

# Spotlight on handwashing in rural India

Findings from a study on hand hygiene  
related knowledge and practices in four  
Indian states





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# Abbreviations

<b>ANM</b>	<b>Auxiliary nurse midwife</b>
<b>APL</b>	<b>Above poverty line</b>
<b>ARI</b>	<b>Acute respiratory infections</b>
<b>ASHA</b>	<b>Accredited social health activist</b>
<b>AWW</b>	<b>Anganwadi worker</b>
<b>BPL</b>	<b>Below poverty line</b>
<b>GP</b>	<b>Gram panchayat</b>
<b>IEC</b>	<b>Information, education, communication</b>
<b>IHHL</b>	<b>Individual household latrine</b>
<b>NGO</b>	<b>Non-government organisation</b>
<b>OBC</b>	<b>Other backward caste</b>
<b>ODF</b>	<b>Open defecation free</b>
<b>PRI</b>	<b>Panchayati Raj Institutions</b>
<b>SBM</b>	<b>Swachh Bharat Mission</b>
<b>SC</b>	<b>Scheduled castes</b>
<b>ST</b>	<b>Scheduled tribes</b>
<b>VWSC</b>	<b>Village Water Sanitation Committee</b>
<b>VHSNC</b>	<b>Village Health Sanitation and Nutrition Committee</b>

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# Introduction

Hygiene behaviours are critical to prevent leading causes of death and diseases in children, particularly diarrhoea and acute respiratory infections (ARI) among children under age five. An analysis of causes of neonatal and child mortality in India found that half of all deaths in children under five years were a result of pneumonia and diarrhoeal diseases<sup>1</sup>. The Global Burden of Disease Study notes unsafe water, sanitation and poor hand hygiene as a major risk factor driving death and disability resulting from these conditions<sup>2</sup>.

Hand hygiene, particularly, handwashing with soap, is recognised as a highly cost-effective public health intervention, having the potential to significantly reduce disease burden globally<sup>3</sup>. Handwashing with soap at five critical times – after defecation, after cleaning a child's bottom, before feeding infants/ children, before eating and before

food preparation, are estimated to reduce diarrhoeal diseases by 47% and respiratory infections by 23%, thereby meaningfully contributing to reductions in infant and child mortality and improved child survival rates<sup>4</sup>.

The F diagram of faecal-oral transmission of diseases clearly shows how various types of hygiene behaviour can affect the transmission of water and sanitation related diseases.

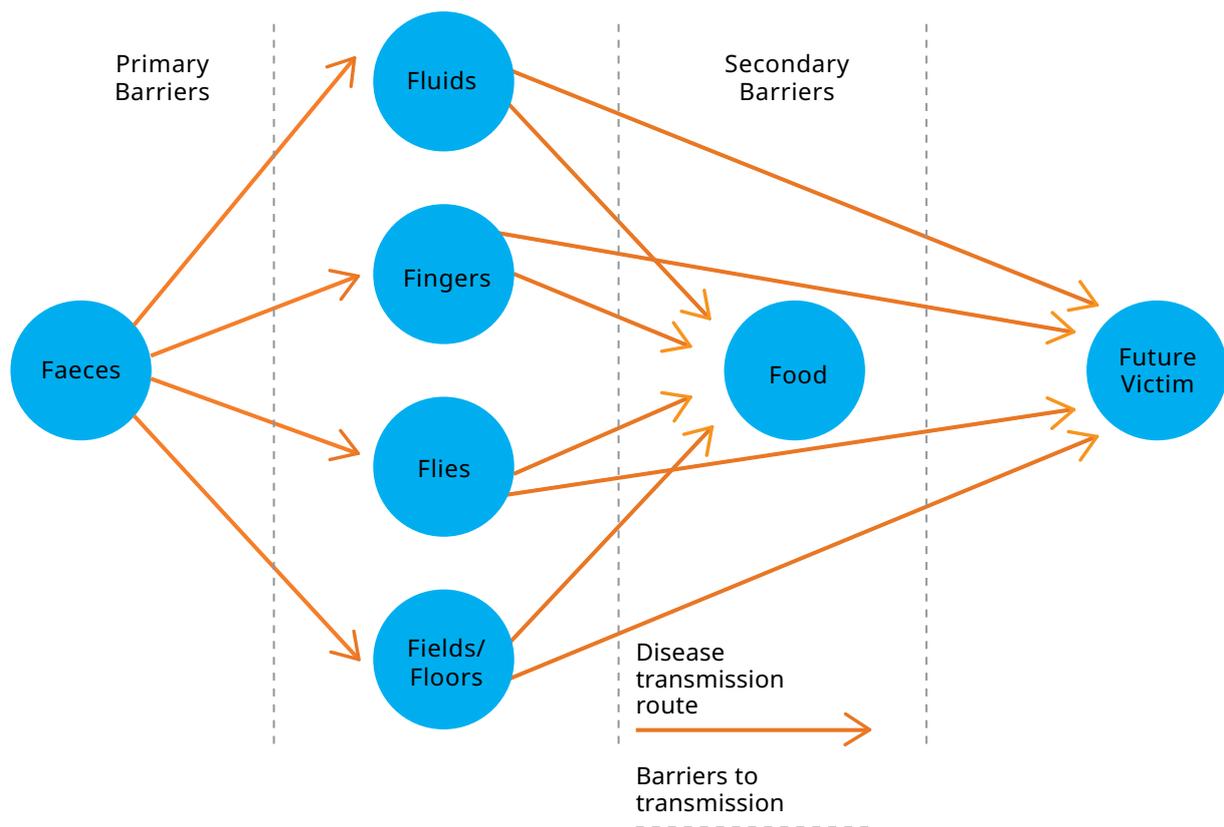
Primary barriers to faecal contamination involve: 1) effective separation of faeces from human contact through safe disposal of excreta (through the use of safe toilets, and safe and appropriate management of faecal matter); 2) removal of faecal matter from hands after contact with excreta (i.e., after defecation, washing a child's bottom and disposing child faeces).

<sup>1</sup> Million Death Study Collaborators (2010). Causes of neonatal and child mortality in India: nationally representative mortality survey. *Lancet*. 2010 November 27; 376(9755): 1853–1860. doi:10.1016/S0140-6736(10)61461-4.

<sup>2</sup> Institute for Health Metrics and Evaluation. Global Burden of Disease-India. Available at: <http://www.healthdata.org/india>. Accessed on 20 June 2017.

<sup>3</sup> Jamieson D, Bremen J et al. (2006) *Disease Control Priorities in Developing Countries*. Oxford University Press.

<sup>4</sup> Greenland K, Cairncross S, Cumming O and Curtis V (2013) Can we afford to overlook hand hygiene again? *Tropical Medicine and International Health*, 18.3, pp 246–9.



**Figure 1.** F Diagram of faecal-oral transmission of diseases

Secondary barriers refer to hygiene behaviours that prevent faecal pathogens present in hands and the environment from increasing and reaching new hosts. Hygiene behaviours that serve as secondary barriers include handwashing before preparing food, before eating and before feeding infant and children<sup>5</sup>.

An exploration of when and why people wash hands, and what they use to clean their hands can help strengthen water, sanitation and hygiene (WASH) programs in the country, and also help to inform WASH, health and nutrition related policies.

<sup>5</sup> Other hygiene behaviours that serve as secondary barriers include preparing, cooking, storing, and reheating food in a manner that prevents pathogens from multiplying; safe handling and storage of drinking water to prevent faecal contamination; and keeping household premises free from faecal contamination.

# Methodology

## Study objectives

The four fold objectives of this study are to:

- Understand the level of awareness about hand hygiene, including a) critical times for handwashing; b) appropriate way to clean hands; c) importance of handwashing, and d) handwashing messages and their sources
- Ascertain access to hand hygiene facilities at the household level, with a focus on a) presence of a designated place to wash hands; and b) presence of water and soap at the designated place
- Explore hand hygiene practices at the individual and household level, including a) occasions when the individual washed hands with soap and water; and b) frequency of handwashing
- Identify the facilitators and barriers to hand hygiene practices by understanding the perceived drivers and barriers to handwashing at the individual and familial levels

## Sample size and selection process

WaterAid India conducted this study in four states: Bihar, Chhattisgarh, Rajasthan and Odisha. The states were selected based on the level of information, education and communication (IEC) expenditure and the progress of construction of individual household latrines (IHHL) under the ongoing Swachh Bharat Mission (SBM)<sup>6</sup>. In each of the four states, two districts were selected based on the level of IEC expenditure (high and low). Within each state, districts falling under each of these categories were listed and randomly selected - one district per category.

<sup>6</sup> We used the report, "Financial Progress of SBM (G) across states up to third quarter of the year 2015-2016: Factsheet" to identify states. Refer to Graphs 6A-6D for details on IEC expenditure versus individual household latrine construction (p. 8)

Category	Other considerations	State	Districts	Blocks	Villages	Sample size calculated	Households covered
High IEC expenditure, low physical progress	Represents north region	<b>Bihar</b>	2	4	16	557	562
Low IEC expenditure, low physical progress	Represents central region, tribal population	<b>Chhattisgarh</b>	2	4	16	150	149
High IEC expenditure, high physical progress	Represents western region	<b>Rajasthan</b>	2	4	16	277	305
Low IEC expenditure, high physical progress	Represents eastern region, tribal and Dalit population	<b>Odisha</b>	2	4	16	292	303
<b>Total</b>			<b>8</b>	<b>16</b>	<b>64</b>	<b>1276</b>	<b>1319</b>

**TABLE 1** Sample details

In each of the selected districts, two blocks were randomly selected (using a random selection formula on Microsoft Excel). Within each block, all gram panchayats (GP) were listed, and four GPs (two open defecation free [ODF] and two non-ODF) were randomly selected (using a random selection formula on Microsoft Excel) to be included in the study<sup>7</sup>. The list of districts is given in Annexure A.

