

**DETERMINANTS OF HOME MANAGEMENT OF
DIARRHEA AMONG CARE GIVERS OF CHILDREN
BELOW 5 YEARS IN NGANDU LOCATION, NYERI
COUNTY**

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**Determinants of Home Management of Diarrhea among Care Givers of
Children Below 5 Years in Ngandu Location, Nyeri County**

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**A Thesis Submitted in Partial Fulfilment of the Requirements for the
Degree of Master of Science in Paediatric Nursing of the Jomo
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2021

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University

Signature.....Date.....

Leah Wambui Gathogo

This thesis has been submitted for examination with my/our approval as University Supervisors

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DEDICATION

I dedicate this thesis to my husband Julius Gathogo and my dear children Charity, Essy and Emmy.

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Sincere acknowledgement to Almighty God for giving me strength, wisdom and finances while undertaking this research work. Special thanks and appreciations are accorded to my supervisors Dr Sherry Oluchina and Mr. Elijah Mwangi for their guidance in writing this thesis.

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ABBREVIATIONS AND ACRONYMS

CWC	Child welfare clinic
DHS	Demographic Health Surveys
FS	Fecal streptococcus
HMIS	Health Management Information Systems
IMCI	Integrated Management of Childhood Illness
KDHS	Kenya Demographic Health Survey
MCH	Mother and Child Health
MOH	Ministry of Health
NACOSTI	National Commission for Science, Technology and Innovation
OPD	Out-Patient Department
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
POPC	Pediatric Outpatient Clinic
WHO	World health organization

OPERATIONAL DEFINITION OF TERMS

Caregiver/Mothers	An adult person who takes care of a child suffering from diarrhea disease.
Child	Person below 5 years.
Individual factors	Socio-demographic characteristics of caregivers
Knowledge	Information the caregivers have regarding home management of diarrhea among under-fives.
Practices	Behaviors and activities undertaken by the caregivers in home management and prevention and control of diarrhea.

ABSTRACT

Diarrhea has been the major source of illnesses and deaths among children in many third world countries. Care given at home has remained the best remedy for acute diarrhea for children below five years. Despite the health worker's efforts to educate mothers and caregivers on prevention and management of diarrhea and on improving quality of life for children attending pediatric outpatient clinic (POPC) and Integrated Management of Childhood Illness (IMCI) programs, there has been increasing trends in the number of children presenting in the clinics with diarrhea and related complications including dehydration. Similarly, there has been increase in number of children who were brought to the health facility with complications of diarrhea due to delayed seeking of health care services. The purpose of the study was to establish the determinants of home management of diarrhea among caregivers of children below five years in Ngandu location in Nyeri County. The study used descriptive cross sectional study design. It was conducted in Ngandu location in Nyeri County. Cochran's Formula was used to arrive at a sample size of 345. A Researcher- administered semi-structured questionnaire and checklist were used to collect data. Descriptive statistics, chi-square tests and binary logistic regression analysis were conducted with the help of SPSS. Findings showed that Slightly above half 52.2% (n=180) had low knowledge on management of diarrhea while 67.1% (n=231) of the respondents had poor practices in regards to home management of diarrhea. There was a significant relationship ($\chi^2 = 7.340$, $df=1$, $p=0.0 < 0.05$, $OR=2.4$) between respondent's age and practice of home management of diarrhea. There was also a significant relationship ($\chi^2 = 62.413$, $df=1$, $p=0.0 < 0.05$, $OR=3.4$) between knowledge and practices of diarrhea and management of diarrhea. Knowledge ($p < 0.05$) remained significant in the multiple regression analysis. Conclusion of the study revealed that there was low knowledge and poor practice of management of diarrhoea, there was a relationship between knowledge and home management of diarrhoea among caregivers of children below five years in Ngandu location in Nyeri County. The study Recommended enhanced education of mothers by community health workers on causes, signs and symptoms of diarrhea and on preparation and administration of ORS as part of home management of diarrhea

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Arnold (2013) defined diarrhea as when a child passes three or more loose or liquid stools within 24 hours, and this may be passed more regular than what normally the child does. Symptoms related to diarrhea include loose and watery stools, and it may be accompanied by other symptoms, including abdominal pain and cramps, weight loss and fever. Diarrhea can be predisposed by several causative agents including viruses, bacteria, and parasites. Passage of loose watery stools in children below five years can be caused by Rotavirus. Other risk factors include poor personal hygiene, when food is prepared in unclean environment or stored in unhygienic conditions and use of unclean domestic water, which may get contamination during storage or handling (Boschi Pinto, 2012). Diarrhea remains the major contributing factor to childhood illness and death in children below five years in third world nations. In both third world countries and developed nations the cause of diarrhea in children remains multifactorial ranging from infectious causes, unhygienic practices to poor nutritional and dietary habits (Bhutta et al. 2013).

