

# Baseline Survey Report

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## Knowledge, Attitude and Practices of Students Towards WASH and COVID-19 in 2 Primary Schools in Mayuge district.



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## Abstract

**Background:** Despite several national efforts, access to sanitation and hygiene is still a challenge in primary schools in Uganda. Though they act as focal centres for initiating change in communities and are key determinants of children's health and wellbeing, many rural schools in Uganda don't meet the national WASH standards as required by the Ministry of Education and Sports. With support from EU Can Aid!, CCUG initiated a project to promote health and learning through sanitation and hygiene in two primary schools in Mayuge district (Wabulungu and Mugeya Primary School). This baseline survey was conducted to assess the knowledge, attitude and practices of pupils towards sanitation and hygiene and COVID-19 measures in these two primary schools in Mayuge district.

**Methodology:** This was a descriptive cross-sectional design employing quantitative methods of data collection. Two hundred fourteen students and four teachers were included in the study using simple random and purposive sampling methods. Permission, informed consent, and assent were sought before data collection was done. Data was collected through a structured questionnaire based on core indicators for monitoring WASH in schools in the SDG by WHO/UNICEF. Collected data were entered into the Statistical Package for Social Scientists (SPSS Version 22), where it was cleaned and analyzed using descriptive analysis.

**Results:** The majority of students had adequate knowledge about WASH; 89.8% knew ways of preparing water for drinking, 95.3% were aware of the benefits of drinking safe water, 70% knew about poor sanitation and hygiene-related diseases while 65% knew the benefits of proper fecal disposal.

Furthermore, the majority of students (83.2%) had adequate knowledge of COVID-19; 71.9% were aware of its spread, symptoms (85.5%), preventive measures (90.6%), and effects (82.7%). However, most students had poor practices toward COVID-19 prevention and nearly half (47.1%) were worried about contracting it from the schools.

Likewise, though the majority of students had a positive attitude towards WASH, a significant number (45.3%) had poor hygienic practices where more than half were not bathing (54.7%) or brushing (55.6%). In addition, only 22% washed their hands with water and soap before and after eating food, and 45.8% washed their hands with water and soap every time they visited a latrine the week before the survey. Unfortunately, some students (3.7%) used their hands to clean themselves after defecating while others did not clean themselves (1.9%) after defecating at school in the week before the survey.

**Conclusion:** Although the majority of students had good knowledge and attitude towards WASH, many participated in poor hygienic practices that predisposed them to related diseases. Lack of adequate sanitary facilities such as hand washing stations, and not conveniently placing hand washing facilities near school latrines affected student participation in hand washing.

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## List of Abbreviations

CCUg	: Community Concerns Uganda Initiative
COVID-19	: Corona Virus Disease of 2019
MoES	: Ministry of Education and Sports
PHASHe	: Promoting Health and Learning through Sanitation and Hygiene
SD	: Standard Deviation
SPSS	: Statistical Package for Social Scientists
SDGs	: Sustainable Development Goals
UNICEF	: United Nations Children's Fund
UPE	: Universal Primary Education
WASH	: Water, Sanitation and Hygiene
WHO	: World Health Organization



## CHAPTER ONE: INTRODUCTION AND BACKGROUND

Despite several efforts, global access to sanitation and hygiene is still a challenge, especially among developing countries. Although access to improved sanitation worldwide stands at 64%, in sub-Saharan Africa, it is lower, at 41% (WHO, 2014). In East Africa, Uganda has some of the lowest sanitation coverage rates estimated to be at 79%. Sixty-eight percent of Uganda's population does not have access to safe water and open defecation is at 12.6% (Ministry of Water and Environment, 2018).

Primary schools not only act as main focal centers for initiating change in communities related to proper sanitation and hygiene, but they are also key determinants of children's health and well-being through health and unhealthy environments (UNICEF & WHO, 2018). Adequate access to Water, Sanitation, and Hygiene (WASH) is every child's right as stated in the Convention of the Rights of the Child (United Nations, 1989) and as included in Sustainable Development Goals (SDG); 3, 4, and 6.

Despite the above, a report by the Ministry of Water and Environment (2017) showed that the majority of schools in Uganda are not meeting the national WASH standards. For instance, the report by the Ministry of Water and Environment revealed that although access to hand washing facilities in schools increased from 35% in the financial year 2016/17 to 40% in 2017/18, the stance ratio reduced from 71:1 to 73:1 in the same period. In addition, the Ministry of Education and Sports School WASH Mapping indicated that schools have poor WASH facilities, which are poorly maintained, and that there is low participation of the parents in the maintenance of the WASH facilities as well as lack of a decent latrines/toilet and bathrooms at school, which is feared to lead to many girls missing school or dropping out of school (UNICEF & Ministry of Education and Sports, 2018).

In Mayuge district, Eastern Uganda, an assessment of WASH in two primary schools found that poor sanitation and hygiene has become a public health concern, threatening access to education, survival and the lives of thousands of children and teachers. Although the Ministry of Education and Sports recommends a standard pupil-to-latrine stance ratio of 1:45 students, it was found that in one school—Mugeya Primary School, the pupil-to-stance ratio was 0:321, as the school did not have any functioning latrine for its students/teachers. Likewise, the second school, Wabulungu Primary School was 1:196.

Furthermore, of both schools, only 1—Wabulungu had 2 washrooms, and even so, they were also not enough, as the school has more than 850 girls of which approximately 400 have started menstruating. Additionally, only 1 school—Wabulungu Primary School, had hand washing facilities near the latrines. However, due to the high pupil-to-stance ratio (1:196), observations made showed that many students were not washing their hands after latrine use due to long queues. In the face of the COVID-19 pandemic, inadequate hand washing facilities make it very difficult or even impossible to ensure learners participate in hand washing—one of the most effective COVID-19 infection prevention measures. Based on the above, CCUG with support from EU Can

Aid conducted a baseline survey as part of the project to Promote Health and Learning through Sanitation and Hygiene (PHASHe).

## **CHAPTER TWO: STUDY QUESTIONS AND OBJECTIVES**

The section describes the research questions and objectives of the baseline survey.

### **2.1 General Objective**

The main objective of the study was to assess the knowledge, attitude, and practices of students towards sanitation and hygiene and COVID-19 measures in two primary schools in Mayuge district.

### **2.2 Specific Objectives**

1. To assess the knowledge of students about WASH in two primary schools in Mayuge district.
2. To establish the knowledge of students about COVID-19 Infection and Prevention Control measures in two primary schools in Mayuge district.
3. To describe the attitudes of students towards WASH in two primary schools in Mayuge district.
4. To identify the practices of students towards WASH in two primary schools in Mayuge district.

### **2.3 Research Questions**

1. What is the knowledge of students about WASH in two primary schools in Mayuge district?
2. What is the knowledge of students about COVID-19 Infection and Prevention Control measures in two primary schools in Mayuge district?
3. What is the attitude of students about WASH in two primary schools in Mayuge district?
4. What are the practices of students towards WASH in two primary schools in Mayuge district?

## **CHAPTER THREE: METHODOLOGY**

### **3.1 Study Design, Setting, and Population**

The survey used a descriptive cross-sectional study design with both quantitative and qualitative methods of data collection. The setting included two primary schools (Wabulungu and Mugeya) in Mayuge district. Mugeya Primary school is situated in Mugeya Village, Baitambogwe Sub County while Wabulungu is located in Wabulungu Village, Magamaga Town Council. Both schools are government-aided (public) schools implementing the Universal Primary Education (UPE) program.