While the initial consideration was to select 20 households in each GP, the final sample was decided according to the size of the GP to ensure

representativeness in terms of the diversity of the population, particularly in terms of caste groups within each GP. **Table 1** presents the sample details.

### Hand hygiene survey tool

A hand hygiene questionnaire was developed and shared with hygiene experts in WaterAid India and the global network. The survey was divided into various sections: 1) demographic details; 2) hand hygiene practices; 3) knowledge of hand hygiene; 4) access to

<sup>7</sup> As some of the blocks are fully ODF, there are no non ODF GPs, and some blocks have no ODF GPs., we randomly selected the highest covered GPs instead

hygiene facilities; 5) hand hygiene related barriers and drivers; and 6) observations of handwashing spaces in the household.

The draft tool was entered into mWater, an application that allows computer assisted data collection using tablets and mobile phones. Two members of the WaterAid India team, along with the agency recruited to conduct the survey, field-tested the tool with 20 households in two villages in Pataudi, Haryana. After the first day of field-testing, a few critical changes were made to the tool in terms of rephrasing questions, adding options to multiple choice questions, and reordering certain questions. The tool was finalised after the second day of field-testing.

The finalised tool (in English) was translated into Hindi and Oriya, and sent to WaterAid India's regional teams for review. The translated tool was back translated to English to ensure accuracy.

## Data collection

WaterAid India recruited an agency to conduct the survey in four states. A rigorous procurement process to identify, interview and finally select an agency was followed. The selected agency, OUTLINE India, comprised

of seasoned researchers and data collection agents, assisted in field-testing and finalisation of the tool, data collection in four states, cleaning up of the data set, and submission of the data set to WaterAid India.

After finalising the tool, OUTLINE India conducted three batches of two-day trainings with surveyors/ interviewers in Bihar, Odisha and Rajasthan. The agency prepared three training modules: 1) a question-by-question guide of the questionnaires; 2) a technical training guide on using tablets and mWater application; and 3) a photo guide for taking photographs of the handwashing spaces in the household. After the training, the interviewers collected data from the four states over a 30-day period (February-March 2017).

## Data Analysis

WaterAid India conducted data analysis using the dashboards created on the mWater platform. For some types of analyses (e.g., of households with children under five), Microsoft excel data sheet was used to carry the analysis. For this report, data was sliced basis socio-economic categories to probe for differences by gender, caste, economic groups, and for families with children under age five.

## Limitations of the study

1. The study was conducted in only four states and eight districts. While the selection of states, districts and GPs was carried out using set criteria to allow for representativeness, greater insights may have been achieved with a larger and more representative sample (e.g., if Southern states had been included as well)
2. The quantitative survey could have been accompanied by a qualitative study to give richer insights to the barriers and drivers of hand hygiene practices
3. While the sample included major socio-economic groups, focused sampling of households with children under age five would have helped gain deeper insights into the practices, knowledge and perceptions of those households regarding hand hygiene
4. Certain questions (e.g., recall of hygiene messages from media) were not easily understood due to the complex nature of questions, and recall bias due to myriad of media interventions around Swachh Bharat Mission
5. Behaviours such as hand hygiene are prone to social desirability bias, particularly when studied through a quantitative survey. Hand hygiene practices at certain times (e.g., post defecation, before eating) may have been over-reported. The time compulsions to complete the study and to inform the Swachh Bharat Mission prevented the team from adding an observation component, which could have addressed this limitation



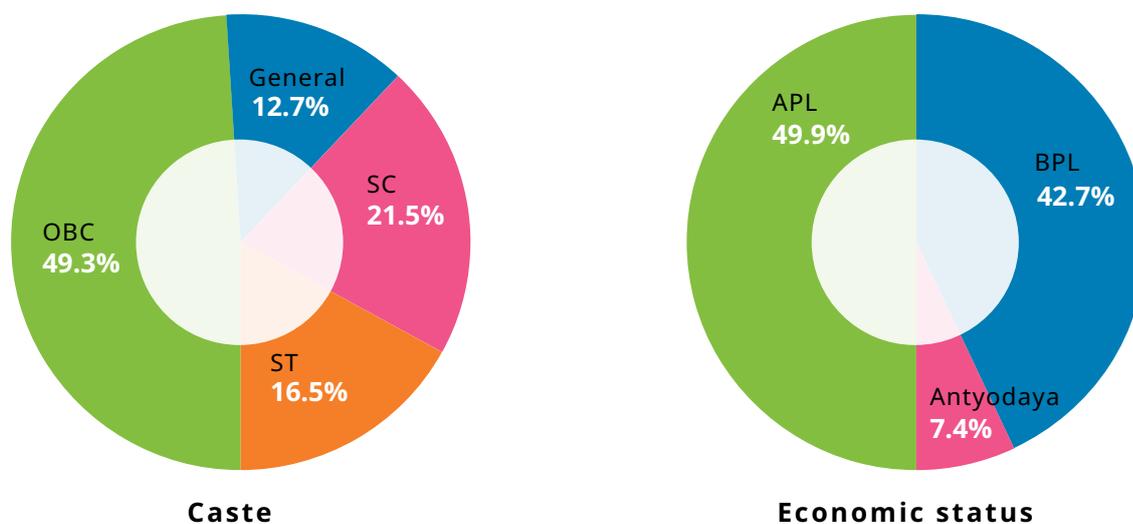
# Findings

## Study coverage

A total of 1,319 respondents participated in this study across four states, of which 57.1% were women and 42.9% were men. **Table 2** and **Figure 2** show the distribution of sample across states and socio-economic groups. Of the total sample, 407 respondents (30.6%) had children under five years; of this, 59.7% were women.

State	Total sample (No. of respondents) <sup>8</sup>	% of total sample	% Male	% Female
Chhattisgarh	149	11.3	60.4	39.6
Odisha	303	23.0	45.2	54.8
Bihar	562	42.6	31.8	68.2
Rajasthan	305	23.1	52.5	47.5
<b>Total</b>	<b>1319</b>		<b>42.9</b>	<b>57.1</b>

**TABLE 2** Sample details by state and gender



**FIGURE 2** Sample details by socio-economic status

<sup>8</sup> One respondent per household

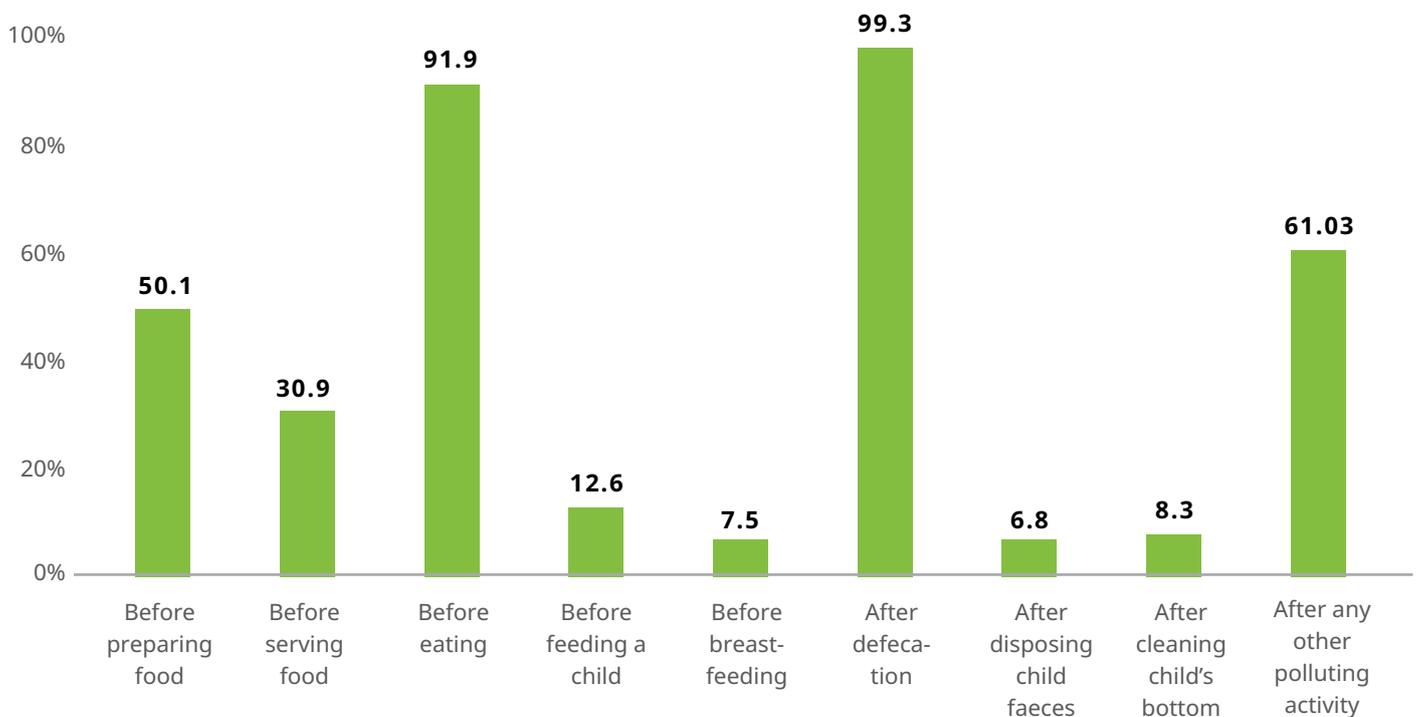
## Hand hygiene practices

This section presents findings related to people's handwashing practices at critical times, the cleansing agents used, correct demonstration of handwashing steps, and the presence of handwashing spaces in the household.

