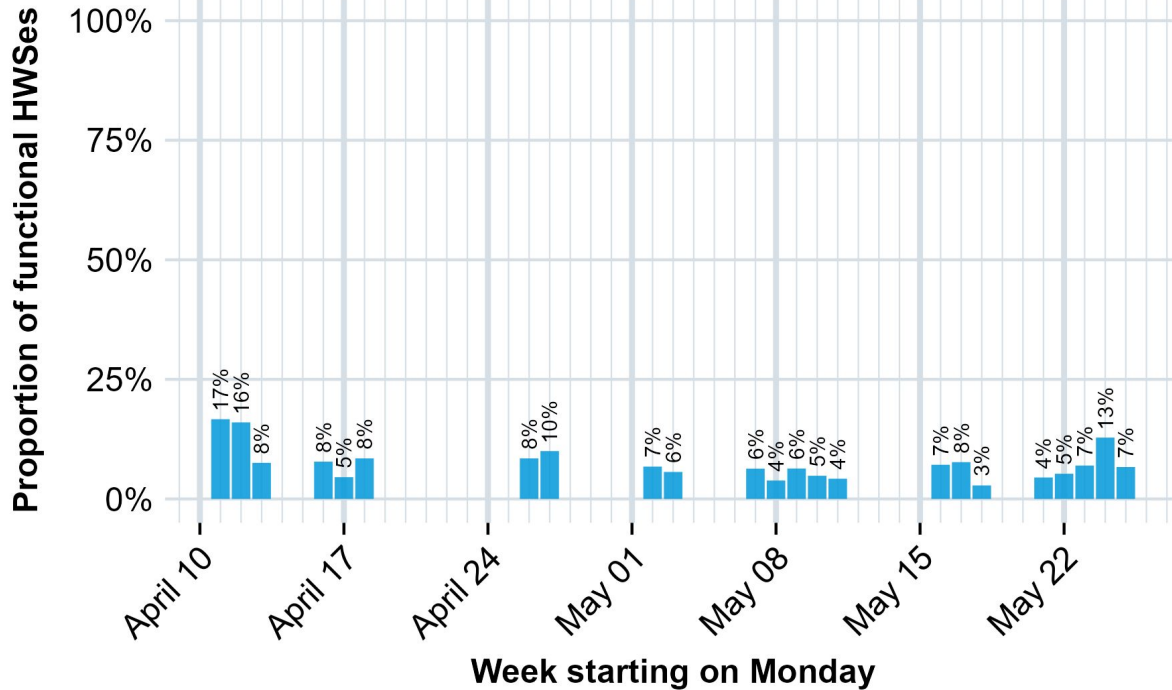


Despite the behavioural interventions that we implemented, the rate of handwashing remained low and continued to decline throughout the trial. By the end of the trial, we observed about 0.1 users per hour.

The low rates of handwashing could be attributed to three key reasons:

1. It was difficult to maintain functioning HWSs, even with constant repair efforts
2. Cultural norms and safety concerns may have reduced access to HWSs
3. External events such as natural disasters and disease further hindered HWS usage

