Baseline Study on

Water, Sanitation, and Hygiene

Knowledge and Practices among Stakeholders in
Thavanampalle Mandal, Chittoor District of Andhra Pradesh

AROGYA RAKSHAK
A Total Health Initiative towards *BANEGA SWACHH* INDIA

Study by

Poverty Learning Foundation & Total Health
December 2019

Signing the agreement

Mr. Pankaj Duhan, Director, Marketing, Reckitt Benckiser and Dr. Prathap C. Reddy, Chairpman, Apollo Hospitals.

This report is based on the real-time data collected between June and August 2019 in selected establishments and individuals associated with Total health CSR interventions in Thavanampalle Mandal, Chittoor District in Andhra Pradesh. The facts and figures presented in this report facilitate Total health and Reckitt Benckiser in designing and implementing WASH programs in schools, Anganwadi Centres, and Total Health run Nutrition Centres, Geriatric Care centers, AYUSH, Mobile and Satellite Clinics.

Conceptualization, data analysis and report writing

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Declaimer:
The findings, interpretations and conclusions expressed herein are entirely based on the facts and figures collected during the study. Data used in the analysis is real time data collected between June and August 2019.

Study Funded by

TOTAL HEALTH
సంపూర్ణ ఆరోగ్యం

A Corporate Social Responsibility of Apollo Hospitals Enterprises Limited

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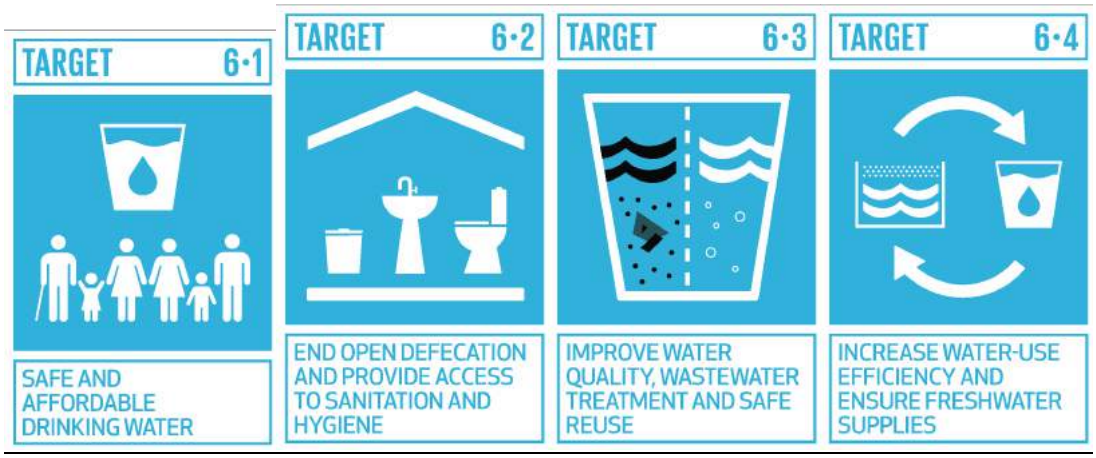
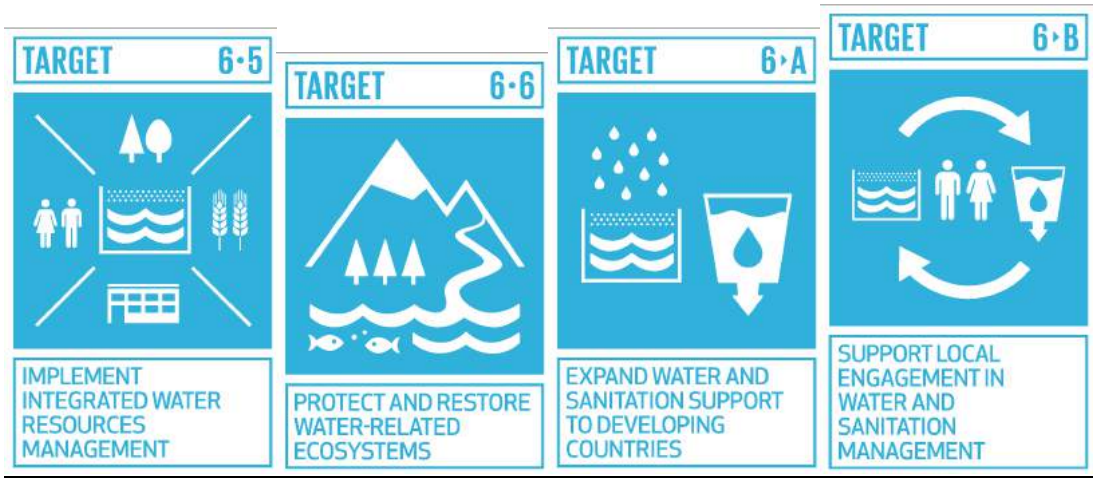
Everyone can help to make sure that we meet the Global Goals. Use these eight targets to ensure clean water and sanitation for all.

SDG 6





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Executive SUMMARY

Purpose:

The propose of this study is to set the baseline data on Water Sanitation and Hygiene conditions in schools, assess the knowledge and hygiene behaviour of key stakeholders: school children, their parents, teachers, front line health workers in Apollo AYUSH, Mobile and Satellite clinics, Pregnant and Lactating women in nutrition centres, women in Self Help Groups (SHGs), Anganwadi Workers and Accredited Social Health Activist (ASHA) workers in Thavanampalle Mandal of Chittoor district, Andhra Pradesh.

The outputs of baseline study, technically build the capacity of Total Health to design more appropriate interventions to fill the gap in water and sanitation facilities, bring behavioural change among the stakeholders, and thereby support the nation in reaching the targets set under SDG 6 by 2030. It also further aims to set the "learning model" for Corporate Social Responsibility.

Scope:

This report presents the existing situation and sets the baseline data focusing on availability of water and sanitation services, along with the existing knowledge and hygiene practices. Using scientifically validated tools and methods, data has been collected between June and August 2019.

The study conducted in 14 schools (12 Government schools; 2 private schools) covering 419 children in 1st and 2nd standards, 379 children in 3rd and 4th standards, 1456 children in 5th and above standards. Besides, 900 parents (parents of school children), 135 teachers, 80 pregnant and lactating women and 90 elders covered in nutrition centres, 113 women from SHGs, 18 front line health functionaries working in AYUSH, Mobile and Satellite clinics run by Total Health, 9 ASHA and 9 Anganwadi workers were covered during the study. The geographical area covered is Thavanampalle Mandal of Chittoor district in Andhra Pradesh.

Methodology:

The qualitative dominant mixed methodology is used in data collection. About 12 scientifically constructed and validated questionnaires were used in data collection. Besides, checklist supported observations and one-to-one discussions with key stakeholders were also used during the study. Data has been analyzed with STATA and generated the analytical tables for results interpretations.

Period of Study:

Study period is – May to December 2019.

Concept:

"The major benefits of having access to an improved drinking water source can only be fully realized when there is also access to improved sanitation and adherence to good hygiene practices. It will have wider socio-economic impacts, particularly for women and girls. Sustainable Development Goal 6 says that access to safe water and sanitation are human rights and prescribed the standards to be achieved by 2030. To achieve this, government along with national and international donors and corporates have to set the right systems: well-resourced, capable institutions delivering services and changing behaviour in resilient and appropriate ways".

Total Health, the Corporate Social Responsibility initiative of Apollo Hospitals Enterprises Limited, is committed to achieve sustainable WASH model. With this concept, Total Health and Reckitt Benckiser initiated the project.

Current Situation

WASH at School Level

1. Toilets, hand washing and drinking water facilities are still inadequate at the school level. The quality of water was not considered to be safe in 7 schools and only 5 schools had their drinking water purified in school. In general, the toilets and urinals in schools are not considered clean and waste management remains to be a concern in schools. Although students exhibited good knowledge on WASH related topics, a large number of them were not able to identify clean source of drinking water or identify safe sanitation practices.

2. Menstrual hygiene knowledge was not optimal among girl students. Knowledge level among teachers were considerably low and a significant number of teachers were not able to identify clean water sources and safe drinking water handling techniques. Teachers and students did not receive WASH related training and communication.

WASH at Community Level

3 There is a lack of availability of toilets in nutrition and geriatric centers. Knowledge among community level staff such as the ASHA workers, Anganwadi workers and Doctors, Nurses and Lab Technicians was optimal. However, this knowledge was not reflected in their WASH practices. For example, unsafe water handling practices was prevalent among ASHA and Anganwadi workers. Similarly, doctors and nurses were not following all the steps for proper hand hygiene even though they knew about the importance of proper hand hygiene.

4. The baseline survey also indicated that the knowledge levels among pregnant and lactating women and elders at the geriatric center was poor. Majority of the P & L women still practices unsafe water handling and treating practices and elders at the geriatric center practice hygienic sanitation practices like open defecation.

5. Women at Self Help Group had poor hygiene practices. Majority of them did not practice safe water drawing techniques and more than half of them dispose of the garbage in their backyard. SHGs also did not have knowledge on safe menstrual hygiene practices. WASH training at the community level was inconsistent or not available.

WASH at Household Level

6. Parents were surveyed about WASH related knowledge and practices to understand the scenario at the household level. The results showed that parents had proper personal hygiene practices i.e, washing hands regularly, taking a bath every day, etc. However, open defecation and unsafe water drawing techniques was widely present among households. Menstrual hygiene is often ignored by the household members.

Recommendations

7. It is important to leverage and direct resources towards improving and building WASH facilities at the school, community and household level. Construction of new toilets and renovation of existing sanitation facilities (Toilets, urinals and hand wash stations) is essential. The overall status and cleanliness of these facilities should be maintained and there should be a proper framework to assess the quality of these facilities. For example, a standard procedure for water quality management and sanitation facilities should be applied across all schools.

8. Students and teachers should receive regular WASH related trainings and school curriculums should incorporate aspects of sanitation and hygiene practices. Students should be encouraged to participate in WASH activities by forming committees and associations and schools should also have a hygiene corner that has posters and information on WASH. School staff such as janitors and the mid-day meal staff should also receive training on WASH.

9. The community strength of the SHGs should be leveraged and WASH knowledge should be spread at the villages with the help of women that are part of the SHGs. Elders at the geriatric center, pregnant and lactating women at the nutrition center, anganwadi workers and ASHA workers should also be educated on WASH practices.

10. Monitoring & Evaluation systems is essential to track the progress of the implementation of WASH. In line with WHO and UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP) recommended service ladder is recommended to design M & E systems. Besides, Log frame, targets and road map could be done in immediate next phase of work to fulfil the desirables in setting the baseline data and targets with non-negotiable timelines.

Section - 1
Context

Sustainable Development Goal 6 "*Ensure access to water and sanitation for all*" talks about clean, accessible water for all is an essential part of the world we want to live in and there is sufficient fresh water on the planet to achieve this. However, due to bad economics or poor infrastructure, millions of people including children die every year from diseases associated with inadequate water supply, sanitation and hygiene[1]. It further reminds –

> 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
>
> 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
>
> 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally
>
> 6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity
>
> 6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate
>
> 6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
>
> 6.A By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies
>
> 6.B Support and strengthen the participation of local communities in improving water and sanitation management

The facts and figures (Global scenario) from UN says –

- 1 in 4 health care facilities lacks basic water services
- 3 in 10 people lack access to safely managed drinking water services and 6 in 10 people lack access to safely managed sanitation facilities.
- At least 892 million people continue to practice open defecation.
- Women and girls are responsible for water collection in 80 per cent of households without access to water on premises.

[1] https://www.un.org/sustainabledevelopment/water-and-sanitation/

- Between 1990 and 2015, the proportion of the global population using an improved drinking water source has increased from 76 per cent to 90 per cent

- Water scarcity affects more than 40 per cent of the global population and is projected to rise. Over 1.7 billion people are currently living in river basins where water use exceeds recharge.

- 2.4 billion people lack access to basic sanitation services, such as toilets or latrines

- More than 80 per cent of wastewater resulting from human activities is discharged into rivers or sea without any pollution removal

- Each day, nearly 1,000 children die due to preventable water and sanitation-related diarrheal diseases

- Approximately 70 per cent of all water abstracted from rivers, lakes and aquifers is used for irrigation

- Floods and other water-related disasters account for 70 per cent of all deaths related to natural disasters

Water scarcity, poor water quality and inadequate sanitation negatively impact food security, livelihood choices and educational opportunities for poor families across the world. At the current time, more than 2 billion people are living with the risk of reduced access to freshwater resources and by 2050, at least one in four people is likely to live in a country affected by chronic or recurring shortages of fresh water. To improve sanitation and access to drinking water, there needs to be increased investment in management of freshwater ecosystems and sanitation facilities on a local level in several developing countries within Sub-Saharan Africa, Central Asia, Southern Asia, Eastern Asia and South-Eastern Asia[2].

The Sustainable Development Goals (SDGs) provide a powerful framework for businesses to engage in Corporate Social Responsibility. SDGs have immense opportunities for the corporate sector's participation. These goals are bringing private players from various sectors to achieve the common aim of sustainable development by exploring synergies between different stakeholders for cumulative synchronized growth[3]. In view of this, Total Health, the CSR initiative of Apollo Hospital Enterprise Ltd (AHEL) and Reckitt Benckiser (RB) have jointly initiated a campaign to:

> *"Drive behaviour change among school students, teachers and health staff of the Mandal, for not only adopting high standards of hygiene and sanitation themselves and their homes, but also becoming ambassadors for propagating of hygienic practices, environmental sanitation, and consumption of safe wholesome water, in a sustainable manner, to create healthy communities in Thavanampalle Mandal in Chittoor district, Andhra Pradesh".*

1.1 The aim is to IMPROVE:

(1) WASH facilities and practices in schools, and

(2) WASH facilities and practices in health services.

In this process, the Baseline Survey is the first step. It gathers key information early in a project so that later judgments can be made about the quality and development results achieved of the project. Besides

[2] Ibid

[3] https://impakter.com/sustainable-development-goals-corporate-social-responsibility-convergence/

it is an early element in the monitoring and evaluation plan and uses the log frame structure to systematically assess the circumstances in which the project commences. It provides the basis for subsequent assessment of how efficiently the activities were carried out and answer what went well and how? And what went wrong and why?. Thereby midterm corrections can be taken up by the Total health.

Accordingly, Total Health has invited Poverty Learning Foundation to take up baseline study to quantify the availability of WASH facilities as well as assess the WASH related knowledge and practices among the stakeholders.

1.2 WASH in Schools

Water, Sanitation, and Hygiene (WASH) in Schools not only promotes hygiene and increases access to quality education but also supports national and local interventions to establish equitable, sustainable access to safe water and essential sanitation services in schools. Poor sanitation, water scarcity, inferior water quality, and inappropriate hygiene behavior are disastrous for infants and young children and are a significant cause of mortality for children under five.

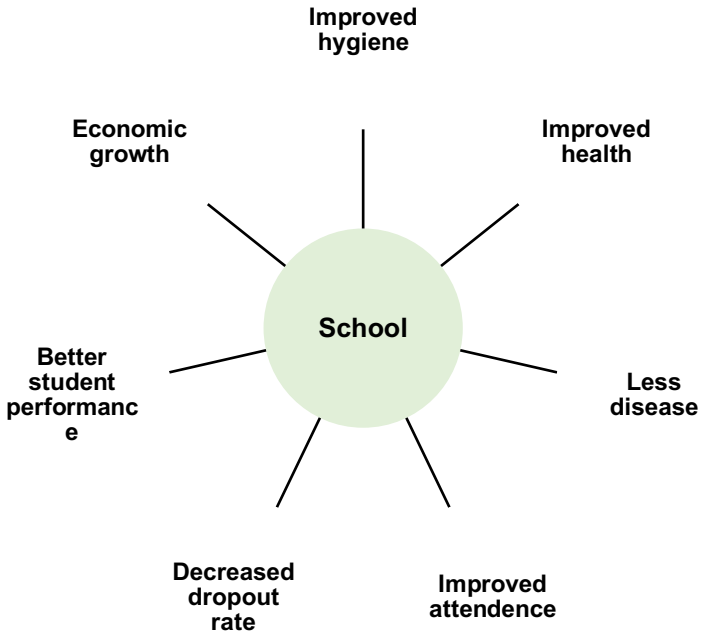
These conditions are also detrimental to the health of school-aged children, who spend long hours in schools. The physical environment and cleanliness of a school facility can significantly affect the health and well-being of children. The disease spreads quickly in cramped spaces with limited ventilation, where hand-washing facilities or soap are not available, and where toilets are in disrepair. Too often, schools are places where children become ill[4]. The global targets related to WASH in schools are specified in Table 1.

Table 1: Global Targets related to WASH in schools	
The SDGs aim for universal access to WASH and inclusive and effective learning environments for all.	
SDG	SDG Targets & Indicators
Goal 6: Ensure availability and sustainable management of water and sanitation for all	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
	6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations
Goal 4: Ensuring inclusive and quality education for all and promote lifelong learning	4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all
	4.a.1 Proportion of schools with access to access to: (a) electricity; (b) the internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities;
	(e) basic drinking water; (f) single-sex basic sanitation facilities; and
	(g) basic handwashing facilities (as per the WASH indicator definitions)

[4] UNICEF (2017) "Water, Sanitation and Hygiene (WASH) in Schools, https://www.unicef.org/publications/files/CFS_WASH_E_web.pdf

As a part on nationalizing SDGs, in September 2014, the new national campaign, Swachh Bharat: Swachh Vidyalaya (SBSV), or "Clean India: Clean Schools", was launched focusing on WASH in Schools. A vital feature of the campaign is to ensure that every school in India has a set of functioning and well-maintained water, sanitation, and hygiene facilities.

