



## Football for WASH (F4W) Proof of concept Study

### Endline Report – February 2020

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## FOREWORD

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This report is submitted to Aqua for All following a Proof of Concept study on a Football for Water Sanitation and Hygiene programme in Kenya, commissioned by Aqua for All, henceforth referred to as the project. It was prepared by Kantar, Public Division, East Africa which is a global social and development research and consultancy agency that aims to impact improvements in the public realm.

This report was prepared after extensive internal and external consultations by a team of experts in evaluation and social development. It details the background to the project, methodology, findings, conclusions and recommendations by Kantar, Public Division. The assessment was led by Dr. Yolande Coombes, a WASH and Evaluations Specialist, and Stephen Aloo, Director Kantar Public East and Southern Africa, who is a research and methodology specialist. They were supported by Julia Wanderi and Esther Ogol, who are both Research Managers at Kantar, Public Division.

Kantar, Public Division, acknowledges Aqua for All and UNICEF Kenya for their immeasurable support during the design and implementation of the assignment. Most importantly, Kantar, Public Division, acknowledges the input of all individual respondents included in the research and the programme staff and on-the-ground staff, who were instrumental in ensuring the full cycle of the project was completed.

## EXECUTIVE SUMMARY

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### Background

- The Football for WASH programme (F4WASH) in Kenya is an on-going school-based programme designed to improve pupil behaviours around water, sanitation and hygiene (WASH) delivered through an innovative football club methodology
- This document is a report on the F4WASH program proof of concept study. The proof of concept study seeks to assess whether there are measurable differences before and after the intervention (changes over time) and between the intervention and control groups.
- There are 3 different intervention groups.

Phase I (Consolidated + non-consolidated together)

Phase II (Full Package + Software together)

Control (only 8 schools)

- Full package schools received the full intervention of hardware (new WASH facilities) and software (behaviour change communication, football activities, WASH club). Software package schools only received the software (behaviour change communication, football activities, WASH club).
- Phase I consolidation schools had previously received the full intervention under football and football & WASH packages of the implementation of the F4WASH program and was included to see whether the 'effects' of phase 1 measured at baseline were still present at endline. No further intervention was supposed to be given to this group. However, at endline it was discovered that additional software (and in some cases hardware) activities had taken place and so this group changed in size.
- Control schools where there was not treatment, were selected to measure the change in impact of the Football for WASH program in the three counties.
- The participants were well matched at baseline and endline and between the different groups. This is important because it means that the effects that are measured are unlikely to be due to differences because of age, gender, socio-economic status of geographical location

### Facilities

- The pupils report better facilities for handwashing, latrines, showers and football at endline compared to baseline.
- Water: Increase in water availability and functional water facilities was reported.
- Water and soap availability for handwashing have improved in the endline compared to baseline. Phase I maintained availability while Phase II and control also reported an improvement.
- There has been an increase (see Figure 6) in the use of mass handwashing stations between the baseline and endline for the Phase II intervention group from 15% to 36% and the control group from 6% to 11%. However, there is a statistically significant decrease in the use of mass hand washing stations in the Phase I group from 66% to 37%.

- Reported toilet use was already over 90% at baseline and this has increased slightly at endline to 95% and we would not expect change. Toilet use was equally high amongst the control group.
- There have been decreases in children reporting open defecation and open urination at school and out of school which are statistically significant for the Phase II intervention group. The control group also reports some reductions

	Phase I		Phase II		Control	
	Baseline	End line	Baseline	End line	Baseline	End line
Urinate in school	10%	7%	16%	8%	11%	8%
Defecate in school	2%	2%	5%	4%	6%	4%
Urinate out of school	29%	27%	39%	29%	35%	24%
Defecate out of school	14%	10%	22%	17%	19%	12%

- Children in the Phase II intervention report that school toilet facilities are better than home. This change is both over time and compared to control groups. It is statistically significant. For example, at baseline 47% of the Phase II intervention reported school toilets being nicer but this had risen to 64% by endline. The control only group increased from 44% to 53% while there was a very slight decline in the Phase I schools from 71% to 69%.

**Q38. Toilet facilities are better at school than at home**

WAVE		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
	Baseline	71%	47%	44%
	Endline	69%	64%	53%

## Knowledge

- Knowledge of when to wash hands, the importance of clean drinking water and why safe sanitation is important remains high for all categories. There have been increases in the knowledge that handwashing with soap prevents disease and these are statistically significant for the intervention groups.
- Knowledge of “why” you should wash your hands is higher in the intervention groups than the control.

## Club Membership and Football

- School club membership has slightly increased between baseline and endline but the relative increases in both WASH and sports clubs is higher which support the intervention objectives of either WASH or Football.
- The increase in membership specifically in Football for Wash club is statistically significant between baseline and endline for the Phase II intervention. Phase I membership of clubs and Football and Wash clubs has decreased.
- Children in the Phase II intervention were statistically significantly more likely to report learning about hygiene and cleanliness and how to maintain health at endline rather than baseline.

- Being a member of the football club led to more pupils feeling more confident and this was statistically significant between baseline and endline. Furthermore, students in the Phase II intervention also reported being more disciplined and this result was statistically significant.
- There has also been a statistically significant increase in teachers using the football pitches during school hours between baseline and endline. The football pitches are also being used for other activities.
- There has been no increase in the amount in income generating activities between baseline and endline for WASH facilities (especially water) at 0% for both waves and over all this remains very low. However, there was a change in what pupils' report income generation being spent on between baseline and endline. Pupils report that money is spent on buying seedlings, construction of other wash facilities and maintaining wash facilities and this result was statistically significant.
- The use of renting out football pitches and equipment has led to the income generated being used to maintain pitches, buy new kit and balls and this was statistically significant between baseline and endline.

### **Menstruation**

- Overall there is an increase in the number of pupils reporting that menstrual hygiene management issues are addressed adequately in their school between baseline and endline and compared to control and this is statistically significant.
- On the other hand, pupils reported that menstruation was more likely to be discussed with the girls than boys in the different schools regardless of the intervention status. There were also statistically significant increases of this for the girls in the intervention schools.
- There were statistically significant increase in proportion of girls reporting ability to shower at the school WASH facilities during their menses. It should however be noted that there was an equally significant but decline in girls reporting this in Phase I schools. Within the Phase II intervention groups, the increase in girls showering at school increased from 7% to 27% which was also statistically significant, Figure 12c.
- There was a decrease in the proportion of girls who stay home during their menses see Table 2, Figure 12d. This was statistically significant for girls in the Phase I and Phase II intervention groups. This supports the better provision of facilities for girls during menstruation in the full package intervention. However, there was a statistically significant increase in the girls staying home from school in the control group.

### **Parents Survey Results**

- Parents of pupils in the full intervention and software intervention have observed positive changes in their children due to F4WASH between baseline and endline
- In terms of changes that have been observed, the statistically significant results for the Phase I and Phase II intervention are for each change (better hygiene, more confident, more ambitious, better school performance, improved health and not idling) except for improved school attendance.
- There has been a considerable increase in the number of households reporting using a tippy tap (see table 3). This suggests that participation by children in the F4WASH program means they influence their families to adopt a handwashing station at home.

- Consistency in washing hands with soap has increased amongst parents before and after the intervention and compared to the control. There was a 9% increase in the full intervention group which was statistically significant. Similar increases are reported for the rest of the family's handwashing with soap behaviour following defecation.
- Parents also reported an increased desire to upgrade their toilet facility in the endline and compared to the control group.

### **Reported Health Impacts**

- There has been an increase in the number of parents who have been informed about what their children learned in F4WASH between baseline and endline
- Similarly, there were decreases in reported cough, cold and influenza in the previous month between baseline and end line and compared to the control group.
- The results for reduction in diarrhoea for the school age children were significant for those with the Phase II intervention but not for those of the Phase I intervention group. This suggests that there is an impact on having improved hardware facilities on health outcomes for school aged children.
- Similar results were found in school aged children for ARIs. The results – showing a reduction in these diseases

# 1 INTRODUCTION

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## 1.1 Football for WASH Proof of Concept study

Football for WASH is a programme designed to bring together local NGOs, football and WASH organisations and government agencies to improve WASH and football infrastructure in schools; to promote good hygiene practices and to ensure the sustainability of the maintenance of the infrastructure through innovative enterprise. In order to achieve this, UNICEF Kenya and other stakeholders are coordinating at both national and county level, to build the capacity of communities and partner institutions.

The program implementation involves phases - Phase 1 goal was to promote, sustain WASH activities in 240 primary schools and to reach at least 300,000 children and their families through WASH messages in football. Several Dutch organizations (SIMAVI, UNICEF NL and Vitens-Evides International) worked closely with their local implementing WASH partners: namely UNICEF, VEI/KIWASCO, SANA and CABDA. The selection of schools was done in consultation with county governments' relevant ministries (Education, Water, Health and sports) who were able to identify county priority schools that need WASH. For sustainability of the interventions, community involvement and participation has been involved from inception.

The main objective of the F4W phase 2 interventions was to improve access to reliable sanitation and safe water services in 90 schools in Kisumu (29), Migori (32) and Trans Nzoia (29) Counties by June 2018; specifically, to improve access to quality, safe and gender sensitive sanitation facilities; and to improve hygiene and menstrual hygiene management practices in the target schools. Again, several Dutch organizations (SIMAVI, UNICEF NL and Vitens-Evides International) worked closely with their local implementing WASH partners within the three counties: namely UNICEF, VEI/KIWASCO, and CREATA. The selection of schools was done in consultation with county governments' relevant ministries (Education, Water and Health).

In each county, there was selection of schools that were entitled to full package and some half package. The full package school meant they would receive both hardware and software components, and the half package schools would receive the software components and a few selected hardware components. There were some slight differences in level of provision of facilities between full package and software only groups because the software only schools were selected because the schools already had a better provision of hardware/facilities. Kisumu selected 16 schools for full package and 13 for half package (29), Trans Nzoia also had 16 schools for full package program and 13 for half package (32), while Migori had 18 schools for full package and 14 for half package program (32).

A proof of concept study approach was chosen, as a realistic way to independently collect evidence of the effectiveness of the integrated approach. The Football for WASH Proof of concept study, therefore, was aimed at collecting evidence of the effectiveness of the integrated F4W approach in relation to regular WASH in school programs, with a focus on behaviour change (children) and sustainability.



## 2 BACKGROUND

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The Football for Water, Sanitation and Hygiene (F4W) is a Public Private Partnership (PPP) initiative that aims at linking the Dutch Water, Sanitation and Hygiene (WASH) sectors with proven capacities in WASH infrastructure provision, and the Royal Netherlands Football Association's (KNVB) long-standing expertise; mainly for football-based life-skills training, as defined within the International World Coaches program.

In Kenya, the Program brings together local NGOs such as Kisumu Youth Football Association (KYFA), Centre for Regeneration and Empowerment of Africa Through Africa (CREATA), Moving the Goalpost (MTG) and Trans-Nzoia Youth Sports Association (TYSA), Kenya Institute of Soccer Education (KISE), the Football Kenya Federation (FKF) and Kenyan Premier League (KPL), Corporate bodies and government partners from football and WASH sectors.

The goal of the program is to promote and sustain WASH activities by bringing together local NGOs, football and WASH organisations and government agencies to improve WASH and football infrastructure in schools; to promote good hygiene practices and to ensure the sustainability of the maintenance of the infrastructure through innovative enterprise.

The program implementation involves phases - Phase 1 goal was to promote and sustain WASH activities in 240 primary schools and to reach at least 165,000 children and 40,000 community beneficiaries through WASH messages in football. Several Dutch organizations (SIMAVI, UNICEF NL and Vitens-Evides International) worked closely with their local implementing WASH partners: namely UNICEF, VEI/KIWASCO, SANA and CABDA, TYSA, KYFA, KAMADEP and Tenda Pamoja. The selection of schools was done in consultation with county governments' relevant ministries (Education, Water, Health and Sports) who were able to identify county priority schools that need WASH. For sustainability of the interventions, community involvement and participation has been involved from inception.

### 2.1 Study Design and Implementation

A proof of concept study approach was chosen, as a realistic way to independently collect evidence of the effectiveness of the integrated approach. The Football for WASH Proof of concept study, therefore, was aimed at collecting evidence of the effectiveness of the integrated F4W approach in relation to regular WASH in school programs, with a focus on behaviour change (children) and sustainability. Kantar Public were contracted to carry out an impact evaluation of the F4W program in Kenya; this report covers the endline information (collected in May 2019) and compares to the baseline (collected in July 2017). A separate baseline report is available.

The target population of the intervention is primary school going children, teachers and head teachers. For the baseline study, data was collected in 59 school randomly selected from three different counties namely; Kisumu, Migori and Trans Nzoia and for the endline, data was similarly collected from another random sample of 59 schools.

