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Approval

This research report was compiled and submitted under my supervision and now ready for
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Sign.....

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Dedication

This Research report is dedicated to my dear mother late Mrs. Marita Tindiwegyi for her support towards upbringing as well my education carrier development, Mr. Wavamuno Tumusiime Richard my Secondary headteacher, Hon .Gregory Matovu for career guidance and financial support during the education struggle, my wife Nabaasa Immaculate and our children Martha , Teddy and Mariana for being there with me, Aheebwa Sandra for continued support in computing work,Agaba Edger for technical support, Ms. Katusiime Hope and Mr. Ndemere Julius the University Supervisors and Dr.Oyik Bruno for the technical support provided as well.

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List of Acronyms

ABHRS	Alcohol Based hand rubs
ACORD	Agency in Cooperation Research in Development
ACI	American Cleaning Institute
ARI	Acute Respiratory Infection
BEHS	Bachelor of Environmental Health Science
BPS	British Psychological Society
CDC	Center for disease control
COVID-19	Corona Virus Disease- 2019 Disability
DALYS	Adjusted Life Years Demographic and
DHS	Household Survey District Sanitation
DSCG	Conditional Grant Global Burden of
GBD HAIS	Disease
HCF	Hospital Acquired Infections
HCWS	Health Care Facility
HH	Health Care Workers
HMIS	Household
HWWS	Health Management Information System
	Hand Washing with Soap

JMP	Joint Monitoring Programme
MDGS	Millennium Development Goals
MICS	Multiple Indicator Surveys
MOFPED	Ministry of Finance Planning and Economic Development
MOH	Ministry of Health
NHWI	National Hand washing Initiative
OECD	Organization for Economic Co-operation and Development
SDG	Sustainable Development Goals
SDI	Social Demographic Index
SPSS	Statistical package for social Scientist
SRS	Simple Random Sampling
UDHS	Uganda Demographic Health Survey
UNICEF	United Nations International Children Education Fund
USAID	United States Agency for International Development
US	United States
WASH	Water Sanitation and Hygiene
WHO	World Health Organization

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Abstract

Slow socio-demographic index (SDI) countries, unsafe water, sanitation and hygiene (WASH) is still the third- largest contributor to the global burden of disease at 7.8% of Disability Adjusted Life Years (DAL Ys). It is estimated that inadequate hand hygiene resulting nearly 300,000 deaths annually, with the majority of deaths being among children below 5 years old (WHO and UNICEF **2017**). The study was to establish the factors associated with low hand washing coverage. It was across- sectional study that used quantitative data collection methods. The statistics in Karungu Sub-county, it experiences high prevalence of sanitation-related illnesses accounting for 67% quarterly compared to other Sub-counties closely linked to poor hand hygiene (HMIS 2018/2019). A **determination** of the level of knowledge, attitudes, practices, and barriers on hand washing among the respondents led to the conclusion that the respondents in the study area have sufficient knowledge about hand washing. Based on the findings, most of the respondents did not wash their **hands** due to lack of water. There is a need to provide piped water for easy access, promote rain **water** harvesting tanks and continuous sensitization on the benefits of hand washing both after illnesses use and to prevent the spread of COVID-19

CHAPTER ONE: INTRODUCTION

Background to the study

The World Health Organization 2017, indicates that four hundred (400) children are infected **with worms** due to poor hand washing practices. These worms cause malnutrition, abdominal malfunction, and impaired learning capacity. However, hygienic behaviors can play an important role in the prevention of diseases related to water and sanitation. In order to emphasize the importance of hand washing, **October 15** has been declared as the Global Hand Washing Day by the United Nations International Children's Education Fund (UNICEF 2008).

The Global Burden of Disease study (GBD 2016), found that from 2006-2016, the number of global deaths attributable to unsafe water, sanitation, and hygiene (WASH) decreased by 25%, while lost disability-adjusted life years (DAL Ys) decreased by more than 35%.

However, in low socio-demographic index (SDI) countries, unsafe WASH is still the thirdz-gest contn'butor to the global burden of disease at 7.8% of DALYs. It is estimated that inadequate **hand** hygiene resulting nearly **300,000** deaths annually, with the majority of deaths being among children younger than 5 years old (WHO and UNICEF 2017).

A systematic analysis for the Global Burden of Disease Study by (WHO 2016), found that **better access** to improved water sources and sanitation is associated **with** higher rates of hand washing since hands are not only an indispensable tool used for daily activities but also a vector for spreading infections.

A **study conducted** by the United Nations Children's Fund (UNICEF 2018) and Ministry of Health (MOH 2018), found that children in Ethiopia had poor status regarding knowledge, **attitudes**, and practices of hygiene much as hand washing is considered as one of the most effective hygiene promotion activities for public health in developing countries.

In a study by (Sijbesma and offers, 2009), hygienic behaviors play an important role in the prevention of diseases related to water and sanitation. Diarrheal diseases have been considered a serious global problem and the leading cause of child mortality around the world with an **estimated two point four million** (2.4million) deaths that could be prevented annually by good hand hygiene practices.

In the study conducted by (Glob and Medie 2018), hand washing contributes tremendously in preventing and controlling most infectious diseases, promotion of appropriate hand hygiene practice has been recognized as an important public health measure.

Several epidemiological studies suggest that the universal practice of hand washing with soap could reduce the risk of severe diarrhea by 48% and the risk of any diarrhea by 47% (Greenland et al. 2012).

According to (Besha, G and C, et al. 2016), Proper hand washing is one of the most affordable and effective means of stopping the spread of infection via feces, body fluids, and inanimate objects. Hand washing is especially important for children and adolescents, as these age groups are the most susceptible to infections gained from unwashed hands.

Some hygiene behaviors, especially hand washing with soap, have been suggested to reduce the occurrence of gastro-intestinal infections, respiratory infections, trachoma, helminths, and skin infections in poor settings (Caircross et al 1991). According to (UNICEF 2009), approximately 94 Ugandan children died every day due to diarrheal diseases and HWWS could have saved half of those lives.

The Water and Environment Annual Sector Report (2013-2014), the rate of hand washing with Soap after visiting a latrine is estimated at 32.7%. The Uganda demographic Health Survey (UDHS, 2011) shows that observed hand washing with soap (HWWS) at household ~ stood at 27% compared to 14% in 2007.

A more recent study carried out by WSP (2012), showed that the rates of observed HWWS in :. ~ improved after concerted efforts that included behavior change communication ampaigns and improving the enabling environment for hand washing with soap including communities how to make affordable soap and hand washing facilities .

Hand washing with soap at key times is believed to be an effective and highly cost-effective means of reducing diarrhea incidence. However, global rates of hand washing with soap are frequently low, particularly among the poor, who also face the greatest threat from infectious diseases Access to a convenient hand washing station has been found to be associated with higher rates of hand washing and decreased fingertip contamination, (MOH and ACORD2010).

In Uganda Government promotes hand washing with soap through the national hand washing initiative (NHWI), and by providing funding to local Governments under District sanitation **conditional** Grant(DSCG). At 33.2% however, the percentage of people with access to hand washing facilities remains significantly below the national target of 50%(SPRING,2015). The national average_ reported above the hides marked by inequities in the availability of hand washing facilities at the local level. Such inequities are further perpetuated by the fact that despite of the memorandum of understanding between ministries of Health, Water and sanitation, Districts and Sub-counties lack clear guidance on their respective roles in the **promotion** of universal hand washing.

1.2 Statement of Research Problem

Hand washing with soap worldwide helped tremendously in reducing the spread of faecal related diseases and communicable diseases in communities. But these personal hygiene practices still have low coverage in developing countries Uganda in particular commonly among the rural communities like Karungu. This is so because of the challenges communities experience in trying to improve their health (Setyautami et al 2012).

Accordingly, the recent household sanitation data 2018/2019 rank Karungu the least with hand washing coverage of 17% which is far below the national target of 50 % (MOH 2018). The **Poor hand** washing practices without soap increase the mode of transmission of pathogens into the human system.

The majority of the people may not frequently wash their hands before eating, after visiting the latrines, and after touching the surface of substances which can be a medium of disease transmission. This increase the risk of certain communicable disease (Lopez and Freeman2009). The increased cases of sanitation- related diseases in Karungu have therefore resulted in absenteeism for school-going children, frequent admissions of children under five years due to diarrheal diseases, and parents /care -givers loose time and resources to care for the sick hence need to find out what causes the persistent low hand washing coverage and design appropriate intervention thereafter.