Swachh Vidyalaya focused on the 6 essential elements – sanitation, daily handwash with soap before taking meal and after using toilets, safe drinking water, Operations and maintenance, behavior change activities, and enhanced capacities. In this context, the assumption is that a clean and healthy school creates a cycle of opportunities –



Learning, hygiene, and health are strongly inter-linked as children miss school or perform poorly when they are suffering from WASH-related illness. Schools are even places where children get sick. Illness can spread very fast in schools where many children are together for many hours a day in often poor hygienic conditions.

Recently it has been estimated that infections in which children contract in schools lead to infections in up to half of their household members and that 88% of diarrheal diseases caused by unsafe water supply, inadequate sanitation, and inappropriate hygiene. For schools, the health focus is generally on diarrhoea, worm infections, and respiratory infections. These diseases affect school-age children most. Proper WASH practices in schools reduce the health-related complications among the school children[5].

The use of improved sanitary facilities reduces the incidence of diarrhea by 34 %3. Washing hands with soap after toilet use and before eating has been cited as one of the most cost-effective public health interventions because it can reduce the incidence of diarrhea by almost 40%, and handwashing can cut the risk of respiratory infections by 16%. All cases of roundworm, whipworm, and hookworm infestation are attributable to inadequate sanitation and hygiene.

[5] UNICEF 2012 WASH for Children, https://www.unicef.org/wash/schools/files/UNICEF_WASH_for_School_Children_South_Asia_Report.pdf

In India, WASH in Schools is also a part of the Total Sanitation Campaign (TSC). WASH in schools is not exclusively covered by any specific policy. Policy definition given to the priority for WASH in Schools says "the School Sanitation and Hygiene Education (SSHE) program started in 1999, under the government's Total Sanitation Campaign (TSC) program. Under SSHE, water, sanitation, and handwashing facilities provided in schools, and hygiene education linked to homes and communities. TSC also aims to provide early childhood development centers known as *Anganwadi* (pre-school) centers, with toilet facilities to encourage toilet use amongst young children as well as their mothers. The Ministry of Drinking Water and Sanitation of the Government of India and the State Governments implement the SSHE program.

1.3 WASH in primary health services

Workers in health care facilities need sufficient quantities of safe water to provide health care services. Drinking and cooking, hand hygiene, showering and bathing, and a variety of general and specialized medical uses all require reliable supplies of safe water. Families and care-givers also need water to tend to patients and their own needs. Without water, a health care facility isn't a health care facility[6].

The lack of safe water, functional toilets, and handwashing facilities in healthcare settings poses significant health risks to patients, healthcare workers and nearby communities. The ongoing global problem of health facility-acquired infections (HAI) has highlighted the consequences of the lack of water and sanitation facilities and practice of key hygiene behaviours. Antimicrobial resistance (AMR) is a multisectoral problem that requires a comprehensive strategy, including WASH improvements, to prevent emergence and transmission. Hand hygiene has been cited as the single most important practice to reduce HAI, and improved hand hygiene practices have been associated with a sustained decrease in the incidence of antimicrobial-resistant infections in healthcare settings. WASH also plays a role in the cleaning of surfaces and bedding for preventing transmission of HAI. Leadership and commitment is needed from governments, international and local organizations, donors and civil society to implement the global action plan to achieve universal access to WASH in healthcare facilities[7].

Women of child-bearing age (especially pregnant and lactating women) are in the most nutritionally-vulnerable stages of the life cycle. Nutritional knowledge and attitude are essential factors of dietary practices and are, thus, potential targets for appropriate planning of nutrition care programs for pregnant and lactating women. Nutrition education enhances nutritional knowledge, thereby influencing attitude and practices towards proper nutrition. It applies to the women in general and pregnant and lactating women in particular.

Older persons are particularly vulnerable to malnutrition. Moreover, attempts to provide them with adequate nutrition encounter many practical problems. First, their nutritional requirements are not well defined. Since both lean body mass and basal metabolic rate decline with age, an older person's energy requirement per kilogram of body weight further reduced. The process of aging also affects other nutrient needs. For example, while requirements for some nutrients reduced further, some data suggest that requirements for other essential nutrients may rise in later life. KAP needs to be studied to influence their hygiene practices as well as their knowledge of dietary.

In all the above three focused areas, understanding the Knowledge, Attitudes, and Practices of related community is much essential in inculcating healthy behaviours.

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[6] WHO & UNICEF (2019) WASH in Health Care Facilities, Global Baseline Report 2019 https://apps.who.int/iris/bitstream/handle/10665/311620/9789241515504-eng.pdf?ua=1

[7] http://resistancecontrol.info/2016/infection-prevention-and-control/the-role-of-water-sanitation-and-hygiene-wash-in-healthcare-settings-to-reduce-transmission-of-antimicrobial-resistance/

1.4 Arogya Rakshak – Swachatha Se Swasth (RB-TH Project) in Thavanampalle Mandal.

Total Health has planned significant interventions focusing on (1) improving the water and sanitation facilities in schools and primary health care facilities, (2) building capacities of school teachers and parents of the children, frontline health functionaries, pregnant and lactating women, and elders who are accessing nutritional services in Total Health run nutrition centres, women in SHGs, ASHA and Anganwadi workers.

The HYPOTHESIS built around the project:

> *"At the end of the three years interventions period (2022), all teachers empowered and act as catalyst in improved behavior change among students towards hygienic practices; school students adopt hygienic practices and transmit the acquired knowledge to family members; infection-free Primary Health Care settings; improved nutritional status of pregnant and lactating women and improved knowledge and hygiene behaviour of SHG women, ASHA and AWWs who acts as local community motivators to achieve Reckitt Benckiser's Banega Swachh India Agenda".*

1.5 Limitations

Since the study is jointly executed by both PLF and TH, the work has been shared between these two organizations (Table 2).

Table 2: Roles played by PLF and TH during the baseline study

Activities	By PLF	By Total Health
1. Designing the tools;	✓	X
2. Validating the questions and standardize for data collection;	✓	X
3. Recruiting the field investigators with a social science background;	X	✓
4. Training the field team in a real field setting;	✓	✓
5. Collecting the data – qualitative and quantitative;	X	✓
6. Data quality checks in field level;	X	✓
7. Cleaning the data;	X	✓
8. Data entry (random based double entry for quality check);	X	✓
9. Data analysis and generating the tables; and	✓	X
10. Writing the report.	✓	X

1.6 Methodology

Given the objectives and aim of the project, "quantitative dominant research" method is adopted to collect the data and information. PLF has designed twelve different sets of the semi-structured interview questionnaire to collect information from the said stakeholders. While designing the tools, PLF has reviewed the earlier tools used by PLF in similar studies. Besides, more focused literature available with UNICEF, UNDP, World Bank, and UNHCR has been reviewed and picked up essential indicators, which are talking about the interlinkages in strengthening WASH practices among the school students and their parents, teachers as well. It has helped in drafting the data collection questionnaires (tools) to collect data and information as much as possible.

Using these draft questionnaires, Total Health has conducted a rapid study to find out the suitability of the questions (validation) in each one of these twelve of questionnaires. After that, Total health and PLF has revised and finalized the questionnaires with relevant modifications.

About 80 trainee nurses from the Apollo Aragonda College of Nursing, and 10 YOGA instructors from Total Health have involved in data collection. Before putting them into the field, PLF core team, along with the Arogay Rakshak project team, has trained these investigators for 3 days and also supervised half a day experimental field visit. Following to this, investigators re-oriented on tools.

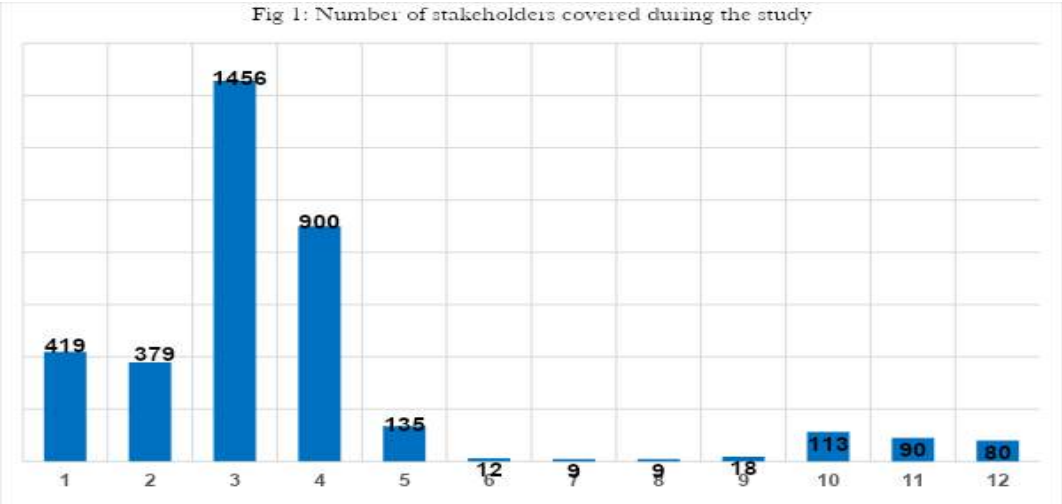
The Arogya Rakshak data management team has done data cleaning and data entry in the formats given by PLF. Data received in suggested formats was analysed by the PLF team and data analysis has been done using the "STATA" (Statistical software used in data analysis). This stage includes, cleaning the raw data, examining, transforming, and arranging it in a specific way to generate useful information from it. Finally based on the output data/information interpreted logically to set the baseline in this report.

Study area

Total Health operates in Thavanampalle Mandal of Chittoor district in Andhra Pradesh. It is, therefore, the institutions and individuals selected for the study comes within this geographical area.

Stakeholders covered

Given the objectives of the study, instead of taking a sample, the study has taken the approach of blanket coverage of all institutions and related individuals to set the baseline information (Fig 1)



Time Frame:

Study started in the month of May and completed by December 2019.

Report structure

This baseline report is having five sections –

Executive Summary

Section 1: Context
Section 2: WASH facilities in schools and Knowledge and Practices in Schools (Children, their Parents, and Teachers)
Section 3: WASH Knowledge and Practices among the Frontline Health Functionaries
Section 4: WASH Knowledge and Practices among the Community
Section 5: Recommendations
Section 6: Annexure - Self Explanatory Analytical Outputs

RESULTS

SECTION – 2
WASH Facilities, Knowledge and Practices in Schools

This section reflects on the existing facilities, knowledge and practices among schools, students and teachers.

2.1.WASH Facilities in Schools

A total of 14 schools in Thavanampalli Mandal (operational area of Apollo CSR/Total health) were surveyed to gather information on water, sanitation and hygiene practices. Of this 14 schools, two are private schools and the rest are government schools. The two private schools are – Apollo Isha Vidyanikethan School and Amararaja Vidyalaya.

2.1.1 Water:

Sources of drinking water:

Out of the 14 schools surveyed, 11 of them had drinking water facility while the other 3 schools- MPP School Aragonda, MPP School Pimagum and ZPHS Thodathora do not have drinking water facility. The main source of drinking water for the schools which had the water facility was the gram panchayat tap. However, in two schools, i.e MPP School in Thodathara and MPP school in Patrapalli the drinking water source is not functional.

Water storage:

7 of the surveyed schools store water in an overhead tank, 3 schools store water in containers with lids and another 3 schools store it in water cans. 1 school, MPP Pimagum stores water in drums. The survey shows that when the water source is functional, there is adequate water for drinking, handwashing and food preparation. However, in Thavanampalle there is not enough water for handwashing.

Water quality:

According to the school principals, water quality was considered to be safe only in 7 schools, whereas in the other 7 schools the quality of water was not considered safe i.e., Aragonda Boys High School, MPP School Aragonda, MPP Patrapalli, MPP School Pimagum, MPP School Sarakalu, MPP School Thavanampalli, MPP School Thodathara. Out of the 14 schools, only 5 schools had purified and treated water for drinking within the school premises and the other 9 schools did not i.e., Aragonda Boys High School, MPP School Aragonda, ZPHS Girls Aragonda, MPP Patrapalli, MPP School Pimagum, MPP School Sarakallu, MPP School Thavanampalli, ZPHS Thavanampalli, MPP School Thodathara.

When the schools' head masters were asked to rate the water facility in their school, only 4 of them said it was adequate while 7 of them said it was inadequate (Aragonda Boys High School, MPP School Diguvagam, MPP School Pimagum,MPUP School Sarakallu,MPP School Thavanampalli, ZPHS Thavanampalli,MPP School Thodathara) and 3 of them said it was very poor (MPP School Aragonda, MPP Patrapalli, ZPHS Girls Thodathara). Only Apollo Isha Vidyanikethan school had their drinking water tested in February 2019 and the results showed that the water was tested positive for chemicals. When the schools were asked if the students bring their own water to school, a total of 9 schools said quite a few bring water from their homes and 4 schools said majority of them bring water from their homes.

2.1.2 Sanitation:

Study collected the number of toilets available and functional, number of urinals and hand wash facilities in 14 schools (Table 3).

10 schools out of the 14 have toilets. However, only 2 of them have running water availability i.e., Apollo Isha Vidyanikethan school, ZPHS Vengampalli and all the 10 schools provide soap near the hand wash point. Only 3 out of the 10 toilets can be considered clean whereas 5 are not so clean (ZPHS Girls Aragonda, Aragonda Boys High School, ZPHS Thodathora, MPP School Thodathora, ZPHS Thavanampalli, MPP School Pimagum, ZPHS Vengampalli)and 2 are dirty (MPP School Thavanampalli, MPP School Aragonda, MPP School Diguvagam).

Table 3: Sanitation Facilities

			Toilet Facilities		Urinals	Hand wash Facilities	
S.No	Category of schools	Location (Village)	Available	Functional	Available	Available	Functional
1	ZP Boys High School	Aragonda	10	5	10	0	0
2	ZP Girls High School	Aragonda	25	12	7	0	0
3	Mandal Praja parished School,	Patrapalli	1	1	2	0	0
4	Mandal Praja parished School,	Thavanampalli	2	2	2	1	1
5	Mandal Praja parished School,	Thodathara	1	0	2	0	0
6	Mandal Praja parished School,	Diguvamagam	1	0	1	0	0
7	Mandal Praja parished School,	Pimagum	1	1	1	0	0
8	Mandal Praja parished School,	Aragonda	1	0	1	0	0
9	Mandap Parashid Upper School	Sarakallu	1	0	2	0	0
10	ZP High School	Thodathara	4	0	0	0	0
11	ZP High School	Thavanampalli	4	4	4	0	0
12	ZP High School	Vengampalli	2	2	2	1	0
13	Amaraja Vidyalaya	Aragonda	14	14	14	14	14
14	Apollo Isha Vidyanikethan	aragonda	20	20	20	20	20

Of the 13 schools with urinals in the toilets, 8 of them did not have any partitions between urinals and only 5 of them have openings for natural light and ventilation. Only 2 schools have floor with adequate slope and a maintainable durable finish. 10 schools do not have urinals that are accessible in all weather conditions, for eg. rainy season. When the principals were asked about the cleanliness of the urinals only 2 principals said that the urinals at their schools can be considered clean.

2.1.3 Hygiene:

Hand washing facility:

Only 4 schools clean their overhead tank monthly and 1 school (MPP Thodathara) cleans the overhead tank just once a year.Out of the 14 schools only 2 schools have a hand washing facility with children friendly height and space (Amararaja Vidyalaya, Apollo Isha Vidyanikethan). The floor of the hand washing station in both the schools is well maintained and have running water.

iv. Mid-Day Meal:

None of the schools follow hygiene practices when it comes to the mid-day meals, i.e, cooks cum helpers do not have gloves, aprons, caps, etc. and only 3 schools maintain the utensils, equipment and other materials on a daily basis and 4 schools cleanly maintain the storage space. Only 1 (Amararaja Vidyalaya) school has reported the usage of soap before and after the mid day meals.

2.1.4 Solid Waste Management Practices:

7 out of the 14 schools throw their garbage outside despite the presence of dustbins and only 3 schools have separate bins for dry and wet waste. In 8 schools the waste is collected and disposed daily, 5 schools collect and dispose their waste once a week and in 1 school waste is collected or disposed less than once a week (MPP School Thavanampalli).

2.1.5 Menstrual Hygiene Practices in Higher Secondary Schools:

None of the 14 schools have a Hygiene Corner that provides information, communication and education material available. The survey results from the schools also indicate that there are no sanitary napkins or incinerators available in any of the schools. Only 1 school has a dustbin inside the toilets for disposal of pads (Amaraja Vidyalaya).

2.2 WASH Knowledge among Students

The following section demonstrates the analysis of the quantitative data that was collected from 2254 students. The students were from 1st to 10th standards from 14 different schools in Chittoor district. Here, the analysis has been made in three categories - Students in (i) 1st and 2nd classes, (ii) 3rd and 4th classes and (iii) 5th class and above.

