



**EVALUATION OF ADEQUACY AND LEVEL OF UTILIZATION OF SANITATION
FACILITIES IN PRIMARY SCHOOLS IN MANGA SUB COUNTY,
NYAMIRA,COUNTY, KENYA**

BY

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**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT OF
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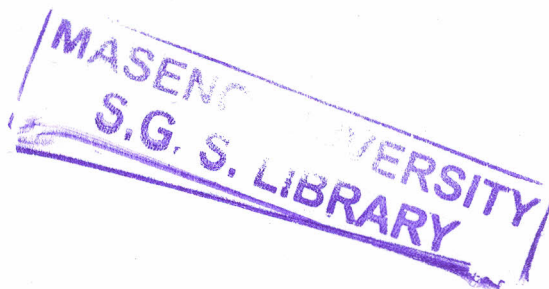
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ABSTRACT

Good sanitation and hygiene practices promote the wellbeing of children in schools. According to WHO(World Health Organization), 88% of all diarrheal related illnesses result from poor sanitation and hygiene practices as well as unsafe water. In addition, UN Secretary General and Millennium Projects have highlighted the need to address sanitation facilities in schools. This is not just limited to inclusion of 80% of school children educated on hygiene but also that all schools are equipped with adequate sanitation facilities. This study sought to find out the adequacy and utilization of sanitation facilities among school going children in Manga Sub County, Nyamira County. To achieve the set objective 10 schools were selected to participate in the study. A chi-square test was used to find out whether there was association between awareness of pupils on consequences of poor sanitation and utilization of the sanitation facilities. All the 10 schools used pit latrines for their disposal of fecal matter while 8 schools had hand washing facilities in place. Latrines were found to be inadequate in 8schools having below minimum standard of latrine to pupil ratio of 1:25 for girls and 1:30 for boys set by the Ministry of Health in collaboration with Ministry of Education. Chi square test showed a significant association. APvalue of 0.04 was achieved in a test comparing awareness/knowledge and utilization of available sanitation facilities. Thus the need for schools to enforce utilization of the available sanitation facilities, put in more effort to build additional facilities as well as equip the hand washing facilities by ensuring continuous availability of water all geared towards promoting utilization.



CHAPTER ONE

1.1 Introduction

Good sanitation practice is the single most effective practice of preventing the spread of microbes in schools (NHS, 2006). The main aim of SSHE (School Sanitation Hygiene Education) is to improve education, hygiene and sanitation practices among primary school going children as well as improve the quality of life led by the children and the community now and in future (MoH, 2009). As a result of the 2008 Global Hand Washing Day which coupled up as the International Year of Sanitation, countries are uniting to find more effective and workable approaches that will help reduce sanitation related diseases (WHO, 2004).

1.2 Background Information

According to World Bank Kenya's population in 2014 was estimated at 44,611,813 up from 43.18 million in 2012 (World Bank , 2014). Joint Monitoring Plan Indicates that 31%(32% rural and 27% urban) of Kenyans have access to improved sanitation. In addition 51% of the urban population shared latrines while 18% of the total rural population practiced open defecation. In Africa diarrhea kills nearly 1 child in every 5 children less than five year of age (Eco Soap Kenya, 2011). There has been minimal progress geared towards halving the number of people without access to sanitation and safe drinking water by 2015 (MoE, 2010). Experts state that at present 2.6billion (Reeves 2014) live without access to good sanitation which translates to countless communities that have people exposed their own feaces as well as their neighbor's feaces. Feaces are then to people fingers and flies as well as find its way to water sources leading to looming public health crisis (Zomerplaag and Mooijman 2005).A study conducted in Kakamega on 'state of sanitation and hygiene of public primary schools in Kakamega

municipality, Western Kenya' showed that the state of sanitary schools in schools was poor, unmaintained and inadequate (Barasa et al, 2015).

1.3 Conceptual Perspective

Good sanitation in schools implies that each pupil should be able to readily access well maintained and convenient sanitation facilities for proper disposal of excreta, suitable anal cleansing material and more so effectively clean hands with soap after visiting the latrine/toilet (MoH, 2009). According to the Ministry of Health (2007) sanitation entails the separation of human faeces from the environment, maintenance of personal and food hygiene, safe disposal of liquid and solid wastes, vector control and safe drinking water chain. Sanitation has also been defined as a process where people demand, develop, and sustain a healthy and hygienic environment for them while erecting barriers to prevent disease transmission (UNICEF, 2010).

1.4 Problem Statement

Inadequate sanitation facilities are one of the major challenges among primary schools more so with the introduction of free primary education, which has led to many pupils enrolling in primary school. Poor funding (Curtis V et al, 2011; Mathew K et al, 2009) and low prioritization of sanitation facilities in primary schools remains to be a big challenge. Most (Mathew K et al, 2009) of the efforts have been concentrated towards books, teachers and classrooms. In spite of the efforts made by Ministry of Health (MOH), Ministry of Education (M.O.E) and Non-Governmental Organizations in encouraging and sensitizing the primary school on good sanitation, little is known about the adequacy and utilization of sanitation facilities in primary schools. This study therefore seeks to find some of the issues surrounding the inadequacies and some of the solutions that can be used to address the issues raised.

1.5 Study Objectives

1.5.1 Broad Objective

The main objective of the study is to find out the adequacy and utilization of sanitation facilities in primary schools within Manga sub- County.