### Handwashing at critical times

To ascertain whether people washed their hands in the 24 hours preceding the survey, interviewers asked respondents to recall all the times they washed their hands in the past day.

Almost all respondents (99.8%) stated that they washed their hands in the last 24 hours. Respondents were more likely to have washed their hands after defecation (99.3%), and before eating (91.9%), than at other critical times such as before preparing food (50.1%), and during childcare related activities, particularly infant and young child feeding and disposal of child faeces (see **Figure 3**). The lower proportion reporting handwashing associated with childcare activities may be reflective of the number of respondents who had young children in their households. Looking specifically at data from



**FIGURE 3** Proportion who reported washing hands at critical times in the past 24 hours

respondents who have a child under five years in their family, a slightly higher proportion washed hands while engaging in childcare tasks (26.3% washed hands before child feeding, 14.7% before breastfeeding, 16.7% after disposing child faeces, and 18.4% after cleaning a child's bottom). The perception that handwashing in the context of childcare is important may be present among some respondents.

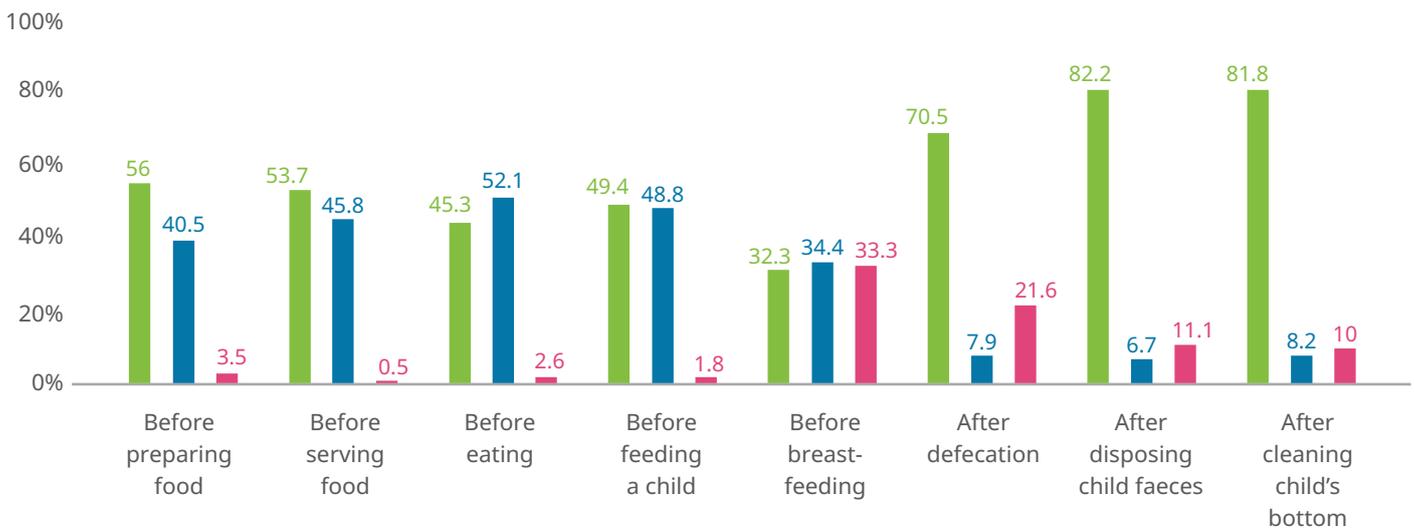
There was minimal variation in handwashing practices after defecation and before eating in the past 24 hours across the four states, socio-economic categories, gender, and families with children under five years. Yet, there were slight variations across these groups in relation to hand hygiene at other critical times (see Annexure B, Tables B.1 and B.2). Owing possibly to their greater involvement in household chores and childcare activities, women were more likely to wash their hands before preparing food (74.9%) and feeding children (18.6%) than men (17.3% and 4.6% respectively). More respondents from Bihar reported washing their hands before feeding children (18.3%) and breastfeeding (11.9%)

compared to those from the other three states, while a higher proportion of respondents from Chhattisgarh washed their hands after washing a child's bottom (16.8%) and disposing child faeces (13.4%) than those in Bihar, Odisha and Rajasthan (see Annexure B, Tables B.1 and B.2). State level differences may be due to cultural practices; this study, however, did not delve into possible socio-cultural factors that shaped hygiene practices.

### Handwashing agents used

Following-up on handwashing practices, respondents were asked about the agents they used to clean their hands at each of the critical times.

Soap was the preferred cleansing agent for activities that involved contact with faecal matter (i.e., defecation, washing a child's bottom, disposing child faeces). In fact, a greater proportion of respondents cleaned their hands after coming in contact with child faeces than after defecating themselves (though this difference is not significant). For activities that did not involve such contact, between two-fifths and half



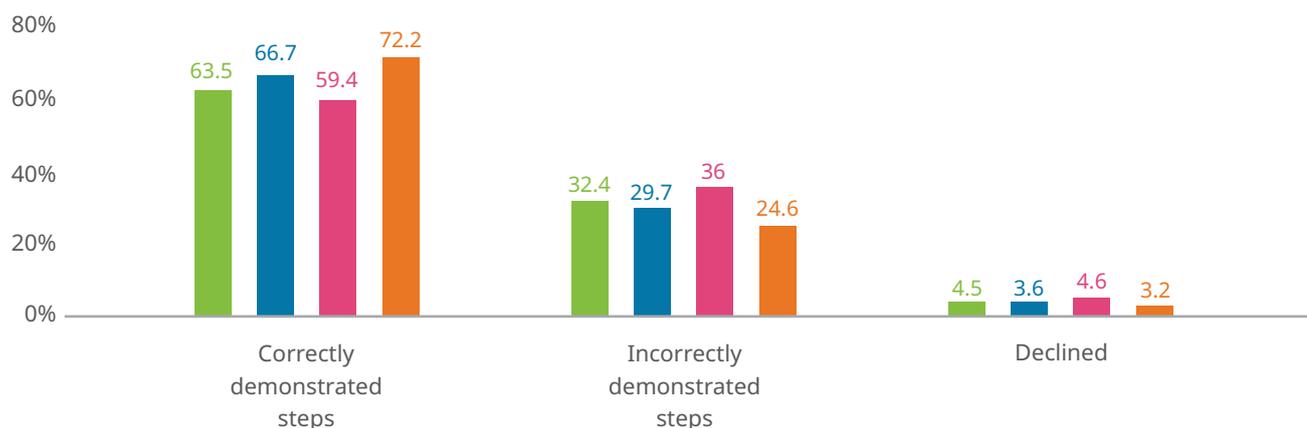
**FIGURE 4** Proportion who reported washing hands at critical times in the past 24 hours

■ Soap and Water   ■ Only Water   ■ Other agents (e.g., mud/sand)

of the respondents used water alone for washing their hands (**Figure 4**). A minority of respondents used mud or sand, especially to clean hands after faecal contact (21.6% using sand/mud after defecation; 11.1% and 10% using sand/mud after disposing child faeces and cleaning a child's bottom respectively). Very few respondents used ash, perhaps due to the lesser availability of ash in homes due to greater access to and use of kerosene and liquefied petroleum gas (LPG) for household use.

It was found that socio-economic groups differed slightly in their reported use of soap to clean

hands after certain critical times, particularly in relation to childcare activities and after defecation. For instance, more respondents from the general caste reported using soap before feeding a child (68.8%), after defecation (84.4%), disposing child faeces (100%), and washing a child's bottom (100%) than those from other castes (see Annexure B, Table B.3). A slightly higher proportion of respondents with a child under five in their household used soap after defecating (78.7%), disposing child faeces (85.3%), and cleaning a child's bottom (89.3%) compared to male and female respondents (see Annexure B, Table B.3).



**FIGURE 5** Proportion demonstrating correct handwashing

■ Total    
 ■ Male    
 ■ Female    
 ■ Respondents with children < 5

### Demonstration of handwashing steps

During the survey, interviewers requested respondents to demonstrate how they typically washed their hands. Based on their observations, 63.5% of respondents, on average, correctly demonstrated how to wash their hands<sup>9</sup>, suggestive of their knowledge of how to clean hands appropriately. Minor variations were found across gender categories, with a slightly higher proportion of women and respondents with children under five years following handwashing steps (66.7% and 72.2% respectively) as compared to men (63.5%) (**Figure 5**). An important caveat regarding this observation is that people tend to perform a socially desirable action or activity more thoroughly, especially

when under observation, than they might in other times.