### 3.2 Sample Size and Sampling Procedure

The study used a sample size table to determine sample size, based on an estimated population of the two primary schools. The estimated population of the targeted students (primary four to primary seven) was 1,000.

**Table 1: Sample Size Table**

Population Size	Required Sample Size <sup>†</sup>							
	Confidence = 95%				Confidence = 99%			
	Margin of Error				Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	<b>278</b>	440	606	906	399	575	727	943
1,200	291	474	674	1067	427	636	827	1119
1,500	306	515	759	1297	460	712	959	1376
2,000	322	563	869	1655	498	808	1141	1785
2,500	333	597	952	1984	524	879	1288	2173

Based on this population, the table indicated a study population of 278 at a 95% confidence interval and margin of error of  $\pm 5$ . However, during the days of data collection, there was a low turn up of students and we were able to collect data from 214 students as detailed below;

**Table 2: Distribution of Sampled Respondents**

S/N	Name of School	Estimated Population	Participants Included	
			Students	Teachers
1.	Wabulungu Primary School	800	147	2
2.	Mugeya Primary School	200	67	2
	<b>Total</b>	<b>1,000</b>	<b>214</b>	<b>4</b>

Table 1 shows that Wabulungu Primary School has a higher sample size as compared to Mugeya Primary School. Wabulungu has a large pupil population of more than 1,800 while Mugeya has an estimated population of 400.<sup>1</sup>

The sampling of students was conducted through a simple random sampling method where research assistants, blindfolded, used a lottery method to randomly select the names of students provided by teachers.

Among teachers, a purposive sampling procedure was used to select four teachers— two from each of the primary schools.

<sup>1</sup> The populations were estimated because of fluctuations in the number of students who turned up during the 2022 school opening and those that the school had before the 2020 school closures.

### **3.3 Data Collection Methods and Tools**

The study used an interviewer-administered questionnaire to collect data from respondents. Most of the questions that were used were adapted from the Core Questions and Indicators for Monitoring WASH in Schools in the SDGs development by (WHO & UNICEF, 2018). The questionnaire was comprised of structured questions and was translated into Lusoga for easy comprehension by students who had limited understanding of the English language. The questionnaire was designed according to the specific objectives and research questions of the study. Furthermore, a questionnaire to assess accessibility to water, sanitation, and hygienic facilities/practices was designed and used to collect data from teachers.

### **3.4 Data Management and Analysis**

After each day of data collection, data was checked for completeness. The project manager had debriefing sessions with researchers to understand the challenges and potential solutions experienced during data collection. Later, the collected data was coded and entered into the Statistical Package for Social Scientists (SPSS version 22), where it was cleaned and analyzed using descriptive statistics.

### **3.5 Ethical Considerations and Limitations**

Through project inception meetings, permission to undertake the survey was sought from district education authorities. At the school level, the organization held inception meetings which culminated in the signing of memorandums of understanding, part of which involved ethical clearance to collect data for both baseline and endline surveys. In addition, informed consent was sought from teachers on behalf of students, and assent was also sought from students before collecting data from them.

## **CHAPTER FOUR: RESULTS**

This section presents the results obtained from analyzed data in relation to the research questions. The baseline survey involved 214 students from two primary schools in Mayuge district. Results are arranged according to knowledge of sanitation and hygiene, knowledge of COVID-19, attitude toward water, sanitation and hygiene (WASH), and practices related to water, sanitation, and hygiene. Additional sections include information on the accessibility of water, sanitation, and hygiene as provided by teachers. This chapter also includes information about the demographic characteristics of respondents.

## 4.1 Demographic Data

This section includes information about the demographic characteristics of both students and teachers.

**Table 3: Demographic Characteristics of Students**

Primary Caregiver of Respondents	Frequency (n=214)	Percentage (%)
9 years	02	0.9
10 years	07	3.3
11 years	25	11.7
12 years	50	23.4
13 years	50	22.4
14 years	48	9.3
15 years	20	3.7
16 years	08	1.7
17 years	04	1.9
<b>Gender</b>		
Male	91	42.5
Female	123	57.5
<b>Class of study</b>		
Primary 4	28	13.1
Primary 5	64	29.9
Primary 6	92	43.0
Primary 7	30	14.0
<b>Individual respondents live with</b>		
Both parents	135	65.0
My mother	31	14.5
My father	02	0.9
My grandmother	18	8.4
My grandfather	05	2.3
Siblings	04	1.9
Others	15	7.0

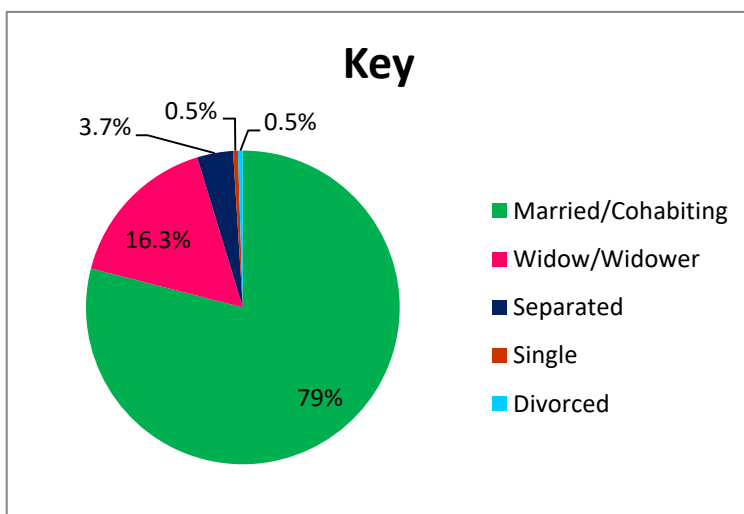
The most common age of respondents (50 or 23.4%) was about 13 years, with an average of 12.9 and a standard deviation of 1.5.

More than half of the respondents (123 or 57.5%) were female while (91 or 42.5%) were male.

Less than half of respondents (43%) were studying in primary six.

The majority of respondents (135 or 65%) were living with both parents while the minority (4 or 1.9%) were living with their siblings.

**Figure 1: Marital Status of primary caretaker (n=214)**



The majority of respondents (169 or 79%) reported that their primary caretakers are married or cohabiting. One respondent (0.5%) said he/she is divorced.