1.3 Justification of the study

The study found out that access to water limits household members to preserve water to put at the latrines for hand washing after use.

However, globally infectious diseases remain the leading causes of child- hood mortality and morbidity accounting for 65% of all deaths in under-five children which can be prevented if proper sanitation and hand hygiene are observed.

Since productive time would be lost to nurse the patients as result of failure to practice hand washing, awareness must be created to control and prevent the occurrence of sanitation-related illnesses.

With the outbreak of the COVID-19 pandemic. it was found out that frequent hand washing would partly reduce the spread of the virus from person to person through dirty hands and other germs that cause and facilitate the transmission of sanitation -related diseases.

1.4 The research questions

To give direction to the study, the following research questions were posed;

1. Does the community members have hand washing facilities close to the latrines?
2. What is the knowledge, attitudes, and practices of household members on hand washing with soap after latrine use?
3. What are the key barriers of hand washing practices with soap after latrine use among community members?

1.5 General objectives

The general objective of the study was to establish the factors associated with low hand washing coverage in Karungu Sub-county Buhweju District so as to be able to design appropriate interventions.

1.5.1 Specific objectives

2. To establish availability of hand washing facilities close to the latrines?
3. To determine the knowledge, attitudes, and practices of household members on hand washing with soap after latrine use?
3. To identify key barriers in hand washing practices among household members in Karungu Sub-County

1.6 Significance of the study

The findings of the study helped to raise awareness on the benefits of having proper hand washing facilities with soap close to the latrines among the community members. This awareness would help build initiatives to reduce the problem.

The study enabled communities to realize the benefits of hand washing with soap after latrine use the reduction of major sanitation -related illness such as diarrhea, saving time and resources to treat the sick as well securing productive time that would be spent in caretaking patients.

The communities were able to fully participate in changing their lives through hand washing and gaining confidence in having sound and ideal facilities for hand washing.

Additionally, the study helped provoke debate on hand hygiene. In the course of this debate better options were developed to address the hand washing with soap after using the latrine.

1.7 The scope of the study

The study was conducted in Karungu Sub -county located in Buhweju District. The Sub -county **has** four parishes and thirty-five villages. It is surrounded by Bitsya, Buhunga, Nsiika Town council, Rwengwe and Bukiro sub-county of Mbarara District.

1.8 Operational definition of terms

This provided the meaning of operational terms used in the study to help the reader understand the contextual meaning of words used.

Hand hygiene: It is the practice of keeping hands free from pathogens by washing with plain **or** microbial soaps and clean water or using hand rub whenever indicated as per 5 moments of hand hygiene.

Hand washing. refers to washing hands with plain soap and clean water (WHO 2009). Hygiene: refers to conditions and practices that help to maintain health and prevent the spread of diseases (WHO 2009).

Knowledge: Is a familiarity, awareness, or understanding of someone or something such as facts, information, description or skills, which is acquired through experiences or education perceiving, discovering, or learning.

Household: A group of people, often a family, who live together in a house or flat 5

Community: A group of people with a common characteristic or interest living together within a larger society

Tippy Tap: A simple handmade water dispenser that enables people to wash their hands without wasting water. The device primarily consists of a container that releases a small amount of water (just enough for a clean hand wash) each time it is tipped. And when the "tap" is released, it swings back to its initial upright position.

improved sanitation: A sanitation system that has a connection to a public sewer, septic system, pour-flush latrine, or access to a pit latrine

Basic sanitation service". This is defined as the use of improved sanitation facilities that are **not** shared with other households according to JMP 2017.

CHAPTER TWO: LITERATURE REVIEW 20.

Introduction

This chapter focused on what other scholars found out in relation to the factors associated with low hand washing with soap at critical moments.

2.1. The availability of hand washing facilities close to the latrines

The Joint Monitoring Program (JMP) run by (UNICEF and WHO 2018), defines a 'basic hand washing facility as the 'availability of a hand washing facility on the premises with soap and water. Hand washing facilities can be 'fixed' or 'mobile.' 'Fixed' facilities include sinks with taps, buckets with taps, and tippy-taps, while 'mobile' facilities include jugs or basins designated for handwashing. The term soap includes a bar soap, liquid soap, powder detergent, **or** soapy water.

Under global sustainable development goals (SDGs) indicator Target 6.2 focuses on access to a **hand** washing facility with water and soap at home, a proxy for individual hygiene practices. While hand washing was not included in the MDGs, the SDGs aim for full universal access and require the reduction of inequalities. Additionally, WHO and UNICEF have proposed an action plan to achieve universal water, sanitation, and hygiene (WASH) coverage even in healthcare facilities(HCFs) by 2030.

Since the first Global hand washing Day in 2008, community and national leaders have used **Global** hand washing Day to spread the word about hand washing, build and maintain hand washing facilities, and demonstrate the value of clean hands. In 2017, more than five million people celebrated Global hand washing Day (WHO and UN 2017).

The presence of hand washing stations with water and soap has been shown to increase hand washing and hygienic behaviors, resulting in a reduction in the incidence of diarrheal diseases, especially in young children (UNICEF 2012).

Tippy tap research in Uganda found that, in the intervention areas where participants received tippy taps plus hand washing education, hand washing rates increased by more than 90 percent (Schreyer Honors College 2014). However, limited research exists on the effectiveness of the **tippy tap** and washing stations *as* a means of removing or reducing barriers to hand washing.

The study by (Ram and Winch et.al 2013), in Bangladesh found that diarrhoeal diseases and respiratory infections contribute significantly to morbidity and mortality. Hand washing with soap reduces the risk of infection; however, hand washing rates in infrastructure-restricted

settings remain low. Hand washing stations a dedicated, convenient location where both soap **and water** are available for hand washing are associated with improved hand washing practices.

In a **study** organized by (Spring 2017), community mobilization activities promote improved hygiene behaviors, in particular hand washing and the use of tippy-taps. Tippy-taps are simple, water-saving hand washing stations that increase the availability of clean water for hand washing at significant points around the household, including near latrines and kitchens, and **at the** entrances to household gardens, chicken coops, or sheep pens.

The most crucial component to encouraging hand washing is to make sure the hand washing facilities are conveniently located, clean, and properly working. Hand drying should also be taken into consideration according to (Agboatwalla, Mubina .et.al 2008).

Carefully respect the habits of users when installing hand-washing facilities according to Mathew at.el (2014). The location of a hand sink depends on the users' size such as children or adults, the direction users are approaching the facility, and their daily routines. The more comfortable the facilities are, the more likely users continue to use them and the more they care and are willing to put effort into maintenance according to (Shangwa and Morgan et.el 2008) .

A bucket with a valve at the bottom can also serve as a hand sink. The 'tap up' hand sink was developed by Mathew Lippincott for outdoor festivals in the Pacific Northwest of the US in 2011.

One such hand washing station is the "tippy-tap," which consists of a small (3 or 5 liter) jerrycan filled with water and suspended from a wooden frame. A string attached to the neck of the jerry can is tied to a piece of wood at ground level. Pressing on the wood with the foot rips the jerry can, releasing a stream of water through a small hole. Soap is suspended from the frame beside the jerry can. A tippy-tap located close to a latrine provides a cheap and potentially convenient means of washing hands after latrine use (Brian 2011).

2.2 The knowledge, attitudes, and practices of hand washing after latrine use

The World Bank, the International Monetary Fund, the members of the development Assistance committee of the Organization fur Economic Co-operation and Development

OECD), and many other agencies have adopted international Millennium Development goals, **one** of which (goal 4) is to reduce infant and child (under five) mortality rates by two-thirds between (1990 and 2015).

According to (CDC 2009), the hands are central to many of our daily activities like handling objects, farming, poultry keeping, cleaning, etc., all of which make the hands to be constantly contaminated. The use of contaminated hands for cooking and eating makes possible the transmission of the contaminants (germs) into the body through food, thereby causing illhealth. Some critical times at which hand washing must be employed include, after using the toilet, changing diapers, attending to a sick person, handling raw meat, fish or poultry, after handling garbage, treating a wound or cut, contact with domestic animals, before food preparation and before eating.

A study in Korea by (Jeong, Choi and Jeong et al, 2007), directly observed hand washing practices and found that only 63.4% of observed subjects truly washed their hands after using the toilet, even though 94% of subjects claimed to mostly or always wash hands after using public rest rooms This shows that there is a difference between saying "yes" to hand washing and its actual practices.