For the endline report there are 2 different intervention groups and control group:

**Phase I (consolidated and non-consolidated)**

**Phase II (full package and software together)**

*Both Group 1 and Group 2 received the full intervention of hardware (new WASH facilities) and software (behaviour change communication, football activities, WASH club).*

**Control** The final group was a control group, which had no intervention.

The methodology used was both qualitative and quantitative and was identical in baseline and endline.

The period of intervention was potentially 22 months but in practice intervention was far less. The intervention did not start until late 2017/early 2018 because of problems encountered due to delayed general elections in Kenya (where schools were used as polling stations and so were closed). Software training took place in the last quarter of 2017. There were additional delays in the full intervention group due to delays in procurement and building of the hardware facilities because of the excessively heavy rains experienced in Kenya during the first 6 months of 2018. Some schools only completed their hardware installation 2 months before the endline.

Implementation fidelity (A separate report on implementation fidelity is available) was measured through visiting the schools and implementation partners. Data collection had two rounds of two weeks (February 2018 and June 2018) in all the three counties, through:

- Spot check observations of the F4W activities
- Interviews with Head Teachers
- Interviews with coordinators/partners.

## 2.2 Objective of the proof of concept study

Evaluation allows us to compare efficiency and cost-effectiveness and to ensure that interventions are effective as well as efficacious, in that they can be replicated in different settings and under different conditions. When testing the effectiveness of an intervention we are asking whether the outcomes and impacts are attributable to the interventions or whether they are a 'chance' occurrence. An experimental study is the standard method for evaluating effectiveness. Impact evaluation measures change in two ways: either as a 'double' difference that simultaneously measures both the difference between two points in time and between treatment and control groups, or as a 'simple' difference between treatment and control groups.

For this study, the analysis allows us to look at the 'double' difference – before and after the intervention and between the intervention and control groups. Thus, the study permits a measurement of any 'treatment effect' of the intervention that is the difference between treatment and control groups. The double difference measure allows us to measure change over time.

This report does **not contain all the results**; these have been made available separately. Rather, this report seeks to shed light on the following:

- Is the sample representative and homogenous between the control and intervention groups and over time?
- Are the Phase II intervention schools out performing the Phase I and control groups?
- Is there an improvement in performance over time for the Phase I and Phase II intervention groups when compared to the control group?

## 2.3 Key focus areas for the baseline study

<b>Focus areas</b>	<b>Indicators</b>
<b>Water</b>	<ul style="list-style-type: none"> <li>- Availability of water,</li> <li>- Type of water storage that was available</li> <li>- Source of water and types of taps</li> <li>- Income generating activities using the water sources</li> </ul>
<b>Sanitation</b>	<ul style="list-style-type: none"> <li>-Availability of toilets</li> <li>- Type of toilets available, are the boys' and girls' toilets separated or are they shared</li> <li>- Toilet maintenance and Cleaning</li> <li>- Sanitation practices and behaviours</li> </ul>
<b>Hygiene</b>	<ul style="list-style-type: none"> <li>-Availability of handwashing stations, soap and water</li> <li>- Do the children maintain hygienic behaviour after visiting the toilet, how are the conditions of the toilets availed in the schools</li> <li>- Are there facilities for showering and changing sanitary towels for girls who are menstruating?</li> </ul>
<b>Clubs and activities</b>	<ul style="list-style-type: none"> <li>-Availability of a football field, F4W football accessories and football</li> <li>- Availability of WASH and/or health clubs</li> <li>- Income generating activities in the schools and neighbouring communities</li> </ul>
<b>School record keeping</b>	<ul style="list-style-type: none"> <li>-Teachers attendance register,</li> <li>- School performance,</li> <li>- Student enrolment and pupils' performance.</li> </ul>
<b>Parents</b>	<ul style="list-style-type: none"> <li>-Knowledge on WASH and F4WASH</li> <li>- Toilets, water and handwashing facilities at home</li> <li>- Health of children</li> </ul>

## 3 DATA COLLECTION TOOLS AND METHODOLOGY

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The study was largely quantitative in nature with a qualitative component on behavioural activities and F4W facilities in the school compounds. All the data was captured face-to-face using a Computer Aided Personal Interview Platform (CAPI). There were three (3) approaches to the data collection as follows:

- Interviews with teachers, parents, pupils and the key stakeholders
- Observation on school facilities for both WASH and Football components
- School performance data abstraction for both teachers and pupils

### 3.1 Quantitative Interviews

Computer Aided Personal Interview Platform (CAPI) interviews were conducted with pupils from class one to class eight from each of the selected schools. Parents of the randomly selected pupils were invited to the school for an interview. This was done to establish knowledge on F4W program, and all other activities associated with the program both within the school environment and the home settings.

Each school had been assigned a unique random number which were generated from the excel sheet these numbers were used to identify the right pupil to be interviewed. Pupil selection was randomized using an inbuilt standard excel template, but this was based each classroom's register for the day of the interview. Once a pupil was selected a letter was written to the parents inviting them for the same interview in the school compound. Only selected pupils were issued with invitation letters to ask their parents to come to the school on the appointment day.

For each of the selected schools, we allocated three quantitative interviewers and one observer who also doubled as the supervisor to the quantitative team. It was the duty of the observer to confirm that the randomly selected pupils by the abstraction team were the ones being interviewed and this was done by confirming from the random excel sheet shared by the abstraction team on the list of pupils and parents to be interviewed on each appointment date. Strict adherence to the same methodology was observed between baseline and endline.

### 3.2 Observation

Observation on the availability of WASH components and F4W was conducted in the school. Data on observation was collected using NField CAPI.

### 3.3 Data abstraction

Data abstraction's aim was to study each of the selected schools over a longer time period. The performance from teachers and the pupils for period of not less than 2 years prior to data collection was reviewed in order to analyse the prior performance of the school before intervention, to see if being enrolled in the program had positive effects on areas such as school attendance, performance of pupils, performance of teachers, and financial sustainability of the schools.

## 4 RESULTS FROM THE PUPIL SURVEY

### 4.1 Age and Gender of the Pupils Sample

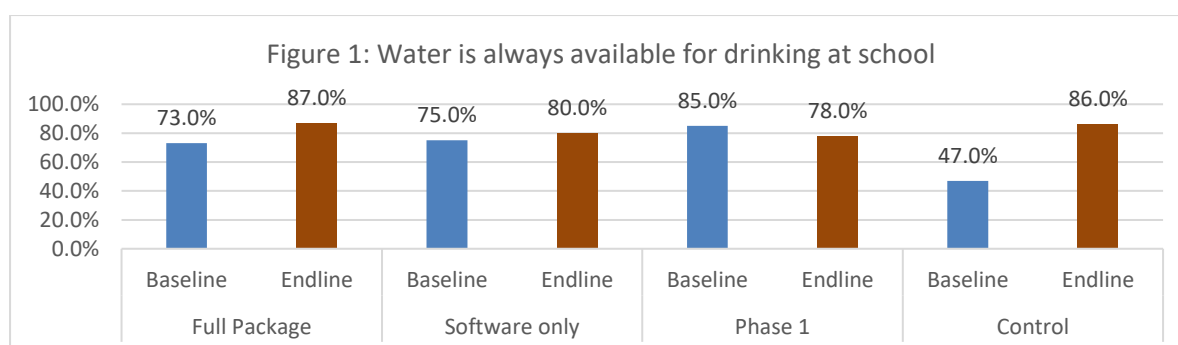
The distribution of pupils across the classes (Standards 1 to 8), by gender and age in the three different groups (2 intervention and one control) was the same for baseline and endline. There was a similar distribution by class/standard across the 2 intervention groups and the control. Similar findings for age and gender indicate that the sample is balanced and homogenous in terms of age, gender, and class pupils are in. So, despite some sampling issues at endline the demographics of the two samples are comparable. This gives us greater confidence in the results which have been obtained.

**Table 1: Q7. Class of the pupil by Intervention Group**

WAVE		Total	Categories		
			Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Baseline	Total	<b>1889</b>	491	674	724
	1	11%	11%	11%	11%
	2	11%	11%	11%	11%
	3	11%	11%	11%	11%
	4	11%	10%	11%	12%
	5	11%	12%	11%	11%
	6	11%	11%	11%	11%
	7	16%	17%	16%	16%
	8	16%	17%	16%	16%
Endline	Total	<b>2001</b>	596	1169	236
	1	11%	11%	11%	11%
	2	11%	11%	11%	11%
	3	11%	11%	11%	11%
	4	11%	11%	11%	11%
	5	11%	12%	11%	11%
	6	11%	11%	11%	11%
	7	17%	17%	17%	17%
	8	17%	17%	17%	16%

### 4.2 Drinking Water

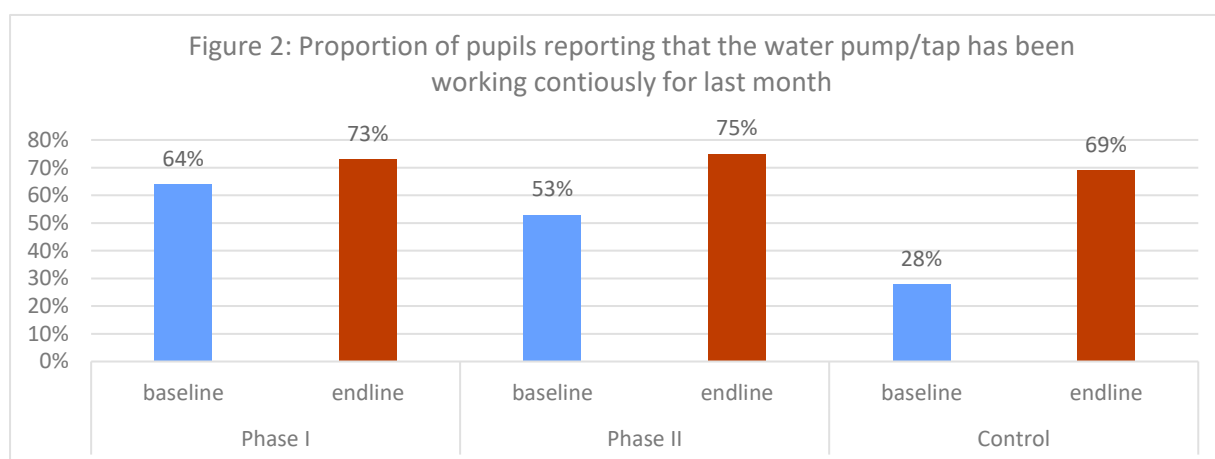
Figure 1 shows the availability of water at the schools as reported by the pupils. Across all schools there has been an increase in the availability of water (including the control group) but the improvements to the 2 intervention groups is statistically significant between baseline and endline. As reported in the methodology, it was difficult to find comparable control schools to baseline controls at endline. Despite this, the results are statistically significant in the intervention schools.



Results for test of significance\* shown in table below

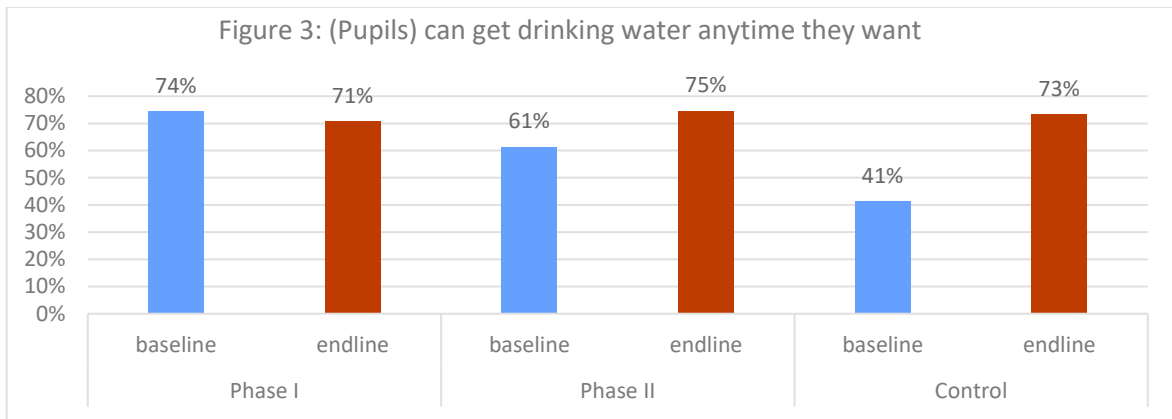
		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Water is always available for drinking at school	Chi-square	1.681	35.159	72.32
	df	1	1	1
	Sig.	0.195	.000*	.000*

A similar pattern of results is found for whether the water pump has been working and whether children can get a drink of water at any time (Figures 2 and 3). Figure 2 shows that the trend between baseline and endline for all intervention groups has increased – i.e. the water pump/tap is more likely to be working continuously at the endline. The control group has also seen increases making it more like the intervention groups. The differences between baseline and endline for the 2 intervention groups are statistically significant. However, the intervention groups do not significantly outperform the control at endline.