In summary, almost all reported washing their hands in the past 24 hours, yet the proportion washing hands before eating food and after defecation was much higher than at other critical times, even among families with children under five. While this trend of washing hands with soap and water after contact with faecal matter is promising, lower rates of hand hygiene practices related to childcare tasks cannot be overlooked given the risk of infection through other routes. The finding that a majority clean their hands following the appropriate steps is encouraging, yet needs to be viewed in the context of social desirability of such behaviours.

<sup>9</sup> Correct demonstration includes following all these steps: wet hands, applies soap, lathers, scrubs hands, washes hands

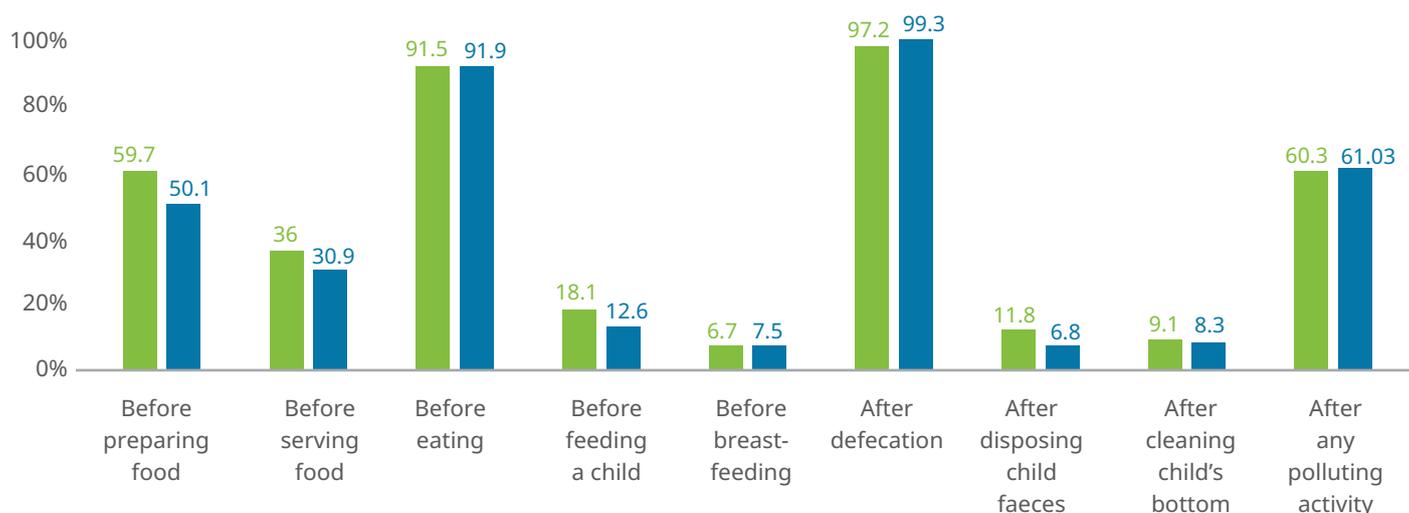
## Handwashing spaces in households

To get a sense of where the family members wash their hands, interviewers were taken to the most commonly used handwashing spaces in the household. Close to three-fourths of the respondents (73.1%) shared that the front or back yard was where the family most often washed their hands. Only 12.5% and 4.5% cleaned their hands in/near the toilet and in/near the kitchen respectively. An average 20.1% reported washing their hands in other spaces, often just outside the household premises or near the closest hand pump (see Annexure B, Table B.5).

Interviewers conducted detailed observations of the handwashing spaces looking for a sink or basin, water availability (e.g., tap with running water, bucket, container, hand pump), and availability of cleaning agents. Strikingly, in 87.9% and 96.0% of the homes, interviewers did find water and soap in/near the toilet, and in/near the kitchen respectively. Speaking to the reported use of the front/back yard for handwashing purposes, 27.4% of the homes did not have water or soap in the yard (see Annexure B, Tables B.6, B.7).

## Facilitators and barriers to handwashing

The location of the most frequently used handwashing spaces in the household and the amenities available has implications for engendering handwashing at critical times. For instance, with only 12.5% washing their hands in/near the toilet, it means that the remaining 87.5% of respondents washed their hands in the front or back yard or outside the premises. This may potentially undermine reported handwashing practices, particularly after latrine use. While this study did not look into distance from the handwashing space as a trigger or barrier to hand hygiene practices, we do have insights into what prevented people from washing hands in general. The main reasons that emerged were forgetting to wash hands (39.3%), lack of time (35.1%), lack of access to water (32.8%), and no access to soap (22.2%). A slightly higher proportion of respondents with children under five cited lack of access to soap (24.3%) and lack of time (39.8%) as major barriers to handwashing (see Annexure B, Table B.11 for details by socio-economic groups). Taken together, these reasons may be indicative of the challenges in washing hands after using the toilet, and do suggest that respondents may have over-reported handwashing after defecation.



**FIGURE 6** Proportion who reported washing hands at critical times in the past 24 hours

■ Knowledge of critical times      ■ Practice of washing hands at critical times

## Knowledge of handwashing

### Knowledge of handwashing at critical times

In this section, respondents were asked about handwashing at critical times and the agents used to clean hands.

Overall, people’s knowledge of handwashing practices was in line with their reported practices regarding this behaviour, with 97.2% and 91.5% being aware of handwashing after defecation and before eating respectively.

Knowledge of handwashing associated with childcare tasks such as child feeding, disposing of child

faeces and washing a child’s bottom was poor (**Figure 6**).

The above figure highlights a critical insight- that in the instances of handwashing before eating, after defecation, before breastfeeding and after any polluting activity, a slightly higher proportion reported engaging in that behaviour than being aware of that hygiene behaviour. This may allude to the practice of handwashing as a habit for some, and not necessarily resulting from greater awareness about handwashing.

Though there are similarities in this trend across socio-economic groups to a great extent, it is interesting to

Critical times for handwashing	Total (%)	Female (%)	Men (%)	Families with Children <5 (%)
Before preparing food	59.7	77.8	35.5	64.1
Before serving food	36	48.3	19.6	44.2
Before eating	91.5	89.6	93.9	90.2
Before feeding child	18.1	23.1	11.5	31.4
Before breastfeeding	6.7	9.7	2.7	12.4
After defecation	97.2	97.1	97.3	98.3
After disposing child faeces	11.8	16.7	5.3	21.1
After cleaning child's bottom	9.1	11.9	5.3	15.7
After any polluting activity	60.3	65.7	53	63.6

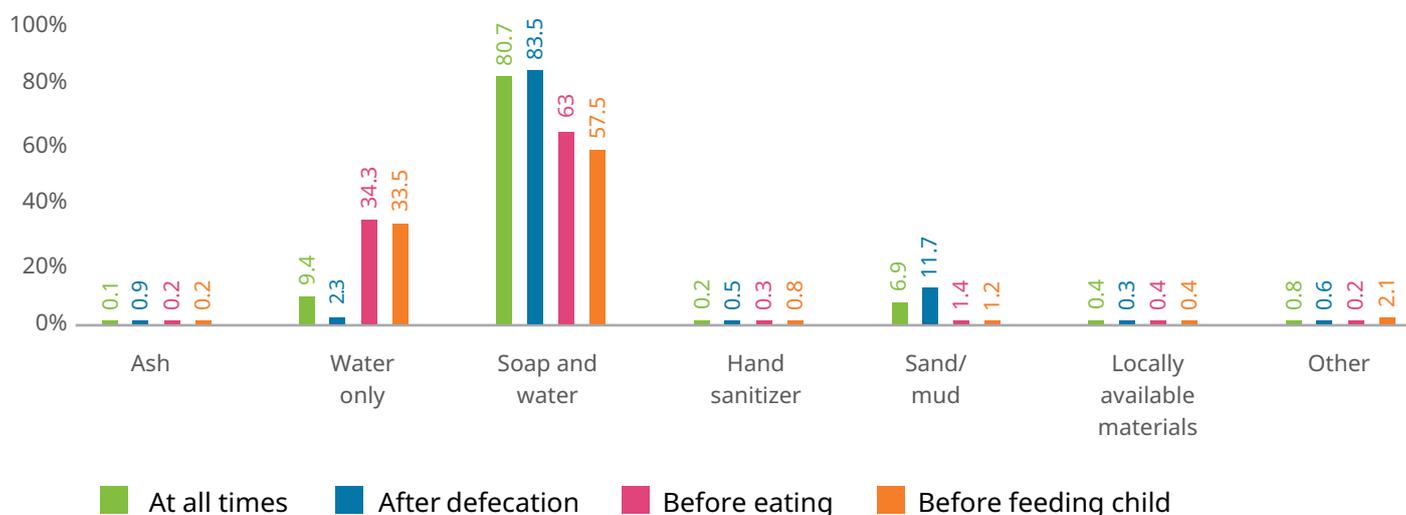
**TABLE 3** Proportion aware of handwashing at critical times by gender

note that some gender differences also exist whereby slightly more women and respondents with a child under five were aware of handwashing during childcare related activities, likely owing to them shouldering more childcare responsibilities than men do (see **Table 3** and Annexure B, Table B.8).