In a study conducted in Bangladesh by (Roberts and Hassan et.al 2006), a gap between perception and practice of proper hand washing practices with soap was identified in the study areas. Hand washing practice with soap before eating was much lower than after defecation. Hand washing knowledge and practices before cooking food, before serving food, and while handling babies is considerably limited than other critical times. A multivariate analysis shows that socio-economic factors including education of household head and respondent, water availability, and access to media have a strong positive association with hand washing with soap (William et.al 2010).

Hand washing can considerably contribute to an improved and sustainable sanitation system by interrupting the transmission of disease agents. Consequently, diarrhoea, respiratory infections as well as skin infections, and trachoma are significantly reduced. A recent review (Curtis et al 2000) suggests that hand washing with soap, particularly after contact with faeces (post defecation and after handling a child's **stool**), can reduce diarrhoeal incidence by 42-47 per cent. These results apply universally regardless of the level of sanitation ,faecal contamination.

Another study recently found that children under 15 years applying hand washing with soap showed to have half the diarrhoea] rates compared to children living in neighboring communities that do not apply hand washing (Luby et al. 2004).

Washing hands with soap at the right times can reduce instances of diarrhea by 35- 50%²³⁴⁵.

Evidence also suggests that hand washing with soap can reduce acute respiratory infections by 30% (Rabie 2003).

According to previous studies, hand washing and the wearing of face masks minimize the spread of influenza (Cowling, Chan & Fang et al, 2009) and hand washing is crucial to diarrhoea prevention (Luby, Agboatwalla &Painter et al, 2006). This study is therefore essential because there is still an acceptably high level of mortality rate among the under five-year-old in Nigeria and a need to explore the current level of understanding of their mothers about the link between hand washing and the risk of developing diseases among this age group.

Hand hygiene is the most effective way to prevent and stop infections (MOH 2020). This can be achieved using soap and water or hand sanitizer which has worked efficiently in the reduction of COVID-19 spread from person to person among others.

2.3 The key barriers to hand washing practices after latrine usage.

A range of strategies designed to support the implementation of evidence-based practice has been investigated and systematically reviewed (Grimshaw et al, 2003).

The most commonly used methods include written educational materials, outreach visits, opinion leaders, audit and feedback, reminder systems, computerized support systems, conferences and workshops, multifaceted approaches. However, the success of such strategies varies widely depending on the type of change being implemented in line with the study by (Baker, Robertson and e.tl. 2010).

Despite a large number of available implementation studies there is little evidence to suggest why any of the interventions are successful or otherwise. This may be partly due to a lack of generalizability as studies have been carried out in a wide range of settings testing different implementation strategies and involving different groups of healthcare practitioners. However, two main issues have been identified as obstructing the success of implementation strategies. These are; failure to identify barriers and levers to implementation of evidence-based practice (Grimshaw. et al, 2004).

A lack of theoretical basis for the interventions used to support the implementation of evidence into practice (Grimshaw and Eccles, 2004 and Bonetti and Michie 2005).

In a study done in communities of Columbia which stated that forgetfulness, laziness, and lack of time was the most commonly reason for not washing hands. (Lopez-quintero et al., 2009).

4.

Therefore, health education is necessary to increase knowledge and practice of hand washing among school children, community members and patients at health care facilities and observation is the better way of assessing children's practice of hand washing.

From the Journal of Humanities and Social Science (IOSR-JHSS 2014), research findings, the results have shown that the challenges facing the uptake of hand washing with soap programme in schools include lack of provision of soap, disappearance of soap, and hand washing facilities, **adequate** water supply and low commitment by the entire school administration. If these challenges will not be addressed, then school days will continuously be lost by the school children due to diarrheal diseases hence poor school performance and unhealthy school children and the entire community.

The study conducted by (Lopez-Quintero et al.2009), the paramount contextual-level barrier **scoring** this population, however, is the scarcity of adequate facilities for hand washing in most communities. This not only prevents children from adopting proper hygienic behavior but also dwarfs school-based educational and health-promotion efforts. Indeed, many students expressed a lack of coherence between the messages provided by teachers regarding hygiene and the daily reality of their school environments.

CHAPTER THREE: RESEARCH METHODOLOGY 3.0

Introduction

This chapter describes study design and rationale, study setting and rationale, study population, sample size determination, sampling procedure, research instruments, data collection procedure, data analysis, and ethical considerations.

3.1. Study design

The study used a cross-sectional study design that employed quantitative method of data collection. Quantitative was preferred because it's helpful while dealing with numbers.

3.2. Research Design

In the study, the quantitative methodology was employed. Cross-sectional design was used due to the nature of data required using quantitative data collection techniques. The study was carried between November and December 2020.

3.3. Sample size determination

The sample size was determined using the Kish Leslie formula (1965) for cross-sectional studies. To determine the sample size for the study population the following assumption was made; the actual sample size for the study was determined using the formula for single p population proportion by assuming 5% marginal error, 95% confidence interval. According to national statistics on hand washing, the population proportion (p) was 27% (Sekuma, 2013). So based on the above information the total sample size was calculated using the following formula:

$$N = \frac{Z^2 \times P(A-P)}{E^2}$$

Where;

P= Proportion of people who practice proper hand washing = 27% (Sekuma, 2013) E=

Marginal error set at 5%

Z= Standard nonnal deviation set at 1.96 for 95% confidence intervals

N= Number of respondents

$$N = \frac{(1.96^2)(0.27)(1 - 0.27)}{0.05^2}$$

N= 302.9

Therefore, N was 303

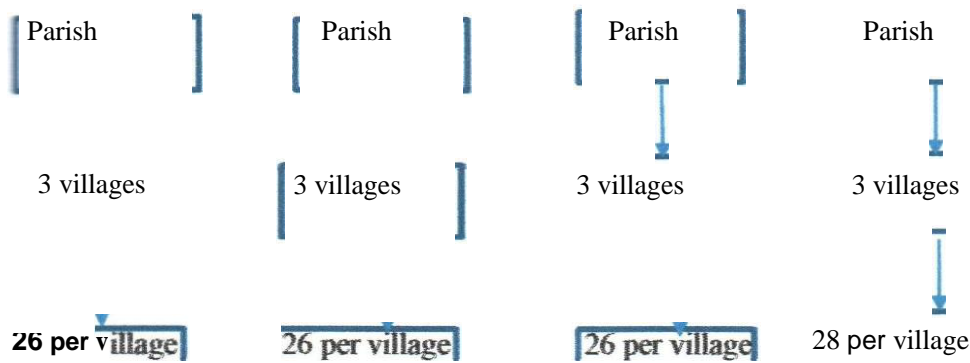
Adding 5% non-respondent and N was $(0.05303) + 303 = 318$

Therefore, N was 318 respondents.

3.4. Sampling procedure.

Illustration of sampling procedure diagrammatically

[es«rs]



Karungu Sub-County was purposively selected from other sub counties that make up Buhweju District due to low compliance to hand washing among the household population.

Two levels of sampling were conducted and these included; parishes and villages. A simple random sampling of 318 respondents who were residents of Karungu Sub County was selected. Before going to the field, a simple calculation was put in and in the first three parishes, each village 26 respondents were interviewed totaling to 78 respondents and the remaining parish each village contributed 28 respondents. This was because we could not get half a person

Then random sampling was carried out at the parish level to determine the number and names of the villages to include in the study. Four parishes were randomly selected in the sub county using simple random sampling (SRS); thereafter three villages per parish were randomly selected using simple random sampling. In total, twelve villages were sampled and visited during data collection. Using proportionate sampling, a total number of households from each village was got by dividing the sample size by the total number of selected villages.

At the village level, an orderly list (that is; coded in 1, 2, 3 formats) of the total number of households was got from the office of the LC I chairperson. Using systematic random sampling, a total number of 26 households for the first three parishes and 28households for the fourth parish from the each selected village was divided by the sample size to get an interval which was used to get the exact household to be included in the study.

The household to begin with, were got from a list ofhouseholds that were coded with numbers from one up to an interval number. Each was separately written on a piece of paper that was folded, put in the box which was then shaken. One piece of paper was randomly selected at once from the box to give a household to start with. Then a researcher was led by the LC I chairperson to the village Centre where a bottle of soda was spun. The direction the soda bottle faced was the route used by the researcher to get the first household. The first household was used as the starting point to count until the starting household was reached to give an interval.

3.5. Data collection

Quantitative data was collected using a closed ended questionnaire to collect information on the availability of hand washing facilities close to the latrines, knowledge, attitudes, and practices of household members on hand washing with soap after latrine use, and the key barriers in hand washing practices among households. The questionnaire was developed in English and then translated in Runyankole to ensure clarity of questions to the respondents.