1.5.2 Specific Objectives

The study aimed at looking at four specific objectives as follows:-

1. To find out what types of sanitation facilities found in selected primary schools in Manga sub county
2. To assess the adequacy of sanitation facilities in selected primary schools in Manga sub county
3. To evaluate the utilization of sanitation facilities in selected Primary schools in Manga sub county
4. To assess the knowledge of pupils on the consequences of poor sanitation

1.6 Research Questions

The study based on four research questions:

1. What types of sanitation facilities are found in primary schools in Manga Sub County?
2. How adequate are the sanitation facilities in primary schools in Manga Sub County?
3. How are the sanitation facilities in primary schools in manga Sub County utilized?
4. Are the pupils aware of on consequences of poor sanitation?

1.7. Study Hypothesis

H_0 : There is no relationship between knowledge of pupils on the consequences of poor sanitation and utilization of sanitation facilities

1.8. Scope and Limitation of the Study

The study was limited to selected primary schools in Manga Sub County, Nyamira County that are already implementing Hygiene promotion activities in their schools. With regard to school sanitation, the study will focus on human excreta disposal with emphasis on the adequacy and availability of the sanitation facilities used as well as the practice towards use of the sanitation facilities.

1.9 Justification of the Study

In spite of the increase in water supply in the past years (63% in 2008 to 70% in 2010), increased inadequacy and utilization of sanitation facilities remain to be of a concern (UNICEF, 2010). The critical issues affecting sanitation in primary schools include inadequate sanitation facilities more so in informal settings and poor areas, low prioritization of sanitation facilities in primary schools, poor enforcement as well as inadequate maintenance of sanitation facilities, overcrowded schools and large regional discrepancies in term of distribution of sanitation facilities (MoPHS and MoE, 2009). Thus exploring the adequacy and utilization of sanitation facilities in Primary schools will provide understanding of what needs to be done to avert poor sanitation in primary schools.

The information gathered in this study will be important to donors dealing with WASH in schools, Education and Health policy makers given that this is an evaluation of the ongoing WASH program in schools. The findings and recommendations will be useful and will form part of the minimum requirements for registration of new primary schools. The study outlines the rift between what is actually happening on the ground and the SSPG (Schools Sanitation Policy Guidelines).

Study findings will act as eye opener to the parents and other education stakeholders sensitizing them to demand for improved sanitation in schools. The parents will be able to assess the sanitary conditions in schools where their children are studying and advice the schools accordingly thus taking part of provision, maintenance and utilization of sanitation facilities in schools.

10.1 Conceptual Frame Work

Figure 1 shows the conceptual frame work suggesting the independent variables are grouped into sanitation facilities, adequacy as well as practices. The intermediate variables include availability, functionality and behavior change affecting the depended variables grouped into negative and positive outcomes. Higher pupil achievement in class, higher school attendance and a healthy environment form positive outcomes where as high disease risk, negative impact in learning and irregular attendance form negative outcomes.