Similar patterns are found for whether children can get a drink of water any time they want. Figure 3 shows that post intervention the Phase II intervention group has increased availability of water by 13%. However, the control group has also increased at 32% in comparison to the amount for the Phase I and Phase II intervention groups. The Phase I group has not seen any significant decrease in water availability or being able to get a drink when they want, which shows that the Phase I intervention has been sustainable in these respects.

Students do continue to bring water from home when there is not enough water available at school and although the data is not shown it is statistically significant for them to bring water when it is not available.

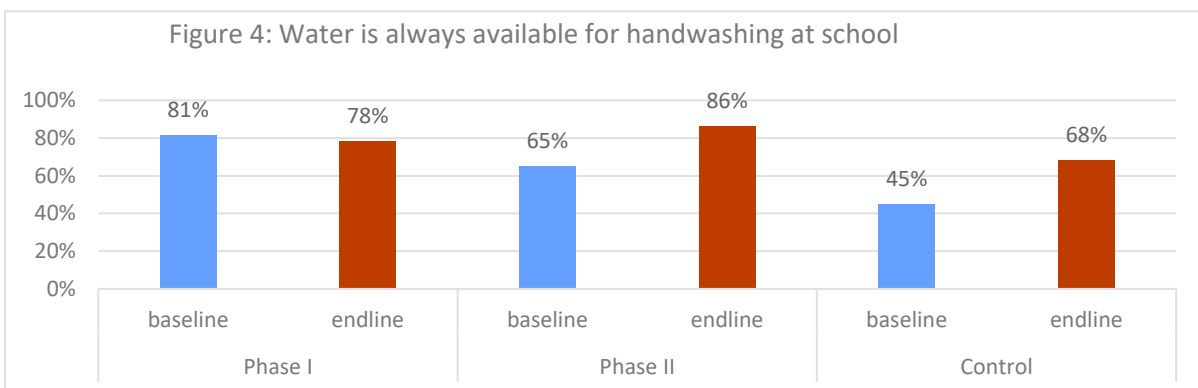


Results for test of significance\* shown in table below

		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Pupils can get drinking water anytime they want	Chi-square	.558	2.688	.411
	df	1	1	1
	Sig.	.455	.101	.521

### 4.3 Handwashing

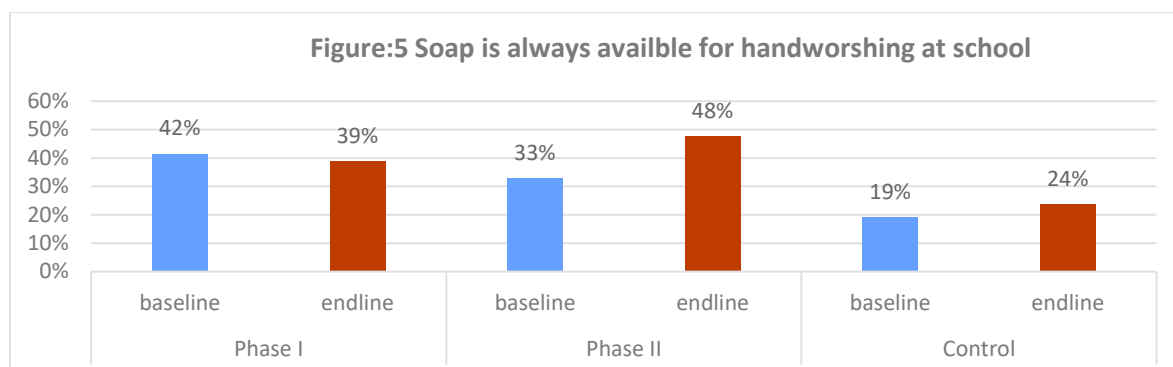
The pattern continues when handwashing is reviewed (Figure 4 and 5). The trend is for increased availability of water for handwashing between baseline and endline in the Phase II intervention group. The Phase II intervention group has increased from 65% to 86% and the Phase I decreased from 81% to 78%. However, the drop in the phase I results was not statistically significant. The control group has also increased at endline, the intervention results are statistically significant.



Results for test of significance\* shown in table below

		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Water available for handwashing at school	Chi-square	1.614	112.165	38.303
	df	1	1	1
	Sig.	.204	.000*	.000*

In terms of the availability of soap for handwashing – there has been an increase between baseline and endline and the difference between intervention remains, though lower in the control schools. The Phase II intervention group increased from 33% to 48%. The phase I intervention groups have maintained soap availability.



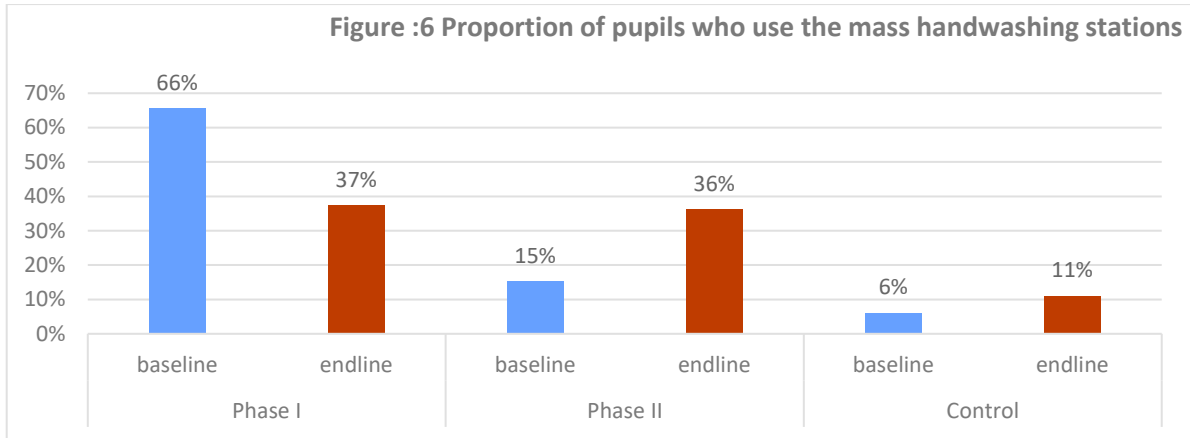
Results for test of significance\* shown in table below

		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Soap is always available for handwashing at school	Chi-square	.873	39.124	2.405
	df	1	1	1
	Sig.	.350	.000*	.121

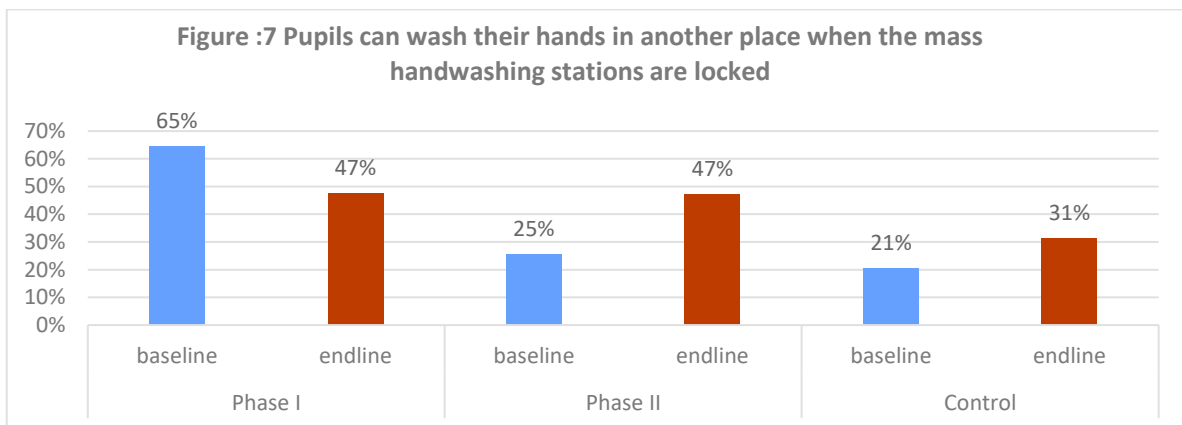
There has been an increase (see Figure 6) in the use of mass handwashing stations between the baseline and endline for the Phase II intervention group from 15% to 36% and the control group from 6% to 11%. However, there is a statistically significant decrease in the use of mass hand washing stations in the Phase I group from 66% to 37%.

There has not been a significant change in the amount of time that the mass handwashing stations are locked between baseline and endline across any of the groups - it remains at about 1/3 of pupils reporting them to be locked across all groups. Mass handwashing stations are controlled by teachers and allow high numbers of pupils to wash hands at 'high traffic' times, but they tend to remain locked outside of break times. There is however an increase (see Figure 7) in the availability of another place to wash hands when the mass handwashing stations are locked between baseline and endline for the Phase II intervention groups and this is statistically significant showing that this aspect of the intervention has been successful. However, there is a decline for the Phase I intervention and an increase in the control group.





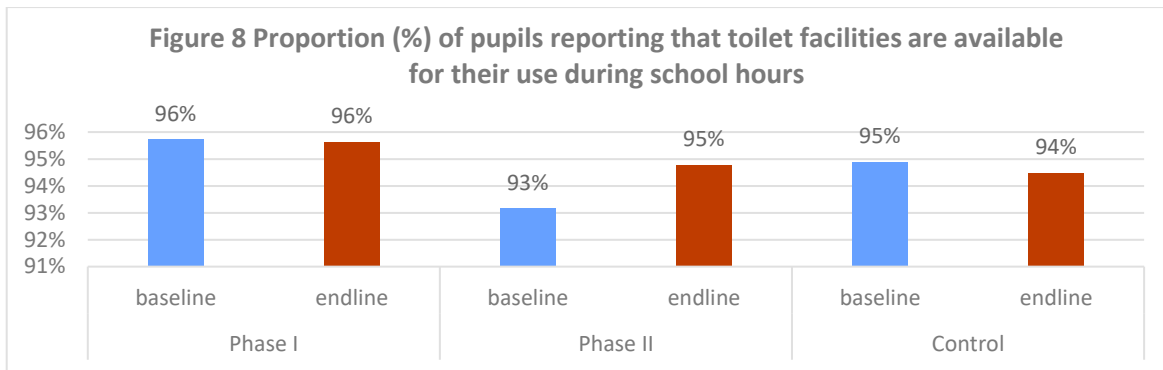
		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Proportion of pupils who use the mass handwashing stations	Chi-square	86.440	93.650	6.424
	df	1	1	1
	Sig.	.000*	.000*	.011*



		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Pupils can wash their hands in another place when the mass handwashing stations are locked	Chi-square	31.754	86.235	11.589
	df	1	1	1
	Sig.	.000*	.000*	.001*

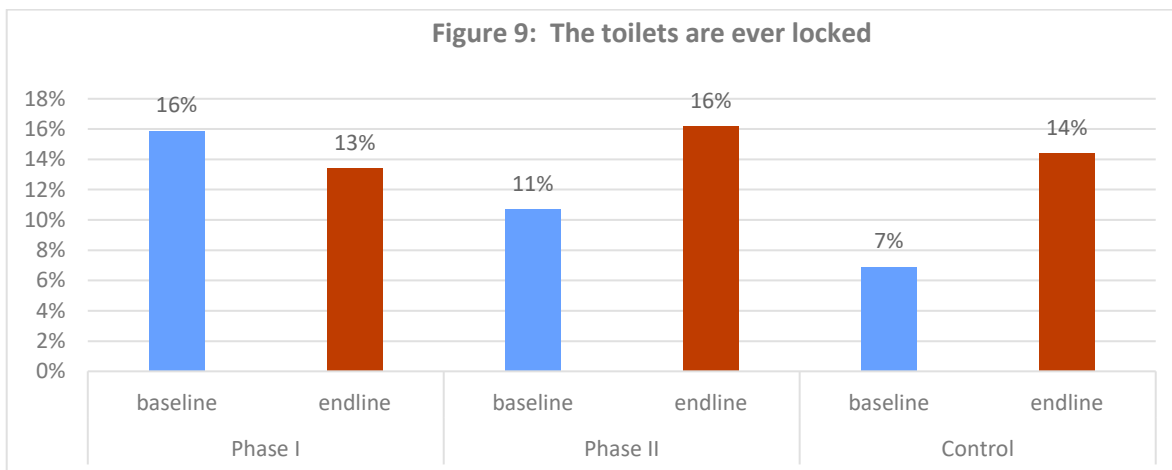
#### 4.4 Toilet Facilities

The availability of toilet facilities at school remains constant between baseline and endline across all groups at about 95%. With such high coverage at baseline we would not have expected to see an increase and the control schools were at a similar level. Across all groups (intervention and control) approximately 95% of students report that toilets are always available.