Conclusions:

- *WASH facilities in schools including toilets, hand washing facilities, drinking facilities and menstrual hygiene facilities for female students are either do not exist or are suboptimal.*
- *Hygiene is not practiced by school staff that is responsible for the mid day meals i.e, the cooks do not use gloves or caps while cooking and the utensils are not maintained properly.*
- *No clear or consistent method for testing water quality in schools. Only one school reported that the water quality is tested and there is a lack of consistency with regards to frequency of testing and the authority responsible for such testing.*
- *Despite the presence of garbage bins, schools still engage in littering behavior and improper waste disposal. Waste is not segregated properly into dry and wet wastes and it is also not disposed regularly.*
- *The schools do not provide any WASH training to their staff i.e, cook cum helpers and there is no hygiene corner available in any of the schools.*

2.2.1 WASH knowledge among 1st and 2nd class students

Water

About 80% (335) of the students surveyed had knowledge about various water related hygiene practices (See figure 3). 79% (331) of the students indicated that RO and tap water as clean drinking water sources. Whereas, 75%(314) of the students were able to identify unclean sources of drinking water. When students were asked to identify correct ways to clean water, almost 85% (356) of the students selected boiling and filtration as the right techniques to clean water for cleanliness.

Sanitation

70%(293) of the students from 1st and 2nd standard had knowledge about various sanitation related practices (figure 3). About 83% (347) of students said that they should go to the toilet in a constructed toilet whereas the remaining 17%(71) said one should go to the toilet either in open air or near a river or water source. When the students were asked about the correct way to clean the toilet more than 51% (214) said using water and only 39%(163) said using a toilet cleaning solution.

Hygiene

Around 66%(276) of the students surveyed had knowledge on hygiene related practices (figure 3). When the students were asked how often one should brush their teeth only 31%(130) said twice a day. 95%(398) of the students said one should wash their hands regularly and around 85%(356) of the students indicated that soap and water and a hand scrub should be used while washing hands. When students were asked to identify various activities that make your hands dirty, none of them were able to identify all the 6 activities. Only 35%(146) could identify at least one activity and around 34%(142) were

able to identify at least two activities from the given list (Figure 2). Around 74%(310) of the students knew that it was necessary to wash hands before and after eating. When students were asked about waste disposal, 83% (347)said that waste should be disposed of in waste bins.

Figure 2: Unhygienic activities that make hands dirty

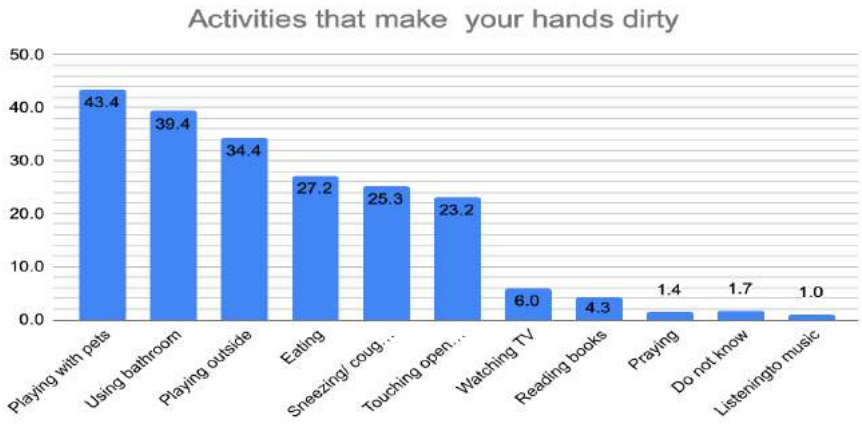
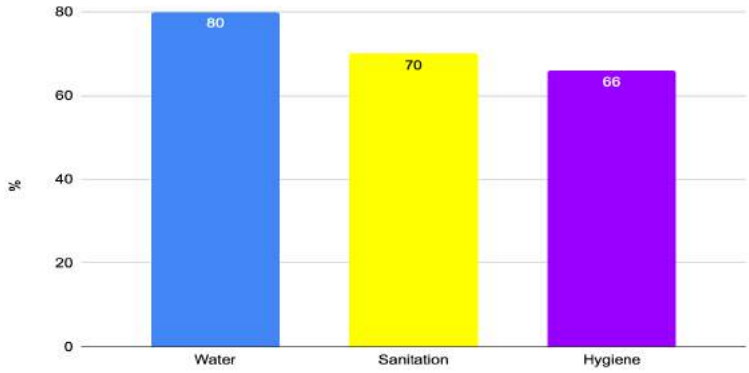


Figure 3: Overall WASH knowledge among 1st and 2nd class students



2.2.2 WASH knowledge among 3rd and 4th class students

Water:

Around 79% (299) of the 3rd and 4th year students that were surveyed had knowledge on hygiene practices related to water (See figure 4).

When students were asked to identify sources of clean drinking water sources, 56.8% (274) of the students chose RO, 16% (77)chose a hand pump, 11.8%(57) indicated piped water, 8.5%(41) shallow well and 6.4%(31) said tap water. When the same students were asked to select unclean sources of drinking water, 67.5% (256) indicated a village pond, 15.6%(59) chose boiled water, 9.2%(35) said a public hand pump and 7.4%(28) chose a filter plant.

46%(188)of the students chose boiling water as the correct way to clean water for cleanliness and 37.7%(154) chose filtration, 8.8%(36) said sieving through cloth and 5.4%(22) said chemical treatment.

Sanitation:

74.8%(280)of the surveyed students from 3rd and 4th class had knowledge on sanitation(Figure 4). 88.4% (335)of the students said that one should go to the toilet in a constructed toilet and 8.4%(32) said in open air in a field. 1.8%(7) said next to a water source. To clean a toilet, 46.4%(182) of the students said using a cleaning agent and 41.3%(162) said using only water. 8.2% (32) of the students said using a broom is the correct way to clean a toilet and 2.6%(10) said using ash is the correct way to clean the toilet.

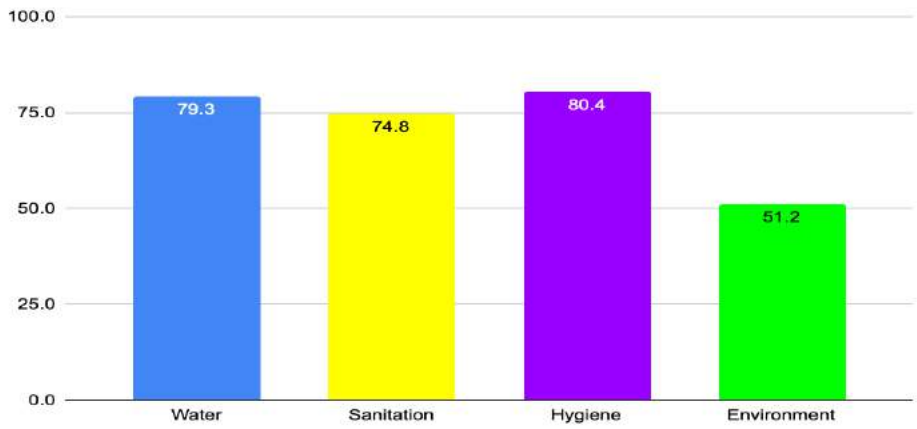
Hygiene:

Around 80% (303) of the 3rd and 4th class students that were surveyed had knowledge on hygiene practices. Only 63.1%(239) of the students knew the steps of hand washing. When the students were asked to select the occasions when one should wash their hands, only 1.8% (7) were able to identify all the scenarios that were listed and another 1%(4) were able to identify at least 5 scenarios. 41.2% (155)of the respondents were able to identify at least 4 occasions. Around 25% (92) of the students were not able to identify clean eating practices.

Environment:

Only 51.2% (194) of the students had knowledge on the environment related question (figure 4). When the students were asked about the importance of trees, 45.6% (173) of the respondents said that they did not know the role of trees in the environment.

Figure 4: WASH knowledge levels among 3rd and 4th class students



2.2.3 WASH knowledge among students in 5th class and above

Water:

About 79% (1150) of the students that were surveyed had knowledge on various hygiene practices related to water safety (figure 5). Only 35.6% (518) of the respondents said RO plant was a clean source of drinking water and another 36.4%(530) chose piped water. About 24%(351) said that the borehole and surface water (15.8%, 230) are clean sources of drinking water.

37.4% (539)of the students were not able to identify the correct way to draw water from the water container, they either draw water by dipping the glass in the container or by dipping fingers in a glass of water. When the students were asked to identify various ways to treat water, about 18.3%(262) of them said that water can be treated by alum or a bleaching agent.

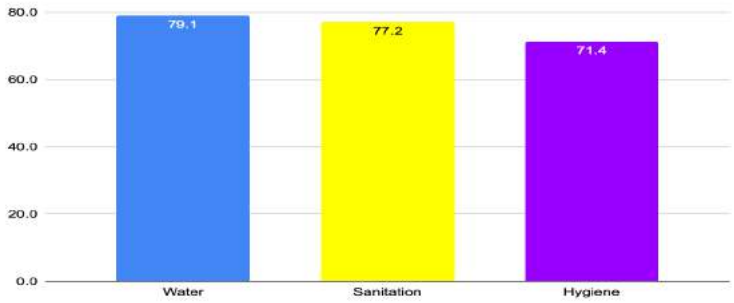
Sanitation:

77.2%(1121) of the students in 5th class and above had knowledge on sanitation related practices(figure 5). When the students were asked how often toilets should be cleaned, only 70.7%(1029) said that they should be cleaned daily. Around 15.2%(222) said once a week and 5.2%(76) said that they did not know. Only 64.8% were able to identify the best cleaning agent for cleaning toilets, i.e, phenol and cleaning agent.

Hygiene:

Only 71.4% (1034) of the students had knowledge on hygiene practices(figure 5). Around 15% (229) of the students said that they were not aware of the six steps of hand wash. When the students were asked to identify various occasions in which one must wash their hands, less than 1%(14) were able to identify all 5 scenarios that were listed. About 41%(597) were able to identify at least 2 occasions in which one must wash their hands. Students were also not able to list all the causes for the occurrence of diarrhea but 41.7%(611) identifies at least one cause. When the students were asked about the importance of dental hygiene, only 6%(87) were able to identify all the three reasons listed i.e., to avoid germs, cavities and bad breath.

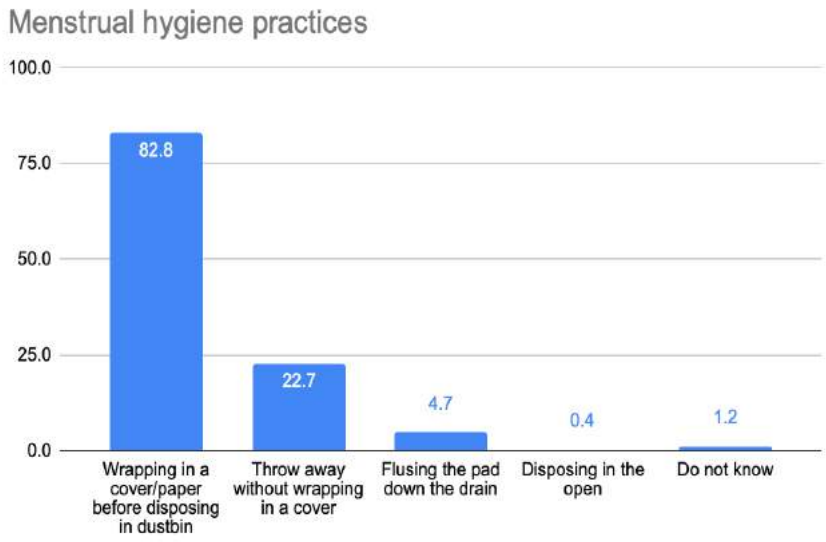
Figure 5: WASH knowledge levels among students in 5th and above



Menstrual Health:

Female students who got their first period were also surveyed to understand their knowledge on menstrual hygiene. Out of the 256 students that got their period, more than 73% (187) did not know what menstruation was and another 11.7% (30) incorrectly responded with "discharge of waste blood". When the students were asked about the correct way to dispose of a sanitary napkin, 22.7%(59) said that you can throw it away without wrapping it in a cover and 4.7%(12) said you can dispose it by flushing it down the toilet(Figure 6).

Figure 6: Knowledge on Menstrual Health



Waste Management:

When the students were asked about waste disposal, 88.4% (1287) said that waste should be disposed in a dustbin but around 11% (102)said that it can be disposed in a backyard, playground or any other corner. Around 40% (576)of the students were not aware of waste separation into dry and wet waste and then they were asked about the importance of separating waste, around 54.7% (838)said that they did not know why it was necessary to separate wet waste from dry waste.

Conclusions*:*

- *The majority of students exhibited good knowledge on various WASH practices.*
- *A large number of students were not able to identify RO plant as a clean source of drinking water or the correct way to draw water from the water containers. Some students still believe that using a bleaching agent or putting water against sunlight can be used to treat water.*
- *Knowledge on sanitation practices was relatively low. Some students were still not aware of the appropriate place to go to toilet or the correct way to clean toilets.*
- *Majority of the students knew the importance of washing their hands regularly and bathing everyday but students were also not able to identify all the occasions when they must wash their hands. Students were also not able to identify most of the causes listed for the occurrence of diarrhea.*
- *A large number of female students were not knowledgeable on menstrual hygiene.*
- *Students were also not aware about waste segregation and its importance to the environment.*

2.3 WASH Practices among students

2.3.1 WASH Practices among 1st and 2nd class students:

Water:

88% (371) of the surveyed students drink water from school resources. Amongst the students that drink water from school resources, 92% (353)follow correct drinking practices, i.e, from a tap below the filter or from a water bottle. The remaining 8%(36) dip cup in the pitcher or drink straight from the tank.

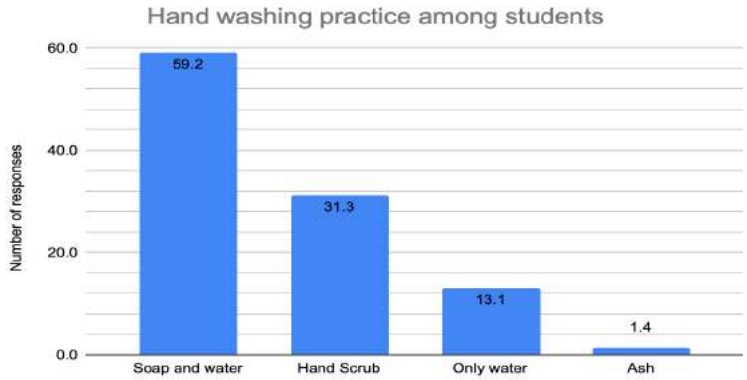
Sanitation:

Around 94%(392) of the students use the toilet at school, out of which 89%(373) pour water after using the toilet. Amongst the 6% (20)of the students that do not use the toilet at school, 8 of them practice open defecation.

Hygiene:

73% (306)of the students wash hands before and after eating and 66%(278) wash hands after using the toilet. 59% (248)of the students use soap and water to wash their hands and 31%(131) of the students use a hand scrub. 13%(55) of them use only water and around 1%(6) use ash to wash their hands(Figure 7). The survey results indicate that 83% (350)of the surveyed students cut their nails regularly.

Figure 7: Hand hygiene practices among 1st and 2nd class students

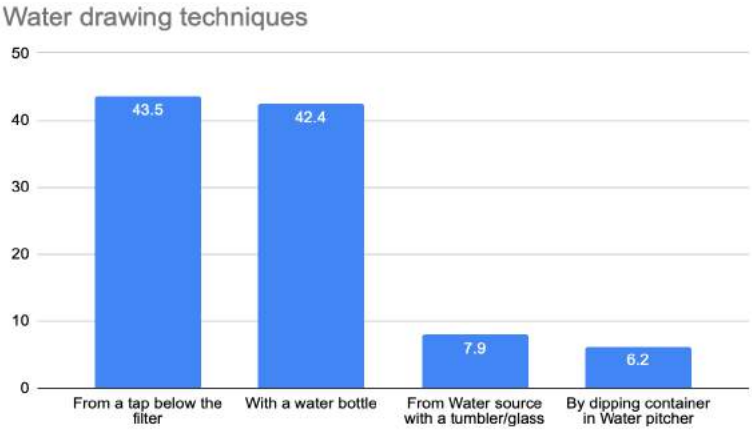


2.3.2 WASH Practices among 3rd and 4th class students:

Water:

86.5% (328) of the students said that they drink water from school resources. Of the students that drink water from the school resources, about 86% (304)of them draw water using the correct techniques (Figure 8), i.e., from the tap below the filter or with a water bottle. The remaining students bring their own water bottle and 96%(364) of those students clean their bottles regularly.