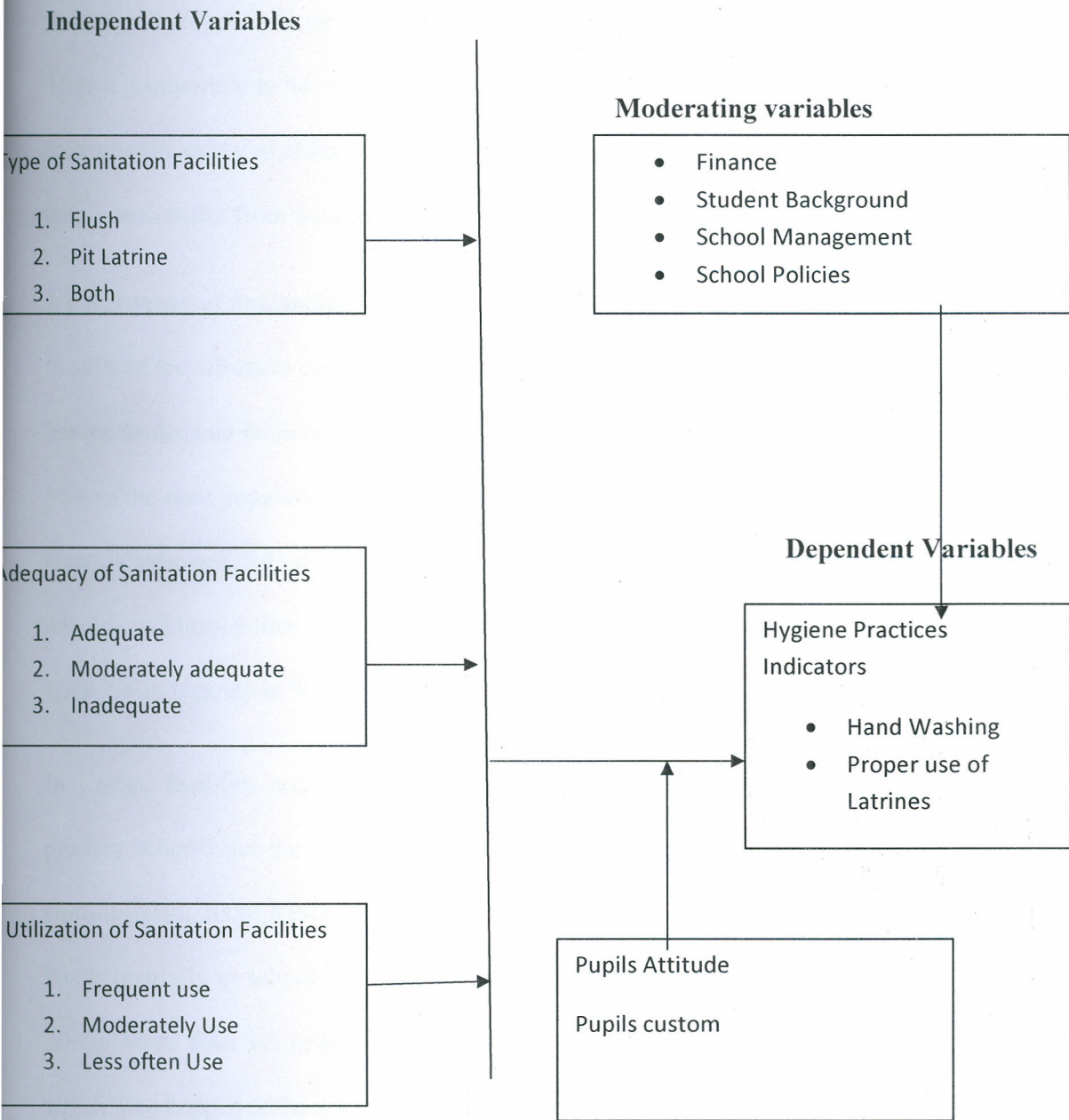


Figure 1 Conceptual Frame work

Adapted from: (Snow et al, 2014)

CHAPTER TWO: LITERATURE REVIEW

Primary schools are a home to many children who spend most of their time away from home. Thus it is important to have schools that are friendly to pupils with adequate sanitation facilities to ensure the safety of children in schools. This has however been not the case. Most schools continue to suffer from inadequate sanitation facilities posing a threat to the health of the pupils.

2.1 Adequacy of Sanitation Facilities

In spite of the efforts to combat poor sanitation, 40% of the current world population is still having inadequate facilities lacking safe means of disposal of excreta (WHO, 2012). In Asia 31% of the rural population have access to good sanitation (WHO, 2004). A study conducted in Uganda indicated that only 30% of the schools had adequate sanitation as well as separate toilets for girls and boys which were attributed to increased enrolment of pupils. In study conducted by UNICEF in Uganda in 90 primary schools, only 2% of the schools had adequate latrine facilities.

In Kenya, facilities used for hand washing have not been considered important more so in primary schools yet the public health perspective hand washing is very important in disease control (NHS, 2006). Research in America has demonstrated that when young children wash their hands regularly at school the incidence of coughs, colds and diarrheal disease decreases (NHS, 2006). More than 1.5 million children under five years succumb to diarrheal related illnesses which also happen to be a number two killer of children under five years worldwide (Eco Soap Kenya, 2011). Washing hands with soap and clean water has been cited as the most efficient way of reducing diarrheal related deaths. Hand washing is important for primary school children in the improvement of health and prevention of diarrheal disease which in turn reduces the absenteeism incidences in school (Xuan and Hoat, 2013). Without facilities used in hand

washing, efforts in construction of VIP Latrines is a total waste of resources and time since fecal oral transmission of diseases is virtually guaranteed (Waterkayn, 2000).

According to the Kenya Ministry of Education(MoE, 2010), the recommended sanitation structures in primary schools should be 5 liters of water per day per pupil for children in day school and 15 liters per pupil per day for pupils in boarding school. Regarding the Toilets /Latrines, the M.o.E recommends 1 cubicle for every 25 girls and this should be supported with special bathing facility, 1 cubicle for every 35 boys with a supplementary 1 meter of urinal walling for every 50 boys. In addition 1 special needs cubicle for each gender of pupils to cater for the physically challenged pupils. The primary schools should also have adequate toilet cubicles for teaching staff and 1 toilet cubicle for each gender of support staff. Each set of latrines/toilets must have a minimum of 1 hand washing facility either built into the latrine/toilet block or provided through separate stand-alone hand washing facilities. This study will therefore find out the correlation between the number of pupils and available sanitation facilities in the school and how the number of sanitation facilities affects utilization of these facilities

In the sub Saharan Africa only 45% of the population has access to sanitary disposal of feces while in Asia 31% of the rural population can access basic sanitary facilities (WHO, 2012). According to the WHO (2000) report an estimated 2.6 billion people can inadequately access basic sanitation. The report goes ahead to state that the world will fail to achieve the sanitation target “nearly 2 billion people should access basic sanitation by 2015” by half a billion if the 1990/2002 trends hold (WHO, 2002).

A study conducted by Snell (2003) alludes that a combination of health education, adequate sanitation facilities and correct behavioral practices is meant to positively impact on the hygiene

and health conditions of the community. Therefore, the success of the school health program is determined not only by the number of water sources and latrines constructed but a combination of all these factors. She emphasizes that un- applied knowledge has no impact on health (Snel, 2003).It is therefore upon this study to find out how these factors relate to each other.