In the world, it is estimated that about 40 per cent of all child's deaths who are less than five years are related to pneumonia and diarrhea problems. In Sub-Saharan Africa, diarrhea disease remains the second cause of morbidity and mortality of children. World Health Organization (2014) with pneumonia (acute respiratory infections) (ARI) being recorded as top most. Diarrhea disease accounted for 4.6 billion cases and 1.16 million deaths in Africa in the year 2014 of which more than 50% were from low income countries and most of the cases were children under 5 years (Army, 2011).

In Kenya, diarrhea is a community health concern since it is leading to many loss of lives among the young children. Every year around 73,700 children below the age of five pass away due to diarrhea disease compared to the pneumonia related cases ranging

up to 920,000 deaths. In 2016, up to 11,000 deaths occurred due to pneumonia, followed by diarrhea disease cases according to Kenya Demographic Health Survey (KDHS) (2014) estimates. In Kenya, this is around 20% of all the reported deaths cases among less than five years' children (Kenya National Bureau of Statistics (KNBS), 2015)

Home based care is the right approach in management of passage of stools that are very loose and frequent. This is due to the fact that diarrhea will start when the child is at home, the child will be taken to the hospital for treatment and even after going back home the very loose and frequent motions may persist. (Masiha et al., 2015). To prevent dehydration and malnutrition from occurring it is important that children get good management at home. The caregivers who are well informed on home remedies should commence it immediately even before they seek any medical advice. Guarino et al. (2018) note that increased fluid intake with continued feeding is one of the indicators of appropriate management to decrease childhood death due to diarrheal disease since the 1980s. But diarrheal disease remains number one cause of loss of lives among children in third world countries.

Similarly, an individual's decision about household management of illness and about when and where to seek care are influenced by his/her perceptions of types and severity of signs and symptoms and other determinant factors like income of the family, education of the mother, distance of health facilities and place of residence (Sharif et al., 2016).

The knowledge and practices of on the early interventions of passage very loose and frequent stools motions at home is important in the prevention of diarrhea related complications (Chiabi *et al.*, 2018). The caregivers' primary information about diarrhea is influenced by various factors for example the level of education, other exposures in diarrhea management and also the caretakers background. (Mukhtar *et al.*, 2011).

Masiha *et al.* (2015) study shows that there is prove showing that bad practices like restricting food intake, minimizing breastfeeding and using incorrect traditional

medicine which its outcome is not known in management of diarrhea at home. This is done by caregivers which may be secondary to lack of appropriate information.

1.2 Statement of the Problem

In Kenya mothers being the key caregivers to young ones below five years needs knowledge and management skills which are vital in reducing the effect of diseases and death rates which are related to diarrhoea conditions. (Kitony, 2016). Epidemiological researches have shown a clear relationship between diarrhea and physical growth and development of a child which had a negative effect. Every day of sickness secondary to diarrhea results in reduction of weight by 20 to 40 grams. Imbalanced nutrition is linked with more severe and persistent diarrhea. (Ferdous *et al.*, 2013). According to Schlaudecker et al. (2011), episodes of diarrhea may predispose to pneumonia in undernourished children.

Despite the health worker's efforts to educate mothers and caregivers on prevention and management of diarrhea and on improving quality of life for children attending paediatric outpatient clinic (POPC) and Integrated Management of Childhood Illness (IMCI) programs, at Karatina Sub County Hospital (KSCH) there has been increasing trends in the number of children presenting in the clinics with diarrhea and related complications including dehydration. The reports from routine program monitoring suggest that more than 75% of children admitted for treatment in the facility presented with diarrhea and most of them had severe dehydration. Between the months of August and October 2018, seventy-three children were admitted with severe dehydration. The data shows that majority of these cases were from Ngandu location in Kirimukuyu Ward. This was a clear indication that the care provided at home prior to hospital presentation was inappropriate as the state of a child with acute diarrhea at first presentation to a health facility was highly dependent on the care provided at home. Regrettably, in spite of the education and presumed information achieved by these caregivers, diarrhea among the young ones was noted to be the second major cause of illness in below five years' age children in the facility after pneumonia and respiratory

related infections. This study therefore sought to establish the determinants of home management of diarrhea among caregivers of children below five years who had diarrhea in Ngandu location in Nyeri County.

1.3 Justification of the Study

Mothers play vital role in appropriate treatment of diarrhea incidents in children below 60 months, as they are the ones in a position to know when a child's episode of diarrhea warrants a visit to a health facility or if they can manage the episode at home. Many deaths due to diarrhea are preventable if the mothers are able to correctly identify acute diarrhea in their children and promptly administer appropriate care thus preventing their children from developing dehydration. Addressing the issue of diarrhea among infants below five years, would address the Sustainable development goal (SDG) number 3 which strives to guarantee healthy lives and thus increasing the well-being for all at all ages by 2025.