3.6. Data analysis

Data gathered from the field was edited, categorized, and entered into the computer using Statistical Package for Social Scientists (SPSS) for generating summary frequency tables and graphics. Pearson correlations and multiple regression analysis were used to establish the relationship among the variables under study.

3.7. Pilot study

The designed questionnaires were pre-tested in households from Karungu Sub-County that were not part of the study area so as to make the necessary adjustment in the questions thus making the questionnaires valid and fit for the study respondents.

3.8. Selection and training of Research Assistants

Two volunteers at the District health office were identified, explained to as to why selected. The benefits and entitlements during the exercise were explained to which consent was reached and trained on the questionnaire both in English and translated as well as in Runyankole.

3.9. Data management

To assure the data quality, half-day training was given to the research assistants. Appropriate information and instruction on the objective; relevance of the study were presented to the respondents. Respondents were informed of the confidentiality of the information they gave and their participation was voluntary. The research assistant stayed with the respondent until all questions were filled. The principal investigator re-checked the completeness of the questionnaire before submission.

3.10. Ethical consideration

A letter of introduction was obtained from Kabale University introducing the researcher and seeking permission to carry out the study from Buhweju District Local Government. Participants were assured of maximum confidentiality of all information. The study commenced after the objectives of the study had been explained thoroughly well to the participants and they have consented to participate in the study.

3.11. Data collection instruments

Data was collected using structured and a semi- structured interview guides consisting of both open and closed- ended questions. The tool was selected because the study involved a mixed group who were literate and that un able to read and write.

3.12. Data collection procedure

Two research assistants were trained to administer the questionnaires. Pretest of the questionnaires was done before going to the field for data collection.

Pretested. **semi- structured. interviewer-administrated** questionnaire was applied to capture all relevant data related to sociodemographic characteristics, attitudes toward hand hygiene, knowledge, as well as the practice of hand hygiene.

The structured checklist was used to capture data related to availability of hand washing facilities close to the latrine concurrently

3.13. Dissemination of Results

Results were compiled into a dissertation that was submitted to Kabale University for the award of Bachelor's degree in Environmental Health Science.

Copies of the results in fonn of a report were given to District Health Officer Buhweju and the other various stakeholders for action as regards the recommendations that were made.

4.1. Introduction

The data obtained have illustrated by the use of tables, bar graphs and pie charts in line with the objectives.

A total of 318 respondents participated in this study giving a response rate of 100%. **4.2**

Socio-demographic characteristics

Table 1 Socio-demographic characteristics

Table I shows results from the univariate analysis of the respondent's demographic characteristics. There were an equal number of males 159 (50%) and females 159 (50%) respondents with more than half of them 206 (64.78%) belonging to age the group of 26-45 years. A great proportion of respondents 197 (61.94%) were in school and the majority 218 (68.55%) had their parents not working.

Table 1: Showing socio-demographic data of the respondents

Variable	Frequency(N=318)	Percentage (%)
Age in Years		
18-25	112	35.22
26-45	206	64.78
Sex		
Female		
Male	159	50
Level of Education		
Primary		
<u>Secondary</u>	197	61.94
Tertiary Education	89	27.98
	32	10.06
Occupation		
Employed	26	8.17
No Job	218	68.55
Student	74	23.27

V::1:imlStatus		
<u>Divorced/ separated</u>	10	3.14
warned	273	85.84
Sgle never married	20	6.28
iiow/widower	15	4.71
<u>Religion</u>		
<u>Catholic</u>	185	58.17
<u>sii</u>	15	4.71
? <u>estant</u>	105	33.01
B:cagain	13	4.08
i:ribe		
<u>saganda</u>	05	1.57
sasoga	01	0.31
<u>say</u> ankole	312	98.11
M of people per household		
1-5People	81	25.47
- ... People	216	67.92
More than 10 people	21	6.60

43. The .availability of hand washing facilities with soap and water

Table: Shows findings in regarding to avail.ability of handwashing facilities close to iseries

S.	Name of Parish	Total household	Households with HWF	% of hand washing with soap
	Kasbarara	79	25	8.5
¶.	Karam	80	15	11.7
...	Karungu Central	81	18	32.5
±	Rugongo	78	14	20.2
	Total	318	72(22.6%)	16.7

According to findings, it clearly shows that latrine coverage is 89%. The percentage of people who practice hand washing is 17% and 16% do hand washing with soap after arrival. The availability of hand washing facilities at working stations due to COVID-19 pandemic



Demarcation of hand washing with soap and water using tippy tap

knowledge on hand washing with soap the respondents

The study established that 224 (70.44%) of the respondents had a good level of knowledge on hand washing while 94 (29.56%) had a poor level of knowledge on hand washing as shown in the figure above.

A proportion of the respondents 292 (91.82%) knew that faeces contain germs and most of them (95.28%) use soap and water to wash their hands. Two hundred eighty-one (36%) knew that hand washing prevents diarrhoeal diseases. More than half of the respondents 212 (66.67%) know that hands should be washed after the toilet and only 47 (14.6%) before a meal. Diarrhoea 274 (86.16%) was the most known diseases which result from not washing hands, followed by cholera 217 (68.24%) and typhoid 178 (55.97%). All

are summarized in table 2.

knowledge on hand washing

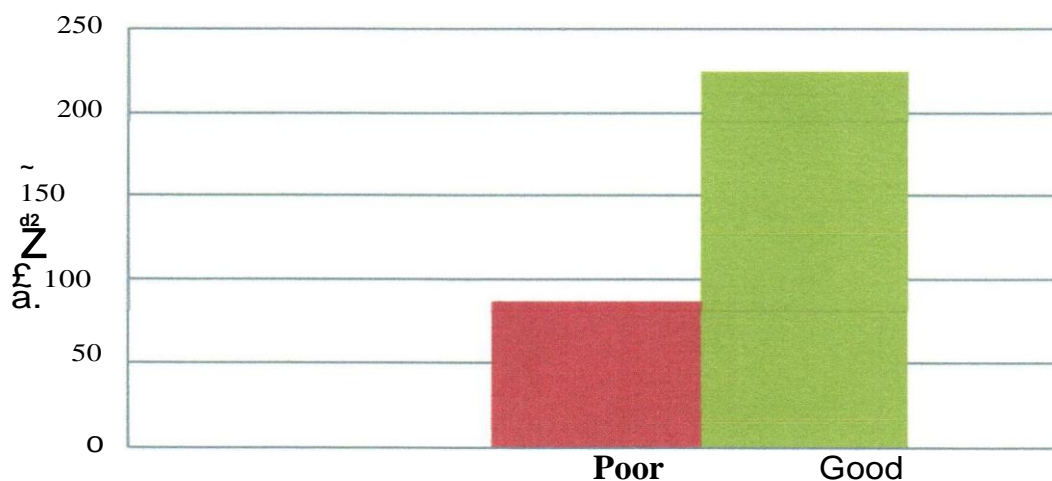


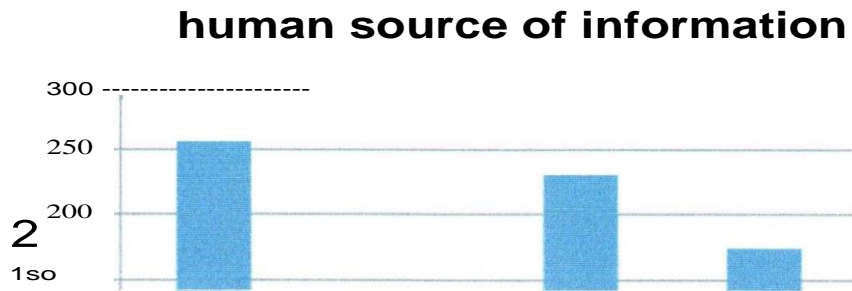
figure 1: Overall Knowledge on hand washing among respondents in Karungu Subcounty

Table 2: Showing Level of Knowledge on hand washing among the respondents

Variable	Frequency (n=318)	Percentage (%)
Human faeces contain germs		
Yes	292	91.82
No	9	2.83
Do not know	17	5.35
Unclean hands transmit germs.		
Yes	277	87.11
No	13	4.09
Do not know	28	8.81
Critical moments for washing hands		
Before meal	47	14.78
After meal	83	26.10
After play	147	46.23
After toilet	212	66.67

Do not know	2	0.63
Materials needed to wash your hands properly		
lean water only	15	4.72
Clean water and soap	303	95.28
.U dean objects are free from germs S		
	100	31.45
	203	63.84
not know	15	4.72
in: a ~ order of parents to wash your hands? es		
	66	20.75
	238	74.84
st inow	14	4.40
8:J::rd' 1!1":1Shlng prevents diarrhoeal diseases		
s	28	88.36
	1	
	37	11.64
Diseases due to poor hand washing		
Cholera	217	68.24
a ea	274	86.16
hepatery	159	50.00
Typhoid	178	55.97
infection	63	19.81
	49	15.41
	37	
		11.6
t ad drinking water can be contaminated by <u>masted</u> hands	4	
	265	83.33
	24	7.55
nr inow	29	9.12

256 (80.50%) were the most human source of information about hand washing followed by teachers 230 (72.33%), health worker 175 (55.03%) and friends 75 (23.58%) as shown in figure 2 below.