		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Proportion of pupils reporting that toilet facilities available for your use during school hours	Chi-square	.005	2.018	.057
	df	1	1	1
	Sig.	.945	.155	.811

When we dig deeper into toilet facilities, we see that there has been an increase in the times when the toilets are locked (see figure 9). The Phase II intervention group increased from 11% to 16% and the Phase I intervention group maintaining a constant at 16% and 13% at baseline and endline respectively. There has been no increase in locking the toilets during school hours for Phase I schools – the increase is in other hours which may reflect the desire to better protect the newly built and newly refurbished facilities particularly during school holidays and weekends.



		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
The toilets ever locked	Chi-square	1.315	10.581	12.541
	df	1	1	1
	Sig.	.252	.001*	.000*

There has been a decrease in the number of children reporting using the bush/wall/ yard to urinate or defecate both in school and out of school (see table 1) when you compare baseline to endline across all groups. The results are statistically significant for the Phase II urination in school. They are not significant for the phase I group which has remained constant. This further supports that the better-quality facilities in school encourage pupils to use the facilities. Those children who do urinate or defecate in the open report doing so because they have been 'caught short' or that the facility is 'too far to go' or for 'other' reasons. Less than 6% of those that defecate or urinate in the open across all groups report doing so because the school toilets are dirty or smelly. So, although quality is not a deterrent – location of toilets is likely to have an impact on use.

Table 1 – Open defecation and urination by pupils

	Phase I		Phase II		Control	
	Baseline	End line	Baseline	End line	Baseline	End line
Urinate in school	10%	7%	16%	8%	11%	8%
Defecate in school	2%	2%	5%	4%	6%	4%
Urinate out of school	29%	27%	39%	29%	35%	24%
Defecate out of school	14%	10%	22%	17%	19%	12%

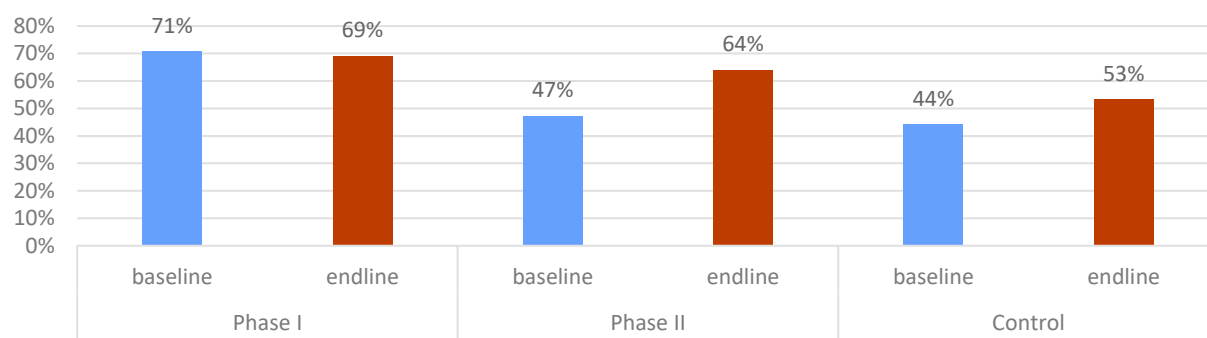
\*statistically significant

		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Urinate in school	Chi-square	2.284	29.967	1.589
	df	1	1	1
	Sig.	.131	.000*	.207
Defecate in school	Chi-square	.435	2.264	.988
	df	1	1	1
	Sig.	.510	.132	.320
Urinate out of school	Chi-square	.695	18.694	10.172
	df	1	1	1
	Sig.	.404	.000*	.001*
Defecate out of school	Chi-square	4.089	6.849	6.097
	df	1	1	1
	Sig.	.043*	.009*	.014*

\*Statistically Significant

When asked if the toilets at school are better than toilets at home the children in the Phase II intervention group say toilets are better at school and this has increased between baseline and endline and is statistically significant. There has been change in the control group and the largest increase in the Phase II group (baseline to endline at 47% to 64% respectively) may well be due to greater cleanliness following the intervention.

Figure 10: Proportion (%) of pupils reporting that the toilets at school are nicer than at home



		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Proportion of pupils reporting that the toilets at school nicer than the toilets at home	Chi-square	.391	49.177	6.044
	df	1	1	1
	Sig.	.532	.000*	.014*

#### 4.5 Knowledge

Knowledge of when to wash hands, why you should use latrines and why you need clean drinking water was already high at baseline across the two intervention groups and the control group. For example, knowledge of clean drinking water preventing disease remains over 90% at both baseline and endline and across treatment and control groups.

Table 2a. Q42. Reasons for use of safe drinking water

WAVE			Total	Categories		
				Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Baseline	Total		1889	491	674	724
		Prevention from diseases	91%	93%	88%	93%
Endline	Total	Less absenteeism from school	1%	%	1%	1%
		Improved health	20%	20%	23%	17%
		Others (specify)	3%	3%	5%	2%
		Total	2001	596	1169	236
		Prevention from diseases	<b>90%</b>	92%	89%	89%
Endline	Total	Less absenteeism from school	1%	1%	1%	0%
		Improved health	19%	15%	21%	17%
		Others (specify)	5%	4%	6%	5%

\*\*significance test

		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Prevention from diseases	Chi-square	2.734	.835	12.343
	df	1	1	1
	Sig.	.098	.361	.000*
Less absenteeism from school	Chi-square	.408	1.405	1.309
	df	1	1	1
	Sig.	.523 <sup>b</sup>	.236 <sup>b</sup>	.253 <sup>b,c</sup>
Improved health	Chi-square	.074	.459	1.359
	df	1	1	1
	Sig.	.785	.498	.244
Improved hygiene	Chi-square	1.263	2.024	1.846
	df	1	1	1
	Sig.	.261	.155	.174
Others (specify)	Chi-square	.727	3.470	16.166
	df	1	1	1
	Sig.	.394	.062	.000*

Overall, knowledge of why you should wash your hands remains at 63% at baseline and endline. There has not been marked change between baseline and endline. Knowledge of why you should wash your hands has remained the same across Phase I, Phase II and control groups knowing it is to prevent disease at 69%, 61% and 59% respectively. There is a higher understanding of the importance of clean water and handwashing than there is about the importance of latrine use.

**Table 2b. Q44. Reasons for washing your hands with soap**

WAVE		Total	Categories		
			Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Baseline	Total	1889	491	674	724
	Prevention from diseases	63%	67%	61%	62%
	Less absenteeism from school	1%	1%	1%	%
	Improved health	16%	15%	16%	16%
	Improved hygiene	48%	44%	49%	50%
	Others (specify)	6%	9%	8%	4%
Endline	Total	2001	596	1169	236
	Prevention from diseases	63%	69%	61%	59%
	Less absenteeism from school	%	1%	%	%
	Improved health	12%	9%	14%	14%
	Improved hygiene	40%	41%	39%	40%
	Others (specify)	15%	10%	17%	14%

**Table 2c. Q45. Reasons for washing your hands**

WAVE		Total	Categories		
			Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Baseline	Total	1889	491	674	724
	Before eating	89%	86%	91%	90%
	Before Preparing food	10%	16%	8%	8%
	After going to the toilet/urinal ?	85%	93%	85%	80%
	Before feeding a child	2%	2%	3%	2%
	After changing a baby napkin	1%	2%	1%	%
	After playing in the field	14%	21%	13%	11%
	After taking care of animals	2%	2%	2%	1%
Endline	Total	2001	596	1169	236
	Before eating	88%	89%	88%	89%
	Before Preparing food	8%	9%	9%	4%
	After going to the toilet/urinal ?	89%	89%	89%	86%
	Before feeding a child	1%	%	1%	%
	After changing a baby napkin	2%	1%	2%	%
	After playing in the field	29%	27%	31%	22%
	After taking care of animals	3%	4%	3%	3%

\*\*significance test

		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Before eating	Chi-square	1.440	3.575	.082
	df	1	1	1
	Sig.	.230	.059	.774
Before Preparing food	Chi-square	13.156	.803	4.335
	df	1	1	1
	Sig.	.000*	.370	.037*
After going to the toilet/urinal ?	Chi-square	4.797	9.173	4.046
	df	1	1	1
	Sig.	.029*	.002*	.044*
Before feeding a child	Chi-square	6.026	11.998	2.331
	df	1	1	1
	Sig.	.014* <sup>b</sup>	.001*	.127 <sup>b</sup>
After changing a baby napkin	Chi-square	.421	6.646	.124
	df	1	1	1
	Sig.	.516	.010*	.724 <sup>b,c</sup>
After playing in the field	Chi-square	5.714	72.380	18.822
	df	1	1	1
	Sig.	.017*	.000*	.000*
After taking care of animals	Chi-square	2.867	2.147	4.234
	df	1	1	1
	Sig.	.090	.143	.040* <sup>b</sup>

**Table 2d. Q46. Reasons people should use latrines for defecation**

WAVE		Total	Categories		
			Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Baseline	Total	1889	491	674	724
	Prevention from diseases	66%	71%	61%	68%
	Less absenteeism from school	1%	1%	1%	1%
	Improved health	14%	13%	14%	15%
	Improved hygiene	33%	35%	31%	34%
	Others (specify)	14%	13%	19%	10%
Endline	Total	2001	596	1169	236
	Prevention from diseases	61%	67%	59%	55%
	Less absenteeism from school	%	1%	%	0%
	Improved health	14%	12%	15%	18%
	Improved hygiene	36%	38%	34%	39%
	Others (specify)	20%	15%	23%	19%

\*\*significance test

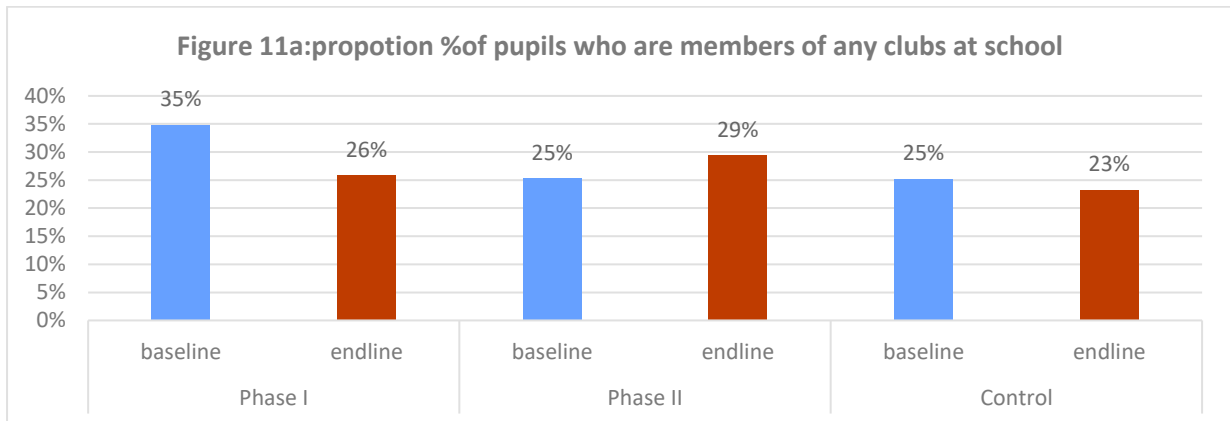
		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Prevention from diseases	Chi-square	2.734	.835	12.343
	df	1	1	1
	Sig.	.098	.361	.000*
Less absenteeism from school	Chi-square	.408	1.405	1.309
	df	1	1	1
	Sig.	.523 <sup>b</sup>	.236 <sup>b</sup>	.253 <sup>b,c</sup>
Improved health	Chi-square	.074	.459	1.359
	df	1	1	1
	Sig.	.785	.498	.244
Improved hygiene	Chi-square	1.263	2.024	1.846
	df	1	1	1
	Sig.	.261	.155	.174
Others (specify)	Chi-square	.727	3.470	16.166
	df	1	1	1
	Sig.	.394	.062	.000*
After playing in the field	Chi-square	5.714	72.380	18.822
	df	1	1	1
	Sig.	.017*	.000*	.000*
After taking care of animals	Chi-square	2.867	2.147	4.234
	df	1	1	1
	Sig.	.090	.143	.040 <sup>a,b</sup>

#### 4.6 Club Membership and Football

School club membership has had a decline from baseline to endline in the Phase I intervention group at 35% and 26% respectively. However, club membership has been somewhat static between baseline and endline among the Phase II intervention groups. It is noted that more children are likely to be in WASH club or a sports club.