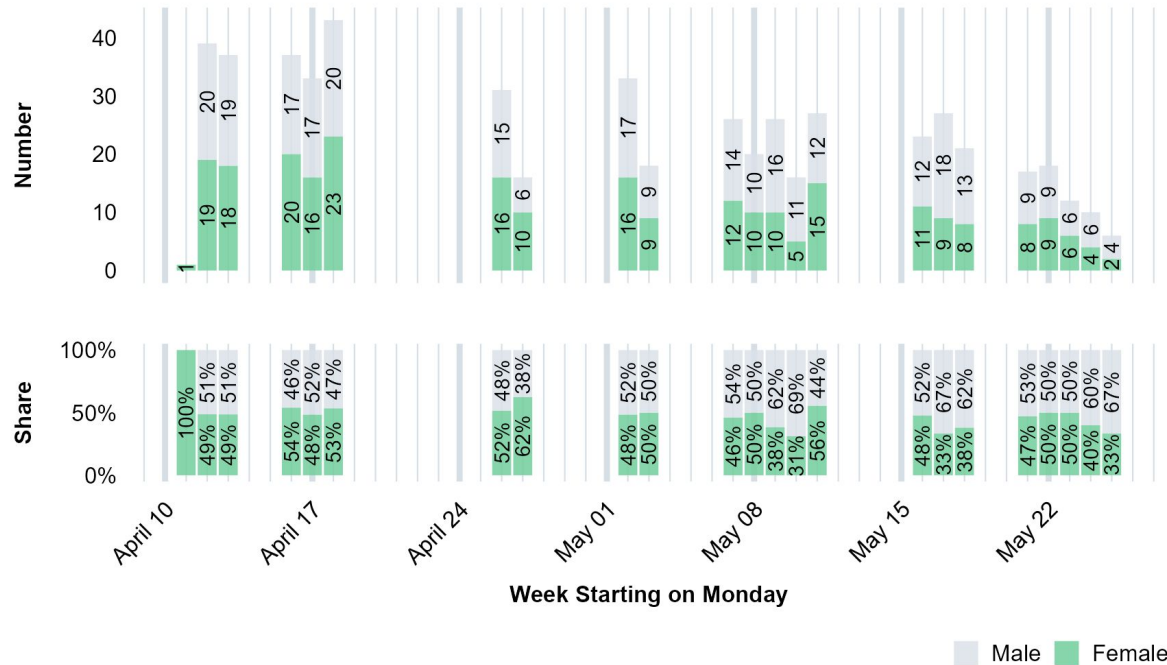
# It was difficult to maintain functioning HWSs, even with constant repair efforts



Prior to our trial, we visited two camps in Cox's Bazar. We observed that a lot of HWSs were broken or not fully functional with missing parts, or without soap or water. Although we implemented a repair schedule as part of our trial, **HWSs continued to break down, with parts constantly missing or stolen.** About 16% of observations recorded functional HWS at the start of the trial, and this fell to 6% at the end of the trial.

**Camp residents were motivated to resell HWS parts for financial gain.** Our exploratory work suggested that camp residents preferred to sell HWS parts, rather than use HWSs, for financial profit. This likely also contributed to HWSs' constant breakdowns, as enumerators also reported missing parts.

# Cultural norms and concerns about safety may have reduced vulnerable groups' access to HWSs



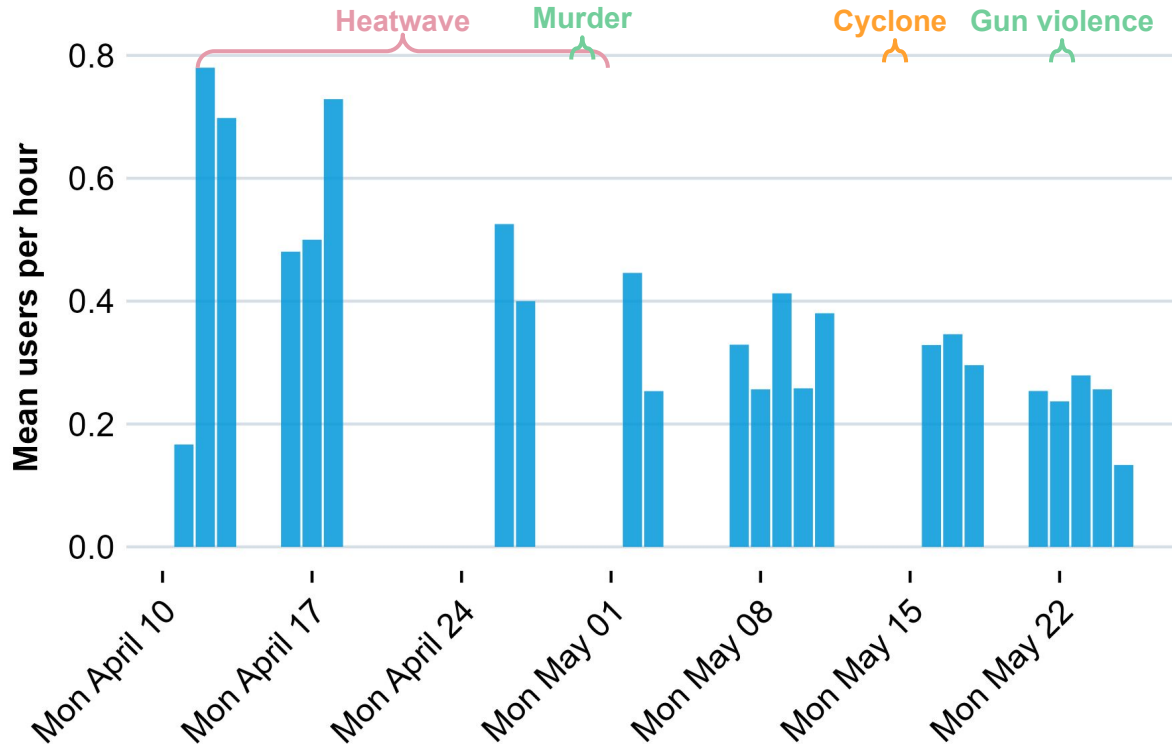
In our field visit, camp volunteers reported that there were **cultural norms and safety concerns**, particularly regarding adolescent girls and women, when leaving the shelter. Volunteers reported concerns about physical safety and human trafficking<sup>1</sup> as well as gun violence during the project period.