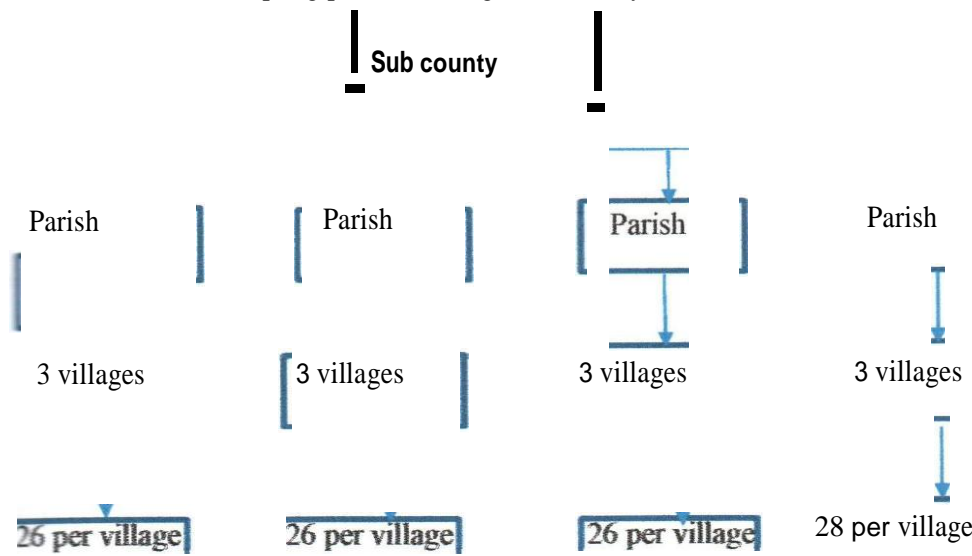


Aiding 5% non-respondent and N was $(0.05303) + 303 = 318$

Therefore, N was **318** respondents.

3.4. Sampling procedure.

Illustration of sampling procedure diagrammatically



Karungu Sub-County was purposively selected from other sub counties that make up Buhweju District due to low compliance to hand washing among the household population.

Two levels of sampling were conducted and these included; parishes and villages. A simple random sampling of 318 respondents who were residents of Karungu Sub County was selected. Before going to the field, a simple calculation was put in and in the first three parishes, each village 26 respondents were interviewed totaling to 78 respondents and the remaining parish each village contributed 28 respondents. This was because we could not get half a person

Then random sampling was carried out at the parish level to determine the number and names of the villages to include in the study. Four parishes were randomly selected in the sub county using simple random sampling (SRS); thereafter three villages per parish were randomly selected using simple random sampling. In total, twelve villages were sampled and visited during data collection. Using proportionate sampling, a total number of households from each village was got by dividing the sample size by the total number of selected villages.

...: :ie village level, an orderly list (that is; coded in 1, 2,3 fonnats) of the total number of households was got from the office of the LC I chairperson. Using systematic random **sapling**, a total number of 26 households for the first three parishes and 28households for the **irth** parish from the each selected village was divided by the sample size to get an interval **which** was used to get the exact household to be included in the study.

The household to begin with, were got from a list of households that were coded with numbers **iron** one up to an interval number. Each was separately written on a piece of paper that was Slided, put in the box which was then shaken. One piece of paper was randomly selected at **cce** from the box to give a household to start with. Then a researcher was led by the LC I chairperson to the village Centre where a bottle of soda was spun. The direction the soda bottle **faced was** the route used by the researcher to get the first household. The first household was used as the starting point to count until the starting household was reached to give an interval.

35. Data collection

Quantitative data was collected using a closed ended questionnaire to collect information on **he** availability of hand washing facilities dose to the latrines, knowledge, attitudes, and practices of household members on hand washing with soap after latrine use, and the key barriers in hand washing practices among households. The questionnaire was developed in English and then translated in Runyankole to ensure clarity of questions to the respondents.

3.6. Data analysis

Data gathered from the field was edited, categorized, and entered into the computer using Statistical Package for Social Scientists (SPSS) for generating summary frequency tables and graphics. Pearson correlations and multiple regression analysis were used to establish **the** relationship among the variables under study.

3.7. Pilot study

The designed questionnaires were pre-tested in households from Karungu Sub-County that were not part of the study area so as to make the necessary adjustment **in** the questions thus making the questionnaires valid and fit for the study respondents.

3.8. Selection and training of Research Assistants

Two volunteers at the District health office were identified, explained to as to why selected. The benefits and entitlements during the exercise were explained to which consent was reached and trained on the questionnaire both in English and translated as well as in Runyankole.

3.9. Data management

To assure the data quality, half -day training was given to the research assistants. Appropriate information and instruction on the objective; relevance of the study were presented to the respondents. Respondents were informed of the confidentiality of the information they gave and their participation was voluntary. The research assistant stayed with the respondent until all questions were filled. The principal investigator re-checked the completeness of the questionnaire before submission.

3.10. Ethical consideration

A letter of introduction was obtained from Kabale University introducing the researcher and seeking permission to carry out the study from Buhweju District Local Government. Participants were assured of maximum confidentiality of all information. The study commenced after the objectives of the study had been explained thoroughly well to the participants and they have consented to participate in the study.

3.11. Data collection instruments

Data was collected using structured and a semi- structured interview guides consisting of both open and closed- ended questions. The tool was selected because the study involved a mixed group who were literate and that un able to read and write.

3.12. Data collection procedure

Two research assistants were trained to administer the questionnaires. Pretest of the questionnaires was done before going to the field for data collection.

Pretested, semi- structured, interviewer-administrated questionnaire was applied to capture all relevant data related to sociodemographic characteristics, attitudes toward hand hygiene, knowledge, as well as the practice of hand hygiene.

The structured checklist was used to capture data related to availability of handwashing facilities close to the latrine concurrently

3.13. Dissemination of Results

Results were compiled into a dissertation that was submitted to Kabale University for the award of Bachelor's degree in Environmental Health Science.

Copies of the results in fonn of a report were given to District Health Officer Buhweju and the other various stakeholders for action as regards the recommendations that were made.

4.1. Introduction

The data have been illustrated by the use of tables, bar graphs and pie charts in line with the objectives.

4.1.1. Objectives

4.1.1.1. All IS respondents participated in this study giving a response rate of 100%.

4.1.2. Site characteristics

4.1.2.1. Socio-demographic characteristics

4.1.2.1.1. Results from the univariate analysis of the respondent's demographic characteristics were as follows: There were an equal number of males 159 (50%) and females 159 (50%). More than half of them 206 (64.78%) belonging to the age group of 26-45 years. A great proportion of respondents 197 (61.94%) were in school and the majority 218 (68.55%) had their parents not working.

4.1.2.1.2. Socio-demographic data of the respondents

Category	Frequency (N=318)	Percentage (%)
Gender		
Male	159	50
Female	159	50
Age Group		
26-45	206	64.78
Other	112	35.22
Level of Education		
Secondary	197	61.94
Below Secondary	89	27.98
Other	32	10.06
Parental Status		
Not working	218	68.55
Working	26	8.17
Other	74	23.27

Marital Status		
Divorced/ separated	10	3.14
Married	273	85.84
Single'never married	20	6.28
widow/widower	15	4.71
Religion		
Catholic	185	58.17
Muslim	15	4.71
Protestant	105	33.01
Born again	13	4.08
Tribe		
Baganda	05	1.57
Basoga	01	0.31
Banyankole	312	98.11
No. of people per household		
1-5 People	81	25.47
6-10 People	216	67.92
More than 10 people	21	6.60

4.3. The availability of hand washing facilities with soap and water

Table: Shows findings in regarding to availability of handwashing facilities close to latrines

S.N	Name of Parish	Total household	Households with HWF	% of hand washing with soap
1	Kasharara	79	25	8.5
2	Katara	80	15	11.7
3	Karungu Central	81	18	32.5
4	Rugongo	78	14	20.2
	Total	318	7222.6%)	16.7

Based on the data findings, it clearly shows that latrine coverage is 89%. The percentage of households who practice hand washing is 17% and 16% do hand washing with soap after arrival home.