## 4.2 Knowledge of Sanitation and Hygiene

**Table 4: Safe Water and Diseases Due To Poor Sanitation and Hygiene**

Safe water for drinking	Frequency (n=214)	Percentage (%)
Any kind of water	2	0.9
Boiled water	71	33.3
Tap water	16	7.5
Water from a borehole	95	44.4
Water from a spring	28	13.1
Others	2	0.9
Preparation of safe water for drinking		
I don't know	19	8.9
Through boiling	188	87.9
Add water guard	04	1.9
Through sieving	19	8.9
Others	19	8.9
Benefits of drinking safe water		
I don't know	9	4
To prevent diseases	156	73
To prevent germs	85	40
To prevent diarrhea	7	3
To quench thirst	1	0.5

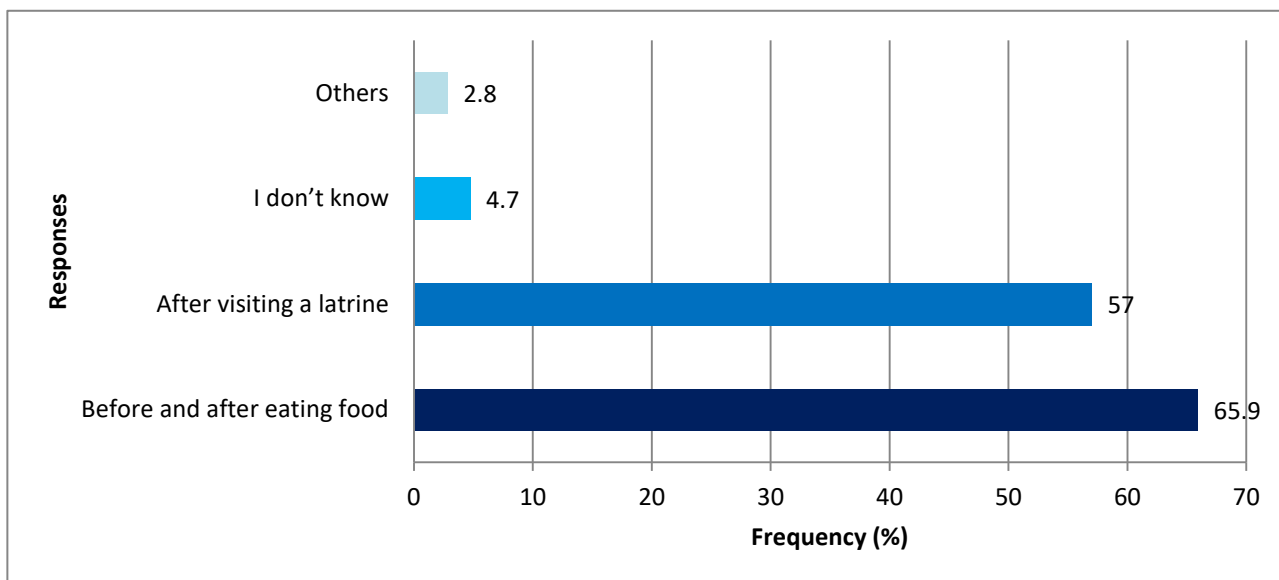
The highest number of respondents (95 or 44.4%) mentioned that safe water for drinking is the one that is drawn from a borehole.

When asked about how to make water safe for drinking, the majority of respondents (188 or 87.9%) mentioned boiling.

### *Respondents mentioned multiple answers*

Just under three-quarters of respondents (156 or 73%) mentioned that drinking safe water helps to prevent diseases while 1 (0.5%) stated that it quenches thirst.

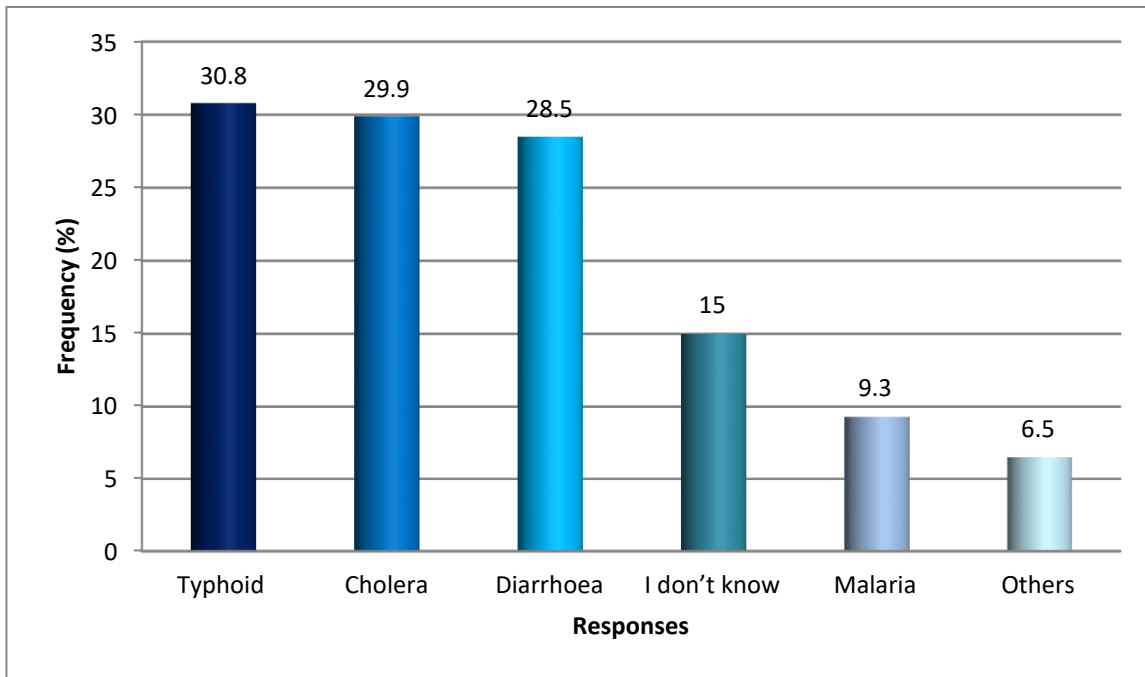
**Figure 2: Respondents' knowledge of when to wash hands (n=214)**



### *Respondents mentioned multiple answers*

The majority of respondents (141 or 65.9%) mentioned before and after eating food, and after visiting a latrine (122 or 57%). Ten respondents (4.7%) did not know how to answer the question.

**Figure 3: Responses on poor sanitation and hygiene-related diseases (n=214)**



*Respondents mentioned multiple answers*

When respondents were asked about diseases associated with poor sanitation and hygiene, less than a third (66 or 30.8%) mentioned typhoid or cholera (64 or 29.9%).

**Table 5: Fecal Disposal, And Health Education on Sanitation and Hygiene**

Importance of proper faecal disposal	Frequency (n=214)	Percentage (%)
I don't know	60	28.0
Reduces the spread of excretion-related diseases	139	65.0
Reduces pollution	06	2.8
Others	09	4.2
<b>Whether respondents received health education on WASH in the past month</b>		
Yes	115	53.7
No	99	46.3
<b>Topics covered during health education (n=115)</b>		
Water quality and proper usage	9	7.8
Bodily cleanliness	78	67.8
Hygiene related to latrine use and maintenance	10	8.7
Safe water storage and usage	02	1.7
Others	16	13.9
<b>Whether respondents would like to know more about sanitation and hygiene</b>		
Yes	141	65.8
No	73	34.2
<b>Topic that respondents would like to know about (N=141)</b>		
Water preparation, usage and storage	58	41.1
Proper hand washing	26	18.4
Latrine usage and maintenance	03	2.1
Menstrual health and hygiene	48	34.0
Others	26	18.4

*Respondents mentioned multiple topics that they wanted to learn about*

More than half of study participants (139 or 65%) mentioned that proper fecal disposal reduces the spread of excretion-related diseases while the minority (6 or 2.8%) said it reduces pollution.

When asked whether respondents had received health education on WASH in the past month, slightly over half (53.7%) agreed. The majority of respondents (95 or 83.3%) mentioned that they were taught by their teachers. Most students (67.8%) reported that they were taught about bodily cleanliness.