2.2 Utilization of Sanitation Facilities

Children spend most of the time in school interacting with different cultures and behaviors. In developed countries provision of latrines / toilets and hand washing basins is a norm , However, utilization of these facilities largely depends on their physical quality, for instance if they are well maintained or not (Reeves, 2014). Studies have shown that sanitation facilities that are child friendly, clean and well-resourced ensuring that children can use the facilities with ease may be a precondition of utilization of these facilities (Zomerplaag and Mooijman 2005). Functional latrines/toilets and hand washing facilities are vital in minimizing incidences of infectious diseases (Bartlett, 2003). In 2009 the promotion of hand hygiene formed an important aspect of public health in combating the outbreak of influenza pandemic in both developed and developing countries (Sandora et al, 2008).A study conducted in 87 primary schools in London indicated that 40% of the pupils would never use toilets at school to defecate and 32% would only use the toilets when they are desperate since the school toilets are always dirty (Lundblad & Hellstrom, 2005). In spite of little literature and evidence on correlation between improved school sanitation facilities to reduction of illnesses improved hand hygiene has been proved to reduce diseases in the school set up (Aiello et al, 2008).

Reports indicate that cleanliness of the latrines directly correlates to its usage by school children (Bartlett, 2003). In South Africa, the poor condition of school latrine has once caused the death

of a five year old boy (Hawker, 2014), this tragic incident demonstrates the health and safety dangers associated with poor sanitation infrastructure in school more so in rural schools where the most poor as well as underserved population schools are located. A report by UNICEF indicates that availability of latrines, hand washing facilities coupled with useful life skills on hygiene and health in schools positively affects the utilization of sanitation facilities provided in school (UNICEF, 2003).

Karangi and Aboda (1993) state that utilization of sanitation facilities in schools is a function of the availability, privacy they provide and the level of cleanliness of the facilities (Karangi and Aboda, 1993). Studies conducted in Hoima and Tororo indicate that 24% and 36% of the respondents respectively used the bush for the disposal of faeces. This study explores the utilization of sanitation facilities available in primary school within Manga Sub County.

2.3 Pupils' Knowledge on Sanitation

Much attention has been drawn to improved sanitation in rural school settings where poor conditions are perceived to cause disease transmission among pupils (UNICEF, 2010) and possibly to their younger sisters and brothers at home. School children have also been reported to be the best agents of change in the community (Onyango-Ouma et al, 2005). Several studies conducted in schools have shown positive self-reported hand washing among pupils (O'Reilley et al, 2008) (Mathew et al, 2009) which should be encouraged in schools. Never the less this is subject to benefit of doubt due to a strong tendency of reporting what is socially desirable (Leslie et al, 2012) as well as evidence thus correlating poorly with measured fecal indicator bacteria on hands (Curtis et al, 2011). As a result of the various findings exhibited by the authors, this study

will seek to find out whether the pupils are aware of good sanitation and how this affects the utilization of the sanitation facilities in schools.

CHAPTER THREE: METHODOLOGY

3.1 Research Design

Cross sectional study design formed the basis of the design given that the issue at hand affects more than one section of the population. The study made use of both quantitative and qualitative methods of data collection. The quantitative aspect of data collection was used to collect quantifiable data whereas qualitative aspects were used in exploring in depth issues in the study. School authorities are in most cases tasked with ensuring the adequacy whereas the utilization is majorly a function of the pupils.

3.2 Study Population, and Area of Study

The study was conducted in 10 primary schools in Manga Sub County, Nyamira County. This was based on the fact that these are the schools trained on sanitation and hygiene promotion. The study subjects comprised Head teachers, teachers in charge of sanitation and pupils of selected primary schools in Manga Sub County.

Fischer's formulae was used to calculate the sample size.

$$n = \frac{Z^2 Pq}{e^2}$$

Where

n = expected sample

Z^2 = is the abscissa of the normal curve that cuts off an area α at the tail ($1 - \alpha$ = the desired confidence level).

e = is the desired level of precision

P = is the estimated proportion of an attribute that is present in the population

$$q = 1 - P$$

The e was placed at 10%

$$\text{Thus } n = \frac{1.645^2 \times 0.5 \times 0.5}{0.1^2} = 67.65 \approx 68$$

Since the study was targeting the 10 schools in the program, a sample of 100 pupils (10 per school) was taken. This would yield better precision than the calculated 68.

In selecting the 10 pupils to participate in the study, a simple random sampling method was used to select 5 boys and 5 girls to be part of the study in each of the schools.