### Knowledge of hand cleansing agents

When probed about the agents that should be used to wash hands at critical times, approximately four-fifths (80.7%) mentioned soap, followed by 9.4% who said water only, and 6.9% who said sand or mud. A higher proportion of

respondents with children under five years (85.9%) said that soap should be used for cleaning hands at all times. As seen in the **Figure 7**, people were more aware that hand cleansing agents are to be used to clean hands after defecation than at other times. It was noted that 85.9% of respondents with a child under five said that soap should be used to wash hands at critical times, a bit higher than the study average (more details on knowledge of cleaning agents by socio-economic groups can be found in see Annexure B, Table B.9).



**FIGURE 7** Proportion who reported washing hands at critical times in the past 24 hours

### Knowledge of importance of handwashing

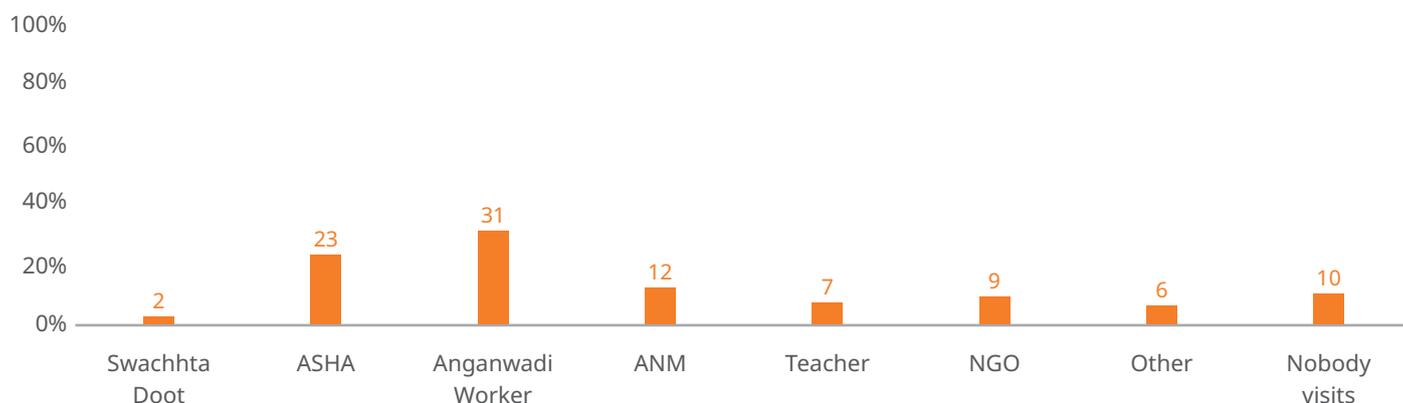
A vast majority said that handwashing helps to protect against germs (84.3%) and maintain cleanliness (79.3%). The difference between these two reasons, though small, may be suggestive of people’s understanding that visibly clean hands may not necessarily imply germ free hands, a perception critical to promoting hand hygiene practices.

Interestingly, 15.7% of all respondents and 17.2% of those with young children noted that they washed hands out of habit,

providing some limited support for why more respondents practice handwashing at some critical times than the number of respondents who knew about handwashing at those critical times (for further details, see Annexure B, Table B.10).

### Messaging on hand hygiene

To get a sense of the source and type of hygiene messages people were exposed to, the respondents were asked about the individuals who visited their community, those who provided information on hygiene, the media they were exposed to, and the key messages communicated by these sources.



**FIGURE 8** People and institutions visiting the community regularly

### Individuals and institutions visiting the community

Frontline workers emerged as the most frequent visitors to the community with close to one-third of respondents (31%) mentioning anganwadi workers, nearly one-fourth (23%) reporting ASHAs, and 12% noting that auxiliary nurse midwives (ANMs) came to the community regularly (see **Figure 8**).

Looking at the data across socio-economic groups, it was found that respondents identifying as Scheduled Tribes (ST), general category, and from the below

poverty line (BPL) and above poverty line (APL) categories were more likely to report visits from ASHAs and anganwadi workers than other groups. Interestingly, while a higher proportion of female respondents stated that they were visited by ASHAs (33.9%) and ANMs (16.5%) as compared to male respondents (28.4% and 14.5% respectively), a slightly higher proportion of men reported visits by anganwadi workers (49.3%) and teachers (12.5%) in relation to women (43.7% and 8.2% respectively) (for more details, refer Annexure B, Table B.13).

Hygiene messages received (%)	Total (%)	Female (%)	Men (%)	Families with Children <5 (%)
(N) Total number receiving hygiene messages from people/institutions	741	450	291	407
Handwashing at critical times	65.0	65.1	64.9	43.5
Safe disposal of child faeces	15.4	14.9	16.2	14.5
Safe handling and storage of water	22.7	22.9	22.3	15.7
Menstrual hygiene management	9.3	13.3	2.7	7.1
Food hygiene	41.9	44.7	37.8	28.7
Latrine use	74.2	75.6	72.2	46.4
Other	2.9	3.1	2.7	2.2

**TABLE 4** Type of hygiene messages received from individuals/institutions

### Sources of hygiene messages and content of hygiene messages

Among the 52.5% of the total sample who reported receiving hygiene messages from an individual or institution, anganwadi workers and ASHAs appeared as the main source of information, followed by NGOs (54.5%, 48%, 23.3% respectively). Over half of the respondents (54.9%) received hygiene messages from the media, with the most popular media being television (86.9%), newspapers (32.4%), and wall paintings (23.9%).

The two main hygiene messages received from individuals and

institutions who visited the community were related to latrine use (74.2%) and handwashing at critical times (65.0%). Based on interactions with respondents, it seems that in all likelihood, handwashing at critical times refers primarily to handwashing after defecation. Given that anganwadi workers often visit the community, 41.9% of respondents received messages related to food hygiene. In line with the overall trend related to childcare associated behaviours, only 15.4% and 22.7% of those surveyed reported receiving messages on safe disposal of child faeces and

Messages received from media	Total (%)	Female (%)	Men (%)	Families with Children <5 (%)
N (Total number who said they received hygiene messages )	725	461	391	407
Toilet is the pride of daughters/ daughters-in-law	43.9	43.2	38.1	<b>26.8</b>
Toilet and safety of women	54.8	49.5	58.6	<b>35.9</b>
Child disease and death	31.6	27.1	34.0	<b>24.8</b>
Girl child and school	17.2	15.8	15.9	<b>12.8</b>
Girl child and dignity	19.9	19.9	16.4	<b>14.9</b>
Let your child reach 5	2.8	3.0	1.5	<b>1.2</b>
Brothers giving their sisters toilets	1	0.9	1.3	<b>0.7</b>
Others	10.6	10.4	11.5	9.1

**TABLE 5** Type of hygiene messages received from media

safe handling and storage of drinking water respectively. Little difference was found across socio-economic groups regarding these findings. However, strikingly, a lower proportion of respondents with young children in their homes reported receiving information on all hygiene practices as compared to the study average, particularly for latrine use, handwashing at critical times, and food hygiene (**Table 4**. For more details, refer Annexure B, Tables B.13 and B.14).

The media focus on latrine use was clear with respondents recalling the main messages as relating to toilet

and safety of women (54.8%), and toilet being the pride of daughters/ daughters-in-law (43.9%). Less than one-third reported media messages on child diseases and death, in part explaining why knowledge regarding handwashing related to childcare activities may be low. Similar to the receipt of hygiene messages from individuals/institutions, a lower proportion of those with young children stated that received hygiene messages from media than the study average (see **Table 5** and refer see Annexure B, Table B.15 and B.16 for more details). The reasons for this trend are not known, and must be explored.

Other care or failure warmer  
infection should be suspected



LIVES  
WASH YOUR  
HANDS BEFORE  
YOU TOUCH ME  
CHILDREN  
DON'T WANT TO  
PUNISH YOU

WaterAid/Rommy Sen

# Conclusion

## Key takeaways

- Handwashing with soap and water, particularly after defecation and before eating, are reportedly high and is largely consistent with the high levels of awareness regarding these behaviours. However, observations of the toilet and kitchen areas in the sampled households suggest that handwashing may be challenging given the lack of soap and water at these locations
- Hand hygiene behaviours and associated knowledge related to childcare activities is poor, even among those with a child under age five in their home. However, the findings do hint that caregivers may be more likely to wash their hands after coming in touch with child faeces (either after washing the child's bottom or disposing child faeces) than those who do not have young children. This, combined with high proportion of handwashing post defecation may suggest that faecal matter may be seen as polluting or dirty, and calls for the use of soap and water. Yet these hand hygiene practices do not extend to infant and young child feeding practices
- Frontline workers who have direct contact with the community emerged as important communicators of hygiene messages. The findings do not indicate that families with young children were more likely to receive information from ASHAs or anganwadi workers compared to others, highlighting an area that requires further investigation (especially since ASHAs and anganwadi workers are expected to reach pregnant women and mothers of young children)
- Television clearly emerged as the medium that has maximum penetration in households, though the overwhelming focus is on latrine use and handwashing associated with this behaviour
- While the findings suggest that people wash hands for cleanliness or to protect from germs, the survey team lack insights into whether and how these motivations work for each of the critical times for handwashing (e.g., do motivations differ for handwashing in relation to faecal contact versus handwashing before eating or child feeding)

- The measurement of hand hygiene behaviours is challenging given social desirability of these behaviours
- Spot observations of handwashing behaviours can be misleading
- Observation of physical setting where handwashing takes places in the households is critical to understand whether handwashing is supported at critical times through the presence of appropriate WASH infrastructure

## Discussion

Knowledge is an important element of behaviour change, and is the focus of most hygiene promotion programmes. Research suggests that while knowledge of the importance of hygiene (through traditional hygiene awareness campaigns) is important to communicate the benefits of handwashing, it is alone insufficient to bring about sustained behaviour change<sup>10,11</sup>. Further, the threat of death, diseases, and germs is a

weak motivator for handwashing<sup>12</sup>. Sustained change in hygiene behaviours can be engendered through a systematic and evidence based-intervention that leverages emotional drivers (such as disgust, affiliation, nurture or status), addresses behaviours in the specific contexts in which it takes place, and implements activities that are interactive and have an element of surprise as seen from the Super Amma trial in Andhra Pradesh<sup>13</sup>.