Figure 8: Water handling practices by 3rd and 4th class students



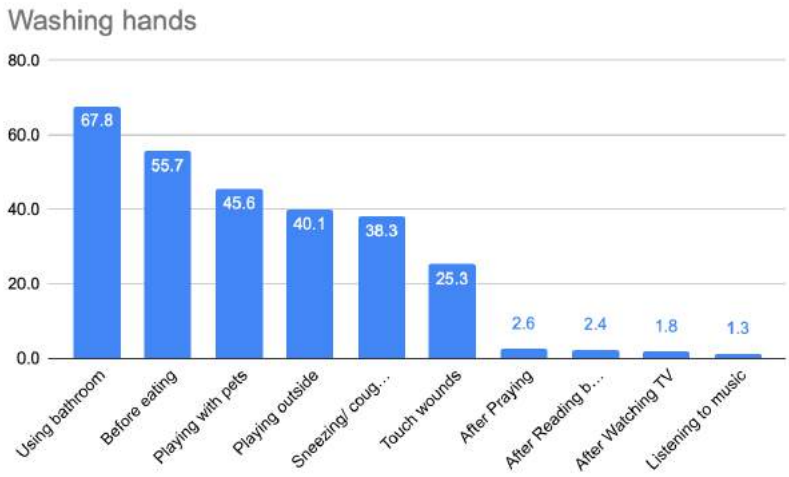
Sanitation:

96%(364) of the students said that they use the toilet at school. The students that do not use the toilet at school said that they either relieve themselves at home (3) or practice open defecation(8). 97.8% (356) of the students that use a toilet said that they pour water aftering using the toilet.

Hygiene:

When the students were asked to identify occasions when they wash their hands, 67.8%(257) said after using the bathroom and 55.6%(211) said before eating. Only 25%(96) said that they wash their hands after touching wounds, 38.2%(145) after sneezing and coughing, 40%(152) after playing outside(figure 9). Around 98%(373) of the respondents said that they wash their hands using soap and water. 99.2%(376) said that they throw their waste in the dustbin.

Figure 9: Hand hygiene practices among 3rd and 4th standard students



2.3.3 WASH Practices among 5th class students and above:

Water:

Around 91.5%(1332) of the students said that they drink water from the school resources but only 72.4%(1048) of them draw water using the safe techniques and 87.2%(1270) wash their hands before drawing water from the water storage. Of the students that bring their own water bottles to school (8.5%), 85.9% wash their bottles daily.

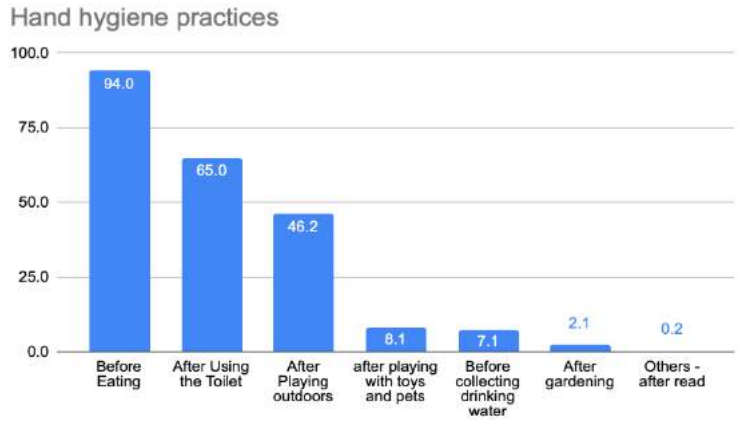
Sanitation:

91.7%(1335) of the students that are in 5th class and above use toilets in their school. Of the remaining 8.3% (121), 33%(40) practice open defecation. When the students that use the toilet, either at school or home, were asked if they pour water after using the toilet, 98.1% (1309) said yes.

Hygiene:

98% (1427) of the surveyed students said that they wash their hands regularly. But when the students were asked when they wash their hands, only 45.8%(673) said that they wash their hands after playing outdoors and 8%(118) after playing with toys and pets(Figure 10). 21.9%(351) of the students said that they wash their hands using only water.

Figure 10: Hand hygiene practices among students in class 5 and above.



Menstrual Hygiene:

97.3%(249) of the female students that got their first period said that they wrap the sanitary pad in a paper or a cover before disposing. 98.8%(253) said that they keep their genitals clean and 99.2%(254) bathe regularly, wash their hands after changing their sanitary pad and change their undergarments daily during their periods.

Waste Management:

97.3%(1417) of the students said that they dispose waste in the dustbins but only 46.6% (679)segregate dry and wet waste. When the students were asked to identify dry waste from a list of items, 24%(476) of them said that they did not know and 28.9%(504) were not able to identify the wet waste.

Conclusions:

- *The majority of the students drink water from the school resources but a lot of them are not aware of the safe techniques to draw water from water storage.*
- *Although a larger number of students use the toilets at school, there is still a small number of students that practice open defecation.*
- *The majority of the students have good hygiene practices, i.e., they bathe daily, trim their nails, wash their hands regularly, etc but the students were not able to identify the appropriate occasions to wash their hands.*
- *Female students practice safe menstrual hygiene practices.*
- *Students dispose their garbage in the waste bins. However, they do not segregate their waste into dry and wet waste.*

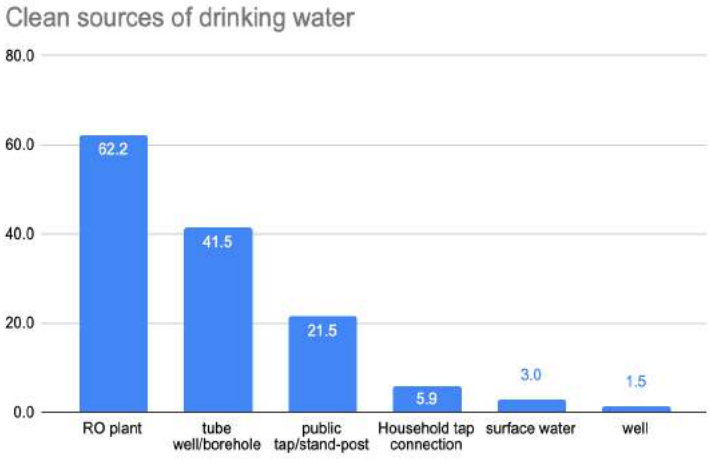
2.4 WASH Knowledge and Practice among teachers

2.4.1 WASH Knowledge among teachers

Water:

Only 62.2% (84)of the surveyed teachers listed RO as a clean source of drinking water. Around 41.5%(56) of the respondents identified borehole and 21.8%(29) indicated a public tap as clean drinking water sources(Figure 11). 97.8%(132) of the teachers believe that treating drinking water is important and all the surveyed teachers said that cleaning water bottles and containers regularly is important. When the teachers were asked about safe handling of water at various stages, 97.8%(132) of them said it was important.

Figure 11: Knowledge on drinking water sources among teachers

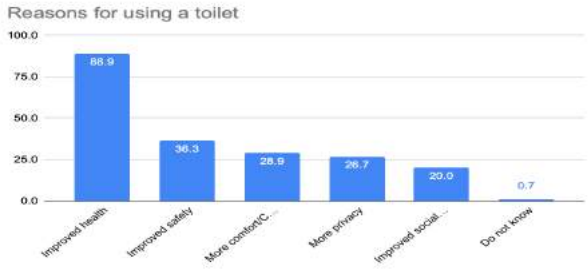


Sanitation:

All the surveyed teachers believe that the use of toilet or sanitation facility is important citing improved health (88.9%, 119), improved safety (36.3%, 49), more comfort and convenience (28.9%), more privacy (25.7%) and improved social status (20%, 27) as the positive aspects of using a toilet(Figure 12). When the teachers were asked how often the toilets in schools should be cleaned, 91.1%(123) said daily, 6.7% (9) said once every 2 days and 1.5%(2) said once every week.

Almost 99%(134) of the teachers believe that waste collection and disposal at school is important.

Figure 12: Reasons for using a toilet



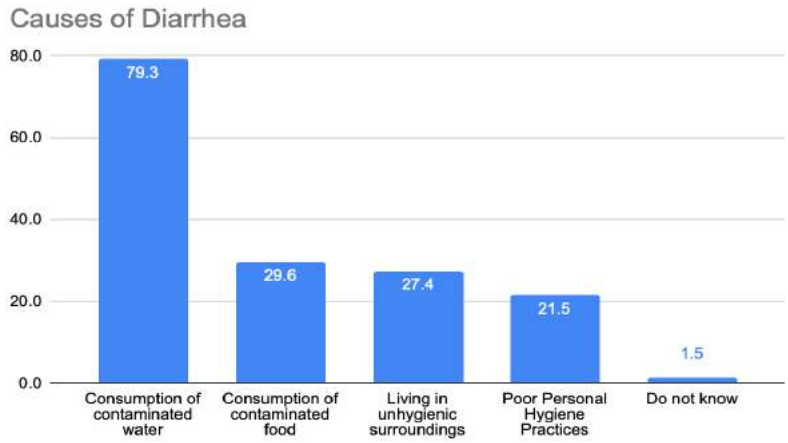
Hygiene:

About 99%(134)of the surveyed teachers said that regular hand washing is important. All the teachers said that it is important to keep the school campus clean and about 99%(134) said that waste management is important in school.

When the teachers were asked if girls are to be supported during menstrual periods, almost 33%(45) said that support was not important or did not know. 85.2% (115) said that orientation on menstrual health is important.

The teachers were asked about the causes of waterborne diseases but none of them were able to identify all the causes. 79.3%(107) indicated the consumption of contaminated water, 29.6%(40) indicated the consumption of contaminated food, 27.4%(37) of the responses indicated living in unhygienic conditions and 21.5%(29) said poor personal hygiene(Figure 13). When the respondents were asked about the steps to prevent waterborne diseases, again none of the teachers were able to identify all the causes. About 49%(118) of the responses indicated treating and purifying water before consumption and 20.1%(48) indicated keeping surroundings clean followed by practicing good personal hygiene (18%,43) and hygiene cooking practices (12.6%,30).

Figure 13: Knowledge on causes of diarrhea

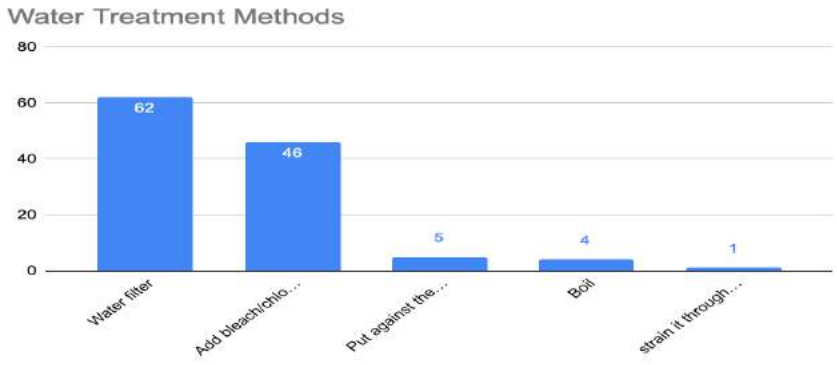


2.5 WASH practices in schools (teachers)

Water:

72.6% (98) of the teachers indicated that drinking water is treated regularly using water filter (50.8%, 62), bleach or alum (39%,46), put against the sun (4.2%,5) and boiling (3.4%,4)(figure 14). 54% of the teachers said that the water is drawn by filling water bottles, 18%(35) said by dipping glass, 11.6%(22) said by using long handled ladle, 9.6%(18) draw water by dipping their fingers in glass and 5.3%(10) hold the glass on the outer edge. Only 57%(77) of the surveyed teachers indicated that the water bottles and containers are cleaned daily and about 17%(23) clean them once every two days and the other 17%(24) clean them once a week.

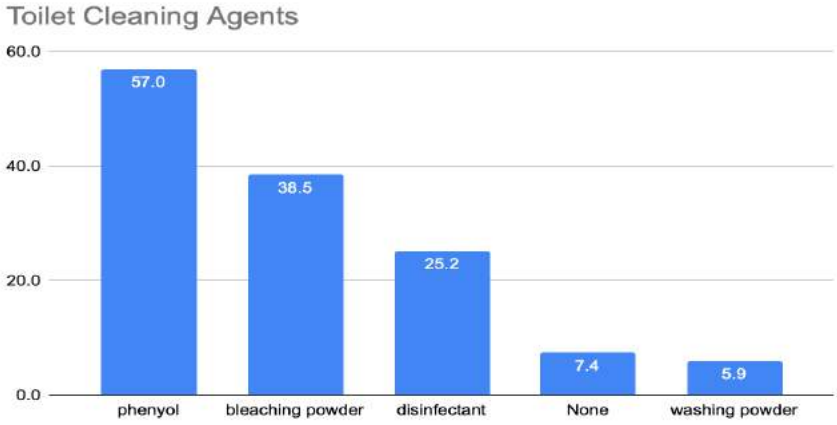
Figure 14: Water treatment practices in schools



Sanitation:

When the surveyed teachers were asked about students defecation practices, 16.3%(22) practice open defecation and 23.7%(32) practice open urination. 5.9%(8) of the teachers admitted to practising open defecation and 10.4%(14)practice open urination. When the teachers were asked about the toilets, 87.4%(118) said that the toilets are cleaned daily. Phenyl (42.5%,77), bleaching powder (28.7%,52) and disinfectant (18.8%,34) are the most commonly used cleaning agents for the toilet(figure 15).

Figure 15: Commonly used toilet cleaning agents



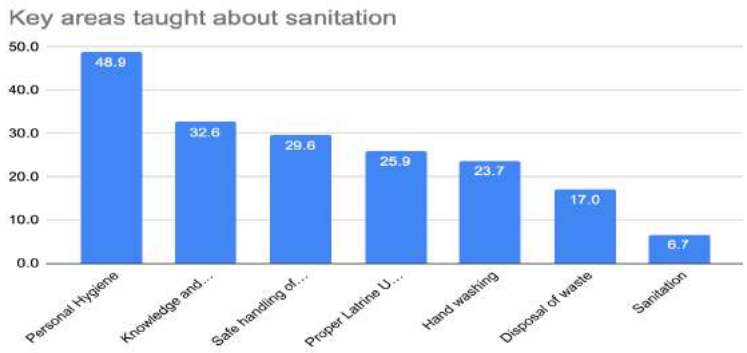
Hygiene:

98.5%(133) of the surveyed wash their hands before eating and after using the toilet. 99.3%(134) of the teachers said that the waste is disposed of in the bins.

2.6 WASH Training in schools by teachers.

Only 56.3%(76) of the teachers said that they received some kind of training on WASH. When the teachers were asked if regular hygiene sessions were conducted for all classes, only 65.2%(88) admitted to conducting WASH training. 49.6 %(67) of the teachers said that there are scheduled hygiene education sessions for the schools and 57%(77) said that education on menstrual health hygiene is conducted. Personal hygiene (26.5%,66), knowledge and skill (17.7%,44), safe handling of water(16.1%,40), proper latrine use and maintenance(14.1%,35) and handwashing (12.9%,32) are the key areas taught about sanitation(Figure 16). Only 23.7%(32) of the teachers said that the school has IEC material on WASH.

Figure 16: WASH related trainings for teachers



Conclusions:

- *WASH knowledge levels were substantially low among teachers. Majority of the teachers were not able to identify clean source of drinking water and do not use safe water handling practices.*
- *Teachers had optimal knowledge on safe sanitation practices but some of them still practice open defecation.*
- *None of the teachers were able to list all the causes of waterborne diseases and majority of them are not aware of the importance of clean cooking practices to prevent such diseases.*
- *Majority of the teachers do not believe that female students need support during menstruation.*
- *Almost half of the teachers have not received any kind of training on WASH.*

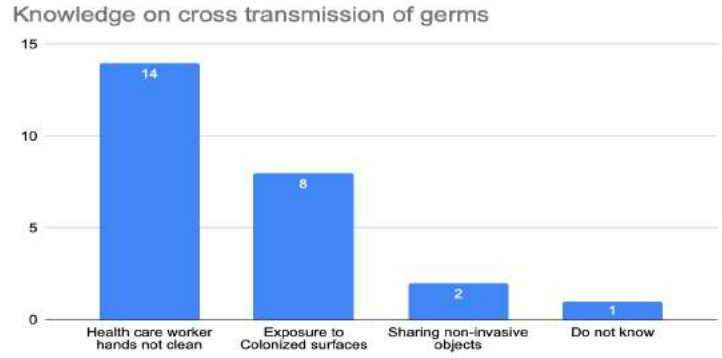
Satellite clinics have functional toilets, which 8 are accessible for people with special needs. All except one clinic has a hand washing station with liquid soap.

3.1 WASH Knowledge among Doctors, Nurses and Lab Technicians

All the 18 respondents believe that hand hygiene is important immediately before touching a patient for preventing transmission of germs. When the respondents were asked why hand hygiene was important - infection control and transmission and good clinical practice were the two most important reasons mentioned. All the 18 respondents agree that hand hygiene practices are an essential part of patient care.
17 of the 18 respondents are aware of the WHO 5 moments for hand hygiene and only 5 of them heard of and practice the Bare Below the Elbow technique. Out of the 13 respondents that do that practice the technique, 12 of them said that they did not know it.

When the respondents were asked to mention sources of germs that are responsible for infections- airborne, water and blood and body fluids were listed as the main sources of infections. When the respondents were asked about the main route of cross transmission of germs between patients in a healthcare facility, 14 of them said that germs get transferred when healthcare workers hands are not clean (figure 20).