A slight decline of 2% is also noted in the control schools. It is reported that there are pupils in the control group who report being in the F4WASH club. This is as a result of some inconsistencies in what

the different clubs call themselves and in understanding the difference between ‘football clubs’ and ‘football for wash’ clubs.



		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Member of any clubs at school	Chi-square	10.376	3.493	.371
	df	1	1	1
	Sig.	.001*	.062	.543

**Table 3a: Club membership reported by pupils**

WAVE		Total	Categories		
			Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
<b>Baseline</b>	<b>Total</b>	<b>525</b>	<b>171</b>	<b>171</b>	<b>183</b>
	WASH club	7%	16%	1%	3%
	Health club	13%	19%	14%	7%
	Income generating club	1%	1%	1%	1%
	F4WASH club	11%	26%	3%	4%
	Sports club	54%	39%	50%	71%
	Other clubs	27%	21%	37%	25%
<b>Endline</b>	<b>Total</b>	<b>553</b>	<b>154</b>	<b>344</b>	<b>55</b>
	WASH club	9%	6%	11%	4%
	Health club	16%	18%	16%	13%
	Income generating club	0%	0%	0%	0%
	F4WASH club	16%	10%	19%	18%
	Sports club	40%	42%	38%	49%
	Other clubs	28%	35%	26%	22%



\*\*significance table

		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
WASH club	Chi-square	8.136	15.554	.017
	df	1	1	1
	Sig.	.004*	.000*	.897 <sup>b</sup>
Health club	Chi-square	.015	.246	1.737
	df	1	1	1
	Sig.	.902	.620	.187 <sup>b</sup>
Income generating club	Chi-square	1.812	4.039	.606
	df	1	1	1
	Sig.	.178 <sup>b,c</sup>	.044 <sup>*,b,c</sup>	.436 <sup>b,c</sup>
F4WASH club	Chi-square	14.789	25.414	11.537
	df	1	1	1
	Sig.	.000*	.000*	.001 <sup>*,b</sup>
Sports club	Chi-square	.296	7.009	9.073
	df	1	1	1
	Sig.	.586	.008*	.003*
Other clubs	Chi-square	7.945	6.238	.178
	df	1	1	1
	Sig.	.005*	.013*	.673

Children in the Phase II package intervention were statistically significantly more likely to report learning about hygiene and cleanliness and how to maintain health at endline rather than baseline but this was not significant for the Phase I group.

**Table 3b. Q51. Benefits for being a member of the WASH club**

		Total	Categories		
			Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
WAVE					
Baseline	Total	1889	491	674	724
	Learn how to be healthy	13%	19%	11%	11%
	Learn how to have good hygiene	17%	31%	14%	10%
	Learn how to be clean	23%	36%	20%	19%
	Others (Please specify)	59%	41%	63%	68%
Endline	Total	2001	596	1169	236
	Learn how to be healthy	14%	14%	16%	9%
	Learn how to have good hygiene	24%	26%	25%	14%
	Learn how to be clean	40%	48%	40%	23%
	Others (Please specify)	46%	40%	45%	65%

\*\*Significance table

		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Learn how to be healthy	Chi-square	4.938	7.787	1.095
	df	1	1	1
	Sig.	.026*	.005*	.295
Learn how to have good hygiene	Chi-square	2.753	34.530	2.407
	df	1	1	1
	Sig.	.097	.000*	.121
Learn how to be clean	Chi-square	16.354	81.423	2.433
	df	1	1	1
	Sig.	.000*	.000*	.119
Others (Please specify)	Chi-square	.145	53.108	.719
	df	1	1	1
	Sig.	.704	.000*	.396

Football club membership remained static for all the categories. Being a member of the football club led to more pupils feeling more confident and this was statistically significant between baseline and endline.

**Table 3c. Q52. Football club membership**

WAVE		Total	Categories		
			Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Baseline	Total	1889	491	674	724
		31%	31%	31%	32%
Endline	Total	2001	596	1169	236
		32%	31%	32%	31%

**Table 3d. Q53. Lessons learnt from the football club**

WAVE		Total	Categories		
			Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Baseline	Total	1889	491	674	724
	More confident	13%	13%	12%	14%
	More disciplined	18%	21%	14%	21%
	Always cleaner	11%	18%	10%	9%
	Healthier	13%	14%	13%	13%
	Being strong	33%	26%	35%	36%
	Being active	29%	26%	28%	31%
	It keeps us busy	6%	7%	6%	4%
	No idle time	11%	10%	12%	11%
Endline	Total	2001	596	1169	236
	More confident	10%	9%	11%	8%
	More disciplined	17%	20%	15%	21%
	Always cleaner	11%	14%	11%	8%
	Healthier	11%	9%	12%	15%
	Being strong	25%	25%	25%	22%
	Being active	32%	33%	31%	32%
	It keeps us busy	8%	9%	8%	8%
	No idle time	15%	13%	16%	16%

\*\*Significance table

		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
More confident	Chi-square	4.367	.167	5.663
	df	1	1	1
	Sig.	.037*	.683	.017*
More disciplined	Chi-square	.037	.141	.001
	df	1	1	1
	Sig.	.848	.708	.975
Always cleaner	Chi-square	3.189	.682	.012
	df	1	1	1
	Sig.	.074	.409	.914
Healthier	Chi-square	8.841	.436	.687
	df	1	1	1
	Sig.	.003*	.509	.407
Being strong	Chi-square	.308	17.870	16.916
	df	1	1	1
	Sig.	.579	.000*	.000*
Being active	Chi-square	6.353	2.397	.042
	df	1	1	1
	Sig.	.012*	.122	.838
It keeps us busy	Chi-square	1.743	1.527	4.665
	df	1	1	1
	Sig.	.187	.217	.031*
No idle time	Chi-square	2.185	6.115	4.214
	df	1	1	1
	Sig.	.139	.013*	.040*

There has also been an increase in teachers using the football pitches during school hours between baseline and endline. The football pitches are also being used for other activities.

There has been no significant change in clubs attempting income generating activities or pupils being involved in income generating activities between baseline and endline. However, there was a change in what pupils' report income generation being spent on between baseline and endline. Pupils report that money is spent on buying seedlings, construction of other wash facilities and maintaining wash facilities and this result was statistically significant.

The use of renting out football pitches and equipment has led to the income generated being used to maintain pitches, buy new kit and balls and this was statistically significant between baseline and endline.

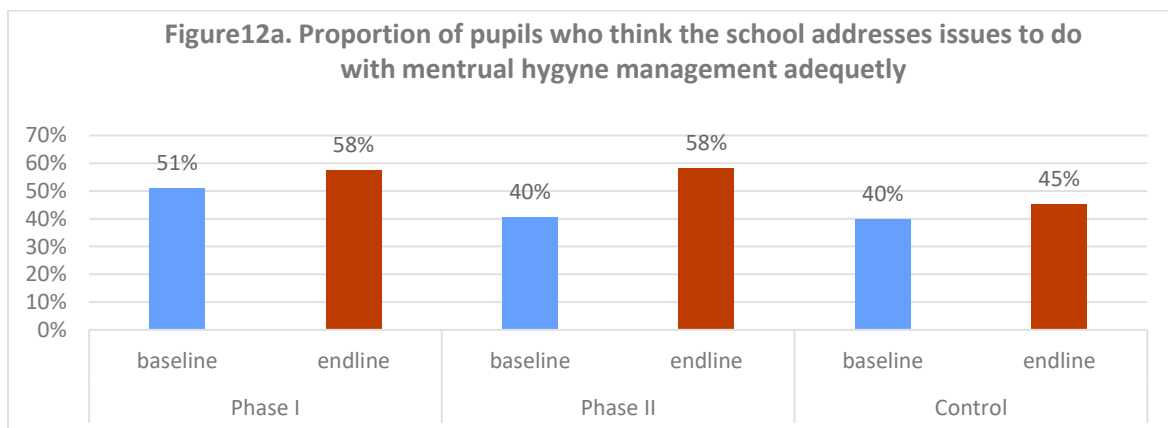
**Q57b. Use of income generated activities use:**

WAVE		Total	Categories		
			Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Baseline	Total	83	45	26	12
	Gardening	45%	47%	31%	67%
	Selling water (Water Kiosks)	7%	13%	0%	0%
	Soap making	13%	13%	15%	8%
	Other	41%	36%	58%	25%
Endline	Total	119	34	82	3
	Gardening	40%	44%	39%	33%
	Selling water (Water Kiosks)	4%	9%	2%	0%
	Soap making	12%	12%	12%	0%
	Other	46%	41%	48%	67%

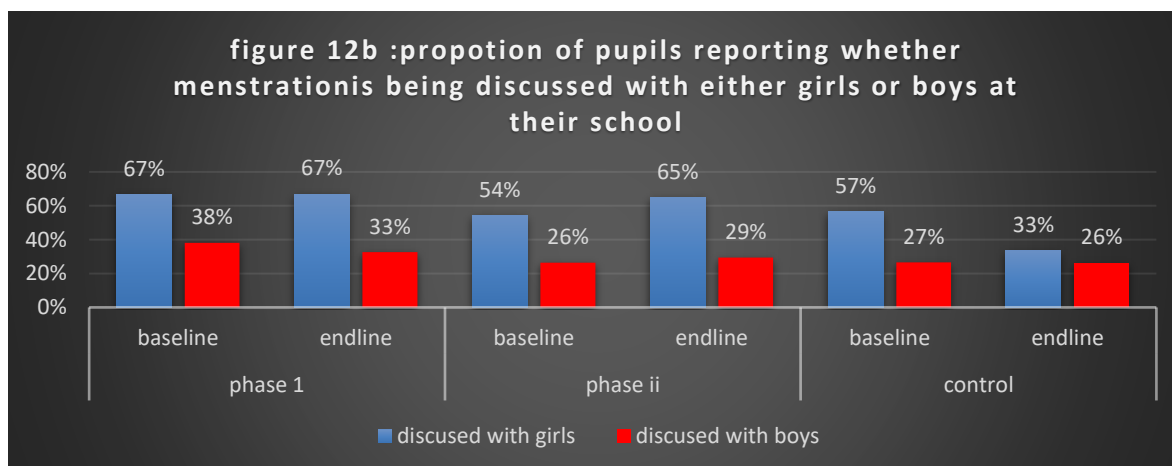
#### 4.7 Menstruation

At baseline menstruation was much more likely to be discussed in Phase I schools than in Phase II or control schools both amongst boys and girls which demonstrates that menstruation was mostly being discussed because of the intervention. At endline there is an increase for all the intervention groups including the Phase I group. Both intervention and control groups had a statistically significant increase. Pupils report that when menstruation is discussed with girls it is mostly done by teachers and not at the WASH club or Football club. In the original intervention design, learning about menstruation was supposed to be part of the clubs. This is an area for further improvement in the intervention design.

Overall there is an increase in the number of pupils reporting that menstrual hygiene management issues are addressed adequately in their school between baseline and endline and compared to control and this is statistically significant.



On the other hand, pupils reported that menstruation was more likely to be discussed with the girls than boys in the different schools regardless of the intervention status. There were also statistically significant increases of this for the girls in the intervention schools.

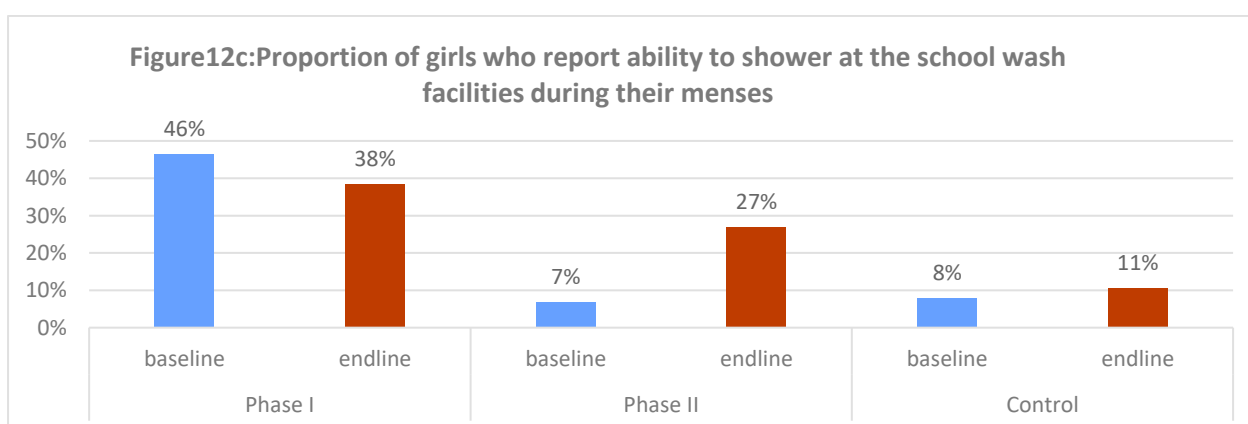


**\*\*Statistical significance**

		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Discussed with girls	Chi-square	.003	20.074	1.205
	df	1	1	1
	Sig.	.960	.000*	.272
Discussed with boys at your school?	Chi-square	3.403	1.812	.014
	df	1	1	1
	Sig.	.065	.178	.907

Between baseline and endline there was a statistically significant difference. However, significant change in the reported benefits of having better MHM in place – the main benefits were feeling cleaner, better performance in school and awareness of sex education.