Demonstration of hand washing facilities at working stations due to COVID-19 pandemic



Demonstration of hand washing with soap and water using tippy tap

The knowledge on hand washing with soap the respondents

The study established that 224 (70.44%) of the respondents had a good level of knowledge on hand washing while 94 (29.56%) poor level of knowledge on hand washing as shown in the figure above.

A high proportion of the respondents 292 (91.82%) knew that faeces contain germs and most 303 (95.28%) use soap and water to wash their hands. Two hundred eighty-one (86.36%) knew that hand washing prevents diarrhoeal diseases. More than half of the respondents 212 (66.67%) know that hands should be washed after the toilet and only 47 (14.78%) before a meal. Diarrhoea 274 (86.16%) was the most known diseases which result in not washing hands, followed by cholera 217 (68.24%) and typhoid 178 (55.97%). All summarized in table 2.

knowledge on hand washing

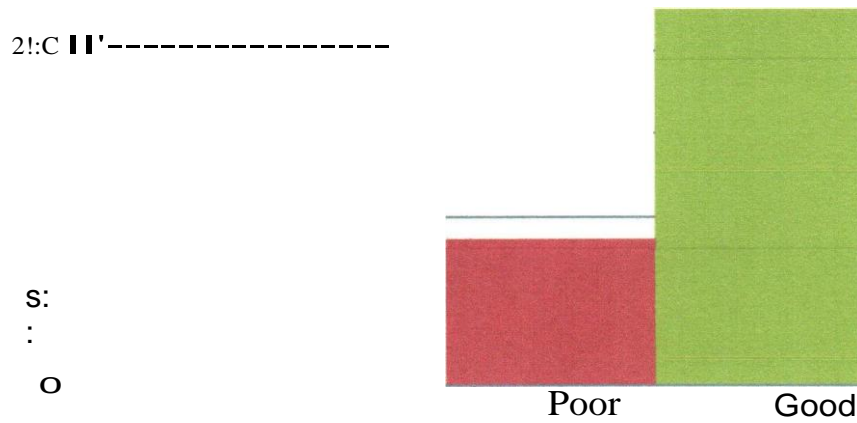


Figure E- Overall Knowledge on hand washing among respondents in Karungu

me2ilrig Level of Knowledge on hand washing among the respondents

	Frequency (n=318)	Percentage (%)
<u>ieerr</u> <u>mtain</u> germs	292	91.82
	9	2.83
imasaw	17	5.35
<u>li::nn</u> '5 <u>a:n:sm</u> lt germs.	277	87.11
	13	4.09
	28	8.81
<u>s</u> for washing hands	47	14.78
	83	26.10
	147	46.23
	212	66.67

Ob not know	2	0.63
Materials needed to wash your hands properly		
ean water only	15	4.72
lean water and soap	30	95.28
AD dean objects are free from germs	3	
Yes	100	31.45
Mo	203	63.84
Do not know	15	4.72
Is it the order of parents to wash your hands?		
:eS	66	20.75
O	23	74.84
Do not know	8	4.40
Hand washing prevents diarrhoeal diseases		
Yes	28	88.36
No	1	11.64
Diseases due to poor hand washing		
Cholera	21	68.24
Diarrhea	7	86.16
<u>Dysentery</u>	27	50.00
Typhoid	4	55.97
Skin infection	15	19.81
Fu	9	15.41
Malaria	17	11.64
Food and drinking water can be contaminated by		
ra:D"Wasbed bands	63	
	205	83.33
No	37	7.55
Do not know	29	9.12

rents 256 (80.50%) were the most human source of information about hand washing followed by teachers 230 (72.33%), health worker 175 (55.03%) and friends 75 (23.58%) as shown in figure 2 below.

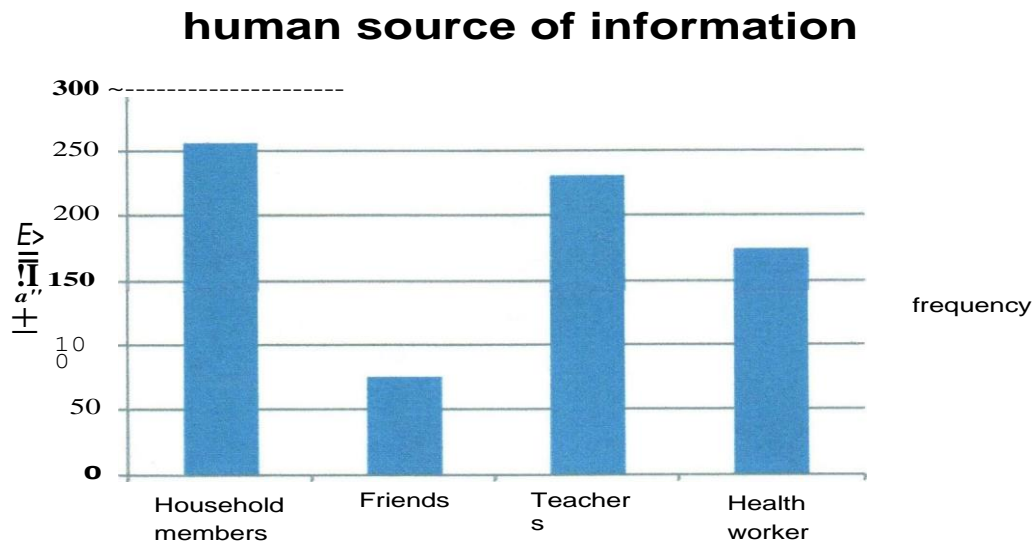


Figure 2: Human source of information

The Radio 285 (89.62%) was the most used media source of information on hand washing followed by newspapers 188 (59.12%), posters 94 (29.56), TV 58 (18.24%) and no respondent mentioned any other media source of information as shown in figure 3 below.

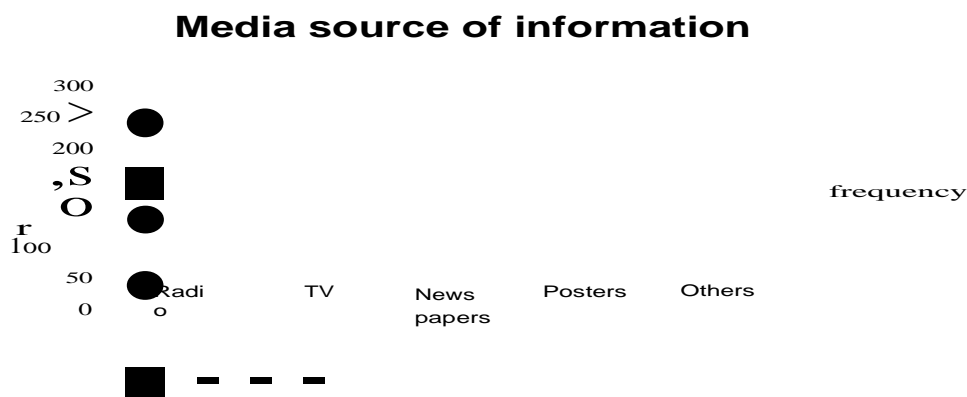


Figure 3: Media source of Information

The attitude on hand washing among the respondents

Most of the respondents had a positive attitude 231 (73%) towards hand washing (figure 4) 139 (75.15%) believing that dirty hands contaminate food and drinking water, while 258 21

(81.13%) respondents agreed that hand washing prevents cross-contamination of germs. The majority of the respondents 297 (93.40%) agreed that hand washing was important and more than half 297 (93.40%) agreed that washing hands with soap before eating was important. Almost all the respondents 308 (96.85%) agreed that it was important to teach the respondents hand washing practice (table 3)