Nearly two-thirds of respondents (141 or 65.8%) were interested in knowing more about sanitation and hygiene. Of these, 58 (or 41.1%) desired to learn more about water preparation, usage, and storage.

### 4.3 Knowledge of COVID-19

**Table 6: Respondents' Knowledge of COVID-19**

Responses on COVID-19 spread	Frequency (n=214)	Percentage (%)
I don't know	40	18.7
Through the air	86	40.2
Touching contaminated fluids	17	7.9
Through body contact with an infected person	51	23.8
Others	20	9.3
<b>Responses on COVID-19 symptoms</b>		
I don't know	20	9.3
Fever	75	35.0
Cough	153	71.5
Breathing difficulties	34	15.9
Loss of sense of smell	9	4.2
Others	11	5.1
<b>Responses on prevention of COVID-19</b>		
I don't know	20	9.3
Wearing a face mask	161	75.2
Regularly washing hands with water and soap/use of sanitizer	105	49.1
Vaccination	33	15.4
Social distancing	32	15.0
<b>Effects of COVID-19</b>		
I don't know	37	17.3
Social stigma	34	15.9
Organ damage	04	1.9
Inability to attend school	11	5.1
Economic costs related to treatment	02	0.9
Death	122	57.0
<b>Source of information on COVID-19</b>		
Over the radio	150	70.1
Through parents	08	3.7
Friends	17	7.9
Teachers during lessons	39	16.8
Others	3	1.4

Most study participants (86 or 40.2%) indicated that COVID-19 spreads through the air while 17 (or 7.9%) said it spreads through touching contaminated fluids.

Regarding symptoms of COVID-19, the majority of respondents (153 or 71.5%) stated cough while 9 (4.2%) mentioned the loss of sense of smell.

As to their knowledge of prevention of COVID-19, nearly half of the respondents 105 (49.1%) mentioned regular washing of hands with water and soap/ use of sanitizer.

As regards respondents' knowledge of the dangers of COVID-19, more than half of students (122 or 57%) indicated death while 4 (or 1.9%) said organ damage.

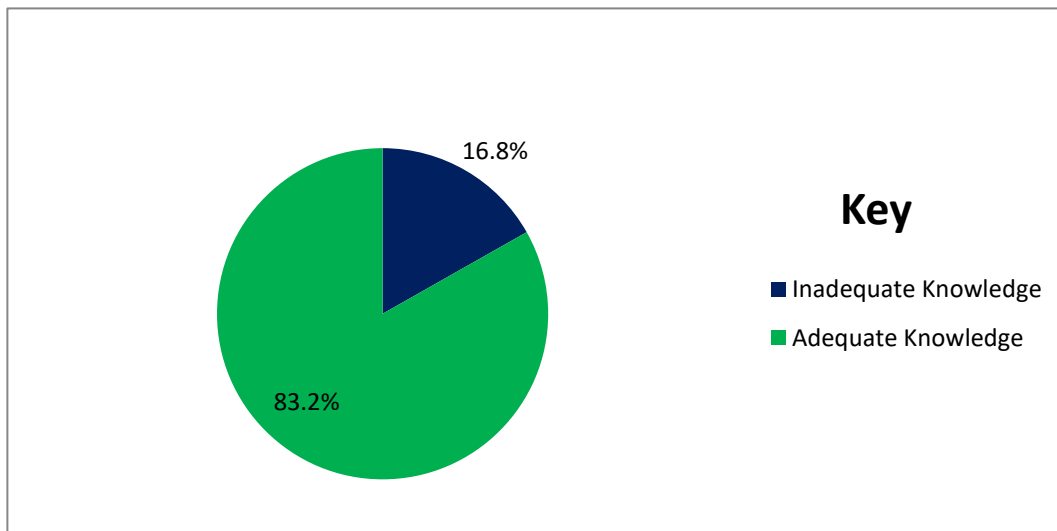
On the source of information on COVID-19, the majority of students (150 or 70.1%) said they heard about it over the radio; only 8 (3.7%) got the information from their parents.

When asked whether they would like to access more information about COVID-19, an overwhelming majority of respondents (200 or 93.5%) said they were interested.

### 4.3.1 Rating of Knowledge on COVID-19

Four questions with 0-2 point scales were computed to give totals ranging from 0-8, 0 being the lowest and 8 being the highest. The questions assessed the knowledge of students about COVID-19 (spread, symptoms, prevention, and effects). The total scores were divided to reveal the knowledge of students about COVID-19. Students who answered at least three questions and had a score equal to 6 or more were considered to have good knowledge. The mean score was 6.6 with a standard deviation of 1.6.

**Figure 4: COVID-19 Knowledge Rating (n=214)**



Eight out of every ten respondents (178 or 83.2%) had adequate knowledge of COVID-19, however 36 students (16.8%) had inadequate knowledge.

### 4.4 Attitude towards WASH

**Table 7: Respondents’ Attitude towards WASH**

	Statements	Responses				
		Strongly Agree	Agree	Not Sure	Disagree	Strongly Agree
1	I believe it is important for students to always wash their hands after visiting a latrine/toilet.	62.6%	12.1%	15.4%	9.8%	-
2	I feel it is vital that students always wash their hands before eating food.	52.3%	17.3%	19.2%	11.2%	-
3	I think it is essential that students always wash their hands after eating food.	60.7%	17.8%	15.4%	6.1%	-
4	I believe it is my responsibility to ensure proper sanitation and hygiene in this school.	56.5%	8.9%	14%	17.8%	2.8%
5	I believe washing hands with water and soap is effective in preventing diseases.	58.4%	18.7%	15%	7.9%	-
6	I feel my parents should be engaged to actively participate in monitoring WASH in my school.	44.8%	16.8%	17.8%	18.7%	1.9%
7	I expect to be actively involved in maintaining proper sanitation and hygiene in my school.	34.1%	23.4%	6.5%	28%	7.9%

Nearly three-quarters of respondents (160 or 74.8%) believed that it is important for students to always wash their hands after visiting a latrine/toilet.

Almost 7 out of every 10 respondents (149 or 69.6%) felt it is vital that students always wash their hands before eating food.

More than three-quarters of study participants (168 or 78.5%) thought that it is essential that students always wash their hands after eating food.

When asked whether they believed it is their responsibility to ensure proper sanitation and hygiene in their schools, the majority of students (140 or 65.4%) agreed.

The highest number of respondents (165 or 77.1%) agreed when asked whether they believed washing hands with water and soap is effective in preventing diseases.

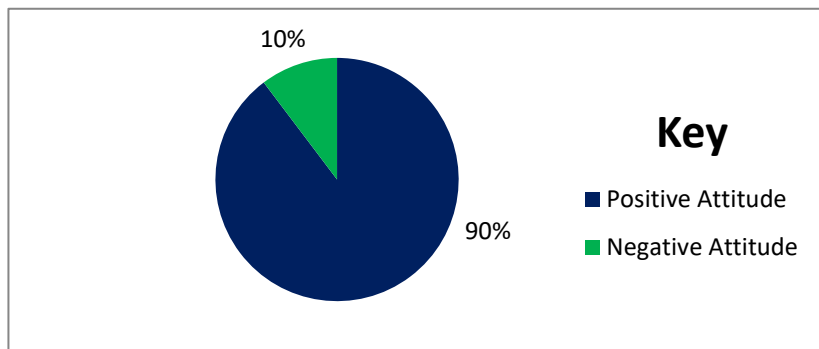
When asked whether they felt their parents should be engaged to actively participate in monitoring WASH in their schools, more than half (132 or 61.7%) agreed. However, 20.6% (or 44) disagreed because they felt their parents would not agree to come to school often (54.5% or 24) or said their parents were not actively involved in their education (44.5% or 20).