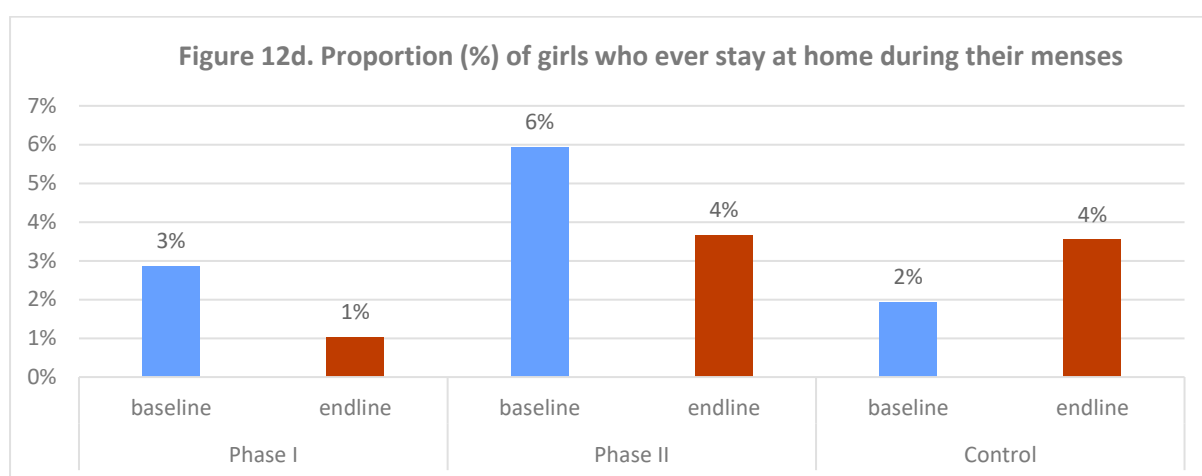
Looking at the utilization of the facilities, there were statistically significant increases in proportion of girls reporting ability to shower at the school WASH facilities during their menses. It should however be noted that there was an equally significant but decline in girls reporting this in Phase I schools. Within the Phase II intervention groups, the increase in girls showering at school increased from 7% to 27% which was also statistically significant, Figure 12c.



\*\*Test for statistical significance

		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
<b>Proportion of girls who report ability to shower at the school wash facilities during their menses</b>	Chi-square	3.436	55.693	.772
	df	1	1	1
	Sig.	.064	.000*	.380

There was a decrease in the proportion of girls who stay home during their menses see Table 2, Figure 12d. This was statistically significant for girls in the Phase I and Phase II intervention groups. This supports the better provision of facilities for girls during menstruation in the intervention. However, there was a statistically significant increase in the girls staying home from school in the control group.



		Categories		
		Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
<b>Q73. Proportion (%) of girls who ever stay at home during their menses</b>	Chi-square	2.455	2.560	1.000
	df	1	1	1
	Sig.	.117 <sup>b</sup>	.110	.317 <sup>b</sup>

Most provided varied reasons for staying at home during menses with painful periods being the most common reason during both baseline and endline

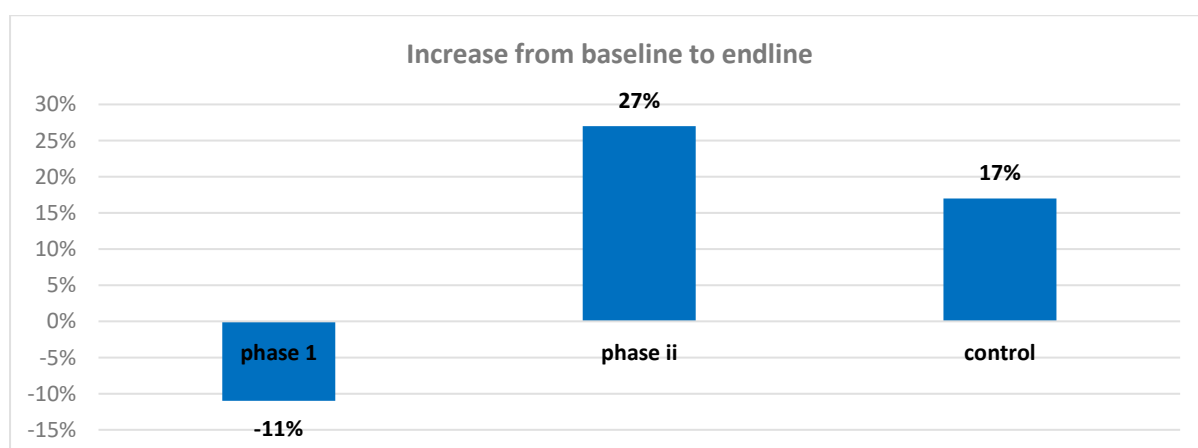
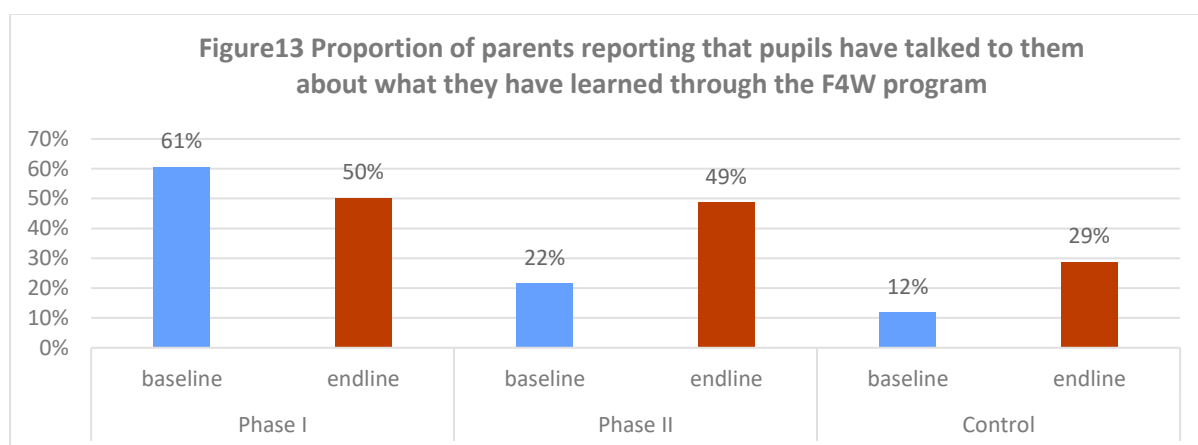
**Table 4: Why do you stay at home?**

WAVE		Total	Categories		
			Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Baseline	Total	34	7	20	7
	Embarrassed/Ashamed	29%	14%	35%	29%
	Gets teased	6%	14%	5%	0%
	Painful Periods	41%	29%	40%	57%
	I don't like to attend when I am menstruating	12%	14%	15%	0%
	There aren't any MHM facilities at her school	0%	0%	0%	0%
	Other (specify)	21%	29%	15%	29%
Endline	Total	29	3	22	4
	Embarrassed/Ashamed	17%	33%	14%	25%
	Gets teased	0%	0%	0%	0%
	Painful Periods	45%	67%	36%	75%
	I don't like to attend when I am menstruating	10%	0%	14%	0%
	There aren't any MHM facilities at her school	3%	0%	5%	0%
	Other (specify)	38%	0%	50%	0%

## 5 RESULTS FROM THE PARENTS SURVEY

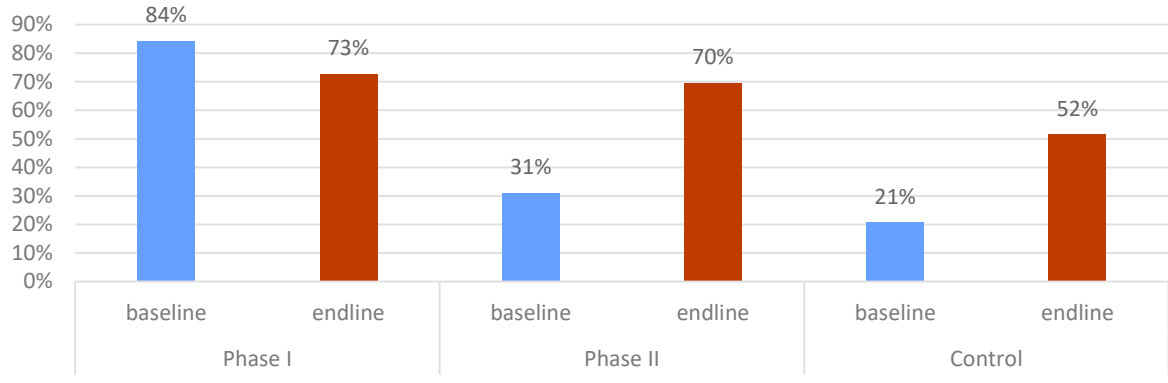
As would be hoped the parents were aware of the Football for Wash club at their schools (where present) and this increase was shown before and after the intervention and as compared to the control group. The demographics for the two samples (pre and post intervention) for the parents' sample are comparable.

The results show (Figures 13 and 14) that among the intervention schools there has been an increase in the number of parents who have been informed about what their children learned in F4WASH between baseline and endline and compared to the Phase I. These results are statistically significant for the Phase II intervention group for both figure 13 and figure 14, where parents report that their children have learned specifically about Water, Sanitation and Hygiene. On the other hand, there has been a decline in these proportions for the Phase I schools which perhaps reflect that for Phase I parents have forgotten what was discussed over time.

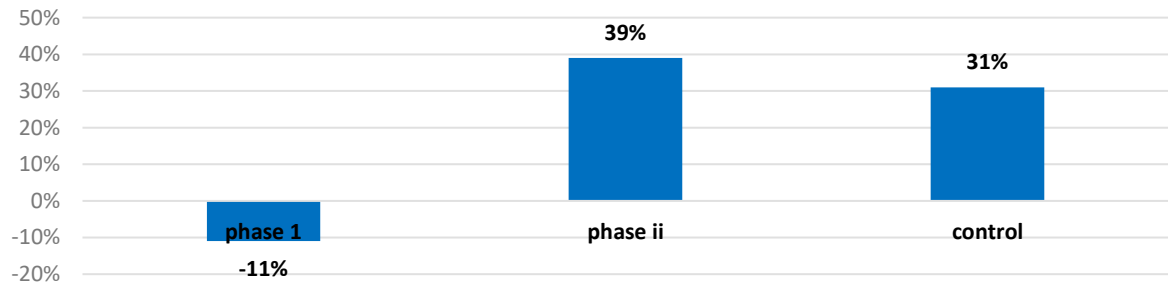




**Figure 14: Proportion of parents reporting child has learnt about Water, Sanitation and Hygiene from the F4WASH Program**

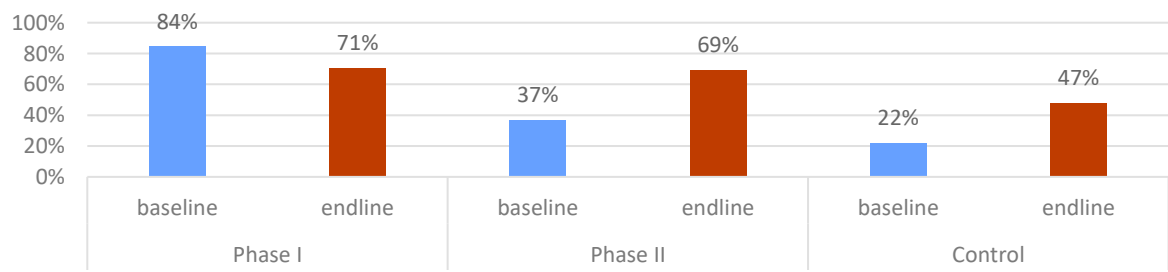


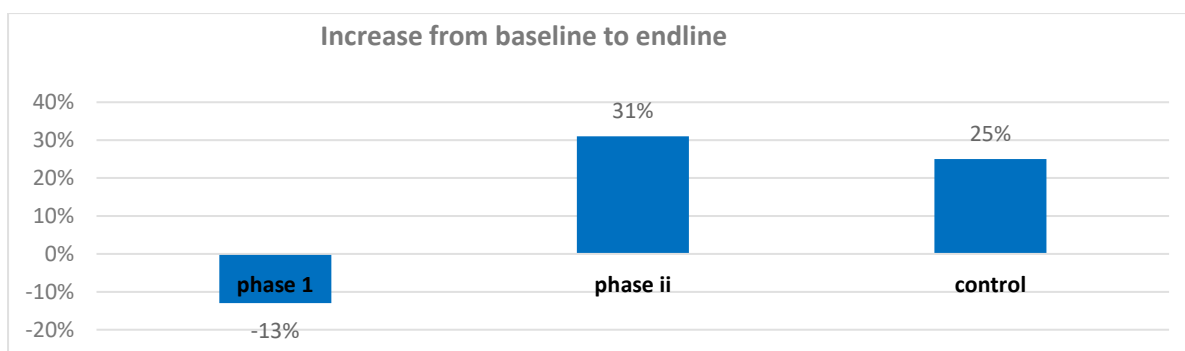
**Increase from baseline and endline**



Parents with children in the F4WASH programme have noticed changes. Figure 15 shows that those in the Phase I and Phase II intervention groups have observed changes between baseline and endline and compared to the control and this result was statistically significant.