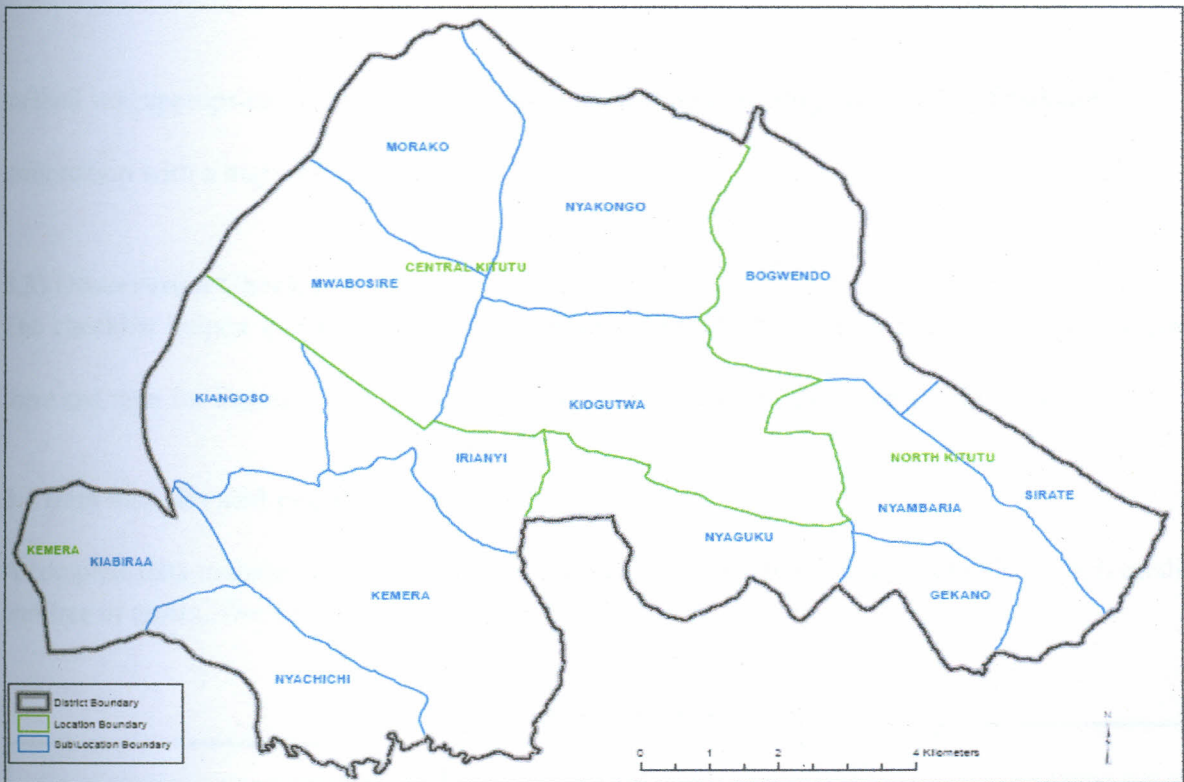


Figure 2: Manga sub county Map

3.3 Data collection

The data collection methods that were used in this study comprised of both qualitative and quantitative methods. These included:

3.31 Survey Questionnaires

This formed the main source of collection of both qualitative and quantitative data. 10 pupils from each of the selected primary schools responded to a self-administered questionnaire.

3.32 In depth Interviews

In depth Interviews was conducted to key informants comprising of the 10 Head teachers from the selected schools and Sub county Public health Officer in order to get cross cutting ideas. This

method was appropriate in collecting the opinions through probing thus getting firsthand information with a high response rate.

3.33 Observation Check List

The checklist helped in collection of data which required observation and actions taking place there and then for instance observation of the number of and types of sanitation facilities.

3.4 Data analysis and presentation

A complete data management model was employed to ensure the data collected is of high quality and free of errors. The following model was used:

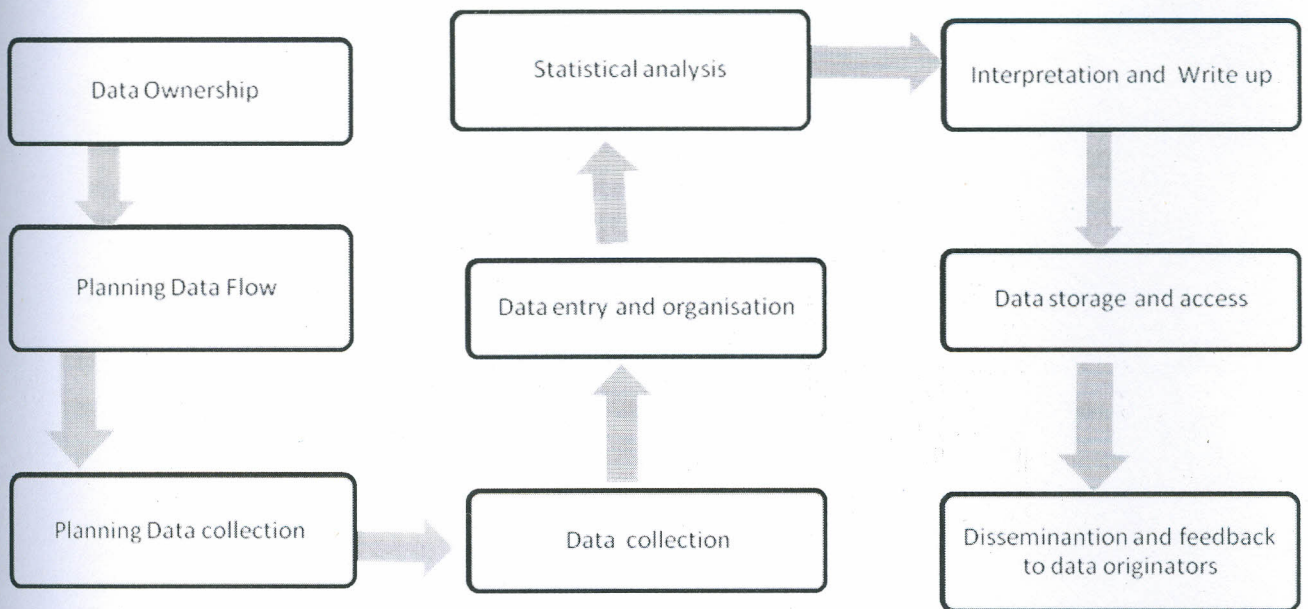


Figure3: A data management model used

Strategies were put in place to ensure ownership of the data collected to ensure possession of, responsibility for, control /power over the information regarding the study. Control measures were included rights to access, create, modify, package, and derive benefit from the data

collected. This was to ensure data generated meets the data quality standards and of highest integrity.