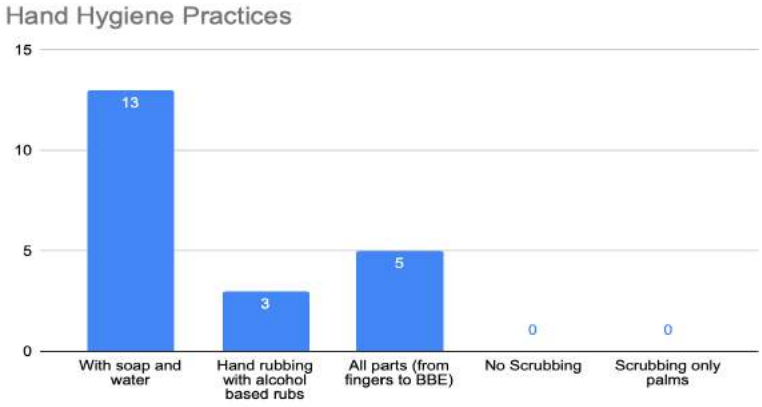
Figure 20: Knowledge on transmission of germs



3.2 WASH Practice among Doctors, Nurses and Lab Technicians

Only 7 of the 18 respondents said that they follow appropriate hand hygiene practices. When they were asked to specify their hand hygiene practices, 13 of them said that they use soap and water, 3 of them practice hand rubbing with alcohol based rubs and 5 of them wash all their parts of hands i.e, from fingers to elbows(figure 21). Around 9 of them said that they wash their hands for 20 to 40 seconds and 8 of them wash it for less than 20 seconds. The survey results show that the hospitals have an approved hand hygiene policy that is complied with by all respondents.

Figure 21: Hand hygiene practices among health practitioners



Conclusions:

- *Doctors, nurses and lab technicians had optimal knowledge on the importance of hand hygiene.*
- *Most of them do not practice the Bare Below the Elbow technique for hand hygiene because they do not know about it.*
- *Doctors, nurses and lab technicians were able to identify the various sources of germs and the main route for cross transmission of germs between patients.*
- *Most of them do not practice safe hygiene practices and wash their hands for less than 20 seconds.*

4.2 WASH Knowledge and Practices among Anganwadi workers

Out of the 9 anganwadi centres that were surveyed, 8 of them had reliable and safe drinking water. 5 centres store water in pots, 2 of them store it in tanks and the remaining 2 store water in drums and water cans.

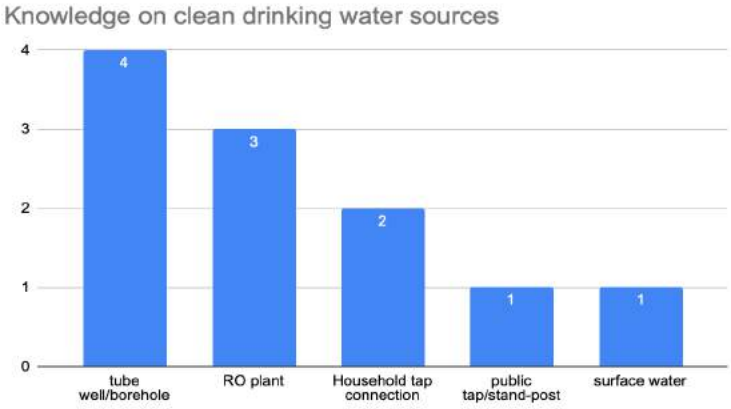
8 anganwadi centres have toilets, however, only 5 of them have running water in the toilet. 7 centres have a hand washing facility with soap provided.

4.2.1 WASH Knowledge among AWW

Water:

Out of the 9 anganwadi centres, only 3 of them were able to identify safe drinking water sources, i.e, household tap connection, RO plant or can water(figure 22). All the 9 AWWs said it was important to treat drinking water and regularly clean bottles and containers. The AWWs also recognized the importance of safe handling of water at various stages.

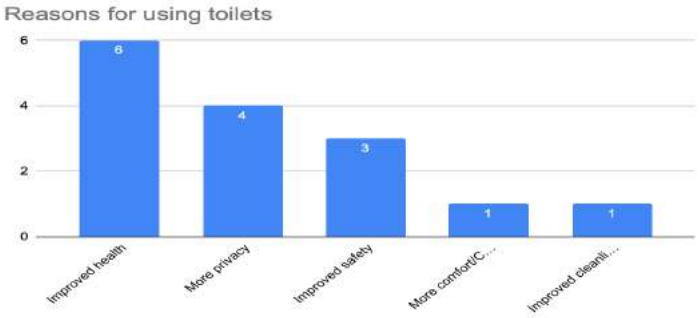
Figure 22: Knowledge on drinking water sources by AWWs



Sanitation:

All the surveyed AWWs said that the use of toilet is important. When the workers were asked about the positive aspects of using a toilet, 6 of the respondents said it improved health, 4 responses identified more privacy as the positive aspect and 3 responses said that toilets improved safety. More comfort and improved cleanliness were also some of the responses given by the AWWs (figure 23). When the workers were asked how often the toilets should be cleaned, 8 of them said that the toilets should be cleaned everyday and 1 of them said it was sufficient to clean them once every 2 days.

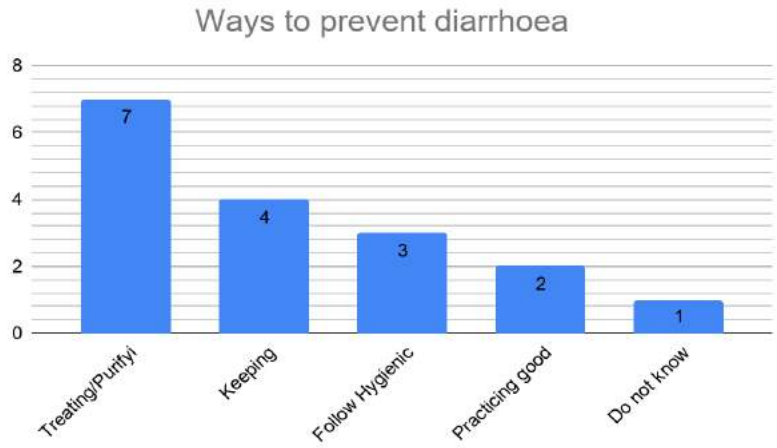
Figure 23: Reasons for using toilets by AWWs



Hygiene:

All the 9 AWWs said that regular hand washing is important. The workers also think that diarrhea can be prevented. However, when they were asked about the steps to take to prevent/avoid diarrhea in children, none of the AWWs were able to identify all the four ways mentioned. Only 1 AWW was able to identify 3 of the 4 ways to prevent diarrhea in children and 6 of them were able to identify at least 2 ways. 1 AWW did not have any knowledge on how to prevent diarrhea among children(figure 24). All the AWWs were able to identify the importance of infant feeding hygiene and menstrual health management.

Figure 24: Knowledge on diarrhoea prevention

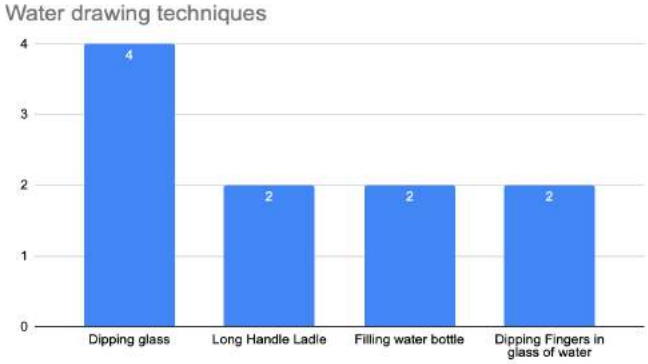


4.2.2 WASH Practices by AWW

Water:

The main source of drinking water in 4 AWCs is public tap. 2 AWCs rely on tankers, wells and bottled water for their drinking water supply. None of the AWCs have an RO plant but 7 of them purify the drinking water regularly either with water filter or by boiling the water. While drawing water from the water container, 4 of them dip their glass in the container, dip fingers in the glass of water and only 4 of them follow the correct practice while drawing water, i.e, using a long handled ladle or by filling water bottle(figure 25). All the AWCs clean their water bottles and containers regularly.

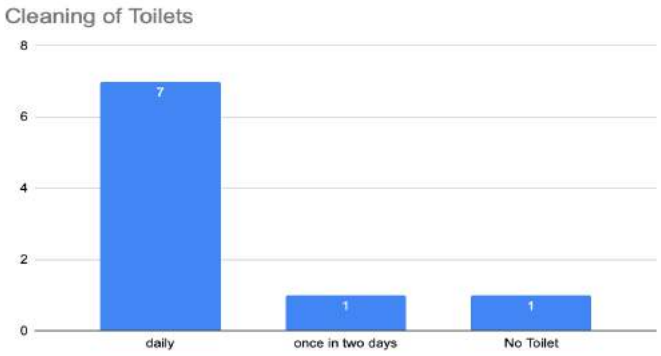
Figure 25: Water drawing techniques by AWWs



Sanitation:

When AWWs were asked if children go for open defecation, 4 of them said that children practice open defecation and urination. Only 7 of the AWCs clean their toilets daily, one AWC cleans their toilet once every two days and one AWC does not have a toilet(figure 26). All of them ensure pouring of water in the toilet after usage and wash hands after touching soiled pads or clothes. The AWCs use bleaching powder,phenol or disinfectant for cleaning the toilet.

Figure 26: Cleaning of toilets in Anganwadis

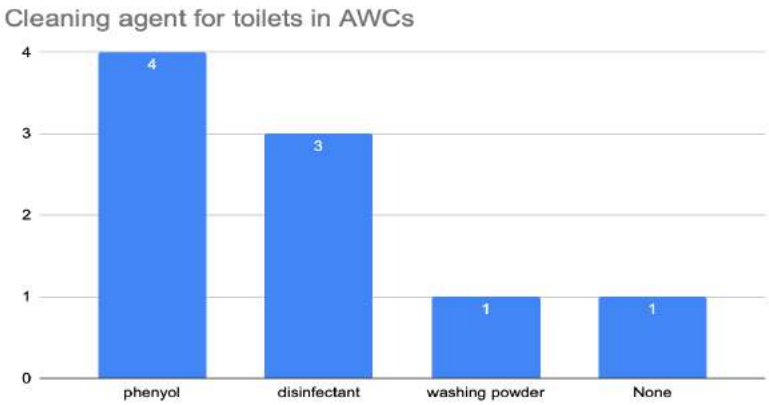


Hygiene:

All the 9 AWWs use soap and water when they wash their hands. When the AWWs were asked if they make sure that the children and mothers wash their hands with soap before eating and after toilet, all 9 of them said yes. All the AWWs said that all the Aayas wash their hands before cooking and before feeding food to children. The cooking utensils, plates, spoons, glasses are also washed with soap and water every day.

The survey results indicated that all the AWCs are swept daily, 6 of them mop their floors daily, two AWCs mop the floors once every two days and one AWC mops the floor once a week only. 4 AWCs use phenyl for mopping the floor, 3 AWCs use a disinfectant, 1 AWC uses washing powder and one AWC does not use any cleaning agent for mopping the floor. None of the AWCs provide sanitary napkins(figure 27).

Figure 27. Cleaning agents used in AWCs



4.2.3 WASH information, education and communication for AWW

6 Anganwadi workers received wash training in the last one year while another 3 did not receive training (Gollapalli, Krishnapuran, Thadathara). 2 AWWs said that they do not have information about WASH in radio, TV, News, road shows (Gollapalli, Thadathara). 6 Anganwadi centres (Aragonda, Charala, Modhalapalli, Krishnapuram, Ponnedupalli, Uppodupalli). While most of the AWCs conduct regular

WASH sessions during nutrition week for mothers and adolescent girls, 1 anganwadi worker reported that they do not conduct such sesssion (Krishnapuram).

Table 4: WASH communication in AWCs

WASH Communication	No:of AWCs
WASH Trainings in the last one year	**6**
Information about WASH in radio,TV,News, road shows	**7**
WASH propaganda at AWC for children, mothers and adolescent girls	**9**
Presence of posters/material at AWC for education and information on WASH practices	**3**
Education for pregnant and lactating mothers about prenatal, postnatal, infant and breast-feeding hygiene	**9**
Availability of community nutrition program in manual for pregnant and lactating women	**9**
Regular WASH session during nutrition week for mothers and adolescent girls	**8**
Sessions properly structured	**7**
Menstrual hygiene practices for young women and adolescent girls	**9**

Conclusions:

- *Anganwadi workers had good knowledge on safe sanitation practices.*
- *Majority of the workers were not able to identify clean sources of drinking water and were also not able to identify all the steps required to prevent diarrhea.*
- *The Anganwadi Centres do not use clean source of drinking water, i.e, RO plant and the anganwadi workers do not draw water from the water storage using safe water handling techniques.*
- *All the anganwadis follow proper hygiene practices, i.e, washing hands regularly, sweeping the center daily, cleaning the cooking utensils with soap and water, etc.*
- *Almost all anganwadi workers received wash related training but most of the AWCs do not have posters or information on WASH practices.*

4.3 WASH Knowledge and Practice among ASHA workers

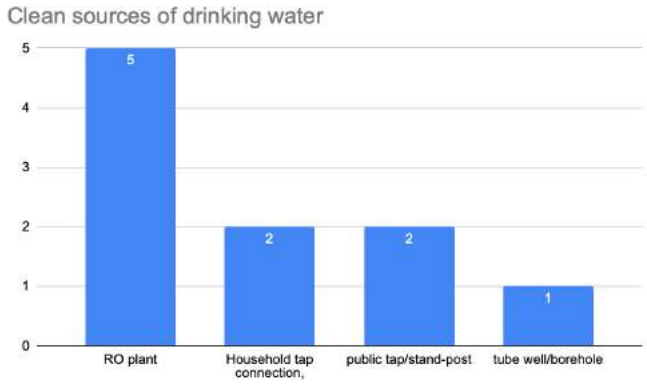
4.3.1 WASH Knowledge among ASHA workers

Water:

Of the 9 ASHA workers that were surveyed, 5 of them consider RO plant as a clean source of drinking water, 2 indicated a household tap connection and another 2 chose public tap as clean sources of drinking water. 1 ASHA worker picked a borehole when asked to identify clean sources of drinking water(Figure 28).

8 of the 9 ASHA workers said that it was important to treat drinking water and all 9 said that cleaning water bottles and containers was important. All the 9 ASHA workers that were surveyed said that safe handling of drinking water was essential at various stages.

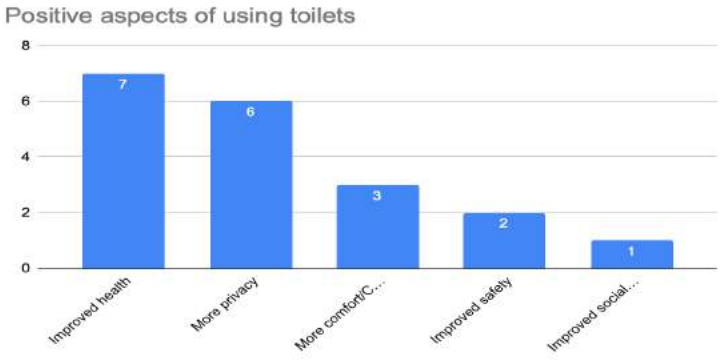
Figure 28: Clean sources of drinking water



Sanitation:

All 9 ASHA workers that were surveyed said that the use of a toilet or a sanitation facility is important. The most popular response for the positive aspects of using a toilet was improved health, followed by more privacy. 3 responses indicated more comfort and convenience as a positive aspect of using a toilet. 1 ASHA worker said the positive aspect of using a toilet was improved social status(figure 29). 5 of the ASHA workers said that toilets should be cleaned daily, 2 of them said that they should be cleaned once in two days and 3 ASHA workers said that toilets should be cleaned once a week.
All 9 ASHA workers said waste collection and disposal is important.

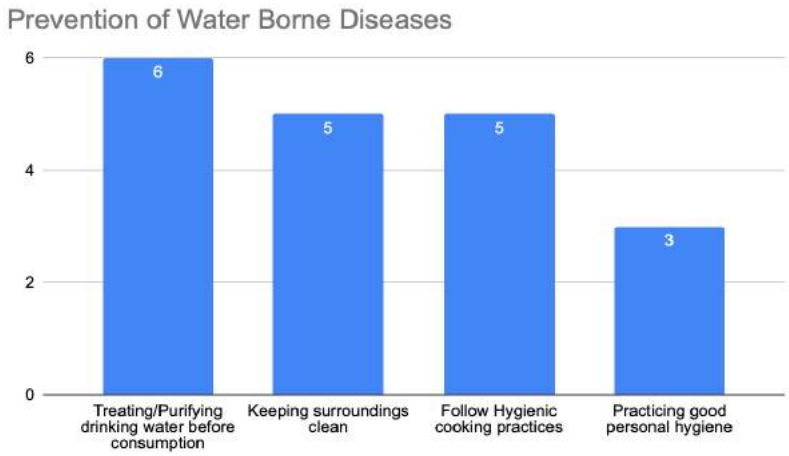
Figure 29: Importance of using toilets



Hygiene:

All 9 ASHA workers identified the importance of regular hand washing. When the ASHA workers were asked if diarrhea can be prevented, all 9 of the respondents said yes but only 7 of them think water borne diseases can be prevented. However, none of the respondents were able to identify all the ways that were listed to avoid or prevent diarrhea and water borne diseases. 6 of the responses indicated that treating and purifying drinking water before consumption, 5 responses indicated keeping surroundings clean and following hygiene cooking practices, 3 responses indicated practicing good personal hygiene. When the women were asked what causes water borne diseases, 7 of the responses indicated living in unhygienic conditions, 6 indicated consumption of contaminated water, 4 responses indicated breeding of mosquitoes in surroundings and 3 indicated consumption of contaminated food (Figure 30).