**Figure 15: Proportion of parents reporting that they have witnessed any benefits of the F4W program on their children's behaviour**





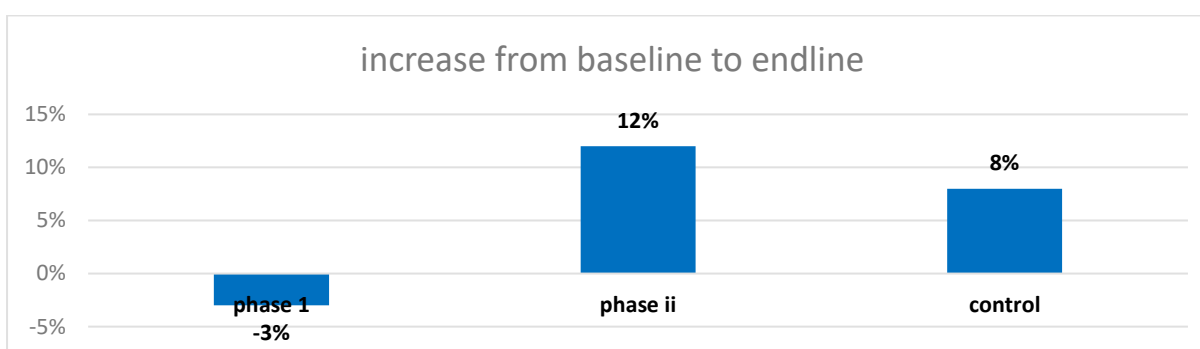
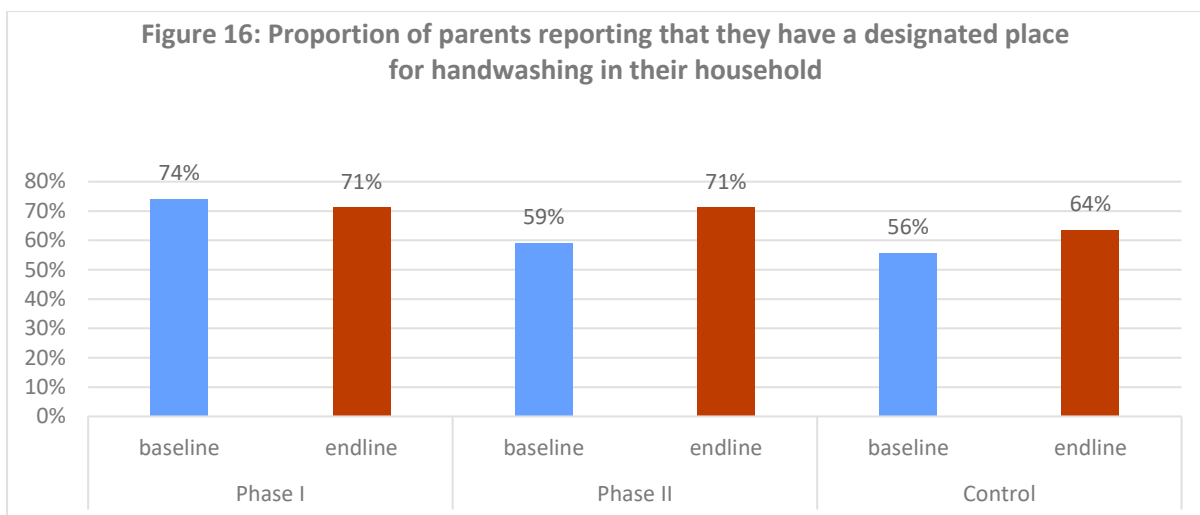
Q13:What did they learn about?

WAVE		Base Total	Categories		
			Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Baseline	Base Total	615	317	177	121
	Safe clean drinking water	45%	50%	36%	45%
	Hand washing	80%	85%	76%	74%
	Proper disposal of waste	10%	12%	5%	12%
	Improved health in the family	18%	21%	17%	14%
	Saving on costs	1%	1%	1%	0%
	Clean homestead	23%	24%	18%	28%
	Others (specify)	7%	6%	10%	6%
	Endline	Base Total	1082	332	648
Endline	Safe clean drinking water	46%	48%	44%	49%
	Hand washing	78%	86%	75%	70%
	Proper disposal of waste	12%	9%	12%	17%
	Improved health in the family	18%	12%	21%	16%
	Saving on costs	%	0%	1%	0%
	Clean homestead	22%	18%	23%	28%
	Others (specify)	11%	8%	13%	11%

## 5.1 Household Knowledge and Facilities

Knowledge of hygiene, sanitation and safe drinking water was very high amongst treatment groups and control and before and after the intervention.

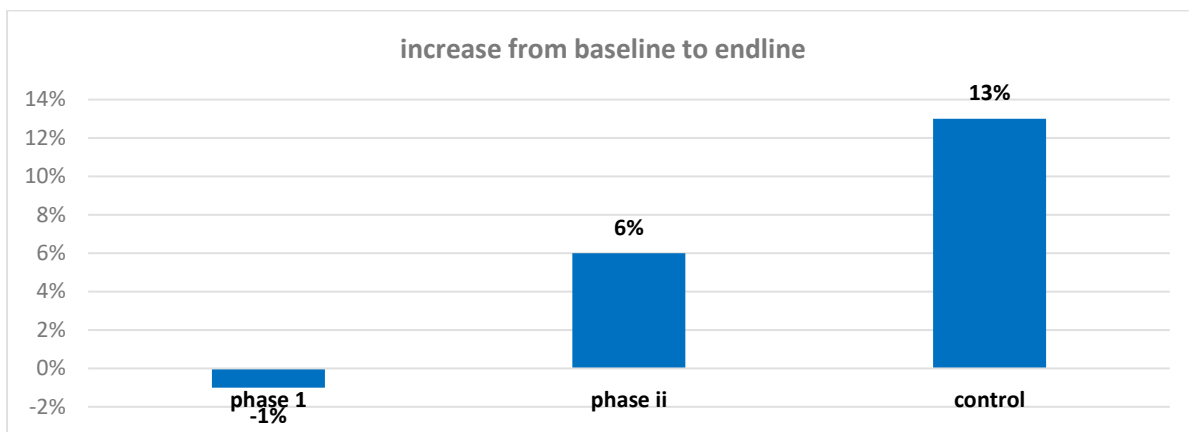
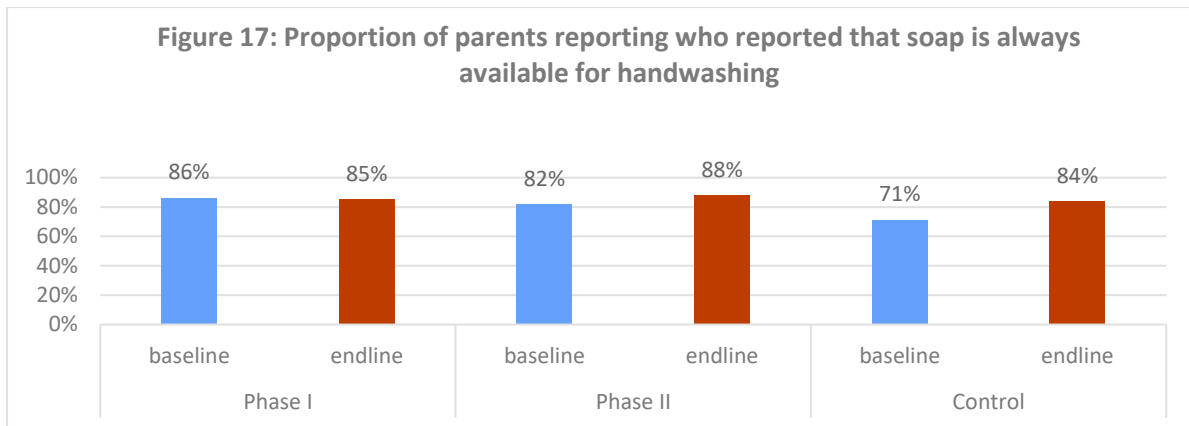
In terms of behavior, there were not big changes in terms of treatment of drinking water and source of drinking water. There were also some changes regarding handwashing (see figure 16 & 17) both in terms of before and after the intervention. The control group was also reported to have improved in handwashing behavior. There has been a considerable increase in the number of households reporting using a tippy tap (see Table 3) from 56% to 65% in the Phase I intervention group and from 44% to 62% in the Phase II intervention group which were also statistically significant. This suggests that participation by children in the F4WASH program means they influence their families to adopt a handwashing station at home.



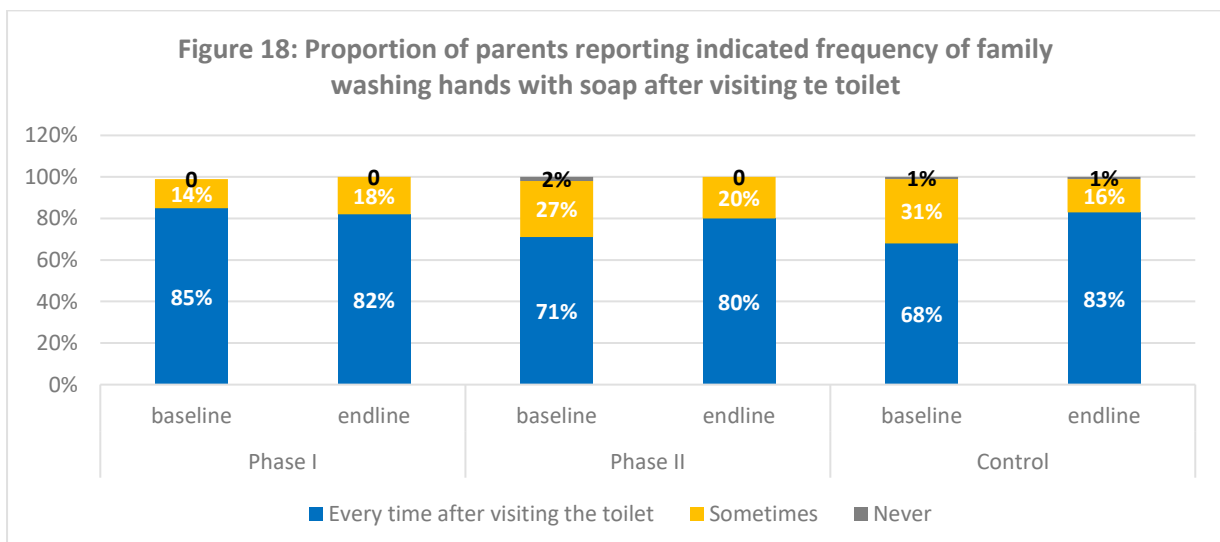
**Table 3: Type of handwashing stations**

WAVE		Base Total	Categories		
			Phase I (Consolidated + non-consolidated together)	Phase II (Full Package + Software together)	Control (only 8 schools)
Baseline	Base Total	941	279	336	326
	Jug	4%	5%	4%	3%
	Basin	27%	23%	29%	28%
	A tippy tap	50%	56%	44%	51%
	Standpipe/piped water tap	5%	4%	4%	6%
	Some other way	15%	11%	19%	12%
Endline	Base Total	1113	325	662	126
	Jug	4%	4%	3%	5%
	Basin	22%	24%	20%	26%
	A tippy tap	62%	65%	62%	58%
	Standpipe/piped water tap	5%	3%	6%	4%
	Some other way	7%	4%	9%	7%

The availability of soap for handwashing has increased between the baseline and endline and this is statistically significant for the phase 2 intervention groups and control group



Consistency in washing hands with soap has increased amongst parents before and after the intervention and compared to the control. There was a 9% increase in the Phase II intervention group. There was a significant increase in the Phase II intervention groups reporting frequency of hand washing as ‘every time’ following visiting the toilet. Similar increases are reported for the rest of the family’s handwashing with soap behavior following defecation.