Data entry and storage was done in SPSS V20 for quantities data. Qualitative data was collected transcribed and conclusions drawn. A check list was used to find out the types of sanitation facilities that are available in primary schools.

CHAPTER FOUR: DATA ANALYSIS AND DISCUSSION

4.1 Data Analysis

The studies key findings are presented in tables, graphs, and figures. A chi-square test was conducted and results discussed. This follows the order in which the objectives are stated.

4.1.1 Types of sanitation facilities

All the schools visited used pit latrines for disposal of faecal matter. Never the less the latrines were in bad shape with 5 schools having latrines without shutters. 3 schools indicated that they purposely did half shutters to stop children from hiding in the latrines. This a side, latrine without shutters or with half shutters only works against girls and is a big hindrance to using them since they don't provide privacy needed.

All the schools had urinals attached to the boys section. Only 8 schools had hand washing facilities. None of the schools had anal cleansing materials, thus children resorted to using leaves and some tearing the books to use. The HWF however the latrines were nowhere near. Most of them were located next to the classrooms. According to the school health policy guidelines, these facilities should be placed next to the latrines to ensure that children don't forget to wash their hand after visiting the latrine.

4.1.2 Adequacy of Sanitation Facilities

Table 1 Table showing Latrine to pupil ratio for the sampled schools

School	Boys Lat	Girls Lat	Boys	Girls	# Boys per a latrine	#Girls per a latrine
Nyambaso	12	9	230	200	19	22
Morako	15	10	275	250	18	25
Omogwa	10	9	420	315	42	35
Sengereri	3	3	301	280	100	93
Nyagechenche	2	2	320	302	160	151
Riombasa	4	4	299	189	75	47
Riagechure	4	5	345	295	86	59
Gesure	4	6	290	280	73	47
Sengera	7	11	357	320	51	29
Ekerubo	9	10	397	350	44	35

Recommended ratio for boys latrine 1:30 (WHO, 2009)

Recommended ratio of girls latrines 1:25

From the study only 2 schools had adequate facilities that closely matched with the recommended ration with ratios of 1:22 and 1:25 for girls' latrines and 1:18 and 1:19 for boys latrines.

2 schools reported moderately adequate facilities with ratios being slightly above the recommended standards while 6 schools had inadequate facilities. This is a below average with schools having so many children using a single latrine for both girls and boys. The school in this category had ratios more than 1:28 for girls and more than 1:50 for boys.

4.1.3 Utilization of sanitation facilities

Both the latrines and Hand washing facilities in the schools visited were not utilized as required with respondents giving varied responses. Of the 10 school visited , 2 schools lacked the hand washing facilities, 5 schools had and washing facilities with water and pupils could be seen washing their hands after visiting the toilet while 3 schools had hand washing facilities but there was no water.

Frequency of hand washing by respondents:

Of the 10 schools visited students were asked on whether they washed their hands after every time they visited the latrines and the following responses were given

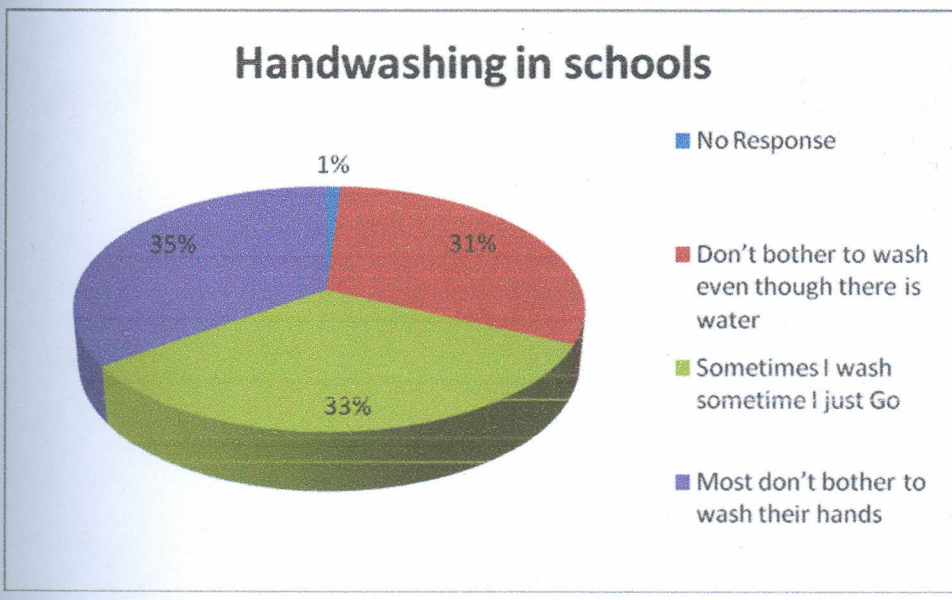


Figure 3: Pie Chart for Frequency of hand washing in school

Pupils were also asked to give their opinion on the use of the latrines in their schools in the responses were given. 1% person did not respond to this question. 31% did not bother to wash their hands even though there was water, 33% stated sometimes they just wash and a times they just go while 35% stated that most of the time they don't bother to wash their hands.