More than half of respondents (123 or 57.5%) indicated that they expect to be actively involved in maintaining proper sanitation and hygiene in their schools.

#### 4.4.1 Rating of the Attitude of Students towards WASH

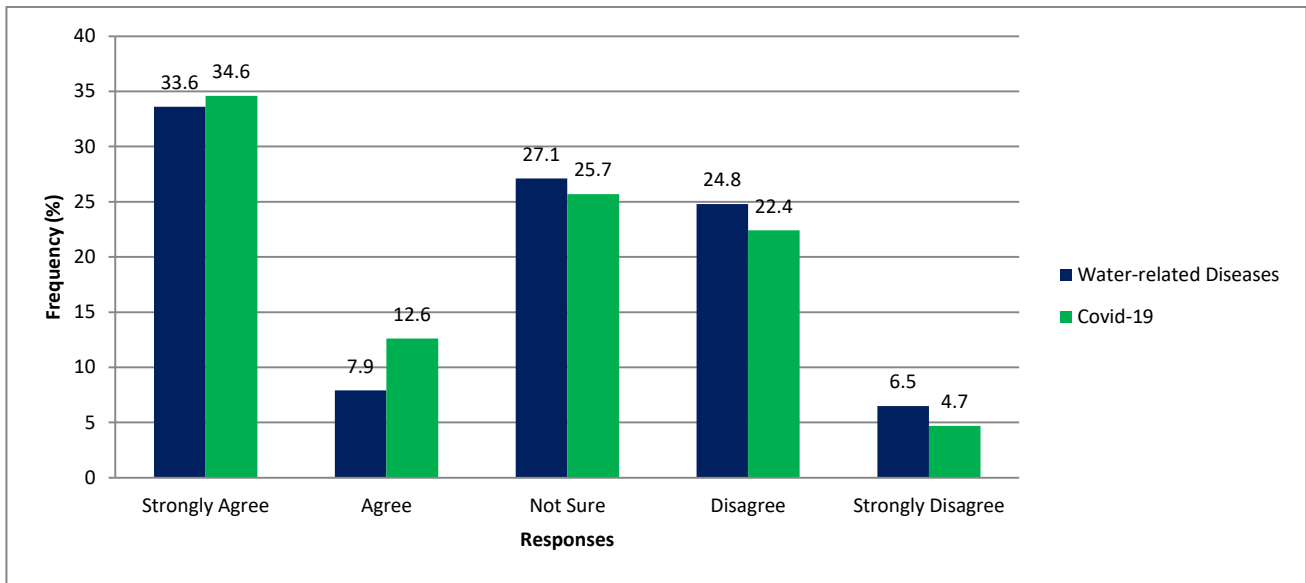
Seven (7) questions with 1-5 point scales were computed to give totals ranging from 7-35, 7 being the lowest and 35 being the highest. The questions assessed the perception of students towards participating in WASH facilities and their belief in the effectiveness of selected WASH activities. The total scores were divided to reveal the attitude of students towards WASH. These include included Negative Attitude (19-35), Positive attitude (7-18).

**Figure 5: Rating for Attitude of Students Towards WASH (n=214).**



An overwhelming majority of respondents (90%) expressed a positive attitude towards WASH while the minority (10%) had a poor attitude.

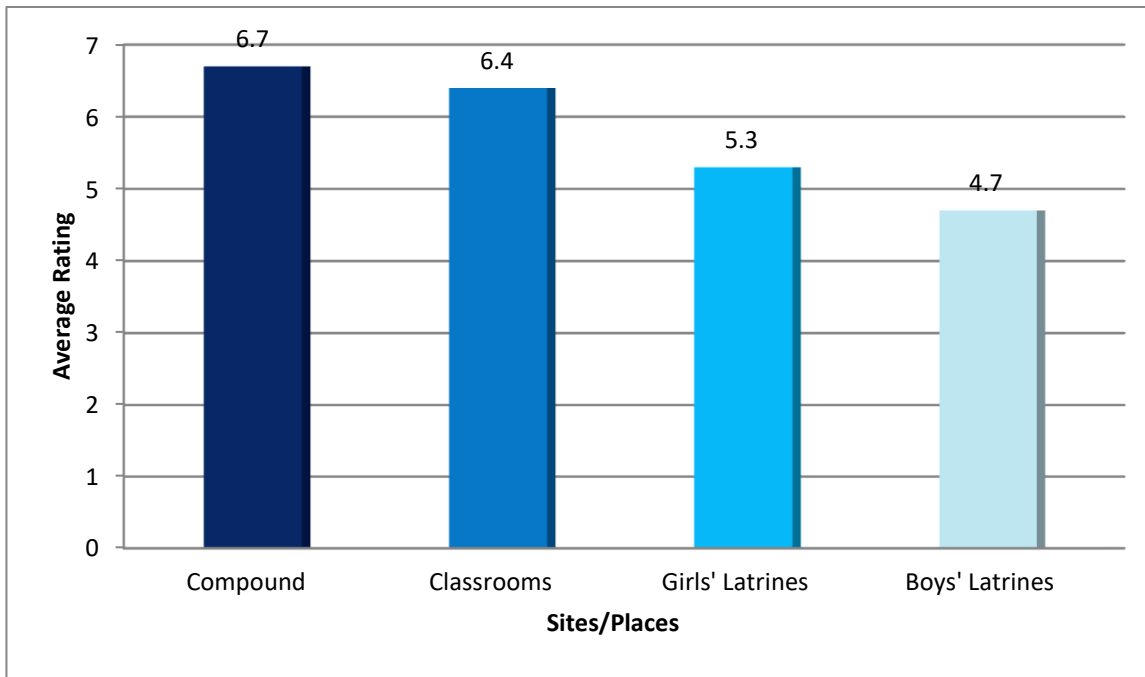
**Figure 6: Responses on Perceived Risk to Water-Related Diseases and COVID-19 (n=214)**



Most respondents (101 or 47.1%) indicated that they are at a higher risk of contracting COVID-19 from their schools. When asked why they perceived themselves to be at a higher risk of contracting COVID-19 from their schools, respondents mentioned that many students don't put on masks, wash hands regularly or observe social distancing within their classrooms.

In addition, 4 out of every 10 students (89 or 41.6%) said they have a high risk of contracting water-related diseases because they drink unsafe water at school, and are unable to wash hands regularly after visiting a latrine and before eating food.