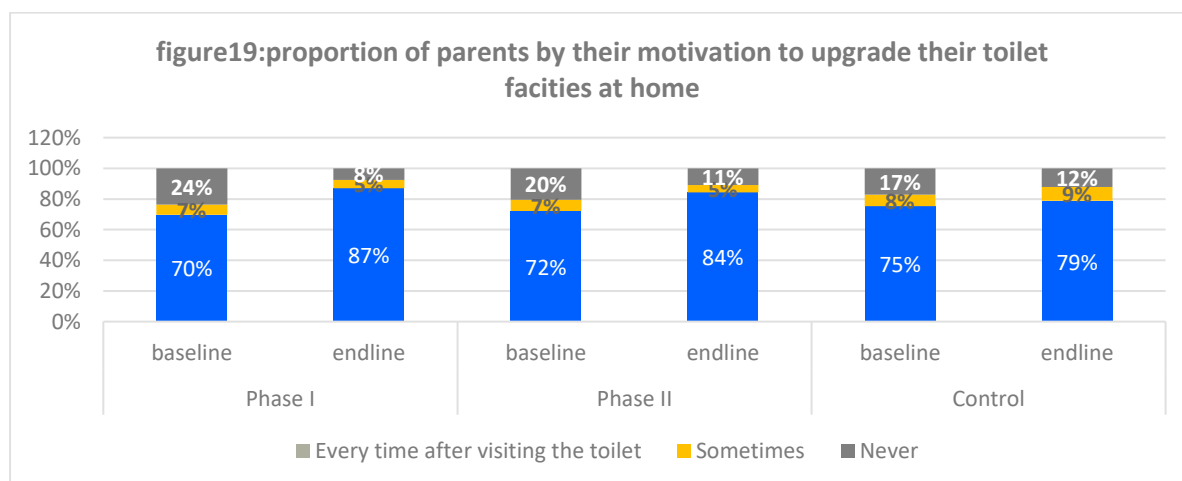


There was a marked improvement in the toilet facilities available within the households amongst the Phase I and Phase II intervention households between baseline and endline. A similar trend was also reported for the control group.

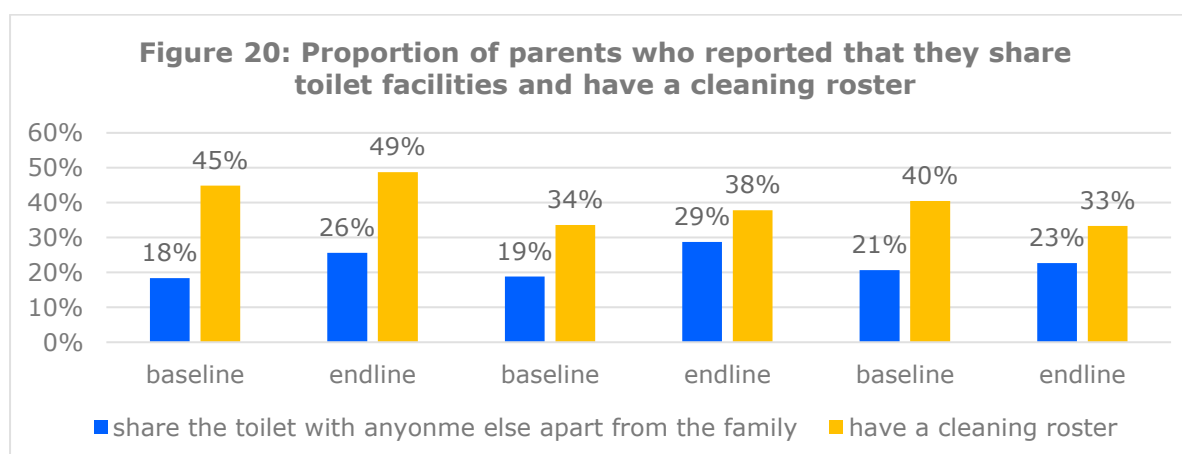
Table 4: Table showing toilet facilities available at home as reported by parents

	Categories					
	Phase I (Consolidated + non-consolidated together)		Phase II (Full Package + Software together)		Control (only 8 schools)	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
Latrine	20%	13%	32%	12%	20%	16%
Pit latrine with slab	36%	38%	27%	41%	33%	33%
Pit latrine without slab	25%	45%	19%	35%	31%	41%
Open pit	1%	0%	5%	0%	2%	3%
Composting toilet	0%	0%	1%	0%	0%	0%
Bucket toilet	0%	0%	0%	0%	0%	0%
Ventilated improved Pit latrine (VIP)	16%	3%	9%	8%	10%	2%
No facility/bush/field	1%	0%	2%	1%	2%	2%
Other (specify)	0%	0%	3%	1%	0%	4%
Flash Toilet	1%	2%	1%	2%	2%	0%

Parents also reported an increased desire to upgrade their toilet facility in the endline and compared to the control group (Figure 19).



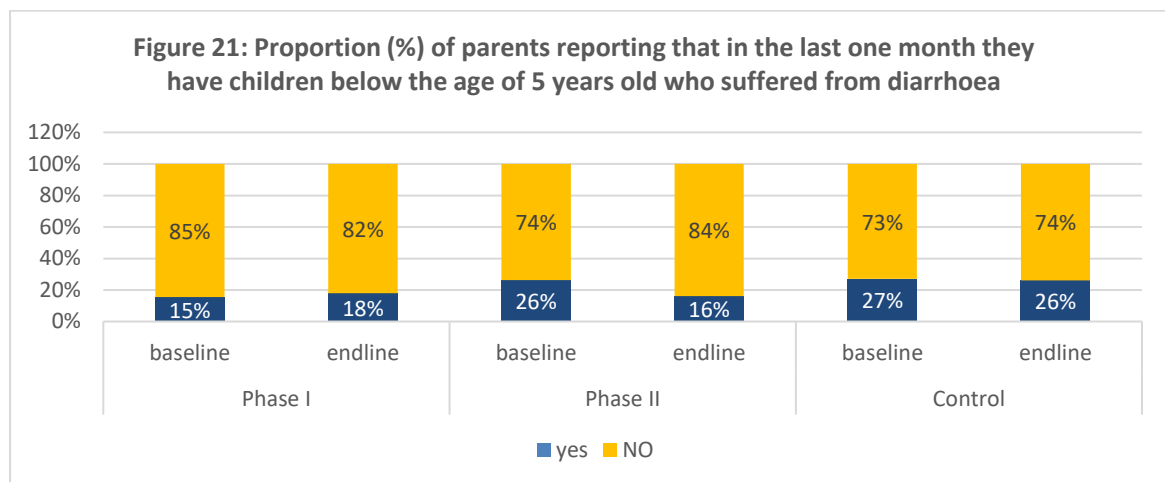
There have been increases in the households who are sharing a latrine and who have now instituted a cleaning roster (see table 3) amongst the Phase I and Phase II intervention groups.



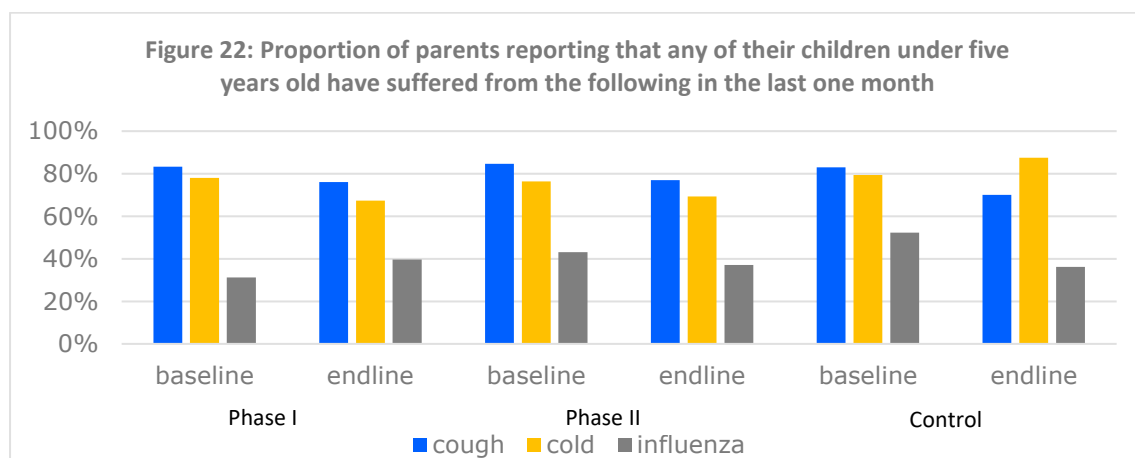
## 5.2 Self-Reported Health Impacts

Approximately 84% of parents in all three groups reported having a child under 5 in the household. This means that the distribution of younger siblings is similar, and the groups are homogeneous in this respect. The study looked at children under 5 to see if there was an effect of children bringing home their knowledge on better WASH practices and influencing their family, and these better practices translating into improved health impacts. In the previous section we observed that households who had children who participated in the intervention had better WASH facilities and knowledge.

Figure 22 shows that fewer children under 5 suffered from diarrhoea in the last 1 month in the endline group as compared to the baseline in the Phase I intervention and Phase II intervention groups. This result was statistically significant for the two intervention groups. This indicates that the intervention has had an impact on health impacts of siblings under 5. There was a minimal increase in the Phase I group.

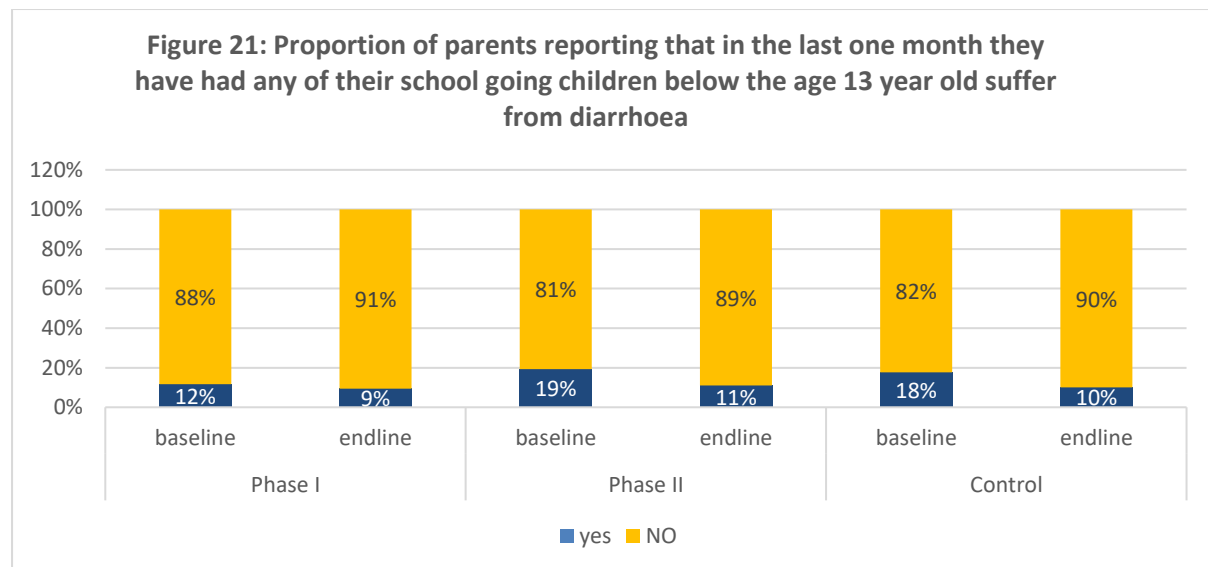


Similarly, there were decreases in reported cough, cold and influenza in the previous month between baseline and end line and compared to the control



The results for the school age children were significant for those with the Phase I and Phase II intervention groups. This suggests that there is an impact on having improved hardware facilities on health outcomes for school aged children.

Similar results were found in school aged children for ARIs. The results – showing a reduction in these diseases - for the Phase II intervention group were all statistically significant.



## 6 SUMMARY

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Overall the proof of concept study has demonstrated that the F4WASH intervention has had positive measurable effects across a range of indicators from use of facilities, behaviour, knowledge and health impacts.

- There are measurable differences in the intervention groups when you compare before and after the intervention took place.
- The Baseline survey measured the sustainability of the phase I implementation and showed that the changes in knowledge and behaviour were maintained over time.
- The intervention has not had any real impact on income generating activities which remain very low.