Attitude towards use of latrines

Table 2 : Attitudes towards use of latrines

Attitude towards use of Latrines	Responses	%
I don't have any problem using them	52	52
I hate going there but I have no choice	20	20
Sometimes I use nearby bush	2	2
Sometimes I avoid going there	21	21
I avoid going there altogether	5	5
Total	100	100

52% of the respondents don't have any problem using the latrines; 20% stated that they hate going there but they have no choice; 2% stated that sometimes they use the nearby bush; 21% stated that sometimes they avoid going there while 5% stated that they avoid going there anyway.

Functionality of hand washing Facilities

Most (33%) of the respondents stated that there was no water nor soap most of the time and so they never use the hand washing facilities; 16% of the respondents stated that most of the time there is no water; 30% stated that there was water and soap all the time; one person did not respond to this question and 20% of the respondents had no hand washing facilities in their school since they come from the 2 schools that had no HWFs.

Table 3: Functionality of hand washing Facilities in schools

	Frequency	Percent
Non response	1	1.0
Most of the time there is no water	16	16.0
There is no water or soap at all, we never use them	33	33.0
There is water and soap all the time	30	30.0
Not applicable	20	20.0
Total	100	100.0

4.1.4 Knowledge of pupils on the consequences of poor sanitation

All the pupils (100) interviewed stated that they understand the consequences of poor sanitation, though when asked to name one of the disease caused by water related problems various responses were given as follows:

Table 4 : Table showing responses of pupils on consequences of poor sanitation

Disease	Responses	%
Skin Rush	29	29
Scabies	10	10
Diarrhoea	52	52
Others	9	9

29% of pupils mentioned Skin rash, 10% mentioned scabies, 52% mentioned diarrhoea while 9% mentioned other disease not in this category.

School were then grouped in to 3 categories of Adequate, moderately adequate and inadequate latrines and compared with the pupil's knowledge on the consequences of poor sanitation. The following responses were given:

Table 5: Table showing Pupil's responses on the consequences of poor hygiene

		Pupils Responses				
School Category	No. Of schools	Skin rash	Scabies	Diarrhoea	Others	Total
Adequate	2	10	3	6	1	20
Moderately adequate	2	6	1	12	1	20
Inadequate	6	13	6	34	7	60
Total	10	29	10	52	9	100

A total of 6 pupils in schools with adequate facilities mentioned diarrhoea as a result of poor sanitation 34 pupils from 6 schools with inadequate facilities mentioned diarrhoea as a result of poor sanitation.

Table 6: Table showing Knowledge against Utilization of sanitation facilities

Do you know causes of poor sanitation * Do you use sanitation facilities
Cross tabulation

Count

		Do you use sanitation facilities		Total
		Yes	No	
Do you know effects of poor sanitation	Yes	68	11	79
	No	14	7	21
Total		82	18	100

Out of the 79 pupils who knew the effects of poor sanitation 68 of them used sanitation facilities while 11 did not use. Of the 21 pupils who did not know the consequences of poor sanitation 14 of them used sanitation facilities while 7 did not use.

Chi square test

$$\chi^2 = \sum \frac{(\text{observed} - \text{expected})^2}{\text{expected}}$$

Table 7: Table showing Chi square Test results

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.234 ^a	1	.040		
Continuity Correction ^b	3.021	1	.082		
Likelihood Ratio	3.779	1	.052		
Fisher's Exact Test				.055	.046
Linear-by-Linear Association	4.192	1	.041		
N of Valid Cases	100				

a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 3.78.

b. Computed only for a 2x2 table

At 1df, the Pvalue of 0.04 which is less than 0.05 and χ^2 of 4.234 which is greater than the minimum expected count of 3.78 there is a relationship between knowledge on poor sanitation

and utilization of the sanitation facilities. Pupils who are aware of the consequences of poor sanitation are more likely to use available sanitation facilities as opposed to those who do not know. Thus the study rejects the Null hypothesis which states that there is no relationship between knowledge on poor sanitation and utilization of sanitation facilities.

4.2 Discussion

The study indicated that all the sampled schools had pit latrines. This is a true reflection of most of the schools in rural Kenya having Pit latrines varied in type some with mud walls and others concrete. The latrines however were in a pathetic state with some having shutters that have been halved hence one could be seen from outside while using the latrine, some missing shutters completely, faeces littered on the floor, missing roof and some with huge cracks posing a threat to the users. This study also noted that 8 schools out of 10 schools had hand washing facilities. This remains a challenge in all the 10 schools. Schools tend to put a lot of effort on other infrastructure and leave out the issue of hand washing as indicated by the area public health officer. 'Hand washing is never taken serious in our schools. Teachers and board of management prioritize desks and books' said the sub county public health officer. Good practice dictates that latrine construction should be accompanied with hand washing facilities placed right next to the latrines with water and soap or ash. Never the less, 20% of the schools visited had no hand washing facilities and those that had the HWF placed them next to the classrooms as opposed to the latrines as required. This might discourage pupils from washing hands immediately after visiting the toilet since the hand washing facilities are far from the latrines and sometimes overcrowded such that so many pupils struggle to use one facility and had no water