Figure 30. Knowledge on prevention of water borne diseases



Hygiene for mother and children:

7 of the 9 ASHA workers identified keeping genital areas clean as the important component of prenatal hygiene and all 9 ASHA workers identified breastfeeding hygiene as an important component of postnatal hygiene. None of ASHA workers were able to identify all the important components of infant personal hygiene but 5 workers identified mixing disinfectant in bathing water and cleaning baby thoroughly after defecation and urination as important components of infant hygiene. When the respondents were asked to identify important components of hygiene practices for women, none of them were able to identify all the listed hygiene practices but 6 of them indicated that regular hand washing for children was important. The use of sanitary pads was indicated as the important component of menstrual hygiene by 8 of the ASHA workers.

4.3.2 WASH Practices by ASHA workers

Water:

The main source of drinking water for 4 ASHA workers is the public tap and only 3 of them use an RO plant. Respondents treat their drinking water using a water filter, boiling water or adding bleach or alum. When the respondents were asked about the right way to draw water from the container, 4 of the ASHA workers said by dipping the glass and only 3 said by filling a bottle. The remaining said dipping finger in glass and using long handle ladle. 7 of the ASHA workers clean their water bottles and container daily and 2 of them clean once a week.

Sanitation:

8 of the 9 ASHA workers have a toilet at home but when the respondents were asked where they usually defecate when at home, 4 of them said that they often practice open defecate. The respondents said that they wither use phenoyl or disinfectant to clean the toilets.

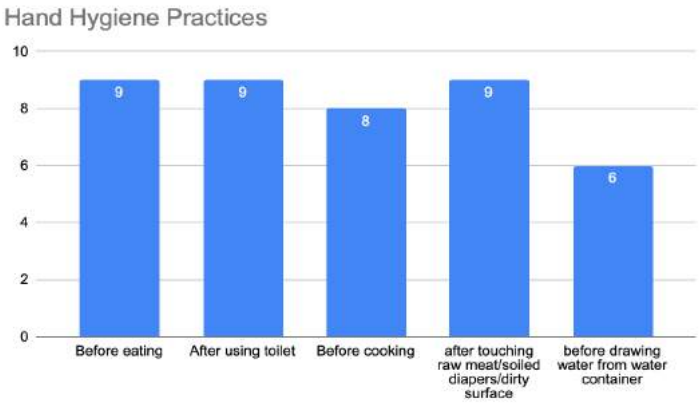
Hygiene:

All 9 ASHA workers wash their hands before eating, after using the toilet and after touching raw meat or dirty surfaces. 8 of them wash hands before cooking and only 6 wash before drawing water from a water container(Figure 31). While most of the ASHA workers use water and soap to wash their hands, 2 of them use only water.

7 of the ASHA workers use sanitary pads and they wrap their pads in a paper before disposing of them. When they were asked how often they change their sanitary pad, 3 of them said that they change every

4 hours, 2 said that they change every 6 hours and another 2 respondents said they change every 12 hours.

Figure 31: Hand Hygiene practices by ASHA workers



4.3.3 WASH information, education and communication for ASHA

When the ASHA workers were asked about WASH related trainings at their center, 8 of them said that they received WASH trainings in the last one year while 1 ASHA worker in Krishnapuram village did not receive WASH trainings in the last one year. ASHA workers in the villages of Krishnapuram and Ponnedupalli also said that they do not educate young women and adolescent girls about best menstrual hygiene practices. While almost all ASHA workers said that they spread awareness on toilets and sanitation in villages, 1 worker ASHA worker in Thadathara said that she does not. ASHA worker in Modhapalli said that she does not impart WASH knowledge and practices at home.

Table 5: WASH communication for ASHA workers

WASH Communication	Frequency
WASH Trainings in the last one year	8
Information about WASH in radio.TV,News, road shows	6
WASH propaganda at AWC for children, mothers and adolescent girls	9
Propagation of WASH practices by ASHA workers	9
Education for pregnant and lactating mothers about prenatal, postnatal, infant and breast feeding hygiene	9
Availability of village sanitation health committee	2
Regular WASH session during nutrition week for mothers and adolescent girls	9
Sessions properly structured	6
Menstrual hygiene practices for young women and adolescent girls	7
No EIC material used	7
Imparting WASH knowledge and practices at home	8

Conclusions:

- *Knowledge levels on various WASH related issues was fairly good among all ASHA workers.*
- *Knowledge about hygiene for mother and children was sub optimal among the ASHA workers.*
- *Despite the good knowledge on WASH, some of the ASHA workers still practice unhygienic practices like open defecation and unsafe water handling.*
- *Most of the ASHA workers received WASH related training but IEC material was not used.*

SECTION 4
WASH knowledge and practices among the community.

4.1 WASH Knowledge and Practice Households (Parents)

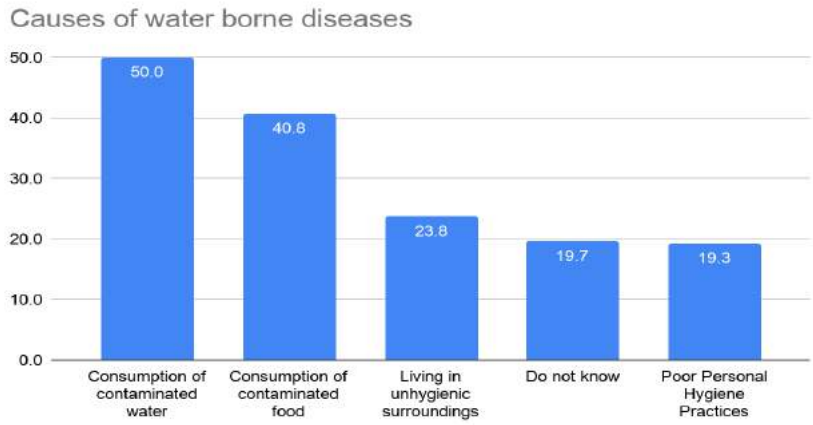
The main source of drinking water for households is a public tap(29.8%, 302), household tap connection (23.5%, 238), RO plan (20.7%,210), borehole (13.8%,140) and surface water (11.1%,112). Only 78.6%(707) of the household members said that they have a toilet at home out of which 82.3%(582) have running water in their toilets.

4.1.1 WASH Knowledge among parents

Water:

73.6%(662) of the women surveyed from households said that water borne diseases can be prevented. When the parents were asked about the causes of water borne diseases, none of them were able to identify all the causes listed. Consumption of contaminated water (50%,450), consumption of contaminated food (40.8%,367),living in unhygienic surroundings (23.8%,174), poor personal hygiene practices (19.3%,214) were identified as the leading causes of waterborne diseases(figure 17). 19.7%(177) of the parents surveyed were not able to identify any of the causes that result in water borne diseases. When the parents were asked to identify steps to prevent water borne diseases, keeping surroundings clean (33.6%,302), treating drinking water before consumption (53%,478) were identified as the most common techniques to prevent water borne diseases. About 15.7%(214) of the surveyed parents were not able to identify any methods to prevent water borne diseases.

Figure 17: Knowledge on water borne diseases.



Hygiene:

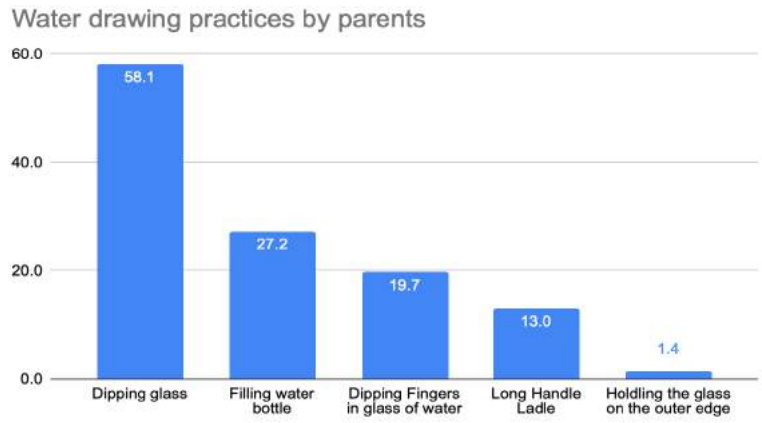
58.2%(524) of the parents surveyed said that undergarments should be changed daily during periods and 29.8% (268)were not able to answer the question. 26.6%(239) think that sanitary pads should be changed every 4 hours, 27.8%(250) said every 6 hours and around 29.8% (268)were not aware about hygienic menstrual practices.

4.1.2 WASH Practice among parents

Water:

55.5%(538) of the surveyed households store water in pots, 20.2% (196) in drums and 20.3%(197) in tanks. The remaining households store water in cans, plastic pots or steel pots. Of the surveyed households, 58.1% (523) take water from the storage by directly dipping the glass, 27.2%(245) fill the water bottles from the water storage and 19.7%(177) by dipping fingers in a glass of water(figure 18). 74.8%(673) of the households clean the water bottles everyday. Only 58.7%(528)of the households said that they treat water using boiling (52.4%,313), filtering with cloth (19.3%,115), chemicals like chlorine or alum (12%,9) and water filter or electric purifier (15.4%,36).

Figure 18: Water handling practices by parents



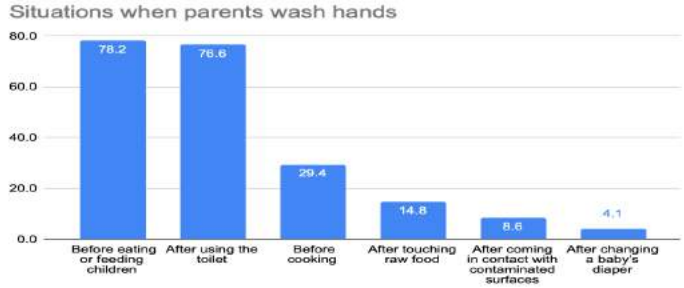
Sanitation:

Only 68.7%(618) of household members use a toilet and 67.2%(475) of the surveyed women from the households said that they clean the toilets daily and 19.1%(135) clean it once every two days and 13%(92) clean their toilets once a month. When the household members were asked what cleaning agents they use to clean the toilet, 41.4%(327) said they use phenyl, 36.3%(287) use a bleaching powder, 11.1%(88) use a toilet cleaner, 8.6%(68) use washing powder and 2.4%(19) said they do not use any cleaning agent in the toilet. 86.3%(610) of the surveyed households said they pour water in the toilet before and after use.

Hygiene:

Only 46.4%(418) of the parents surveyed are aware of the six steps of hand wash. Figure 19 below shows the occasion in which the parents wash their hands.

Figure 19: Hand hygiene practices by parents



89.8%(808) of the parents in the households trained their children to wash hands regularly and 81.4% (733) of the surveyed households use soap to wash their hands. Around 95%(861) of the parents bathe regularly and wear washed clothes every day. 90%(818) of the parents said that they trained their children in personal hygiene practices.

Around 91%(821) of the households sweep the floors in their house daily. When the households were asked about mopping the floor, 35%(316) said that they mop daily, 21.7%(195) once in two days and 42% (378) mop once in a week. However, 19% (186) of the households use only water to mop their floors. Around 37%(334) of households dump their waste in the backyard and only 42.8%(385) have dustbins in kitchen, living room and bathroom.

Clean eating habits:

Around 98%(879) of the students wash their utensils regularly but around 66.5%(650) of them use soap and 22.9% (224)use detergent. 97.7% (879)of the respondents said that they cover the utensils containing food.

Pets:
About 25%(224) of the household have pets in their houses out of which 87.5%(196) said that they keep their pets clean and only 57.6%(129) are vaccinated.

Conclusions:

- *Knowledge on water borne diseases and ways to prevent water borne diseases was not present among some of the parents.*
- *Majority of the mothers were not aware of menstrual hygiene practices like changing undergarments daily during periods or changing sanitary napkins frequently.*
- *Most of the parents practice unsafe water handling either by dipping the glass in the water container or by dipping their fingers in the glass.*
- *A lot of the household members practice open defecation.*
- *Personal hygiene practices like washing hands regularly, taking a bath daily, wearing washed clothes are optimal among household members. However, majority of the household members are not aware of the six steps of hand wash.*
- *Households sweep and mop their floor regularly but some of them only use water to mop their floor.*
- *A lot of the households that have pets do not have them vaccinated.*

4.4 WASH Status among pregnant and lactating women:

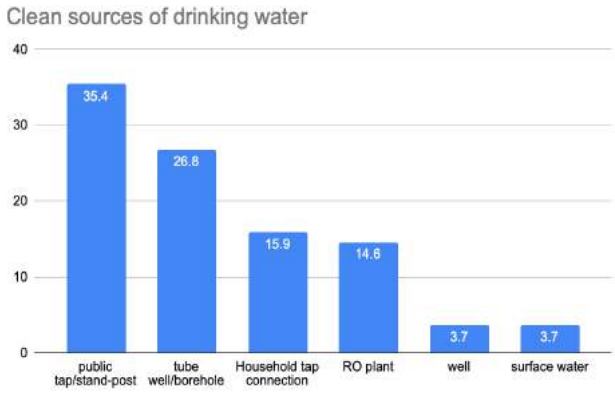
80 pregnant and lactating women were surveyed about the status of the nutrition center. 83.75%(67) of the surveyed women indicated that the center has a reliable supply of clean water. Only 55%(44) of the pregnant and lactating women said that there were functional toilets available at the center and 65%(52) said that there was a hand washing facility at the center. 71.3%(57) of the respondents said that the center provided soap or liquid for hand wash. When the respondents were asked if the toilets were cleaned and kept neat 93.2%(41) of the surveyed women said that they were kept clean.

4.4.1 WASH Knowledge among pregnant and lactating women

Water:

When the surveyed women were asked to identify sources of clean drinking water, only 14.6%(12) of them said RO was a clean source of drinking water and 15.9% (13) indicated a household tap connection. Almost 35% (29)of the women pointed to a public tap and 26.8%(22) pointed to a borewell as clean sources of drinking water(figure 32). 88.8%(71) of the women said that it was necessary to treat drinking water and all women said that regular cleaning of bottles and containers was important. Almost 97%(78) of the respondents recognized the importance of safe handling of drinking water.

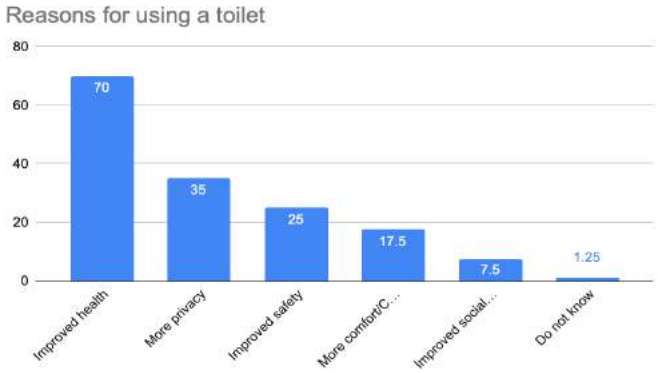
Figure 32. Clean sources of drinking water identified by P&L women



Sanitation:

Around 97%(78) of the pregnant and lactating mothers agreed to the importance of the use of toilet and sanitation facility but only 63.8%(51) said that the toilets should be cleaned daily. When the respondents were asked to identify the positive aspects of using a toilet, 70% (56)of the responses indicated improved health, 35%(28) indicated more privacy, 25%(20) of the responses said improved safety and 17.5%(14) of the responses said more comfort and convenience(figure 33). When the respondents were asked about the importance of waste collection and disposal, 96.3%(77) said it was important.

Figure 33. Reasons for using a toilet

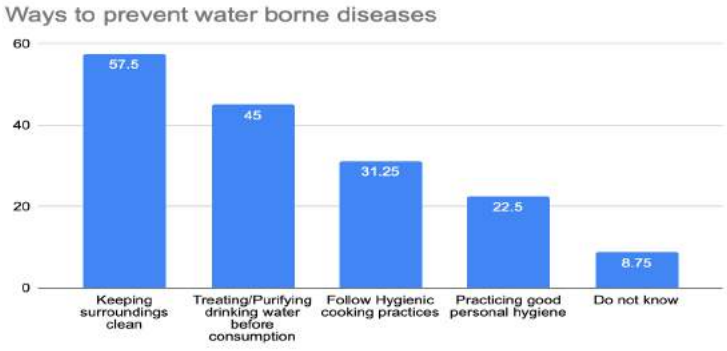


Hygiene:

All the pregnant and lactating women that were surveyed knew the importance of regular hand washing. Almost 99%(79) of the women knew about the importance of menstrual health hygiene and personal hygiene of a mother during pregnancy. All the 80 women that were surveyed said that personal hygiene of an infant is important.

When the women were asked about the causes for water borne diseases, 63.8%(51) of the responses identified that the consumption of contaminated water causes water borne diseases, 42.5%(34) of the responses indicated that it was because of living in unhygienic conditions. 32.5%(26) of the responses indicated that the consumption of contaminated food caused water borne diseases and 30%(24) of them said it was because of poor personal hygiene practices. Almost 82%(66) of the respondents said that diarrhea and other water borne diseases can be prevented. When the respondents were asked about the practices that could prevent water borne diseases, 57.5%(46) of the responses indicated that keeping surroundings clean can prevent such diseases, 45%(36) responses indicated the consumption of treated and purified water. 31.3%(25) said following hygienic cooking practices and 22.5%(18) of the responses indicated practicing good personal hygiene. 8.75%(7) of the responses indicated that they did not know. (Figure 34).