These concerns may impact females more than males. The [most recent census](#) of asylum-seekers in Cox Bazar reports that 52.7% are female and 47.3% are male. However, our HWS observations reported 49.9% washes by women and 50.1% were male - a small under-representation.

To avoid leaving the shelter, volunteers report, some **residents build illegal makeshift latrines** inside their shelters. These latrines lead to fewer residents using HWS, which contributes to poor sanitation in the camps.



# External events such as natural disasters and violence further hindered HWS usage



**External events may directly reduce an individual's capability to use HWSs.** For example, a heatwave made it difficult for individuals to venture outdoors.

**External events could also damage HWSs, reducing individuals' opportunity to use HWSs.** The cyclone that occurred during the trial was likely to damage HWSs.

**These events may also reduce motivation by shifting priorities away from HWS usage.** Incidents of violence in the camp may have reduced inclination to venture out.

While we saw no clear pattern between specific events and HWS usage, the number of HWS users per hour generally declined over the course of the trial. This suggests that **these events in combination might have discouraged HWS usage overall.**

# Recommendations

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# We need to design behaviour change interventions within the infrastructural and systemic context of handwashing

1 Invest in access to sustainable handwashing infrastructure as a foundation for behaviour change

2 Encourage behaviours that promote community ownership and maintenance of infrastructure

3 Encourage hygiene behaviours that are less reliant on infrastructure



# Invest in access to sustainable handwashing infrastructure as a foundation for behaviour change

## Why?

Our trial findings indicated that depleted soap and water, and missing parts, frequently prevented HWSs from functioning properly, despite continuous efforts to repair them. On the other hand, repairs that made HWS fully functional were associated with a large, positive impact on whether people washed their hands.

On top of the functionality of the infrastructure itself, access issues such as obstruction of the HWS or lack of knowledge on how to use the HWS also reduced HWS usage. We also found that challenges (e.g. crime) and disasters (e.g. heatwaves, cyclones) appeared to impede hand washing during our trial. Cultural aspects that prevent women from leaving the home also likely reduce access to HWSs for women.

BI interventions should therefore run in parallel with adequate investments in infrastructure, safety, and well-being.



*Example of a non-functional HWS where the water tank, soap bottle and tap were missing*

## What could this look like?

To be able to change behaviour, we need to ensure there is **opportunity** for the behaviour to occur.<sup>1</sup> Camp residents need **physical opportunities** to wash their hands, which requires access to a functioning HWS. Even though building permanent structures is difficult due to existing legal structures, HWSs **should not be easily dismantled or damaged** (e.g. securely fixing soap bottles, using a “tapless” HWS with a foot-operated nozzle instead), and be weather-resilient (e.g. shelters over HWSs). This requires more investment and innovation in design for transient populations.