An enabling environment is important to foster hygiene behaviour change, with evidence pointing to the importance of the availability of soap and water, and the presence of a designated and established handwashing space to encourage sustained handwashing practices<sup>14,15</sup>.

Studies on primary caregivers of children under the age of five suggest clear benefits to children if their caregivers wash their hands.

<sup>10</sup> Brian A, Schmidt WP, Wright R et al (2009). The effect of a soap promotion and hygiene education campaign on handwashing behaviour in rural India: a cluster randomised trial. *Trop Med Int Health*. 2009 Oct;14(10):1303-14. doi: 10.1111/j.1365-3156.2009.02373.x. Epub 2009 Aug 25.

<sup>11</sup> Seimetz E, Kumar S, Mosler H-J. Effects of an awareness raising campaign on intention and behavioural determinants for handwashing. *Health Educ Res*. 2016; 31(2): 109-120. Doi:10.1093/her/cyw002

<sup>12</sup> The Global Public-Private Partnership for Handwashing with Soap (2015), Promote. Available at: <http://globalhandwashing.org/about-handwashing/promotehandwashing/project/>

<sup>13</sup> Brian A, Schmidt WP, Vardharajan KS et al (2014). Effect of a behaviour-change intervention on handwashing with soap in India (SuperAmma): a cluster-randomised trial

<sup>14</sup> Abdi R, Gautam OP. Approaches to promoting behaviour change around handwashing-with soap. *WaterAid*

<sup>15</sup> Mane Ab, Reddy NS, Reddy P, Chetana KV, Nair SS, Srinivas T. Differences in hand hygiene and its correlates among school children in rural and urban areas of Karnataka, India. *Arch med*. 2016; 8(5):1-5. Doi:10.21767/1989-5216.1000163.

When mothers wash their hands with ash or soap, their children have a higher mean height-for-age than those who do not.<sup>16</sup> However, research in India has found a discrepancy between knowledge of handwashing with soap and optimal handwashing by mothers caring for children in the home and in the community in urban and rural areas.<sup>17</sup> Some research indicates that among mothers, the presence of handwashing facilities may facilitate handwashing with soap post defecation, yet handwashing may also be informed by the perceived threat of germs associated with that activity.<sup>18</sup>

The present study suggests that many people do have access to soap, but may prioritise its use at certain times, as a result of their knowledge of when soap is to be used, how much soap they have access to, and where the soap may be placed in the household setting. To improve handwashing with soap

at critical times, people's attitudes and perceptions regarding soap use at critical times must be understood and addressed, and the physical environment needs to be modified to make handwashing with soap easier and a habit. The difficulties of rural households, especially women in adhering to the principles of handwashing is an important consideration, and hence, ways to facilitate such practices within their complex situations need to be thought of.

In the context of the ongoing Swachh Bharat Mission, learnings from a review of literature on hygiene promotion suggests that when handwashing with soap is promoted under the ambit of a larger awareness and infrastructure focused WASH program (for instance, the Swachh Bharat Mission), the hygiene behaviour change component receives less attention<sup>19</sup>.

<sup>16</sup> Saxton J, Rath S, Nair N, Gope R, Mohapatra R, Tripathy P, Prost A. Handwashing, sanitation and family planning practices are the strongest underlying determinants of child stunting in rural indigenous communities of Jharkhand and Odisha, Eastern India: a cross-sectional study. *Maternal Child Nutr.* January 2016. Doi: 10.1111/mcn.12323

<sup>17</sup> Khan S, Kumar V, Priya N, Yadav SS. Handwashing practices among the caregivers of under five children in rural and urban areas of Moradabad, India: a community based study. *Int J Med Sci Public Health.* 2017; 6(1): 133-138.

<sup>18</sup> Demberere T, Chidziya T, Ncozana T, Manyeruke N. Knowledge and practices regarding water, sanitation and hygiene (WASH) among mothers of under-fives in Mawebini, Umzingwane District of Zimbabwe. *Phy Chem Earth.* 2016; 92:119e124. Doi:10.1016/j.pce.2015.09.013.

<sup>19</sup> Abdi R, Gautam OP. Approaches to promoting behaviour change around handwashing-with soap. *WaterAid*

## **Programmatic, policy and research considerations arising from study findings**

### **Translating hygiene awareness into action**

- Health and nutrition services for pregnant women and mothers of children under age five (e.g., antenatal care visits and immunisation services under National Rural Health Mission, and household visits and counselling by ASHAs; anganwadi sessions with pregnant women, lactating mothers, mothers of children under five) to incorporate messages related to handwashing at critical times, with a focus on infant and young child feeding practices and handwashing after contact with child faeces, explaining routes of transmission and health impacts
- Hygiene interventions led by frontline workers (ASHAs and anganwadi workers) to incorporate benefits of handwashing in the context of child health, highlighting how washing hands at critical moments can avert preventable diseases that typically affect children (such as diarrhoea, pneumonia), and keep them healthy
- Demonstration and practice of hand hygiene measures by frontline workers and caregivers at the community and institutional level can serve to model and reinforce behaviours
- Nutrition rehabilitation centres (established under the National Rural Health Mission) to communicate key hand hygiene messages to caregivers of children receiving treatment, emphasising how hand hygiene practices must accompany nutrition-focused treatment to improve the child's nutritional status and maintain health
- Current mass media programs that draw attention to key issues under the Swachh Bharat Mission, particularly those that use television, to consider mass media communication on hand hygiene as well. These can emphasise handwashing at critical times, particularly with regard to childcare activities, and to address key barriers to engaging in such behaviours consistently

### **Enabling environments**

- The physical environment in a household to be restructured to

make handwashing facilities visible and easily accessible, enabling family members to wash hands at critical times. Handwashing facilities (where water and soap are both available) to be placed in locations where handwashing needs to occur (e.g., in or near the toilet, in or near the kitchen, in or near spaces where the family eats). Frontline workers to facilitate discussions with families during home visits or with mothers in anganwadi centres on how handwashing facilities can be located in their homes to facilitate handwashing at critical times

- Areas where piped water supply is available to consider how three water connections/taps can be made available in the home at key locations: in/near the toilet, in/near kitchen, in/near other space in the household where the family typically wash their hands

### **Capacity building of frontline workers and healthcare providers**

- Training programs directed at ASHAs and anganwadi workers to have a module on water, sanitation and hygiene fostering an understanding of how WASH affects health, and the critical role

played by handwashing with soap at critical times to cut disease transmission routes. Given their role in reaching communities with hygiene messages, frontline workers like anganwadi workers, ASHAs and ANMs must be trained to deliver comprehensive messages around hand hygiene, with additional messages for caregivers of children under five in relation to infant and young child feeding practices and child faeces

- Frontline workers to receive training on how to document and monitor hand hygiene practices
- Healthcare providers/doctors involved in the delivery of maternal and child health services in health facilities to receive in-service training on hand hygiene and its links with child health

### **Research**

- Sustained hygiene behaviour change requires programs to draw upon research that identifies the triggers to be activated (e.g., disgust, affiliation, nurture, status) and barriers that needs to be tackled (resources, distance, time, knowledge)

- The design of hand hygiene behaviour change programs to include rigorous research (with a behaviour centered design) that deploys both quantitative and qualitative tools to explore the triggers that engender hand hygiene practices, the barriers and facilitators to handwashing, and the framing of messages to spark and sustain behaviour change particularly among caregivers of children under five
  - Indicators for hand hygiene to be developed, vetted and accepted by experts, and piloted in health information and monitoring systems as well as surveys on child health
  - Research methods to be developed that can comprehensively understand the nuances of hand hygiene and related issues at scale
- also include clear messages on maintaining hand hygiene at critical times to reduce faecal-oral transmission of diseases, addressing different audiences through different media channels
  - Bringing in focus on interpersonal communication around hand hygiene and other critical knowledge areas – towards training of ASHAs, anganwadi workers, Swachhata facilitators, village health and sanitation committee members and Panchayati Raj institution leaders
  - Developing feasible hygiene indicators and include them in regular review visits, periodic surveys and assessments, and management information systems
  - Building focus on ensuring water availability by strengthening integration with the National Rural Drinking Water Programme
  - Building focus and involvement of school and college students in spreading awareness on hygiene action
  - Developing and including a hygiene behaviour assessment in Swachh Swasth Sarvatra processes to enhance hygiene practices