Conclusions of this study will improve caregivers' information on diarrhea prevention and its home care management in children; similarly, the health care providers in the study area will be able to adapt workable measures or strategies that are likely to improve and reduce cases of severe diarrhea among children below five years. The study findings will enhance information to village leaders and the whole community to develop programs aimed at decreasing incidences of diarrhea. The study finding may also serve as a reference material for policymakers to consider in the design of programs that will help in improving education and reduce cases of diarrhea.

1.4 Research Questions

- (i) What is the level of knowledge on home management of diarrhea among caregivers of children below five years in Ngandu Location Nyeri County?
- (ii) How is the practice of home management of diarrhea among caregivers of children below five years in Ngandu Location Nyeri County?

- (iii) What is the relationship between caregivers' individual factors and home management of diarrhea among caregivers of children below five years in Ngandu location, Nyeri County?

1.5 Objectives

The study was guided by the following objectives:

1.5.1 Broad Objective

To establish the determinants of home management of diarrhea among caregivers of children below five years in Ngandu location in Nyeri County.

1.5.2 Specific Objectives

- (i) To assess the level of knowledge on home management of diarrhea among caregivers of children below five years in Ngandu location in Nyeri County.
- (ii) To determine the practice of home management of diarrhea among caregivers of children below five years in Ngandu location in Nyeri County.
- (iii) To determine the relationship between caregivers' individual factors and home management of diarrhea among caregivers of children below five years in Ngandu location in Nyeri County.

1.6 Theoretical Framework

The health belief model was adopted for this study. It is a health behavior change and psychological model developed by Rosenstock (1966) for studying and promoting the uptake of health services.