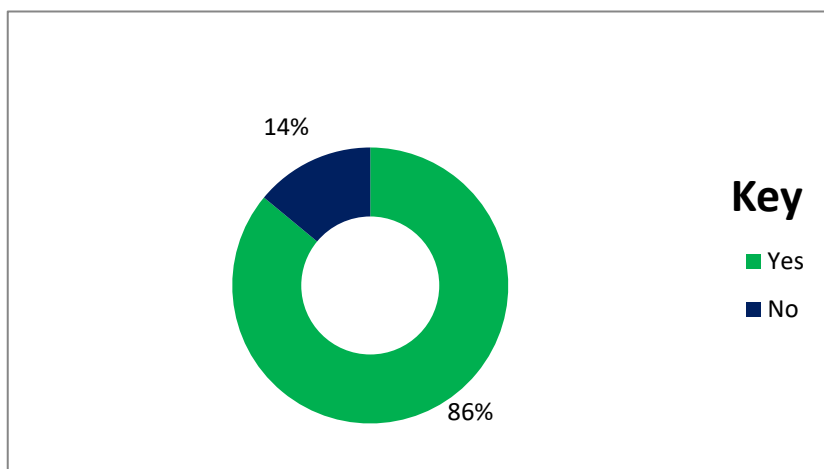
**Figure 7: Rating of General Cleanliness of Classrooms, Compound, and Latrines (n=214)**



On a scale of 1-10, 1 being the lowest and 10 being the highest, respondents were asked to rate the general cleanliness of their school compound, classrooms, girls' latrines, and boys' latrines. The minimum scores for the compound and classrooms were 1 and the maximum was 10 while the minimum scores for the girls' and boys' latrines were 1 and the maximum was 9.

The highest average rating by students was the compound with an average score of 6.7 and a standard deviation (SD) of 2.1, followed by classrooms with a score of 6.4 and a SD of 2.1, girls' latrines with 5.4 with a SD of 1.9 and boys' latrines with an average score of 4.8 and a SD of 1.9.

**Figure 8: Respondents' Interest In Acquiring Soap Making Skills (N=214).**



An overwhelming majority of respondents (184 or 86%) mentioned that they were interested in learning soap making while the minority (30 or 14%) were not interested.

## 4.5 WASH-related Practices among Students

**Table 8: Frequency of Students Engaging in WASH Activities**

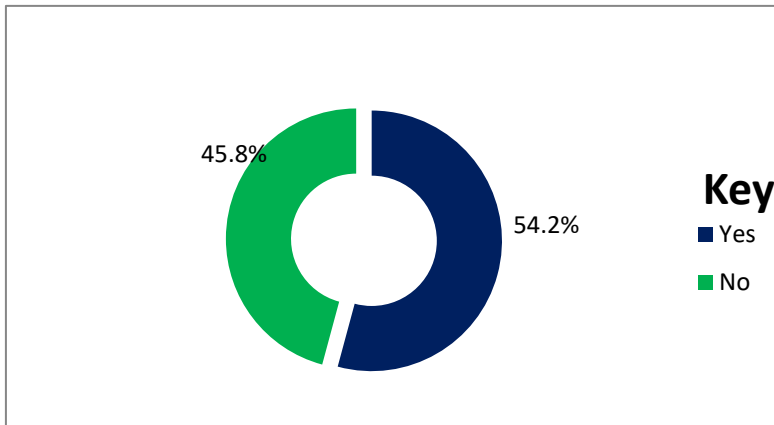
	Activities	Responses				
		Every day (7 days)	Often (5-6 days)	Sometimes (3-4 days)	Rarely (1-2 days)	None at all (0)
1	Bathing	45.3	24.8	22.9	7	-
2	Brushing	44.4	8.4	23.8	13.6	9.8
	Frequency of students...	Every time	Most times	Sometimes	None at all	
4.	Hand washing with water and soap before and after eating food in the past week.	22.0	15.9	22.4	39.7	
5.	Hand washing with water only after eating food in the past week	45.3	32.2	12.6	9.8	
6.	Hand washing with water only before eating food in the past week.	32.7	51.9	6.5	8.9	
7.	Hand washing with water and soap after visiting a latrine/toilet in the past week	45.8	22.9	21.0	10.3	

Table 6 above shows that the highest number of respondents (45.3% of 85) indicated that they had a bath each day of the week before the survey. Less than half (95 or 44.4%) stated that they brushed their teeth every day in the week before the survey while 21 (9.8%) said they never brushed their teeth at all in the week before the survey.

When asked about the frequency of hand washing with water and soap before and after eating food in the past week, most respondents (85 or 46.3%) indicated none at all. The majority of respondents (45.3% or 97) stated that they washed their hands with water only after eating food in the past week, while just over half (111 or 51.9%) said they washed their hands most times days of the week.

Furthermore, less than half of respondents (98 or 45.8%) mentioned that they washed their hands with water and soap every time they visited the latrine while (22 or 10.3%) stated that they never washed their hands with water and soap after visiting the latrine in the week before the survey.

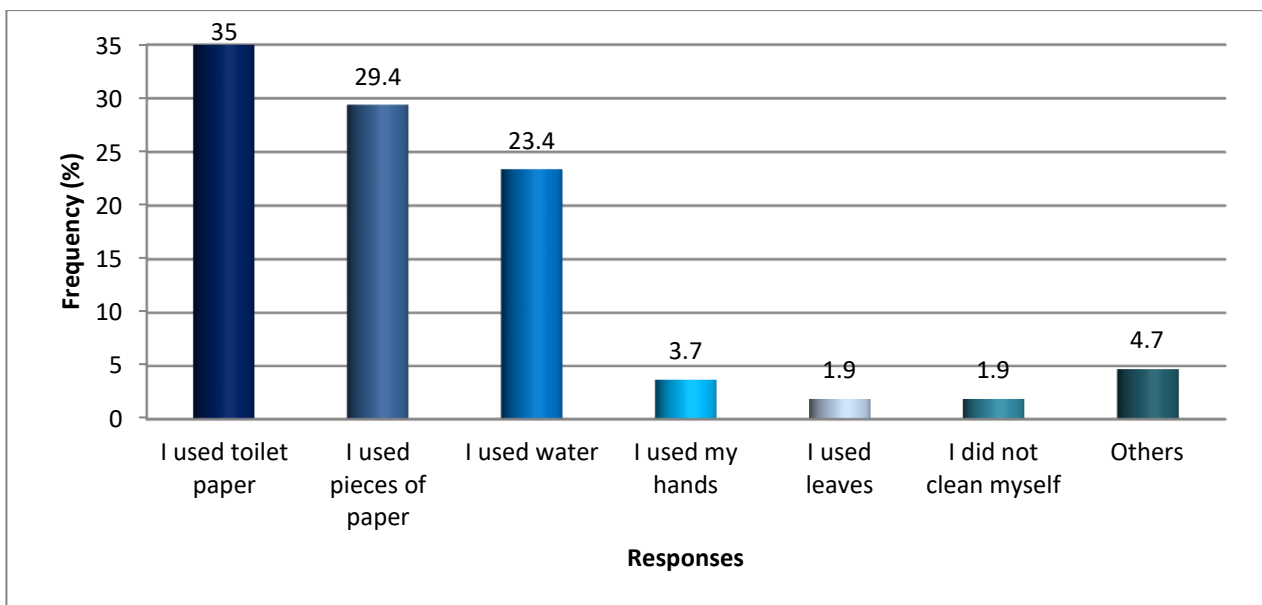
**Figure 9: Availability of Hand Washing Stations Near Latrines (n=214)**



More than half of study participants (116 or 54.2%) indicated that they have hand washing stations near their latrine although many (98 or 45.8%) disagreed.