### **Immediate policy priorities for Swachh Bharat Mission**

Given the rapid pace of the ongoing Swachh Bharat Mission, it will be important to consider the following on priority:

- Expanding the communication focus from toilet promotion and open defecation free status to

# Annexure A

## Study sampling frame

**TABLE A 1:** List of states and districts included in the study

State	District
<b>Bihar</b>	Gopalganj
	<b>Madhubani*</b>
<b>Chhattisgarh</b>	<b>Durg*</b>
	Dhamtari
<b>Odisha</b>	<b>Debagarh*</b>
	Kalahandi
<b>Rajasthan</b>	Dholpur
	Pali

\*indicates WaterAid India districts (Durg, Madhubani, Debagarh)

# Annexure B

Study findings  
represented in tables

**TABLE B 1:** Practice of handwashing at critical times in the past 24 hours by state and gender

Handwashing at critical times	Total (%)	Bihar (%)	Chhattisgarh (%)	Odisha (%)	Rajasthan (%)	Female (%)	Male (%)	Families with Children < 5 (%)
N (total sample of 1319)								
Before preparing food	50.1	58.4	34.9	54.5	38	74.9	17.3	52.1
Before serving food	30.9	43.6	24.2	35.9	5.9	47.3	9.4	35.6
Before eating	91.9	92.7	83.9	93.4	93.1	91.2	93.3	91.9
Before feeding a child	12.6	18.3	12.1	12.2	2.6	18.6	4.6	26.3
Before breastfeeding	7.5	11.9	4.7	4.9	3.3	11.2	2.7	14.7
After defecation	99.3	98.6	97.9	98.3	99.3	98.5	99.1	99
After disposing child faeces	6.8	8.2	13.4	7.3	0.7	9.7	3	16.7
After cleaning child's bottom	8.3	9.6	16.8	7.6	2.6	12.5	2.8	18.4
After any other polluting activity	61.03	79.4	47.7	66.9	27.9	67.1	53.2	64.1

**TABLE B 2:** Practice of handwashing at critical times in the past 24 hours by caste and economic status

Handwashing at critical times	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)	BPL (%)	APL (%)
N (total sample of 1319)							
Before preparing food	53.4	47.5	49.2	51.2	54.1	49	50.5
Before serving food	30	29	32.6	25.6	32.7	31.2	29.6
Before eating	90.1	94.5	92	92.3	91.8	90.8	93
Before feeding a child	13.8	11.5	1.42	9.5	9.2	13.7	12.2
Before breastfeeding	5.7	6	7.8	10.7	5.1	7.3	8.1
After defecation	97.9	98.6	98.8	99.4	98.9	98.6	98.6
After disposing child faeces	7.8	8.3	7.4	1.2	5.1	6.9	6.9
After cleaning child's bottom	9.5	10.6	8.6	2.4	9.2	7.8	8.7
After any other polluting activity	61.1	54.8	64.6	54.8	69.4	66.4	55.2

**TABLE B 3:** Use of soap as a cleaning agent at critical times by socio-economic status and gender

Handwashing at critical times	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)	BPL (%)
N (total sample of 1319)						
Before preparing food	55	49.5	55.3	67.4	62.3	53.3
Before serving food	59.6	55.6	50	55.8	59.4	53.6
Before eating	47.1	41	44	52.9	48.9	40.9
Before feeding a child	51.3	28	50.6	68.8	66.7	46.8
Before breastfeeding	50	15.4	29.4	33.3	40	31.7
After defecation	63.2	62.6	72.6	84.4	64.9	66.1
After disposing child faeces	95.4	98.7	75	100	100	79.5
After cleaning child's bottom	96.2	69.6	78.6	100	66.7	81.8

**TABLE B 4:** Use of only water as a cleaning agent at critical times by socio-economic status and gender

Handwashing at critical times	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)	BPL (%)
N (total sample of 1319)						
Before preparing food	39.1	45.6	42.2	31.4	32.1	42.4
Before serving food	39.3	44.4	50.5	41.9	40.6	46.4
Before eating	49.4	56.6	53.3	45.8	51.1	56
Before feeding a child	48.7	68	47.1	31.3	33.3	53.2
Before breastfeeding	37.5	76.9	27.5	22.2	0	34.1
After defecation	7.6	16.8	6.5	2.4	6.2	11.7
After disposing child faeces	4.5	5.6	8.3	0	0	12.8
After cleaning child's bottom	3.7	17.4	7.1	0	11.1	11.4

APL (%)	Female (%)	Male (%)	Families with children <5 years (%)
57.2	56.3	54.1	54.9
52.8	52.7	60.4	48.8
48.4	43.2	47.9	43.2
50.5	48.6	53.8	47.1
32.1	33.3	26.7	36.5
75	74.3	65.4	68.3
82.6	82.2	82.4	81.3
84.2	82.9	75	82.8

APL (%)	Female (%)	Male (%)	Families with children <5 years (%)
40.4	40.7	39.8	42.3
46.2	47	37.7	51.3
49	55.8	47.3	53.3
46.3	50	42.3	51.3
37.7	33.3	40	47.6
4.9	7.3	8.7	8.2
2.2	6.8	NA	6.7
5.2	6.4	NA	6.9

**TABLE B 5:** Handwashing spaces in the household premises

Handwashing spaces in the household premises	Total Sample (%)	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)
N (sample)	1319	283	217	650	168	98
In/near the toilet	12.5	8.1	16.1	10.8	22.0	7.1
In/near the kitchen	4.5	2.8	5.1	4.6	6.5	3.1
In/near the front/back yard	73.1	70.7	82.5	72	69.0	64.3
Other	20.1	23.7	7.4	22.8	20.2	34.7
Don't clean hands	6.5	3.5	1.8	9.1	7.7	8.2

**TABLE B 6:** Water availability at handwashing sites

	In/near toilet (%)	In/near kitchen (%)	Front/back yard (%)
N (total sample of 1319)			
Not available in close proximity/ brought from elsewhere	2.2	1.4	14.7
Running water (pipe/overhead tank/hand pump)	6.7	1.9	35.0
Water stored in storage container	3.6	1.2	23.4
None (no water available)	87.9	96.0	27.4

BPL (%)	APL (%)	Female (%)	Male (%)	Families with children <5 years (%)
563	658	753	566	407
9.2	16.1	11.4	13.9	11.5
5.9	3.6	4.2	4.9	3.2
75.8	72.0	70.4	76.7	72.9
15.6	21.3	23.8	15.2	22.1
5.2	7.4	8.4	4.1	6.6

**TABLE B 7:** Handwashing agent available at handwashing sites

Handwashing agent	In/near toilet (%)	In/near kitchen (%)	Front/back yard (%)
N (total sample of 1319)			
Ash	1.2	0.8	13.9
Water only	3.6	1.7	31.9
Soap	9.9	3.5	43.0
Sand/mud	0.7	0.5	16.0
Locally available scrub	0.2	0	2.4
Other	0.5	0.3	2.6
None	87.9	96.0	27.4

**TABLE B 8:** Awareness about handwashing at critical times

Critical times for handwashing	Total (%)	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)
N (sample)	1319	283	217	650	168	98
Before preparing food	59.7	60.1	50.7	61.2	64.3	64.3
Before serving food	36	36.7	28.6	38.8	33.3	40.8
Before eating	91.5	87.6	94.9	91.7	92.9	92.9
Before feeding child	18.1	20.5	18.4	18.5	12.5	15.3
Before breastfeeding	6.7	2.8	6.5	7.2	11.3	3.1
After defecation	97.2	95.4	97.2	97.5	98.8	96.9
After disposing child faeces	11.8	10.2	13.4	12.9	8.3	12.2
After cleaning child's bottom	9.1	9.5	9.2	9.8	5.4	12.2
After any polluting activity	60.3	56.9	50.2	67.1	52.9	67.3

**TABLE B 9:** Knowledge about the agent to be used for handwashing at critical times

Handwashing agent	Total (%)	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)
N (sample)	1319	283	217	650	168	98
Ash	1	0.7	1.4	1.2	0	2.0
Water only	9.4	10.2	11.9	9.4	4.8	8.2
Soap	80.7	80.2	73.7	81.8	85.7	84.7
Hand sanitizer	0.2	0	0.5	0.3	0	0
Sand/mud	6.9	7.4	8.8	5.8	8.3	4.1
Locally available scrub	0.4	0	0.9	0.5	0	0
Other	0.8	0.7	1.4	0.6	0.6	0

BPL (%)	APL (%)	Female (%)	Male (%)	Families with children <5 years (%)
563	658	753	566	407
60.4	58.4	77.8	35.5	64.1
38.2	33.4	48.3	19.6	44.2
91.3	91.5	89.6	93.9	90.2
19.0	17.8	23.1	11.5	31.4
7.9	6.1	9.7	2.7	12.4
96.3	98.0	97.1	97.3	98.3
12.6	11.1	16.7	5.3	21.1
9.6	8.2	11.9	5.3	15.7
63.8	56.2	65.7	53	63.6