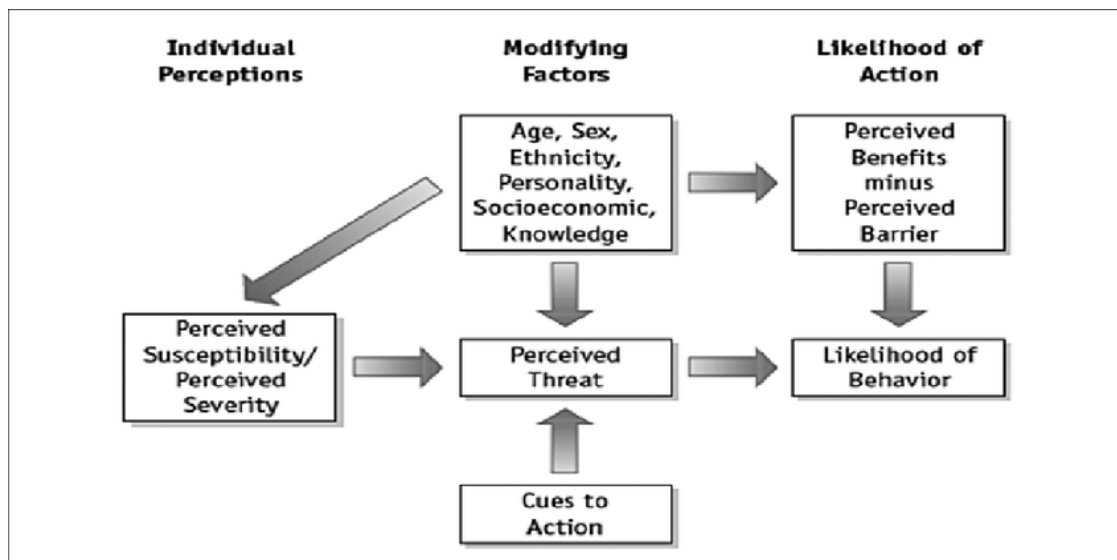


Figure 1.1: Health Belief Model

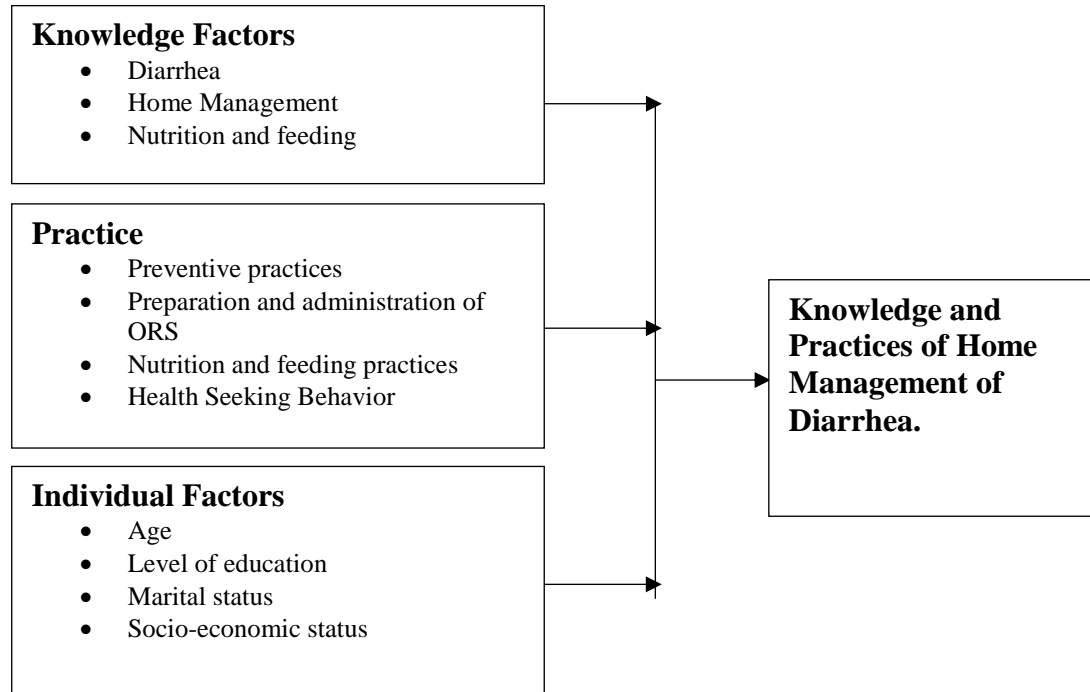
The Health Belief Model forms the base for encouraging people to take beneficial health interventions which helps to avoid unwanted health outcomes (Skinner,2008). Giving example of severe diarrhea being unwanted health outcome and the urge to prevent mortality rate from the disease can be used to motivate mothers to practice home management of diarrhea. When developing health information measures the HBM can be used as an important framework. According to Harrison et al. (1992) HBM concept is hence applicable to use it in this study which sought to establish the determinants of home management of diarrhea among caregivers of children below five years in Ngandu location in Nyeri County.

1.7 Conceptual Framework

The conceptual framework shows the variables in the study and their indicators.

Independent Variables

Dependent Variable



Source author (2020)

Figure 1.2: Conceptual framework

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This section indicates a review of collected work related to determinants of home care of diarrhea with a bias on knowledge factors, practice and individual factors. The findings and conclusions of past studies are presented. The purpose of the review is to establish what has been done thereby identifying gaps and the need for the current study.

2.2 Knowledge on Home Management of Diarrhoea

The caregivers having the correct knowledge and information on the early and timely therapy of diarrhea at home is important in the prevention of diarrhea related complications (Chiabi *et al.*, 2018). According to the Community Integrated Management of Childhood Illness (C-IMCI) strategy (3), the family caregivers should be well informed on factors leading to diarrhea and treatment to be given using the correct preparations for example giving fluids prepared at home like porridge, fresh prepared fruit juice, milk, salt and sugar mixed solution and continued breast feeding. The child is then monitored closely for any sign of fluid volume deficit which calls for urgent referral to the hospital (Othero *et al.* 2008).

Desta *et al.* (2017) found that majority of women had correct knowledge the signs of diarrhea; sunken eyes and weakness/lethargic were the most mentioned sign. Only a third of mothers were aware that diarrhea leads to dehydration but majority did not know signs of dehydration in Naseem and Swetha (2012) study. A minority of mothers in Padhy *et al.* (2017) study were aware of assessment of danger signs and dehydration and a few about treatment of dehydration. About signs of dehydration, less than half of the mothers in Mumtaz *et al.* (2014) study had general signs and only a few gave an answers of sunken eye being the only sign they know whereas less than half gave out more than one sign that is the child being thirsty having dry hair skin and mucous membrane. Signs

and symptoms of dehydration identified by respondents in Osonwa et al. (2016) study were depressed eyes, dry mouth with dry lips and tongue, general body fatigue and the child becomes irritable.

In Desta *et al.* (2017) study, majority of caregivers reported that diarrhea cannot be addressed at home and above half of the guardians were not aware of any kind of home fluid that could be given care diarrhea, only a small number of guardians had information that ORS is among the fluids that can be used for diarrhea therapy. Most respondents in Chandra and Wanda (2017) assumed that traditional medicine was effective to treat diarrhea.

Jha et al. (2006) found that majority of Nepalese mothers had more understanding on ORS as well as its beneficial effects in the correction of fluid volume deficit secondary to diarrhea. Desta *et al.* (2017) found that only a few parents said that ORS can replace fluid lost during diarrhea but a high percentage of parents said it stops diarrhea, while minority of caregivers did not know how to use ORS. Masiha *et al.* (2015) found that the vast majority had heard of ORS, with majority of the mothers had adequate knowledge about ORS, its preparation and administration. The attitude of mothers regarding its usefulness was positive and the vast majority of mothers agreed that it didn't have any side effect upon their child. Even though commercial ORS preparations were easily available at various costs in pharmaceutical shops, Naseem and Swetha (2012) found that majority of the mothers knew only one commercial preparation and just over half of mothers were practicing ORT. In addition, there was a general ignorance about the quantity of ORS to be given with each episode of diarrhea as majority of the mothers were unaware of it. Regarding preparation of ORS in Pandey *et al.* (2017) study, a few of the mothers had good knowledge, over half of mothers had average knowledge and rest had poor knowledge. Onwukwe et al. (2015) found that just over half of mothers were aware of the importance of initiating ORT at home with the onset of diarrhea, and a few administered traditional remedies.