Of those who indicated that they have hand washing stations near the latrines, 78 (67.2%) stated that the stations have running water and soap; about one-third of respondents (38 or 32.8%) disagreed.

**Figure 10: Materials Used in Anal Cleansing after Defecation at School (n=214)**

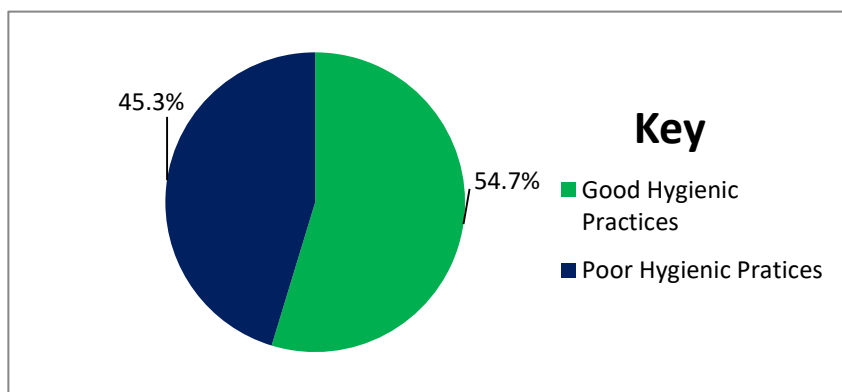


More than a third of respondents (75 or 35%) reported that they used toilet paper the last time they defecated at school in the past month while (4 or 1.9%) did not clean themselves.

#### **4.5.1 Rating of WASH-related Practices among Students**

Five questions with 1-5 point scales were computed to give totals ranging from 5-23, 5 being the lowest and 23 being the highest. The questions assessed the engagement of students towards WASH. The total scores were divided to reveal ratings of WASH-related practices. The questions included engaging in bathing, brushing, hand washing before and after eating, hand washing after visiting a latrine, and material used during anal cleansing a week before the survey. Lower scores depicted good hygienic practices while higher scores depicted poor hygienic practices. Scores for good hygienic practices ranged from 5-13 and 14-23 depicted poor hygienic practices.

**Figure 11: Rating of Respondents about WASH Practices (n=214)**



More than half of the study participants (117 or 54.7%) had good hygienic practices; however, just under half of them did not (97 or 45.3%).

#### 4.6 Sanitary Facilities in the Schools Before the Project

Additional information was collected from teachers (on the school sanitation committees) and school administrators. Altogether, 2 teachers and 2 school administrators provided data on school Water, Sanitation, and Hygiene.

**Table 9: Water and Sanitation Facilities/Activities in the Two Primary Schools**

Water	Wabulungu		Mugeya	
The main source of drinking water provided by the school	Piped water supply		Unprotected well	
			Borehole	
Whether water was available at the main source(s) each day in the 2 weeks before the survey	No		No	
Number of drinking water points in the school	0		0	
Preparation of safe drinking water for students at school	Chlorination		Nothing	
Sanitation	Wabulungu		Mugeya	
Number of latrines with lids (pit covers) in the schools	Boys	0	Boys	0
	Girls	0	Girls	0
Number of latrines	Boys	01	Boys	01
	Girls	01	Girls	01
Number of stances	Boys	05	Boys	01
	Girls	05	Girls	01
Pupil-to-stance ratio	Boys	174.2	Boys	194
	Girls	204.8	Girls	160
Water stations nearby the latrines to facilitate hand washing after latrine use among students	Boys	0	Boys	0
	Girls	0	Girls	0
Hygiene	Wabulungu		Mugeya	
Number of functional hand washing points in the school	05		01	
Location of hand washing points	Near the classrooms		Near the classrooms	
Number of times per week that group hand washing activities are conducted	2-4 times per week		None	
Disposal of solid waste from the school	Burned on school premises		Burned on school premises	
Average rating of the general cleanliness of...				
Classrooms	6		5	
Compound	6		3	
Girls' Latrine	5		2.5	
Boys' latrine	5		2	

Information obtained from teachers and school administrators showed that Wabulungu Primary School's main source of drinking water is piped water while Mugeya Primary Schools accesses water from an unprotected well and borehole. Neither school was providing drinking water for their students at the time of data collection and none had a drinking water point. However, participants from Wabulungu indicated that they use chlorination to prepare safe drinking water for students while in Mugeya, nothing is done to improve the safety of the water for students to drink.

Regarding sanitation, both schools did not have lids on any of their latrine stances. In addition, both Wabulungu and Mugeya had one latrine for boys and one for girls respectively. On the number of stances, Wabulungu had five stances for both girls and boys, while Mugeya had one stance for boys and one stance for girls. With a pupil population of 1,895 (871 boys and 1,024 girls), Wabulungu had a pupil-to-stance ratio of 174.2 for boys and 204.8 for girls. On the other hand, Mugeya had a pupil population of 354 (160 girls and 194 boys), and a pupil-to-stance-ratio of 194 for boys and 160 for girls. Neither school had washing stations near latrines to facilitate hand washing among students after latrine use.<sup>2</sup>

Regarding hygiene, teachers from Wabulungu Primary School mentioned that they had five functional hand washing points located near the classrooms while Mugeya Primary School had only one. Wabulungu held 2-4 group hand washing activities per week while Mugeya did not hold any. Both schools burn their solid waste on the school premises. When asked to rate the general cleanliness of different facilities within their schools, teachers from Wabulungu had an average rating of 6 for classrooms, 6 for the school compound, and 5 for the girls' and boys' latrines respectively. Teachers from Mugeya had an average rating of 5 for classrooms, 3 for their school compound, 2.5 for the girls' latrine, and 2 for the boys' latrine.

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<sup>2</sup> Mugeya was using latrines for a Mosque neighbouring the school.

## **CHAPTER FIVE: DISCUSSION, CONCLUSION, AND RECOMMENDATIONS**

This study sought to assess the knowledge, attitude, and practices of students towards sanitation and hygiene and COVID-19 measures in two primary schools in Mayuge district. Results show that although the majority of students in both schools have adequate knowledge of WASH and a positive attitude, a significant number engage in poor practices that put their lives at risk of contracting sanitation-related diseases.

This section discusses study results organized according to the research questions/objectives in line with the related literature review. This chapter also provides a summary of the results and recommendations.

### **5.1 Discussion**

#### **5.1.1 WASH-related Knowledge of Students**

The majority of students had adequate knowledge of WASH. Nearly nine out of every ten respondents (89.8%) were aware of ways of preparing safe water for drinking, 95.3% knew the benefits of drinking safe water, 92.5% knew about the appropriate time to wash hands, 70% were aware of poor sanitation and hygiene-related diseases while 65% knew the benefits of proper fecal disposal. This could be attributed to prior health education conducted by teachers in respective schools. At least 6 teachers were trained in 2021 on the integration of WASH into learning and promoting life skills-based education to learners related to WASH. To that effect, over half of respondents (53.7%) mentioned that they received health education on WASH in the month before data collection (water quality and proper usage, bodily cleanliness including hand washing, hygiene-related to latrine use and maintenance, safe water storage, and usage). High knowledge levels among students could therefore be linked to recent health education by teachers.