Figure 34: Knowledge on prevention of water borne diseases by P&L women

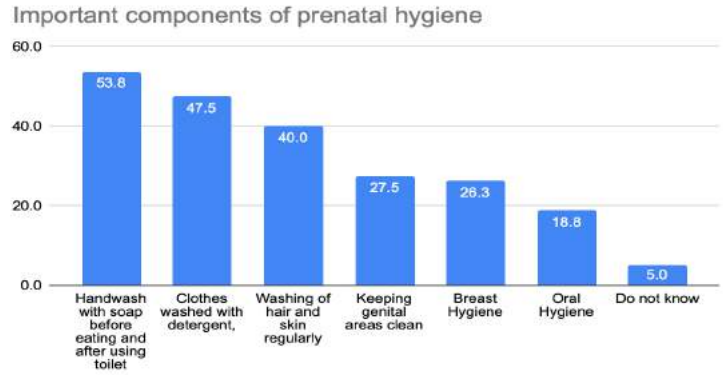


Hygiene for mother and children

When the women were asked to identify the important components of prenatal hygiene practices, none of the pregnant and lactating women at the nutrition centers were able to identify all the components. Only 53.8%(43) of the respondents said it was important to wash hands before eating and after using the toilet, 47.5%(38) of the responses indicated clothes washed with detergent, 40% (32)indicated

washing skin and hair regularly and around 27.5%(21) said keeping genitals and breasts(26.3%,21)(figure 35). When the women were asked about postnatal hygiene, breast hygiene (73.8%,59), Handwash (58.8%,47) and keeping genitals clean (50%,40) were identified as the most important components. The women identified cleaning baby thoroughly after defecation and urination(55%,44), mixing disinfectant in bath water (42.5%,34) and using dry and clean cloth to wipe (36.3%,29) as important components of infant personal hygiene.

Figure 35: Important components of prenatal hygiene

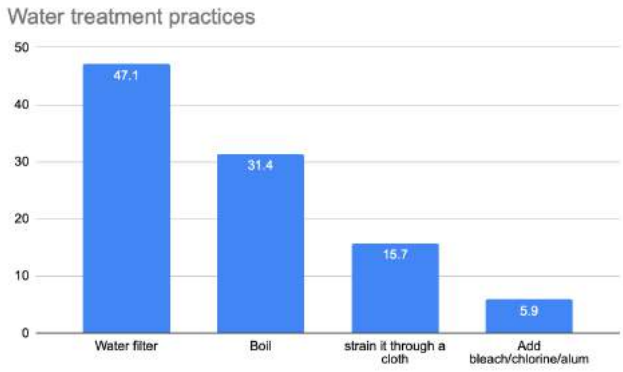


4.4.2 WASH Practice by pregnant and lactating women

Water:

Around 50%(40) of the responses on the survey indicated that public tap is the main source of drinking water, followed by a tanker (25%,20) and RO plant (11.3%,9). About 74%(59) that do not use an RO plant treat their drinking water, out of which 47.1%(24) use a water filter, 31.4%(16) boil the water and 15.7%(8) strain it through a cloth. The remaining 5.9%(3) add bleach, chlorine or alum (Figure 36). 87.5%(70) of the surveyed women clean their water bottles and containers daily and 12.5% (10)clean them once every two days.

Figure 36: Water treatment practices by P&L women



Sanitation:

Only 75%(60) of the respondents have a toilet at home. 47.5%(38) of the households use either phenyl or disinfectant for cleaning their toilet, 12.5%(10) use bleaching powder and 6.25%(5) use washing powder. Another 6.35% (5) households said that they do not use anything to clean their toilets.

Hygiene:

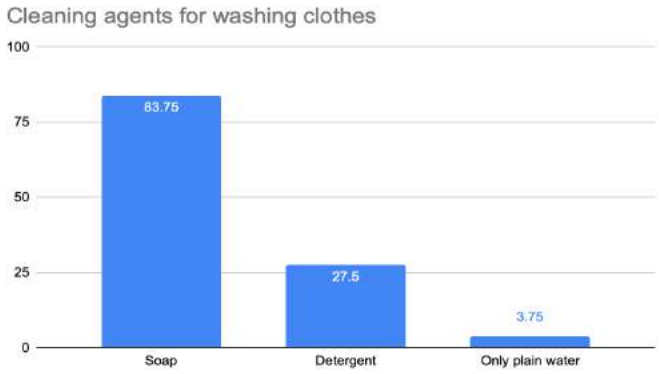
About 98%(78) of women wash their hands before eating, after using the toilet and after touching raw meat. 91.3%(73) wash their hands before cooking and only 77.5% (62)of women wash their hands before drawing the water from the water container. About 85%(69) of the women use water and soap to wash their hands and 13.6%(11) use only water.

WASH practices specific to P&L women:

92.5% (74)women use sanitary pads but only 52.7%(39) change their pads every four hours. 27%(20) of the surveyed women change every 6 hours and about 19% (14) change once in 12 hours.

97.3%(72) of the women wrap their sanitary pads in paper or cover before disposing them. 90%(72) of the women said that they wear fresh clothes daily during pregnancy but 83.8% (67)of the wash their clothes with soap and 3.8%(3) use water. Only 27.5%(22) use a detergent to wash their clothes(figure 37). 99%(79) of the women sanitize their breasts and genitals.

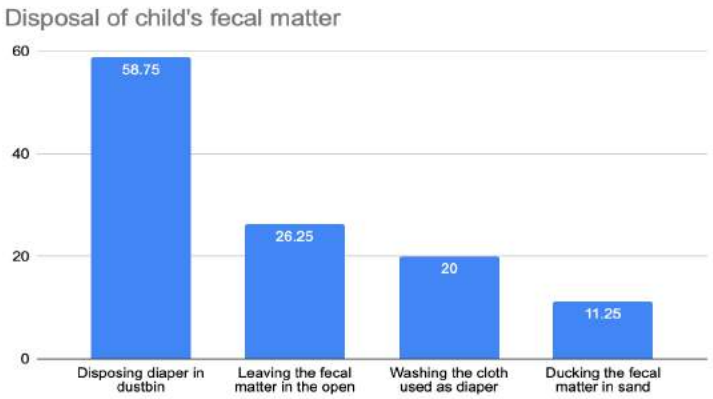
Figure 37. Cleaning agents used for washing clothes



Infant and Child related hygiene practices:

97.5%(78) of the women said that they sterilize the bottles, cups, spoons used to feed the infant and 88.8%(71) dress their infants in washed clothes. When the women were asked if they clean their infant thoroughly after defecation, 95%(76) of them said yes. 15%(12) of the women said that they do not ensure that their children wash their hands regularly. 92.5%(74) of the women sweep the floor of the play area of their infant and children but only 78.8%(63) mop the floor regularly. Only 58.8%(47) of the mothers dispose their children's diaper in the dustbin. 26.3%(21) leave the fecal matter in the open and 11.3% (9)cover the fecal matter in sand. 20%(16) of the women still use a cloth as a diaper. (figure 38)

Figure 38. Child fecal matter disposal practices



4.4.3 WASH Communication for pregnant and lactating women

When the women at the nutrition center was asked if they received WASH training for prenatal and postnatal care 72.5%(58) said that they received the training. 71.3% (57)said that they received WASH training for menstrual hygiene.

Conclusions:

- *WASH knowledge among pregnant and lactating women was fairly poor. Majority of the P & L women were not able to identify safe sources of drinking water.*
- *Knowledge on hygiene related issues like prevention of waterborne diseases and sanitation like regular cleaning of sanitation facilities was low.*
- *The majority of the P&L women do not have access to clean drinking water sources. A lot of women still practice techniques like sieving water through cloth or adding bleach and alum to treat water.*
- *All most all women wash their hands before eating but some of them use only water to wash their hands.*
- *Only about half of the P&L women change their sanitary napkins regularly i.e, every 3-4 hours.*
- *About half of the pregnant and lactating mothers practice unhygienic practices related to infant and child i.e., disposing used diaper, washing their children's hands, etc.*
- *Not all women received training on WASH practices.*

4.5 WASH Facilities, Knowledge and Practices among elders at Geriatric Center:

4.5.1 Geriatric and Day Care Facilities:

Water:

A total of 90 elders in the geriatric center were surveyed. 53.8%(50) of the elders indicated that the main source of drinking water in the geriatric center is a public tap. 29%(27) of the elders indicated that there

were no source of drinking water in the geriatric center. 7.5%(7.5) individuals said that the main source was an RO plant and the remaining 9.7%(9) said bore well and household tap.

Sanitation:

When the elders were asked about the functionality of the toilets in the center, 96.7% (87)of the respondents indicated that they did not have a toilet at the center and 58.9%(53) said that they have a hand washing facility at the center. However, only 17.8% (16)of the centres provide soap for hand washing. When the respondents were asked if the floor of the center was swept regularly only 35.6% (32)of the elders indicated that the floor of their center was swept regularly and only 25.6% (23)mop them regularly.

Hygiene:

Only 16.7%(15) of the elders that were surveyed said that waste is thrown in the dustbins and out of those only 1 said they segregate dry and wet waste and 73.7%(11) respondents said that the geriatric centres that collect their waste dispose the waste daily and 4 dispose it once every 2 days.

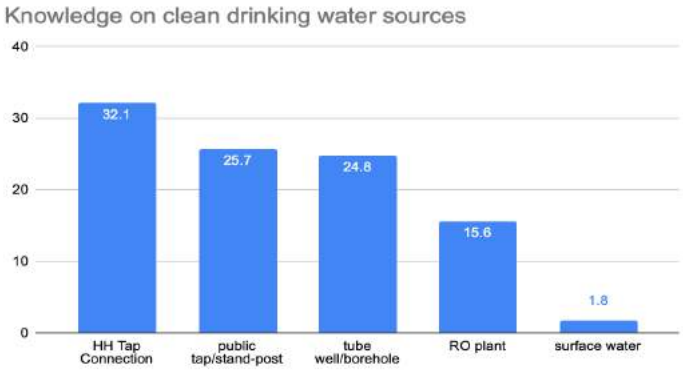
4.5.2 WASH Knowledge among elders

Water:

32.1%(35) of the responses indicated that household tap connection is the cleanest source of drinking water followed by 25.7%(28) of the responses that indicated public tap and stand post. 24.8% (27)of the responses consider tube well or a borehole and only 15.6%(17) consider an RO plan to be the cleanest source of drinking water. 1.8%(2) of the respondents indicated that surface water is the cleanest source of drinking water(figure 39).

When the respondents were asked if it was necessary to treat drinking water, 88.9%(80) of the elders said yes and 7.8% (7)of the elders did not know about the importance of treating drinking water. 3 of the respondents said it was not necessary to treat drinking water. When the elders were asked about the importance of cleaning water bottles and containers, 96.7%(87) indicated that it was important to clean them. 87.8% (79)of the respondents also indicated the importance of safe handling of drinking water whereas 11.1%(10) did not know the importance of it.

Figure 39. Knowledge on drinking water sources at the geriatric center.



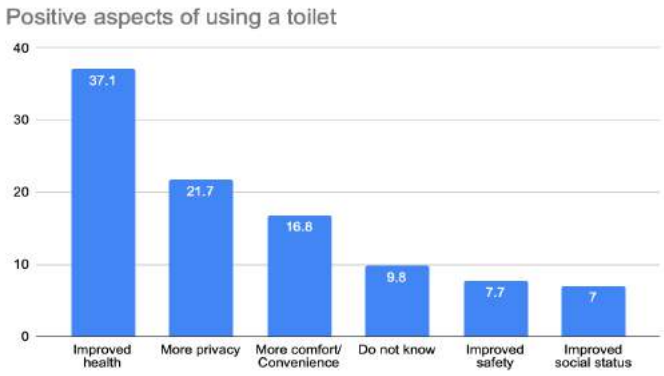
Sanitation:

When the elders were asked about the importance of toilet or a sanitation facility, 90%(81) of the respondents indicated that the use of a toilet or sanitation facility was important. 37.1%(53) of the responses indicated that the use of toilets improved health, 21.7%(31) of the responses stated the use of toilets contributed to more privacy, 16.8%(24) said that using a toilet was more comfortable and convenient, around 7%(10) said that using a toilet improved safety and social status and the remaining 9.8%(14) were unable to identify the positive aspects of using a toilet or a sanitation facility (Figure 40). When the respondents were asked how often the toilets should be cleaned, 41.1%(37) said that they should be cleaned daily, 22.2%(20) said that they should be cleaned once every two days and another 20%(18) said once in a week. The remaining 16.7%(15) did not know how often toilets had to be cleaned. 93.3% of the respondents indicated that waste collection and disposal was important.

Hygiene:

97.8%(88) of the surveyed elders indicated that regular handwashing is important. When the elders were asked if it is important to keep the centre clean, 74.4%(67) said it was important and 23.3% (21)said that they did not know if it is important to keep the center clean. The remaining 2 of them said it was not important to keep the center clean. Only 68.9%(62) of the respondents said that waste management at the center was important, 28.9%(26) did not know if waste management is important at the center and the remaining 2 said that waste management at the center was not important.

Figure 40. Positive aspects of using toilets according to elders

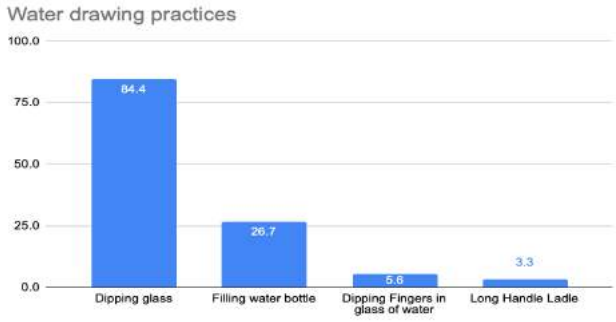


4.5.3 WASH Practice by elders

Water:

The main source of drinking water for 46.2%(42) of the elders in the geriatric center is public tap, 30.8% (36)of the elders have an individual household tap and only 6.8%(8) have an RO plant. The remaining get their drinking water from sources like well, surface water, tanker, etc. Only 30%(25) of the respondents follow safe water handling i.e, either by using a long handled ladle or by filling water bottle. Around 90%(81) of the elders draw water out of the storage by dipping the glass in the container or by dipping fingers in a glass of water(figure 41). Only 55.6%(50) of the elders clean their water bottles and containers daily, 35.6%(32) clean them once every two days and the remaining 8 clean them once a week. While cleaning the bottles and containers, 52.2 %(47) clean it with soap and 37.8% (34)clean it with plain water. The remaining 9 use a detergent to clean their water bottles and containers.

Figure 41. water drawing practices by elders



Sanitation:

When the elders were asked about their sanitation practices, only 53.3%(48) use their own toilet whereas the remaining 46.7%(42) practice open defecation.

Hygiene:

The surveyed elders were also asked about their hygiene practices. All of the 90 elders that were surveyed said that they wash their hands before eating whereas only 88.9%(80) wash their hands after using the toilet. While 55.6%(50) of them use water and solid soap to wash their hands, 36.7% (33)use only water. 6.7%(6) use a liquid soap and 1 uses ash to wash their hands.

Only 76.7%(69) of the elders clean their plate and glass at the center before food is served. When the elders were asked if they wear washed clothes everyday, only 66.7%(60) said that they wear clean clothes everyday. 76.7%(69) clean their blankets and bedsheets often and only 64.4%(58) trim their nails regularly and bathe regularly. When the men were asked if they shave or cut their hair regularly only 56% (14)indicated that they do that regularly.

4.5.4 WASH related communication for elders

When the elders were asked if they received any information on WASH practices, only 46.7%(42) said that they received WASH related information and the remaining 53.3%(48) did not receive any kind of information.

Conclusions:

- *Elders at the geriatric center do not have knowledge on clean sources of drinking water. Some of the elders did not know about the importance of safe handling of drinking water.*
- *There is a lack of sanitation facilities and drinking water facilities at the geriatric centers.*
- *Elders have recognized the importance of sanitation facilities but a lot of them did not know about safe sanitation practices, like cleaning toilets everyday.*
- *Almost half of the elders surveyed practice open defecation.*
- *A lot of them do not practice safe hygiene practices like cleaning their water bottles every day or wearing clean clothes every day.*
- *The majority of elders did not receive any WASH training.*

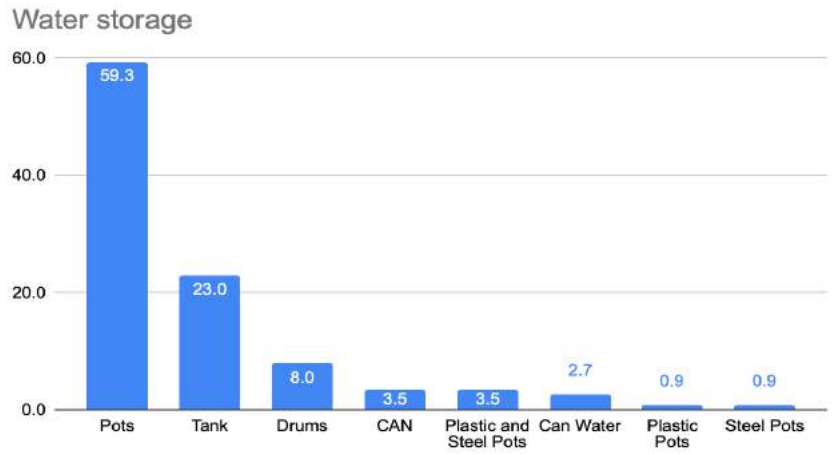
4.6 WASH Status among Self Help Groups

4.6.1 WASH Practices by SHG women:

Water:

59.3%(67) of the SHG women store water in pots and about 23%(26) store it in tanks(figure 42). Only 40.5%(46) of the women in SHGs practice safe water drawing techniques i.e., using a long handle ladle or by filling water bottle. Majority of them draw water by dipping the glass in the container (67.3%,81). 70.8%(80) of the women said that then clean their water bottles and containers daily.