Guillaume (2020) establish knowledge level of caregivers on management practices of acute diarrhoea among children under five years in Mathare Informal Settlement. Caregiver's knowledge on management practices of acute diarrhoea was found to be significant with the diarrhoea prevalence in children under five years. Only 15 (4.6%) respondents had high knowledge on management practices of acute diarrhoea. Fifty seven point four per cent (57.4%) of the respondents had moderate knowledge on management practices of acute diarrhoea followed by 38% with low knowledge level. Low knowledge level was a predictor of diarrhoea in children under five years. The study found that low level of knowledge was a predictor of diarrhoea prevalence among children.

The purpose of Mwaniki and Kimiywe (2017) study was to determine caregivers' knowledge on nutritional management of childhood diarrhea and assess nutritional status of the children. The study demonstrated that caregivers were not knowledgeable with optimal feeding of children during diarrheal episodes as per the National Operational Guidelines for Health Workers. It was evident that caregivers were not aware of zinc supplementation as a first line treatment for diarrhea and those who knew were not aware of the correct dosage. The poor knowledge of caregivers regarding the need for growth monitoring of a child in the management of childhood diarrhea may have contributed to the severity and duration of diarrhea. Caregivers preferred using traditional foods such as yams, cassava and roasted bananas in the management of childhood diarrhea because of the belief that they could control diarrhea.

A study by Anyango (2018) sought to determine the impact of knowledge, perception and practice of caregivers on management of diarrhoea at home among children less than five years old. On home management practices during diarrhoea, 240 (60.8%) had poor knowledge and 154 (39.2%) had good knowledge. Caregivers' knowledge that diarrhoea is caused by germs was significantly associated with management of diarrhoea at home by giving water, OR=3.7 (95% CI= (1.283-11.100) p =0.042 or continued feeding OR=1.4 (95% CI= (1.264-1.297) p =0.04. The caregivers who reported that diarrhoea was caused by teething were 3.5 times more likely to continue feeding the

child than those who thought that diarrhoea is caused by taboo. The caregivers' knowledge on the signs of dehydration had influence on management of diarrhoea at home. Those who knew the signs of dehydration and gave ORS were; (68.2%; $x = 7.923$, p value= 0.022), water, (65.1%; $x = 10.672$, p value=0.001), and continued feeding (73.3%; $x = 6.631$, p value=0.038).

2.3 Practice on Home Management of Diarrhoea

To reduce the number of deaths caused by diarrhea there is need for timely and right diagnosis of the disease and immediate initiation of interventions. The care givers play an important role in issues related to promotion of health, prevention of diarrhea and provision of child's care. (Dodicho, 2016). The caregiver is required simply to perform a brief and superficial examination of the child who have lost fluids from the body through diarrhea and be able to identify the amount and type of liquid to be given, these interventions are quite key for the welfare of the young ones. Other factors involved in the care and development of diarrhea in children include the quality and quantity of food, along with other factors involved in their nutrition (Abdinia, 2014). National diarrheal disease control programs emphasize the application of 4 management approaches for diarrhea in childhood this includes use of ORS, giving zinc tablets supplements, teaching the mothers to continue feeding the child and to provide more liquids to replace the lost fluids, these modalities are applied in all health care systems. Although all these measures are applied diarrhea remains a public health challenge. (Ghimire *et al.*, 2018).

In Ahmed *et al.* (2009) study, it was observed that those care givers who had no special choices for the food they are giving to their children with diarrhea were 48% while 66.6% gave specific food after every loose motions. Few parents were noted not to provide meals during present episodes and majority in the previous episodes of diarrhea, the parents thought that this reduces the bowel function and this would reduce the loose motions with minimal interventions. Majority of the guardians (23.6%) had a choice of curd and salt tea in the past episodes and minority (18.0%) of the guardians during the

present episode. The caregivers who had given their children ORS (24.4%) in the last (15 days) occurrences of diarrhea and only (8.4%) of caregivers had used ORS in current occurrence of diarrhea (24 hrs), this is because the caregivers had not sought treatment for their young ones in any clinic in the current episodes whereas they had used the same clinics in the previous episodes. In another Indian study by Verma et al. (2017), just, 54.76% mothers are able to provide oral rehydration solution (ORS) to their young ones with frequent watery loose motions. About 43.43% of mothers mix salt and sugar solution and give it as a remedy of childhood diarrhea at their homesteads. Although major efforts are being spread in the whole world to enhance breastfeeding, its only 19.9% of mothers who continue to breastfeeding when their child suffering from diarrhea.