Attitude on hand washing

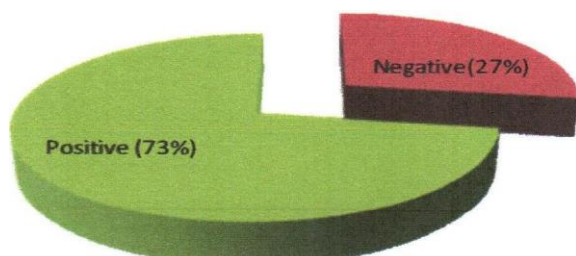


Figure 4: Overall attitude on hand washing among the respondents

Table 3: Showing Attitude towards hand washing among respondents

Variable	Frequency (n=318)	Percentage (%)
It is proper to wash hands with clean water.		
Agree	306	96.22
Neutral	5	1.57
Disagree	7	2.20
Dirty hands cause contamination of food and drinking water.		
Agree	239	75.15
Neutral	31	9.75
Disagree	48	15.09

ash your hands well with water, you do not er		
mare snag.		
er	73	22.95
	24	7.55
	211	66.35
3iilai I - <u>prevents</u> cross-transmission of germs		
	258	81.13
era	24	7.55
&ii =	36	11.32
it f e is important		
	297	93.40
	9	2.83
a--	12	3.78
..i:....we y tohavea hand washing facility at home .		
	281	88.36
	22	26.92
	15	4.72
:-:a ufy mtt to wash your hands with soap if they look		
air ar saell bad.		
	124	39
era	35	11.01
anz hands with soap before eating is important.	159	50
rs dn ot contain germs.	29	93.4
	7 6	1.89
	41	42.89
ts portant to teach children hand washing practice.	35	11.01
er	308	96.85
are	6	1.89

Disagree

4	1.26
---	------

4.5. The practices of hand washing among the household members

Most of the respondents 277 (87.11 %) reported not having washed their hands during the time of the interview. The reasons for not washing hands were; lack of water (50.5%), time (3.6%), soap (10.6%) and hand washing station (35.4%). 41(12.9%) respondents who had washed their hands, 26 (63.41 %) of these respondents had used water and soap while 15(36.6%) used water only. Almost all the respondents 250(78.6%) had no less access to water sources and 206 (64.6) do not have access to soap to wash hands before a meal and after the toilet. Table 4, below summarizes the key findings on hand washing practice among the respondents

4.6. The key barriers for handwashing with soap after latrine

Table 4: Showing barriers experienced by the respondents in regarding to hand washing after latrine use.

Variable	Frequency Percentage	
	(n=318)	(%)
Having adequate access to water supply nearby. Yes		
No	75	23.5
	24	76.4
	3	
Source of water		
Pond	37	11.6
Deep well	00	00
Shallow well	23	7.2
Spring	258	81.3
Tank	00	00
How far is the water source from your home		
Above 5kms	240	75.4
Between 4-3kms	58	18.2
Within 1km	20	6.2

How many jerricans do you use a day		
Above 5 jerricans	35	11.0
About 4 jerricans	67	21.0
Between 1-3 jerricans	216	67.9
How much do you need to construct a tippy tap/handwashing facility?		
30,000 -50,000	261	82.0
20,000- 25000	43	13.5
Below 10,000	14	4.4

A large number of respondents 243(76.4%) reported that they had no adequate access to supply of water nearby their homes and a few households as low as 75 (23.5%) said that the long distance covered to get water makes them prioritize other functions instead of reserving water for hand washing with soap after the latrine. The other barriers included the cost to have the hand washing facility being expensive to buy materials where by the cost for the installation of the tippy tap is above thirty thousand shillings among the 82% of the households reached during the study.

DISCUSSION

Hand washing with soap removes transient potentially pathogenic organisms from hands and it is not sufficient to wash hands with only water after critical events like defecation. If individuals wash their hands, they are less likely to transmit pathogens from their hands to their mouths. Therefore, this study was undertaken to assess the knowledge, attitude and practice, and barriers of hand washing among the population of Karungu Sub -county, Buhweju district in order to provide information that could be used to promote hand hygiene among the local population.

The majority of the respondents had a good level of knowledge on hand washing and slightly more than two - thirds had a positive attitude towards hand washing.

5.0.1 The availability of hand washing facilities close to the latrines.

Based on the data findings, it clearly shows that irrespective of latrine 89% latrine coverage which is above the national target of 80% in rural areas, the number of households who practice hand washing is 16.7% leaving out 77.4% not using soap during hand washing after latrine use. This typically illustrates that hand washing with soap is not given the attention it deserves.

5.0.2. The knowledge of hand washing among the household members.

This study assessed knowledge on hand washing among the population. To start with, most of the respondents knew that human feces contain germs. This was a very encouraging finding as we understand that hand washing knowledge is greatly influenced by an individual's awareness. Homes are the right place to initiate this behaviour early in the childhood (Alyssa Vivas B.G, 2010).

Besides, the study revealed that more than half of the respondents mentioned their household members as a source of information on hand washing knowledge. This was consistent with a study done in Ethiopia where respondents used their household members as the main source of hand washing knowledge (Alyssa Vivas B.G, 2010). This finding clearly showed that household members at home can play a vital role in imparting the knowledge of hand washing very early in the other members' life.

To increase on the level of knowledge on hand washing, radio was the most mentioned media source used by households to enhance their knowledge on hand washing. This was also

revealed in a study conducted in Indonesia where households used radios to get knowledge on hand washing (Tri Setyautami, 2012).

Respondents mentioned before a meal (14.78%), after a meal (26.10%), after play (46.23%) and after the toilet (66.67%) as critical moments for washing hands. This was greatly lower than in a study conducted in Ethiopia which showed (98.8%) of the respondents washed their hands before a meal (Vivas A, 2010). And another study in Philippines reported that 46.9% of the respondents washed their hands before a meal (RB Sah, 2014).

When it comes to hand washing, these results were consistent with a study in Philippines where before a meal, after a meal, after toilet and after playing were the major episodes when respondents washed their hands (RB Sah, 2014).

In this study, respondents reported hand washing to prevent diarrhoeal diseases while diarrhoea was the most identified disease which results from not washing hands, followed by cholera and typhoid. This was also reported in a study done in South Africa where diarrhoea, cholera and typhoid were the most popular diseases mentioned by respondents (Jerry E. Sibiya, 2013).

These findings indicate that respondents are well knowledgeable on diarrhoeal diseases that result from poor hand washing. However, few respondents mentioned malaria as a disease resulting from not washing hands. This could be due to the factor that most of diarrhoeal diseases manifest with fever symptoms. Below is the basic procedure for effective hand washing

5.0.3. The attitudes towards hand washing among the household members

Attitude affects an individual's feeling about the habit and may eventually influence their practice. And in this study, most of the respondents' had a positive attitude towards hand washing. Keeping hands clean is one of the most important steps which can be taken to avoid diarrhoeal diseases and the spread of germs to others (CDC, 2016).

Many diseases and conditions can be spread by not washing hands with soap and clean running water (CDC, 2016). This was true in this study where the majority of the respondents agreed that hand washing was important and prevents cross-contamination of germs. This was also consistent with the study conducted in Nigeria where children agreed that hand washing was important (Merenu IA, 2015a).

In this present study, more than half of the respondents agreed that it was important to teach household members hand washing practice. This indicates that enhancement of knowledge on 27

hand washing among the household members is necessary. In this regard, parents could play a vital role in enhancing hand washing practice among other family members. Even, children when taught good hand washing practices can also be the agents of change subsequently by spreading what they have learned to their family, friends, and community members (SARKAR, 2013). This can therefore result in a better quality of life.

5.0.4. The Practices and the key barriers in hand washing practices among household **members**

The current study revealed that 87.11% of the respondents reported to have not washed their hands. The reasons for not washing hands were; lack of water (50.5%), time (3.6%), soap (10.6%) and hand washing station (35.4%). A study conducted in Ethiopia showed that only 36.2% of respondents washed their hands using soap and water which was higher than in this study (Vivas A, 2010b). Similarly, a study in the Philippines showed an average of 37.7% washing their hands with soap and water which was also higher than this study (RB Sah, 2014). This therefore, means that respondents in the study area have less access to water and soap. Another study in Nigeria showed that 92.7% of respondents used soap and water to wash their hands and 11.6% used only water without soap (Merenu IA, 2015a).

What prevented respondents in this study from washing their hands include; lack of water, time, soap and hand washing station. This was also mentioned in a study by Ekwere in Nigeria where lack of water, busy schedule, and lack of soap were the most constraints to hand washing (Ekwere TA, 2013). This could be due to the water cost where water has to be used sparingly since most households used piped water. And time could be due to their busy schedule since most of the respondents were school children.

This study attempted to explore accessibility to water and soap before a meal and after toilet *for* children in households. A slightly lower percentage of the respondents (36.2%) had access to water and 35.5% had access to soap. However, this was greatly higher than 17.5% respondents who had access to soap before meal and lower than the 61% who had access to the soap after a meal in a study conducted in India (S. PATI, 2014a). This can be attributed to the on-limited availability of soap in households. In a similar study on hand washing among children in Colombia, it was observed that only 33.6% of children had access to the soap before eating **and** after defecation (Catalina Lopez-Quintero, 2009).