WHO (2009) quantifies the benefits of a lower pupil to latrine ratio and recommends a standard ratio of pupils to latrines/Urinals as 1:25 for girls and 1:30 plus one urinal for boys while the government of Kenya recommends 1:25 for girls and 1:30 for boys (MoE, 2008). Going by the WHO standard, the study noted an increased ratio of pupils to latrines such that 6 out of 10 schools could not meet this standard for boy's latrines and 8 out of the 10 schools could not meet this standard for the girls' latrines. The study noted an increased pupil to latrine ratio an

indication that these facilities are not adequate for the pupil population in the schools. This is again compounded with latrines having no doors, and one can easily be seen from the outside worsening the already bad situation. The inadequacy of the latrines contributes to defecation and urination on top /outside the pit hole (32%) as well as some children losing the patience of having to wait for long queues for their turn to use the latrines. Controlling the cleanliness of such facilities becomes even more difficult as the study indicates that even if the place is cleaned it will become dirty within a short time (18%) and some respondents reporting that the latrines are never cleaned (13%). Only 37% of the respondents were satisfied with the cleanliness of the latrines. With regard to hand washing facilities, 8 schools reported having HWFs at the time of the visit. Schools with HWFs also had challenges in the utilization of the same facilities. Only 50% of the schools with hand washing facilities had water at the time of the survey, 20% had no water but looked recently used. The MoH guidelines on school sanitation states that all schools must have HWFs placed next to the latrines with water and soap or ash at all times (MoPHS and MoE, 2009). The policy guideline was evident from the studies conducted that showed reduction in disease and Helminthic infection from children who constantly washed their hands with soap and/or ash (Eco Soap Kenya, 2011).

With regard to utilization of the sanitation facilities, most pupils (35%) stated the fact that they did not bother to wash their hands while 33% washing their hands sparingly. 31% of the pupils reported not bothering to wash their hands even if there is water while 1% did not respond to this question. 52% of the pupils stated that they had no problem using the latrines irrespective of the state while 20% of the pupils used the latrines because they have no choice. It is importance to note that some pupils used the nearby bush; some avoided going there at some times while other avoided going there altogether and this was represented as 2%, 21% and 5% respectively.

This study sought to find out the correlation between knowledge of pupils in the schools under study on the consequences of poor hygiene. This was prompted by previous studies that have had positive correlation knowledge and hygiene practices (Kumie and Ali , 2005).This study found that of the 100 pupils that were interviewed 52% identified diarrheal as one of the diseases caused by poor hygiene. A study by Jerry et al (2013) on KAP on water sanitation and hygiene in selected schools in Vhembe District, South Africa found 76% of the pupils interviewed could mention at least one disease that is caused by poor sanitation (Jerry et al., 2013).

Pearson's chi square test to determine the dependency between awareness and consequence of poor sanitation indicated a positive relationship. Pearson's chi-square value under 'Asymp. Sig' is 0.40 and less than 0.05 indicating that there exists a relationship between awareness of consequences of poor sanitation and utilization of the available sanitation facilities. This is an indication that pupils who are aware of the consequences of poor sanitation are more likely to make use of the available latrines and hand washing facilities as opposed to pupils who are not aware.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter covers the summary of the study, the conclusions and the recommendations proposed to help improve the adequacy and utilization of sanitation facilities in primary schools.

5.2 Summary

The study aimed at evaluating the adequacy level of utilization of sanitation facilities in primary schools in Manga Sub County, Nyamira County, Kenya. The study targeted 10 primary schools that were implementing WASH Interventions within the subcounty, 10 teachers were sampled one per school and 1 public health officer was also interviewed. Focus group discussions were also held with pupils. 1 focus group discussion per school. A chi-square tests used to test whether there was an association between knowledge of pupils on poor sanitation and the utilization of sanitation facilities was found to be significant (P value 0.04). The types of sanitation facilities found in primary schools in Manga Sub County were found to be latrines. The sanitation facilities however were not adequate since only 2 schools had adequate facilities that met the recommended standards of 1:30 for boys and 1:25 for girls' latrines. The available sanitation facilities were not being utilized as required due to lack of water and soap for the hand washing facilities and the inadequacy and poor state of the latrines kept pupils at bay. 52% of the pupils were aware of the consequences of poor hygiene since among the diseases listed they were able to pick diarrhea as a disease caused by poor hygiene.

5.3 Conclusion

Though all the schools under the study had latrines in place, the adequacy of these facilities is still wanting. Schools continue to enroll more pupils (both girls and boys) while the number of latrines continue to be strained. This has partly contributed to over-utilization of the facilities.



5.4 Recommendation

This study therefore recommends the following:-

5.4.1 Policy Recommendation

The Ministry of Education should work with the Ministry of Health to ensure that schools follow the set standards in making sanitation facilities available to the pupils.

Water is essential in sanitation and therefore schools and communities should work hand in hand to endeavor to provide water and hand washing facilities in all the schools.

There is need for the teachers to sensitize the pupils on the causes of poor sanitation so that they can embrace using the latrines however little they are in school to avoid the consequences of poor sanitation such as diarrhea and other enteric infection

Thus there is need for schools and the government to enforce utilization of the available sanitation facilities, put in more effort to build additional facilities as well as equip the hand washing facilities by ensuring continuous availability of water all geared towards promoting utilization.

5.4.2 The problems for further studies

The study was carried out in Nyamira County. There is need to expand the research to cover other counties in the country so that the results can be generalized to the whole country.

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