In a Nigerian study conducted by Ogunrinde et al. (2012), minority of mothers (less than 1%) had information on about home remedies of Diarrheal Disease(DD). Most of the care givers (36%) used pharmacological treatment for diarrhea (Antibiotics and anti-diarrheal agents). Minority of the caregivers (8.6%) gave their children ORS. Use of zinc supplements to manage diarrhea was only known by 32% of the caregivers 75.5% of the caregivers were able to adherence to 10-day zinc supplementation which was quite encouraging. In another Nigerian study, the mothers who were able to accurately care diarrhea at home were only 80 (39.4%). Those who were aware that they should use ORS were around 76% (154 mothers), of this mothers 56 (27.6%) could appropriately mix Salt sugar solution(SSS), and 29 (14.3%) were able to repeat the same method for UNICEF ORS. Other mothers, 38 (18.7%) were able to use anti-bacterial, anti-diarrheal, and other herbal remedies to manage diarrhea problems. (Adimora, Ikefuna & Ilechukwu, 2011).

In Ethiopia, Desta et al. (2017) study 37.6% of the care givers at 95% confidence interval (32.7, 43.2) revealed the level of practice on home remedy of diarrhea. 20% of the caregivers were noted they had not taken any action when their young ones had incidences of diarrhea. According to the study results around 5% of the caregivers gave homemade liquids while 0.5% used traditional herbs as a remedy for frequent watery

loose motions. Results conclusions revealed that three-fourths of caregivers gave their children ORS the moment they started passing frequent watery loose motions. More than half of the care givers gave a report on duration of the prepared ORS and said that they kept it for one day then discard it if not used. In a Kenyan research, Olsson *et al.* (2011) tried to find out the determining factors related to correct diarrhea case treatment in this country. Descriptive survey which was cross sectional was done to mothers with young ones who were below 60 months who had diarrhea. This was done in a rural setting which was Asembo and urban Kibera. The findings in Asembo revealed that 61% of mothers gave oral rehydration therapy (ORT) as a remedy 45% gave ORS and those mothers who continued to feed their young ones were 64%. The study findings in Kibera showed that those mothers who gave ORT were 75% while those who provided ORS were 43% and the mothers who constantly fed their young ones were 46%. In another Kenyan study, Njeru *et al.* (2017) found that 41% of the respondents managed diarrhea cases with non-recommended home remedies such as salt and sugar solutions. Results of Mukiira and Ibisomi (2015) showed that 55% of the caregivers who were above half of the study population searched for incorrect health care for the treatment of diarrhea for their young ones. Out of the 55%, of the care givers only 35% of them sought no care for their young ones at all. Using ORS and giving zinc supplements is very much recommended as a remedy of diarrhoea and in this study their use was quite minimal.

Guillaume (2020) establish knowledge level of caregivers on management practices of acute diarrhoea among children under five years in Mathare Informal Settlement. Sixty-three point eighty-nine per cent (63.89%) of the respondents give water like any other day during diarrhoea disease. Fifty-four point three per cent (54.3%) of the caregivers breastfed their child during the survey. Although the majority of respondents seek health care from a health care facility, the number of respondents who seek health care from a chemist was high. This can be explained by poverty or the fact that people wait for their condition to worsen before going to a health care facility. In the study, the majority of respondents used boiling water as source of drinking water because it is cheap and they want to prevent themselves from water borne diseases. This shows a positive attitude

towards diarrhoea prevention. Although children experienced diarrhoea in households that used boiling water and treated water as source of drinking water but the difference was not statistically significant. Children of the four respondents who were using domestic drinking water directly from the tap did not encounter diarrhoea within the two weeks preceding the study.

2.4 Caregivers' Individual Factors Affecting Home Management of Diarrhea

Home focused care of diarrheal is a crucial part while addressing diarrhea in children and researchers agreed that it is the hallmark of diarrhea control programme. According to Olopoja and Egbewale (2016), the focus of home care remedies of diarrhea lies on the fact that diarrhoea commences when the child is within the home area and may proceed even after returning home after consulting the health facility. The determinants of childhood diarrhea management are many and directly or indirectly consist of environmental factors social economic factors and individual's behavioural aspects, and depending on the population under study they may have changes. According to Amare *et al.* (2014), maternal education, what they do for a living, their area of work and their current age are social demographic conditions that are related to the mother's knowledge on diarrhea and its care.

2.4.1 Age

Kitony (2016) found that there was a significant relationship between age and home management of diarrhea. Good use of ORS in home management of diarrhea disease in Bello *et al.* (2017) was found to be significantly influenced by age of the mothers, as mothers in the age groups 21 -30 and 31 – 40 years respectively had about 20 times the likelihoods of using ORS in management of diarrhea episodes as against other age groups. In Desta *et al.* (2017) study, the caregivers who had a higher chance of having good practice by 4 and 3.6 times were in an age range of 25 to 35 years and between 36 to 45 years of age. In Amare *et al.* (2014) study results, mothers over 45 years of age were the most vulnerable population for lack of enough information as compared to age

group of 15-24 years. The results of Hornimann (2017) revealed no statistical major difference between the age and the effective home-based care of diarrhea. Similarly, age of the mother was also not significant in Gazi *et al.* (2015) study.