Figure 42. Water storage practices by SHG members

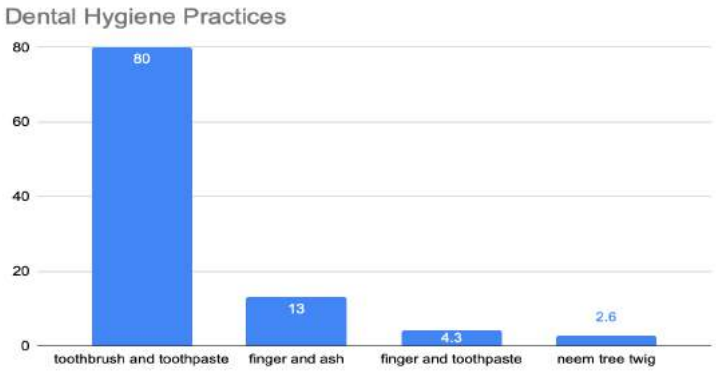


Hygiene:

73.5%(83) of the women in SHGs are not aware of the six steps of hand wash. 13.3% (15)of the women said that they wash their hands with water only and the remaining use soap or dettol. 87.6%(99) of the women said that they wash their feet after they enter the house and 88.5%(100) cut their nails regularly. When the women were asked what their family uses for brushing their teeth, 13%(15) said finger and

ash, 4% said finger and toothpaste and 2.6%(3) use a neem twig. The remaining 80%(92) use a toothpaste and toothbrush(figure 43). Around 53% (61)of the SHGs said that they dispose of their garbage in the backyard.

Figure 43. Dental hygiene practices by SHG members



Menstrual Hygiene:

82.2% (37)of the women said that they use a sanitary pad and almost 98%(44) bathe regularly on their period. All of the women in the SHGs said that they wash their private parts on their menstruating days. When the women were asked where they dispose of their sanitary pads only 2 women said that they dispose of in the dustbin. The remaining 56.5%(22) said that they burn and 38.5%(15) throw it outside. 89.2%(33) of the women said that they cover the sanitary pad in paper before disposing.

4.6.2 WASH related communication for SHG women:

Around 49.5%(56) of the women said that their WASH knowledge has been acquired by themselves. 37%(42) received it in their SHG meeting, 26% got it from TV (30)and 13%(15) received it through government awareness programs. Only. 44.2% (50)of the SHG members said that they get orientation on WASH regularly. 94.7%(107) of the SHG members said IEC material on WASH is not supplied to the SHG members.

Conclusions:

- *Women from the SHGs have poor hygiene practices. Majority of the women do not practice safe water drawing techniques and most of them are not aware of the six steps of hand wash.*
- *Some of the women only use water to wash their hands and still brush their teeth with their finger and ash.*
- *More than half of the women in the SHGs dispose their garbage in the backyard.*
- *Majority of the women do not follow menstrual hygiene practices. A lot of them wither throw out their used sanitary napkin or burn them.*
- *SHG members do not receive regular training on WASH practices.*

SECTION 5
RECOMMENDATIONS

School Level

Infrastructure and Supplies:

- At the school level, it is recommended to increase the availability of toilets and handwashing facilities. Moreover, the school principals should ensure that the existing sanitation facilities are functional with adequate slope and ventilation. It is also suggested to provide soap and all the hand wash stations.

- Water quality management needs to be implemented across all schools along with guidelines and instructions for quality check protocol. Schools that do not have any drinking facility i.e, MPP School Aragonda, MPP School Pimagum, MPP Patrapalli and ZPHS Thodathora should be provided with a safe source of water supply. Water storage capacity needs to be increased in schools to ensure the consistency of water availability.

- Ensure that the water storage tanks and containers are cleaned regularly.

- Provide sanitary napkins for adolescent girls in schools.

- Increase the number of cleaning staff to ensure that the toilets and classrooms are kept clean. The staff also needs to be trained and monitored regularly.

- Increase the availability of dustbins in schools and place them in appropriate locations. Also provide separate bins for dry and wet waste for proper segregation.

WASH related activities and communication:

- It is recommended that the principals and school staff get involved in maintaining and enhancing WASH standards in schools. Conduct regular training on sanitation and hygiene practices for teachers.

- Enhance student participation in WASH related activities at the schools by encouraging students to form WASH committees with a well defined mandate on their activities.

- Include WASH practices in school curriculums. Students should be educated about safe water handling practices and basic hygiene practices.

- Provide WASH education for janitors, mid day meal staff and aayas.

- Install hygiene corner in schools with posters and brochures about hygiene education, proper waste disposal and segregation practices, safe sanitation practices, etc.

- Enhance menstrual hygiene management at schools by providing the necessary resources and support for students.

Community Level

- Maintain the optimal level of hygiene knowledge present among ASHA and anganwadi workers by keeping them engaged in hygiene education and WASH related activities. Invest further in

their training and education by providing them with appropriate information and material on WASH practices.

- Build and increase the number of toilets and handwashing facilities at nutrition and geriatric centers.

- Investigate further into the prevalence of unhygienic practices like open defecation and unsafe water handling practices at ASHA centers, Geriatric centres and nutrition centers.

- Provide WASH knowledge to pregnant and lactating women at the nutrition centres on hygiene related issues like prevention of water borne diseases and the regular cleaning of sanitation facilities. Focus on improving hygienic practices related to infant and child like proper disposal of diapers, washing their children's hands, etc.

- Provide soap at the hand wash facility of the Nutrition centres.

- WASH training at geriatric centers for elders is required. Particularly on clean and safe drinking water practices and safe sanitation practices.

- Incorporate a WASH components in SHGs to improve sanitation practices. Provide education sessions on safe water handling practices, proper garbage disposal and basic hygiene practices.

- Train doctors on the Bare Below Elbow technique for hand hygiene.

- Provide sanitary napkins at ASHA centers and Anganwadi Centers.

Household Level/ Individual Level

- In order to change WASH practices at the household level, it is important to educate individuals on WASH practices and standards. Especially mothers need to know about safe water handling practices and sanitation practices as they are responsible for all the major decisions at the household level and pass on the knowledge to their families as well.

- Parents need to be involved in WASH related activities at the school level and community level where they can be educated on personal hygiene practices like the six steps of hand wash and menstrual hygiene practices.

- Install toilets and sanitation facilities in households and include awareness campaigns to reduce open defecation and waste disposal.

- Water storage and supply to households needs to be increased in order to maintain adequate water supply.

Section 6:
ANNEXURES
Self-Explanatory Analytical Outputs

Data in following tables will give further understanding about the results. These details will help in designing the MONITORING framework or LOGFRAME to control and direct the interventions towards the aim of the project.

This section begins with questionnaires used to collect the data from school students, followed by parents, teachers, frontline health functionaries and the community.

1st and 2nd Standard:

Q 1.4 Gender		
	frequency	average
Male	215	51.3
Female	204	48.7

Q 1.5 Caste		
	frequency	average
OC	135	32.2
BC	211	50.4
SC	69	16.5
ST	4	1.0

Q 1.8 School Type		
	frequency	average
Elementary school	4	1.0
High school	239	57.0
MPP school	9	2.1
Primary school	146	34.8
private school	6	1.4
secondary school	1	0.2
upper primary school	14	3.3

Q 2.1 Observe the pictures below and mark the ones you consider to be clean drinking water sources?		
	frequency	average
Shallow Well	33	5.9
Hand Pump	87	15.6
Piped water	62	11.1
RO	142	25.4
Tap Water	230	41.1

Pond	4	0.7
Do not know	1	0.2

Q 2.2 Select unclean drinking water sources from the pictures below:		
	frequency	average
Village pond	252	60.1
Boiled water	68	16.2
Hand Pump	61	14.6
Water Filter	30	7.2
Do not know	8	1.9

Q 2.3 Select the correct ways of treating water for cleanliness from the pictures below:		
	frequency	
Boiling	191	45.58
Filteration	189	45.10
Seiving through cloth	43	55.84
Chemical Treatment	27	6.44
Do not know	7	1.67

Q 2.4 Where should we go for toilet?		
	frequency	average
Constructed Toilet	351	83.8
Open air in a secluded area	61	14.6
Near a river/Water source	5	1.2
Do not know	2	0.5

Q 2.5 Which is the Correct way to clean a toilet?		
	frequency	average
With only water	225	53.7
With a broom	19	4.5
By ash	9	2.1
With toilet cleaning solution	170	40.6
Do not know	11	2.6

Q 2.6 Observe the pictures below and select the best cleaning agent for cleaning toilets.		
	frequency	average
Washing Soda	14	3.3
Soap	33	7.9
Cleaning Solution	359	85.7
Ash	4	1.0
Do not know	9	2.1

Q 2.8 Should we wash our hands regularly?		
	frequency	average
yes	398	95.0
no	21	5.0

2.12. Where should waste be disposed?		
	frequency	average
In an open area outside your house	34	8.1
Waste bin	351	83.8
Open Dump	32	7.6
Next to a river/water source	2	0.5
Do not know	4	1.0

3rd and 4th Standard:

Q 1.4 Gender		
	frequency	percentage
male	184	48.5
female	195	51.5

2.7.Do you know steps of handwash?		
	frequency	percentage
yes	239	63.1
no	140	36.9

2.8.Should we wash our hands regularly?		
	frequency	percentage
yes	373	98.4
no	6	1.6

2.1.Observe the pictures below and mark those which you consider to be clean drinking water sources?		
	frequency	percentage
Shallow Well	41	10.8
Hand Pump	77	20.3
piped water	57	15.0
ro	274	72.3
tap water	31	8.2
pond	2	0.5

2.2.Select unclean drinking water sources from the pictures below		
	frequency	percentage
village pond	256	67.5
boiled water	59	15.6
public hand pump	35	9.2
filter plant	28	7.4
do not know	1	0.3

2.6. Observe the pictures below and select the best cleaning agent for cleaning toilets.		
	frequency	percentage
Washing soda	4	1.1
Soap	39	10.3
Cleaning Solution	324	85.5
ash	1	0.3
Do not know	11	2.9

2.3.Select the correct ways of treating water for cleanliness from the pictures below		
	frequency	percentage
Boiling	188	49.6
Seiving through cloth	36	9.5
Filtration	154	40.6
Chemical Treatment	22	5.8
Do not know	9	2.4

2.14. Where should we dispose waste		
	frequency	percentage
In a dump outside your house	15	4.0
Waste bin	363	95.8
Dump or burning	1	0.3

3.13.Do you wash your hair regularly?		
	frequency	percentage
yes	310	81.8
no	69	18.2

3.14.Do you cut your nails regularly?		
	frequency	percentage
yes	338	89.2
no	41	10.8

5th class and above:

Q 2.1 Which of the following do you consider to be clean drinking water?		
	frequency	percentage
piped water	530	36.4
tube well/borehole	351	24.1
well	32	2.2
surface water	230	15.8
RO plant	518	35.6
Do not know	2	0.1
others - filter	2	0.1
water service from govt	1	0.1

Q 2.2 What is the right way of handling water?		
	frequency	percentage
Long Handle Ladle	193	13.3
Dipping glass	516	35.4
Filling water bottle	718	49.3
Dipping Fingers in glass of water	62	4.3
Holdling the glass on the outer edge	227	15.6
Do not know	7	0.5

2.9 What are best cleaning agents for cleaning the toilet?		
	frequency	percentage
washing powder	116	8.0
bleaching powder	445	30.6
phenyol	777	53.4
Advance cleaning agent for killing germ	168	11.5
Do not know	140	9.6
acid	11	0.8
dettol	2	0.1
kerosine	1	0.1

2.12 What are the occasions when we need to wash hands?		
	frequency	percentage
Before Eating	1319	90.6
After Playing outdoors	629	43.2
After Using the Toilet	1014	69.6

Before collecting drinking water	88	6.0
after playing with toys and pets	133	9.1
Do not know	1	0.1

2.14 Why should we keep our mouth clean?		
	frequency	percentage
To avoid germs	897	61.6
To avoid cavities	597	41.0
To avoid bad breath	532	36.5
Do not know	25	1.7

2.17 Select clean eating habits from the list below		
	frequency	percentage
eating in the playground	317	21.8
washing hands before eating	1047	71.9
cover food while eating outdoors	231	15.9
leaving food uncovered while eating outdoors	34	2.3
sitting a clean area	745	51.2
dropping food while eating	10	0.7
Do not know	22	1.5

2.18 What do you think are main causes for occurrence of diarrhea and other water borne diseases?		
	frequency	percentage
Consumption of contaminated water	439	30.2
Consumption of contaminated food	720	49.5
Living in unhygienic surroundings	161	11.1
Poor Personal Hygiene Practices	183	12.6
Do not know	422	29.0
Others - due to fever	1	0.1
due to tablets	1	0.1
eating mango	1	0.1
eating out side food	2	0.1
fever	1	0.1
hot	2	0.1
over heat	16	1.1
roaming sunlight	1	0.1

2.22 What hygiene practices should be followed during menstruation?		
	frequency	percentage
use of sanitary pads	130	50.8
Changing pads every 3 to 4 hours	80	31.3
Washing hands after changing pads	26	10.2
Keeping genital areas clean	13	5.1
Changing underwear every day during menstruation	5	2.0
Do not know	2	0.8

2.23. Should girls receive training in menstrual health practices?		
	frequency	percentage
yes	199	77.7
no	57	22.3

2.28. Where should waste be disposed?		
	frequency	percentage
backyard	102	7.0
any corner	39	2.7
playground	19	1.3
dustbin	1287	88.4
anywhere	5	0.3
Do not know	4	0.3

3.5 Do you wash your hands before collecting water from water storage?		
	frequency	percentage
yes	1270	87.2
no	186	12.8

3.29 Do you dispose dry and wet waste separately?		
	frequency	percentage
yes	679	46.6
no	777	53.4

Elders at Geriatric center

Q 2.1 What is the main source of drinking Water		
	frequency	percentage

Public Tap	50	55.6
Individual Household Tap	4	4.4
Tanker	0	0.0
well	0	0.0
bore well	5	5.6
RO Plant	7	7.8

Q 3.1 Which one you consider clean source of drinking water?		
	frequency	percentage
Household tap connection	35	38.9
public tap/stand-post	28	31.1
tube well/borehole	27	30.0
well	0	0.0
surface water	2	2.2
RO plant	17	18.9

Q 4.4 What do you use to clean bottles and containers		
	frequency	percentage
Detergent	9	10.0
Soap	47	52.2
Ash	0	0.0
Plain water	34	37.8

Q 4.6 Where do you defecate when at home?		
	frequency	percentage
In own toilet	48	53.3
In public toilet	0	0.0
Open defecation	42	46.7

Q 4.14 What do you and your household members usually use for hand washing?		
	frequency	percentage
Water only	33	36.7
Water with ash	1	1.1
Water and Solid Soap	50	55.6

Water and Liquid Soap	6	6.7

Parents:

4.5 What are the causes for water borne diseases		
	Frequency	Percentage
Consumption of contaminated water	450	50.0
Consumption of contaminated food	367	40.8
Living in unhygienic surroundings	174	19.3
Poor Personal Hygiene Practices	214	23.8
Do not know	177	19.7

5.29 Where do you dispose used sanitary napkins at home and at school?		
	Frequency	Percentage
Dustbin	209	39.0
Outside	157	29.3
Flush in the bathroom	12	2.2
BURNING	63	11.8
DIG IN THE MUD	6	1.1
Not applicable	89	16.6

5.39 Do you segregate your waste into dry and wet waste and dispose them in separate dustbins?		
	Frequency	Percentage
yes	316	35.1
no	584	64.9

5.41 Is the drainage line around your house covered?		
	Frequency	Percentage
yes	468	52.0

no	432	48.0

5.42 If no, do you dispose any waste in the drainage line?		
	Frequency	Percentage
yes	52	12.0
no	380	88.0

5.31 How often do you sweep the floor in the house?		
	Frequency	Percentage
daily	821	91.2
once in two days	49	5.4
once in a week	29	3.2
once in a month	1	0.1

Starting from left: Mr. Pankaj Duhan, Director, Marketing, Reckitt Benckiser; Lt. Gen (Retd) Mandeep Singh. Advisor, Group Medical Services, Apollo Hospitals; Dr. Prathap C. Reddy, Chairperson , Apollo Hospitals; Dr. Subbanna J, Chief Executive Officer, Total Health; Ms. Preetha Reddy, Vice-chairperson, Apollo Hospitals; Dr. Anupam Sibal, Group Medical Director, Indraprastha Apollo Hospitals; Mr. Ravi Bhatnagar, Director - External Affairs, Reckitt Benckiser

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