**Social opportunity** (e.g. cultural norms) is equally important. We need to invest in more safety measures for vulnerable groups including women, such as ensuring hygiene facilities are well-lit at night and encouraging bystander intervention. Greater education on how to use HWSs (e.g. usage of equipment, handwashing technique), would also reduce the difficulties that residents face in using HWSs.

# Encourage behaviours that promote community ownership and maintenance of infrastructure

## Why?

Sustainable infrastructure is not just a matter of materials or designs, but also dependent on behaviours within the community. Unfortunately, we observed that certain HWSs had missing or stolen parts, or were mishandled with the tops of taps being ripped off, sticks being jammed up the tap, or holes being bored in the tank. This signifies a lack of ownership by the community, and lack of actions taken to maintain the infrastructure.

We should therefore consider behaviour change not just in terms of encouraging handwashing behaviour, but also with regard to encouraging ownership and maintenance of HWSs. We need to encourage greater care when using the HWS to avoid breakage, and anti-theft behaviours to ensure that handwashing infrastructure remains functional. It would be important to investigate behavioural barriers and facilitators towards such ownership and maintenance of HWSs.



*Example of an empty soap bottle at a HWS*

## What could this look like?

Camp residents already face **cognitive overload** from day-to-day stressors, and so it needs to be **easy** for people to take ownership, to minimise cognitive load. For example, we could institute clear and simple mechanisms for an individual to report damaged HWS or fix minor damages at the community level.

We could also harness the **endowment effect**, by officially granting ownership to a specific local leader, or set of households, and allowing them to redecorate the HWS to reflect that. This would encourage them to bear responsibility for the HWSs maintenance and prevent mishandling.

We could also encourage ownership through **social influences**. Influential messengers in the community (e.g. imams) could encourage people to care for HWS infrastructure. We could add on a soft social incentive by having community leaders publicly recognise those who have contributed to HWS maintenance.

# Encourage hygiene behaviours that are less reliant on infrastructure

## Why?

The ultimate aim of handwashing behaviour change interventions is to increase hand hygiene practices. However, hand hygiene need not be limited to handwashing. While handwashing with soap and water might be the most effective form of hand hygiene,<sup>1</sup> the best hygiene practice is one that can be followed easily and consistently.

We may, for instance, aim to encourage usage of alcohol-based liquid hand sanitizer or anti-bacterial hand sanitiser wipes, that are distributed to each individual or household for personal use or placed in sturdy public dispensers. These might be less prone to wear-and-tear or theft, though they may be more resource-intensive to provide.



*Example of a hand sanitiser bottle*

## What could this look like?

The interventions that we use to encourage HWS usage could also be used to encourage alternative hand hygiene behaviours. For instance, we may use posters as **visual prompts**, or harness social influences like **community and religious leaders**. We might need to also invest in additional education to prevent adverse use of hand sanitisers (e.g. contact with eyes or ingestion).

The usage of hand sanitisers and HWSs **need not be mutually exclusive**. Camp residents may use permanent (and less fragile) HWSs, while using hand sanitisers when they are far from a HWS.

When changing behaviour, it is often effective to **tap on pre-existing habits**. We observed many camp residents engaging in skincare (e.g. using face packs). Indeed, displaced persons value good grooming as it promotes self-respect.<sup>2</sup> We could explore encouraging hygiene behaviours as part of skincare and grooming.

# Future trials should ensure that data collection is robust and accurate

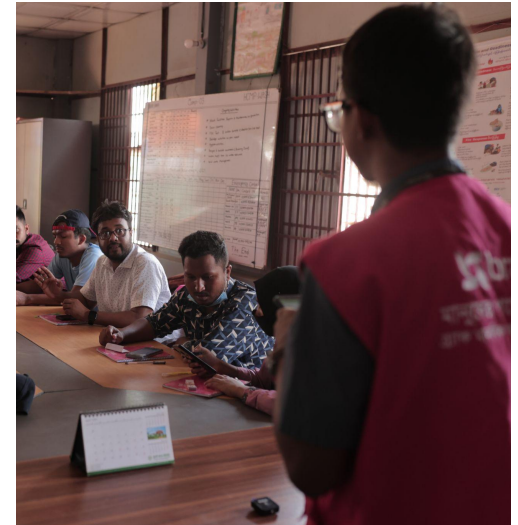
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## 1 Continue investing in novel data collection methods that leverage technology

The mobile application developed by POKET was helpful in using GPS tracking methods and visual recognition software to retrieve location information. These technological features are useful in reducing likelihood of human error when entering data, and we can continue to expand on such features. It is also particularly useful when multiple features can be used in tandem as failsafes (e.g. multiple means of tracking location).