Major factor that can affect Child's health in terms of growth and development is the maternal level of education. In a Kenyan study, education was a significant factor influencing home management of diarrhea. Those with primary education were less likely to practice home management of diarrhea compared to those with tertiary level (Kitony, 2016). Desta *et al.* (2017) study revealed the care givers who were five and eleven times more likely to have adequate information were those who had achieved primary education secondary education and above. In addition, the study also showed that mothers who were uneducated were by 94.8% and those educated till primary school level were 85.7% less likely to perform well as compared to those mothers who were educated up to secondary schools and above. Amare *et al.* (2014) study revealed that the uneducated mothers had less information in relation to diarrhoea treatment after they were rated with the educated mothers. It was noted that as the more the mother was informed the higher was the level of awareness and knowledge. In a study by Hornimann (2017) the highest school scores achieved and successful home based remedies of diarrhea had no major difference between them.

2.4.2 Marital Status

There was a significant relationship between marital status and home management of diarrhea in Kitony (2016) study. Desta *et al.* (2017) showed that study showed that single mothers and out in marriage women at 88.9% and 88% respectively were less likely to have the good practice when associated with those women who were in marriage. According to the researchers the cause of this may be related to the reasons that women who are in marriage may have a chance to get information and practice from their partners. Amare *et al.* (2014) finding showed that those mothers who were in their marriage had better knowledge on diarrhea treatment in children below 60 months unlike the women whom their husbands had died, they were noted to have low

information level. A South African study showed no major statistical changes between mothers who were married and effective care of diarrhea at home. (Hornimann, 2017).

2.4.3 Social- Economic Status

Maternal employment and income affect the mother and child bonding and family functions, as it makes it hard to get enough time for household chores, earning an income away from home and care for the children. (Géa-Horta *et al.*, 2016). Socio-economic status of the mother was a significant predictor of proper home management of diarrhea in Gazi *et al.* (2015) study. In Desta *et al.* (2017) study, findings showed that mothers working daily were by 79.2% less likely to have proper information. No changes in statistics were noted when social economic factors were compared with successful home based care of diarrhea apart from with family members living in a house in Hornimann (2017) study. Although Andrade *et al.* (2015) study identified statistical relationship between the caregivers who performs household chores and those employed, other findings have revealed the impact of caregiver's employment on children's wellbeing and this leads to a notion that caregivers who are working away from home have minimal time and this can affect quality of maternal care offered to the young ones. Guillaume (2020) sought to determine the management practices of acute diarrhoea by caregivers of children under the age of five in Mathare Informal Settlement. Children of caregivers who were self-employed, casual workers, had fixed termed, and housewives experienced diarrhoea but the difference was not significant.

2.5 Summary and Research gaps

In the foregoing chapter, literature was reviewed on determinants of home management of diarrhoea among caregivers of children below five years. Specifically, extensive literature was reviewed on the knowledge factors, practice and individual factors related to management of diarrhoea at home. Generally, studies show that mothers have low knowledge and poor practices in regards to management of diarrhoea. In addition, studies show that individual factors such as age, education, marital status and socio-

economic status have varied effects on the management of diarrhoea knowledge and practices. Unfortunately, most of these studies are facility based descriptive studies. Facility based studies are inherently biased because of access barriers. Therefore, a community-based study was justified. This study therefore sought to establish the determinants of home management of diarrhea among caregivers of children below five years in Ngandu location in Nyeri County.

CHAPTER THREE

MATERIALS AND METHODS

3.1 Study Design

This research applied analytical cross sectional study design. This is a type of a design whereby the disease or condition and their causes are measured at an appointed area in a certain time for a specific identified population. (Dawson, 2009). The study involved quantitative techniques of data collection and analysis.

3.2 Study Area Description

This research was conducted at Ngandu Location. This is a rural settlement located in Kirimukuyu division, Mathira west sub county in Nyeri county. The location has a population of 11680 people as of 2017 records. The estimated population for under five children is 3414 as per the Mathira West Sub-county health records. The main economic activities in the village are farming and animal keeping.

3.3 Study Population

The current study was a household survey targeting caregivers of children below five years in Ngandu location in Nyeri County.

3.4 Sampling frame

Sampling frame was 3414 which was the estimated total population for under five children in Ngandu location as per the Mathira West Sub-county health offices.