BPL (%)	APL (%)	Female (%)	Male (%)	Families with children <5 years (%)
563	658	753	566	407
1.1	0.8	0.9	1.1	1.2
11.2	8.1	9.9	8.7	10.1
79.4	81.2	81.8	79.2	85.9
0.4	8.7	0.3	0.2	0.5
5.5	0	5.3	9.2	8.8
0.7	0	0.3	0.5	0.5
1.4	0.3	0.8	0.7	0.7

**TABLE B 10:** Knowledge of why handwashing is important

	Total (%)	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)
N (sample)	1319	283	217	650	168	98
Protect from germs	84.9	85.5	87.1	82.8	89.9	91.8
Maintain cleanliness	79.3	81.6	69.6	78.6	90.5	83.6
Because of reminders/prompts/ nudges	3.3	1.4	2.3	3.8	5.9	4.1
Because of awareness campaigns	7.8	6.7	5.1	8.6	10.1	14.3
Personal habit	15.7	10.9	17.1	16.6	18.5	17.3
Social/ religious/ cultural/ community norm	4.5	4.2	3.7	4.6	5.4	6.1
Nothing/No need to wash hands	1.4	0.4	3.7	1.5	0	0
Other	0.9	0.4	0.5	0.9	2.9	1.0

**TABLE B 11:** Reasons for not washing hands

Reason	Total (%)	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)
N (sample)	1319	283	217	650	168	98
No access to soap	22.2	22.2	19.4	23.2	33.9	20.4
No access to water	32.8	32.8	25.8	31.7	65.7	28.6
Not necessary to wash every time	4.9	4.9	5.1	5.5	4.2	7.1
Do not have time	35.1	35.1	41.5	36.0	27.9	39.8
Forget	39.3	39.3	52.9	37.7	30.4	41.8
Other	9.6	9.6	10.1	10.2	8.3	5.1

BPL (%)	APL (%)	Female (%)	Male (%)	Families with children <5 years (%)
563	658	753	566	407
85.8	83.1	84.9	84.9	89.2
74.6	82.7	78.5	80.4	77.9
2.5	3.9	3.2	3.5	2.7
5.5	8.8	7.6	8.1	7.4
17.1	14.3	16.9	13.9	17.2
4.6	4.1	4.8	4.1	3.4
2.3	0.9	1.3	1.6	0.9
0.5	1.4	0.8	1.2	1.5

BPL (%)	APL (%)	Female (%)	Male (%)	Families with children <5 years (%)
563	658	753	566	407
22.0	22.8	22.0	22.6	24.3
27.5	37.9	31.1	35.2	29.7
5.3	4.1	5.4	4.1	5.7
40.8	29.5	36.1	33.7	39.8
40.7	37.7	39.9	38.3	38.1
12.6	8.2	10.4	9.2	9.6

**TABLE B 12:** What is needed to wash hands

What is needed	Total (%)	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)
N (sample)	1319	283	217	650	168	98
Easy access to water	80.9	78.4	77.9	79.7	93.4	79.6
Easy access to soap	78.6	76.0	75.1	79.2	85.1	77.6
Adequate time	20.8	13.8	15.7	24.1	26.2	22.4
Other	5.5	7.4	7.8	3.8	5.9	7.1

**TABLE B 13:** People/institutions who have reached the community with hygiene messages

People/institutions	Total (%)	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)
(N – those reporting receiving any hygiene messages from individuals/institutions)	741	139	132	362	108	57
Swachhta Doot	4.3	4.3	5.3	3.9	4.6	0
PRI	17.8	10.1	21.9	17.9	22.2	15.8
NGO	23.3	22.3	14.4	27.6	21.3	39.7
VWSC	4.6	1.4	7.6	4.7	4.6	5.2
VHSNC	7.0	2.1	13.6	6.9	5.6	4.6
ASHA	48.0	46	68.2	44.5	37.9	56.1
AWW	54.5	60.4	71.2	44.2	61.1	52.6
Teacher	12.1	6.5	10.6	9.9	28.7	5.3
Relative	9.6	6.5	11.4	10.8	7.4	7.0
Doctor	18.9	11.5	3.8	22.4	35.2	29.8
Other	6.7	7.9	6.8	6.4	6.5	3.5

BPL (%)	APL (%)	Female (%)	Male (%)	Families with children <5 years (%)
563	658	753	566	407
79.9	81.9	81.4	80.2	82.3
79.4	78.1	41.5	75.1	86.2
22.9	18.7	23.9	16.6	22.4
76.4	3.5	5.2	6.0	4.9

BPL (%)	APL (%)	Female (%)	Male (%)	Families with children <5 years (%)
330	354	450	291	407
3.3	5.9	2.9	6.5	2.2
20.6	15.5	14.0	23.7	11.5
23.3	20.6	31.1	11.3	14.9
5.5	3.7	4.4	4.8	2.5
6.1	7.9	7.3	6.5	5.4
54.5	40.7	49.3	46.0	30.9
56.1	53.4	52.0	58.4	32.7
8.8	16.4	9.8	15.8	7.4
10.6	9.0	10.7	7.9	6.6
11.8	23.7	22.4	13.4	12.3
8.5	5.6	5.6	12.0	2.7

**TABLE B 14:** Types of messages received from person/institution

Hygiene messages received	Total (all) (%)	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)
(N – those reporting receiving any hygiene messages from individuals/ institutions)	741	139	132	362	108	57
Handwashing at critical times	65.0	62.6	63.6	66.3	65.7	68.4
Safe disposal of child faeces	15.4	10.8	19.7	15.2	16.7	15.8
Safe handling and storage of water	22.7	18.7	27.3	22.4	23.1	28.1
Menstrual hygiene management	9.3	7.2	4.5	8.8	19.4	17.5
Food hygiene	41.9	34.5	25.8	44.8	62.0	47.4
Latrine use	74.2	68.3	76.5	72.9	83.3	68.4
Other	2.9	3.6	2.3	2.5	4.6	3.5

**TABLE B 15:** Media communicating hygiene messages

Media	Total (all) (%)	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)
(N - total number receiving hygiene messages from media )	725	145	148	425	134	51
Radio	14.1	19.3	13.5	13.4	12.7	5.9
Television	86.9	82.1	86.4	85.6	91.0	88.2
Newspaper	32.4	20.7	18.2	30.8	55.2	13.7
Wall painting	23.9	14.5	21.6	22.1	28.3	29.4
Leaflet	8.7	6.9	4.1	7.5	15.7	9.8
Public announcements	16.7	15.9	12.4	16.2	16.4	21.6
Community meetings	14.9	13.8	17.6	12.2	12.7	21.6
Other	3.3	4.1	0.7	3.8	2.2	3.9

BPL (%)	APL (%)	Female (%)	Male (%)	Families with children <5 years (%)
330	354	450	291	407
66.1	63.6	65.1	64.9	43.5
14.8	15.8	14.9	16.2	14.5
24.5	20.1	22.9	22.3	15.7
6.4	10.7	13.3	2.7	7.1
30.3	51.9	44.7	37.8	28.7
74.5	74.9	75.6	72.2	46.4
3.3	2.5	3.1	2.7	2.2

BPL (%)	APL (%)	Female (%)	Male (%)	Families with children <5 years (%)
349	452	461	391	407
16.9	13.3	11.5	17.6	9.8
80.5	90.0	86.6	85.4	59.5
22.6	38.9	24.7	37.9	21.9
19.8	22.3	21.0	22.5	17.2
4.9	10.4	8.2	7.9	6.1
18.1	12.8	18.4	12.0	13.5
19.5	7.9	16.7	9.7	11.3
2.6	3.9	3.7	3.1	2.7

**TABLE B 16:** Types of messages received from media

Messages received from media	Total (all) (%)	SC (%)	ST (%)	OBC (%)	General (%)	Antyodaya (%)
N (total number who said they received hygiene messages )	725	145	148	425	134	51
Toilet is the pride of daughters/ daughters-in-law	43.9	22.8	40.5	45.9	44.8	41.2
Toilet and safety of women	54.8	40	52.7	51.8	75.4	50.9
Child disease and death	31.6	24.8	22.3	28.0	52.2	23.5
Girl child and school	17.2	8.9	16.2	13.6	29.8	17.6
Girl child and dignity	19.9	10.3	16.9	18.8	26.9	25.5
Let your child reach 5	2.8	3.4	0	2.4	3.7	0
Brothers giving their sisters toilets	1	0.7	1.4	1.4	0	0
Others	10.6	18.6	10.1	9.2	8.9	9.8

BPL (%)	APL (%)	Female (%)	Male (%)	Families with children <5 years (%)
349	452	461	391	407
44.4	38.1	43.2	38.1	26.8
46.1	59.7	49.5	58.6	35.9
23.2	36.5	27.1	34.0	24.8
10.0	20.1	15.8	15.9	12.8
15.8	19.5	19.9	16.4	14.9
1.7	3.1	3.0	1.5	1.2
1.1	1.1	0.9	1.3	0.7
10.0	11.7	10.4	11.5	9.1







WaterAid/Mansi Thapliyal

### **Wateraid India Country Office**

2<sup>nd</sup> floor, RK Khanna Tennis Stadium, 1, Africa Avenue,  
Safdarjung Enclave, New Delhi 110029

**Tel** +91 11 6612 4400

**Email** [waindia@wateraid.org](mailto:waindia@wateraid.org)

[www.wateraidindia.in](http://www.wateraidindia.in)