The study results also revealed that a higher number of respondents 243(76.4%) said that they **id not have** adequate access to supply of water nearby their homes to a few households as low as 75(23.5%) insisting that the long- distance covered to get water makes them prioritize other

functions instead of reserving water for hand washing with soap after the latrine. Importantly, a good number of respondents indicated that the available sources are in the valleys far from households since they stay in hills 81.3% (258). The other barriers included the cost to have the **hand washing facility being** expensive to **buy** materials where **by** the cost for the installation of the tippy tap is above **thirty** thousand shilling among the 82% of the households reached during the study. Because of long distances and children are at school, any drop of water is saved for washing clothes, feed on animals as well as bathing **than** one to put at **the** latrine

Observed practices during data collection in some homes

Hand washing facilities can be placed at all points in a home



5.2. CONCLUSION

A determination of the level of knowledge, attitude, practices, and barriers on hand washing among the respondents led to the conclusion that the respondents in the study area have sufficient knowledge about hand washing.

However, this cannot be relied on because we cannot tell whether this good knowledge was being transformed into practice since this was self-reported knowledge. In terms of the questionnaire's results, the attitude was also found to be high among the population but there was an indication that some households lacked soap since to about half of the population reported no access to soap.

Most of the population believed that washing of hands prevents diarrheal diseases. This is due to **me** abundance of awareness sources like media, schools, health workers, and other household members.

The other messages from this study are that in addition to barriers and levers previously identified and documented within the literature, this study has found that most households were

situated in hills and the available natural water source exist in the low lands increasing distance hence time- consuming for other productive activities.

The use of a theory-based question schedule is likely to give a fuller and more accurate picture of the barriers and levers to hand hygiene practice.

5.3. RECOMMENDATIONS

Based on the findings, most of the respondents did not wash their hands due to lack of water. Therefore, i recommend the government to provide adequate quantities of potable piped water at a cheap price in Karungu Sub- county for easy access.

Karungu Sub -county leaders should promote harvesting rain water at the household level so that to **make water available for washing hands.**

Health education should be incorporated in hand washing promotion programs so that to improve the knowledge, attitude, and practice of hand washing for the entire population in this community and thereby, their quality of life.

Buhweju District should formulate ordinances that incorporate homes as centers for promoting hand washing programs for children and parents should be the number one priority for initiating such programs.

Radios being the most used media source of information for people in households, I recommend that radio programmers should at least add a hand washing promotion skit in each program.

5.4 SUGGESTIONS FOR FURTHER RESEARCH

Investigating the underlying causes for failure to use available hand washing facilities.

The relationship between hand hygiene and control of sanitation related diseases.

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APPENDICES

Appendix 1: Consent Form

I am Pius Manigaruhanga a student from Kabale University pursuing Bachelor's degree in Environmental Health Science. I am carrying out a study on factors associated with low hand washing coverage in Karungu Sub -County in Buhweju District. Your involvement in this study is **voluntary** and your answer will only be used for academic issues or even help to generate information that which will help to hand washing coverage in the Sub county. You are free to with draw from the study if you wish at any point and this will not affect you in any way. Any information given to me will be kept with the utmost confidentiality.

Tue nature of the study and the reason has been explained to me and I voluntarily agree to participate.

RD//2021

Date.

Appendix 11: Questionnaire for Respondents

A questionnaire on factors associated with low hand washing coverage in Karungu Sub- county
Buhweju District

Instructions. Answer by ticking the most appropriate option in the box.

Section A. Socio- demographic characteristic of the respondent.

1. Gender characteristics of the respondents?

Male

Female

2. Age group of respondents

a)15- 20 years

b)21-25years

c)Above 25years

3. Religion.

a) Catholic

b)Muslim

c)Bom again

d)Protestant

4. Occupation

Employed

Self -employed

Others specify

5)Tribe.

a)Baganda

b) Basoga

c) Banyankole

d)Others specify

6.Number of people in the house hold?

1-5

6-10

More than 10

7.Education level

a) Primary

b)Secondary

c)Tertiary

d)Others specify

Section. B. Availability of handwashing facilities close to the latrine

For questions I-6, an observational checklist was used to capture relevant data. 1

.Availability of the latrine at the household

Yes

No

2.Is there a handwashing close to the latrine?

a) Present

b) Absent

3.The functionality of the available handwashing facility

a) Nonnally used

b) Moderately used

c) Abandoned

4.What is the quality of the available handwashing facility?

a) Good

b) Fair

c) Poor

5.The **type of available handwashing facility close to** the latrine?

a) The only jerrican

b) Jerrican with water

c) Tippy tap

6.The type of materials used to the construct handwashing facility? a)

Pennanent

b) Temporally

Section C: Knowledge on benefits of hand washing after the latrine C

(1). knowledge on hand washing with soap after latrine use

1. Do human faeces contain germs?

Yes **D**

No **D**

Do not know []

2. Unclean hands are the way to the transmission of germs.

Yes **D**

No **D**

Do not know []

3. When do hands become visibly dirty?

Before meal

After meal

Anear

Aner tote

Do not know

4. What do you need to wash your hands properly?

Clean water only

Clean water and soap

5. Are all clean objects free from germs?

Yes

No

Do not know

6. Is it the order of the parents to wash your hands?

Yes

No

Donotknow

7. If you fail to wash your hands, you **will** be exposed to diarrhoeal diseases.

Yes

No

8. Which of the following diseases is a result of poor hand washing? (more than one answer is possible)

cholera

Diarrhoea

Dysentery

Typhoid

skin infection

Flu

Malaria

9. From which source did you learn about hand washing? (more than one answer is possible)

Parents

media

Teachers

Health workers

10. From which media source have you read/heard about hand washing (more than one answer is possible)

Television **D**

Radio **D**

Leaflets **D**

News paperst]

Posters **D**

Other (specify)

11. Is it possible that food and water can be contaminated, if you do not wash your hands with soap?

Yes **CJ**

No. **D**

Do not know [_]

C (2). The attitudes on hand washing **with** soap after latrine use

1. It is proper to wash hands **with** clean water.

Aenee

Neutral **D**

Disoneresp_]

2. Unhygienic conditions of **hands cause** contamination of food and consumable water.

Agree **CJ**

Neutral **D**

Disagree **C::J**

3. If you wish to wash your hands well with water, you do not need to use soap.

Agree **CJ**

Neural[]

Disaeree [

4. Do you believe hand washing prevents cross-transmission of germs?

ve]

>> []

Not sure[]

5. Do you believe frequent hand washing is important?

Yes **O**

» J

Not sre []

6. It is necessary to have a hand washing facility at home?

Agree **D**

Neutral []

Disagree **D**

7. You only need to wash your hands with soap if they look dirty or smell bad.

Agree []

Neutral **D**

Disagree []

8. Faeces do not contain germs.

Agree **O**

Neutral **L**

Disagree []

9. Washing hands with soap before eating is important.

Agree **O**

Neutral []

Disagree **L**

10. It is important to teach children to practice hand washing.

Agree []

Neutral []

Disagree **L**

C (3). The Practices on hand washing **with** soap

1. Have you washed your hands today? (if no skip 2) 1. Yes. 2. No
2. I yes; what did you use to wash your hands? **D** 1. Water only. 2. Water and soap
3. Why didn't you wash your hands today? **D** 1. Lack of water.
2. Lack of time. 3. Lack of soap. 4. Lack of the hand washing station. 5. I didn't find my hands dirty.
4. Do you easily get water to wash your hands before a meal and after toilet? 1. Yes. 2. No
5. Do you get soap easily to wash hands before a meal or after visiting the toilet? 1. Yes. 2. No

6. Which one of the materials is most used to wash hands in your *family*?

1. Water *only*
2. Soap and water

Section: **D**. The key barriers to hand washing **with** soap 1. Do

you have access to an adequate water supply nearby? *Yes*

No

2. What is the source of getting water for home use? a)

Pond

b) Deep well

d)shallow well

e) Tap

f) Tank

3 .. How far is the water source from your home?

- a) Above 5kms
- b) Between 4-3kms
- c) Nearby

4 .. How many jerricans do you use a day

- a) Above 5
- b) About 4**
- c) Between 1-3

5. How much do you use to construct a tippy tap/"handwashing facility?

- a) Around shs. 30,000=
- b) Between shs. 20,000- 25,000=
- c) **Below shs. 10,000=**