## 2 Actively monitor and provide feedback to enumerators

Enumerators are at the frontline of data collection, and need to submit reliable data for analyses to be robust. This requires sufficient training of enumerators to ensure that they understand how data should be collected and submitted. Apart from training, monitoring of enumerators (e.g. through spot checks) and having a feedback loop is also important during trial implementation. This helps ensure that there is fidelity to data collection processes, and that the submitted data is valid.



# Appendix

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# We used BIT's bespoke project methodology, **TESTS** for this project

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# We conducted a target workshop to **define the problem**



## TARGET WORKSHOP

Behavioural solutions start with defining problems in behavioural terms. We used a range of strategies to turn this complex challenge into a solvable problem. We conducted a **Target workshop** with SIL to consolidate and specify the exact behavioural issues that are most important in this context. While handwashing with soap is the most important behavioural goal, the purpose of this workshop was to come away with a precise target for solution development. We narrowed down on **handwashing behaviour at public HWSs** in Rohingya camps.



## TARGET STATEMENT

We worked with SIL to prioritise behaviours that would have the most impact and be feasible to observe. For example, self-report measures or household behaviour was ruled out due to inability to observe it at a large scale. Based on desk reviews, and impact-feasibility ratings, we finalised a target statement most likely to have impact:

"If only refugees in the refugee camps in Cox's Bazar would wash their hands with soap at the BRAC public handwashing stations."

# We conducted an exploratory workshop, and consultations to understand the context

## EXPLORE WORKSHOP & CONSULTATIONS

We conducted an **Explore workshop** with SIL to model and visualise the process of handwashing that people go through. We helped create **user journey maps** to understand barriers, actions and thoughts of users at the HWSs and to identify points at which improvements could be made to encourage hand washing behaviour.

We also worked with SIL to conduct **consultations** with camp officials, WASH research teams stationed at Cox's bazar, BRAC's in-house Humanitarian Crisis Management Programme (HCMP) Team as well as external stakeholders such as other humanitarian aid organisations working in the camps (UNHCR, UNICEF, IOM).