#### **5.1.2 Knowledge and Practices of Students about COVID-19**

The majority of students (83.2%) had adequate knowledge of COVID-19. Most were aware of its spread (71.9%), symptoms [cough, fever, and breathing difficulties] (85.5%), preventive measures [wearing a face mask, regular hand washing with water and soap/use of sanitizer, vaccination, and social distancing] (90.6%), and effects [social stigma, organ damage, inability to attend school, and death] (82.7%). The main sources of information on COVID-19 were the radio (70.1%) and teachers during lessons (16.8%). The results are in line with a cross-sectional study carried out in Ethiopia which showed that 81.8% of the students were knowledgeable about COVID-19 (Yesuf & Abdu, 2022). The result of this study is higher compared to a study conducted in China in which 70.1% of respondents were knowledgeable about COVID-19 (Xue et al., 2021). This could be attributed to differences in the period the studies were conducted, the category of questions used, and the sample size.

Despite having high knowledge levels, most students had poor practices toward COVID-19 prevention. Because of this, nearly half (47.1%) were worried about contracting COVID-19 from their schools because many students were not wearing masks, washing hands regularly, and observing social distancing within their classrooms. During data collection, research assistants observed that many respondents were not wearing

face masks. Additionally, teachers also complained about the inability to enforce social distancing in classrooms due to large class sizes. In Wabulungu Primary school, for example, the classes are 2-3 times the recommended class sizes due to the Universal Primary Education (UPE) policy of automatic enrollment of students without assessing the available school structures. Due to limited school structures, it is nearly impossible to avoid crowding among students contrary to the Ministry of Education and Sports (MoES) COVID-19 guidelines for operating education institutions (Ministry of Education and Sports, 2020). Poor practices toward COVID-19 could be attributed to inadequate masks among students, limited hand washing stations, and large class sizes which made it impossible to observe social distancing. The results of this study are similar to a study conducted by Yesuf and Abdu (2022) among students in Ethiopia which found that only 47% had good practices for COVID-19 prevention.

### **5.1.3 Attitude of Students Towards WASH**

Study results showed that an overwhelming majority of students (90%) had a positive attitude towards WASH. Seven out of every ten respondents believed it is important for students to always wash their hands after visiting a latrine toilet, 69.6% mentioned that it is important for students to always wash their hands before eating food. In addition, 65.4% believed that it is their responsibility to ensure proper sanitation and hygiene in their schools, 77.1% believed in the effectiveness of washing hands with water and soap in preventing diseases while 61.7% felt that their parents should be engaged and actively participate in monitoring WASH in their schools. Previous research has shown that increased knowledge levels are associated with a positive attitude toward WASH among students. However, the study contradicts results obtained by Munthir et al. (2021) in their study in Saudi Arabia which found that only 46% thought that hand washing prevents diseases while 69% did not believe that hand washing could remove germs.

### **5.1.4 WASH-related Practices of Students**

Although more than half of students (54.7%) engaged in good hygienic practices, a significant number (45.3%) did not. More than half of respondents were not bathing (54.7%) or brushing (55.6%) daily. In addition, only 22% washed their hands with water and soap before and after eating food in the week before the survey.

Nearly 4 out of every 10 respondents (39.7%) reported that they did not wash their hands with water and soap at all before and after eating food in the past week, 45.3% washed their hands with water only after eating food while 32.7% washed their hands with water only before eating food in the past week. This could indicate that students believe hand washing after eating food is more important than before eating food. Even though most students had good knowledge of hand washing, it is likely that many did not critically think about practicing hand washing before eating. Due to hunger and the desire to eat, children without critically thinking, are most likely to rush to eat food without washing hands and after remembering to wash them. This is most probably true if they have poor role modeling from their parents and other adults in their households. Studies by Valeria et al. (2009) and Byamukama (2019) have shown that adults Ugandans have

poor hand washing practices before eating food which might negatively influence children to think hand washing after food is more important. It could also be related to beliefs associated with eating certain foods with the assumption that hand washing before and after eating food is “not universally practiced” and depends on the category of food to be eaten. There is an assumption that oily foods such as fish and chicken might need one to wash their hands after eating than other non-oily foods (Valeria et al., 2007).

In addition, less than half (45.8%) washed their hands with water and soap every time they visited a latrine the week before the survey while 10.3% did not wash their hands at all. Furthermore, a worrying number of respondents (3.7%) reported using their hands to clean themselves after defecating, 1.9% did not clean themselves, and another 1.9% used leaves. Evidence shows that parents play an important role in influencing their children’s hygienic behaviour including hand washing after visiting a latrine (Song et al., 2016). However, several reports have mentioned that between 48 to 73% of adult Ugandans don’t wash their hands after visiting a latrine (Byamukama 2019; Taremwa 2018), implying that the respondents’ poor hand washing practices after visiting the latrine might be linked to their parents’ inability to do the same.

Although there could be a number of other plausible reasons for the above results, studies indicate that financial difficulties to buy toothbrushes and paste, inadequate hand washing facilities, and limited anal cleansing materials are the probable reasons for the poor WASH-related practices among students (Shannon et al., 2011; Vivas et al., 2010; Owsald et al., 2008). These results contradict findings obtained by Chowdhury et al. (2018) in Bangladesh which showed that almost all respondents (99.5%) washed their hands properly with soap after defecation, and 91.6% cleaned their hands with soap before and after eating.

The present study also found out that both schools had inadequate hand washing facilities. For instance, neither school had hand washing stations near the latrines, although there were some stations near their classrooms. This might have negatively impacted hand washing among students after visiting the latrine. However, a study by Ssekamatte et al. (2022) in 5 divisions in Kampala among school-going adolescent boys showed that even though 98% had access to hand washing facilities, only 62.5% always washed hands after using a latrine implying that hand washing practice after visiting a latrine might not only be facilitated by the availability of sanitary facilities.

In addition, 4 out of every 10 students believed they were at a higher risk of contracting water-related diseases because they drink unsafe water at school, and are unable to wash hands regularly after visiting a latrine and before eating food. Although teachers from Wabulungu indicated that they use chlorination to prepare drinking water for students, both schools had unreliable water sources and they did not have water throughout the 2 weeks before the survey. Further, neither school had drinking water points for students to facilitate drinking water at school.

## 5.2 Study Limitations

1. Because almost all information was self-reported by students during data collection, there may have been some exaggerations and omissions. In addition, the data collection exercise was conducted one month after the start of the term and teachers had recently taught students about WASH (integrated into learning), and COVID-19. This may have influenced the overall results of the survey, as the majority of students had adequate knowledge and a positive attitude towards WASH.
2. In addition, the study results might have been influenced by the Ministry of Health and Ministry of Education and Sports' COVID-19 Infection Prevention Control (IPC) measures of increasing access to hand washing stations in primary and secondary schools to improve routine hand washing among students.

## 5.3 Conclusion and Recommendations

Although the majority of students had good knowledge and attitude towards WASH, many participated in poor hygienic practices that predisposed them to poor hygiene-related diseases. Lack of adequate sanitary facilities such as hand washing stations, and not conveniently placing hand washing facilities near school latrines affected student participation in hand washing.

School Administrators of Wabulungu and Mugeya Primary Schools should ensure adequate provision of hand washing facilities near the students' latrines and food serving places to promote hand washing among students.

School Administrators of Wabulungu and Mugeya Primary Schools should ensure that student latrines have enough anal cleansing materials to promote safe anal cleaning when students defecate at school.

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