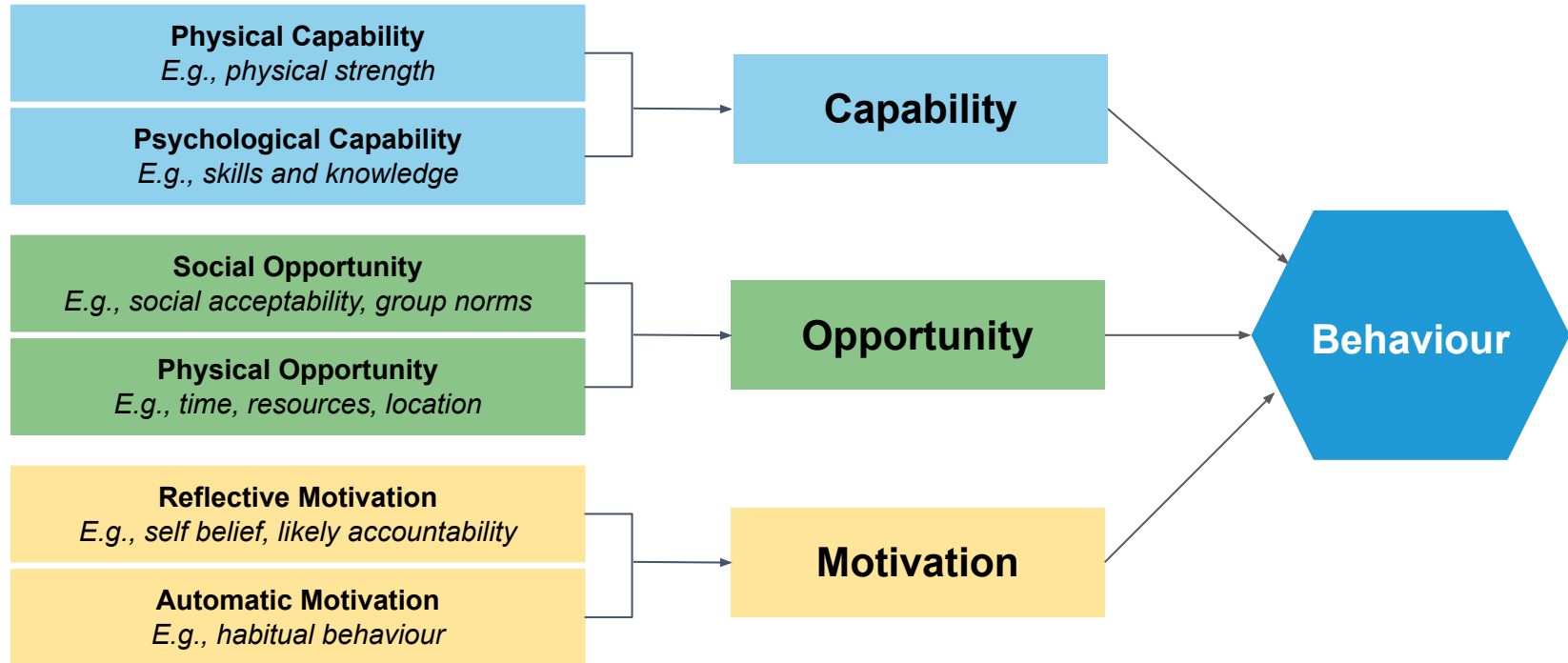
## FIELD OBSERVATIONS & DESK REVIEWS

We **visited the refugee camps** at Cox's Bazar, particularly Camp 2W and Camp 3 which were our test setting to observe behaviours of interest. The goal was to gain an understanding of how people behave naturally and the context in which these handwashing behaviours were occurring.

We reviewed existing data, including reports, white papers, and other research findings to understand the current context, spot trends, and identify gaps. While provision of soap and water was not enough to ensure correct handwashing behaviour,<sup>1</sup> access is definitely the most basic factor to be able to work on behaviour change interventions.<sup>2</sup>



# We used the **COM-B model** to identify barriers to behaviour



# We conducted a **solution workshop** to develop interventions that addressed barriers, which we then **tested**

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## SOLUTION WORKSHOP

We worked closely with BRAC's Social Innovation Lab (SIL) to design solutions. We brought together our learnings from the field and our in-house expertise in behavioural science to come up with behavioural interventions that could encourage hand washing in the camps.

We conducted a Solution workshop with SIL and used learnings from our literature review, stakeholder consultations and field observations to brainstorm solutions that would be most impactful and feasible to deploy within the camps.

We used BIT's EAST framework, which dictates that behavioural solutions should be a combination of these four factors: Easy, Attractive, Social, and Timely, to come up with solutions. We came up with a number of solutions which were then narrowed down on the basis of an impact-feasibility analysis.

## IMPLEMENTATION & TESTING

We **implemented the behavioural interventions** that we designed with SIL and tested these in a field trial in 2 camps over April to May 2023. Enumerators observed HWSs in 1-hour blocks during the trial period. Due to multiple challenges in data collection (e.g. external events that hindered data collection, missing or inconsistent data from enumerators), we focused on understanding general handwashing behaviour and implementation factors.



# We used the EAST Framework to develop interventions

We use the EAST framework as an accessible, simple way to make behavioural interventions more effective. According to this framework, in order to encourage a behaviour, we need to:

**Make it Easy:** People have limited cognitive bandwidth, and so we need to simplify and reduce frictions in performing a behaviour.

**Make it Attractive:** Attention span is limited, and so we need to attract people's attention to perform a behaviour.

**Make it Social:** We can use the power of networks and social influences to encourage behaviour change.

**Make it Timely:** We should prompt behavioural change when people are likely to be receptive, and help highlight the immediate costs and benefits.