3.4.1 Sample Size Determination and Formula

The Cochran's Sample Size Formula was used to calculate a sample size. Cochran (1977)

$$n_0 = \frac{Z^2 pq}{e^2}$$

n_0 represents the estimated sample size, the critical level used was for 95% which is z , the attribute which was present in population as the estimated proportion is p , q was $1-p$ and e was the desired level of precision. The study assumed maximum variability, hence the value of $p=0.5$ was used. The desired level of precision that was applied was set at $\pm 5\%$. The sample size was:

$$n_0 = \frac{(1.96)^2(0.5)(0.5)}{(0.05)^2} = 384.16 = 384$$

Since the total population was less than 10,000, a finite correction formula was applied.

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Where n is the desired sample size

n_0 is the sample size when population is $> 10,000 = 384$

N is the population size.

$$n = \frac{384}{1 + \frac{(384 - 1)}{3414}}$$

Applying the formula gives a corrected sample size of 345 respondents.

3.5 Sampling Procedure

Purposive sampling technique was used to recruit respondents in the study. It is a sampling technique in which researcher relies on his or her own judgment when choosing members of population to participate in the study. In the study the researcher was recruiting caregivers with children with diarrhea.

3.6 Selection Criteria

3.6.1 Inclusion Criteria

The study included:

- (i). Caregivers of children with diarrhea who were below five years.
- (ii). Caregivers aged 18 years and above
- (iii). Caregivers who provided informed consent

3.6.2 Exclusion Criteria

- (i). Caregivers with children below five years who were mentally ill.
- (ii). Caregivers who failed to provide informed consent.

3.7 Variables

The study aimed to investigate the determinants of home management of diarrhoea among caregivers of children below five years with diarrhoea in Ngandu location in Nyeri County. The independent variables comprised knowledge factors, practice and individual factors while prevention, control and management of diarrhoea at home was the dependent variable. Individual factors to be assessed in the study included age, level of education, marital status and socio-economic status.

Knowledge was established by looking into the information the caregivers have on diarrhoea, home management and nutrition and feeding. Knowledge was assessed by a series of 13 questions. Respondents who had correct answers in 5 or more of the indicators of knowledge were classified as having “high” knowledge while those who got 4 or less correct were classified as having “low” knowledge.

Practice in this study was measured by investigating preventive practices, preparation and administration of ORS, nutrition and feeding practices and health seeking behaviour. Respondents who observed 5-7 of the recommended home management of diarrhoea practices were classified as having “good” practices while those who observed 4 or less

of the recommended home management of diarrhoea practices were classified as having “poor” practices.

3.8 Data collection tools

The study employed the use of a researcher- administered semi-structured questionnaire. Questionnaires were preferred as they were easy to administer. In addition, through questionnaires the researchers own view did not guide the respondents on how to respond to the questions in a specific way and this helps to reduce bias unlike when the researcher used telephones or face to face interviews (Burns, 2010). Questionnaires were developed by the researcher which had 4 sections. Section A collected data on socio-demographic details of the mothers, Section B collected data on knowledge factors, practice was assessed in Section C.

Section D contained a checklist which was used to check observable attributes of home management of diarrhea such as preparation and administration of ORS and which feeding methods were used by the mothers for the kids with diarrhea.

3.9 Validity and Reliability of Data Collection Tools

During the study, construct and content validity was the most applicable test to use to gauge the validity of the instruments that was used for data collection. To ensure construct validity, the researcher modelled questions based on the indicators identified in the conceptual framework and with reference to instruments used in previous studies. It was important in this study for the researcher to have the questionnaire reviewed by the supervisor.

To establish reliability of the instrument, a pretest was conducted. The purpose of the pretest was to establish the suitability of the questionnaire in collecting relevant data for the study in terms of the validity and reliability of the instrument. The pretest was conducted in Tumutumu Location prior to the main study. Tumutumu Location is selected because it bore a lot of similarities to the study site in terms of geography and

sociodemographic and economic characteristics of residents. Orodho (2009) recommends an equivalent of 10% of the main sample was used in the pretest. The researcher therefore involved 35 caregivers of children below five years in the pretest. Reliability was established by analyzing data collected in the pretest. Cronbach alpha was used to gauge reliability whereby a coefficient of 0.7 and above was taken as the minimum acceptable threshold as recommended He et al. (2015).

3.10 Data Collection Procedures

The researcher collected the data with the help of 4 research assistants. Community health workers were involved in the study to create rapport with the community. They assisted the researcher identify the households with mothers with children who were below five years and had diarrhoea. Since the area is expansive and the sample size was large, the researcher divided it into 4 parts and a research assistant was assigned their portion. The researcher accompanied the assistants for supervision and to address any issues. The data collection period lasted for 4 months.

3.10.1 Training Procedures

The study hired 4 research assistants to aid the researcher in data collection. The assistants were community health workers (CHW) working in the study area. The CHWs were trained on the purpose of the study, how to acquire informed consent and administration of the questionnaire including filling the checklist. The assistants were involved in the pretest to familiarize themselves with the data collection process. The researcher supervised the assistants to ensure that data collection was going on as intended.

3.10.2 Quality Assurance Procedures

Quality assurance was ensured through hiring research assistants who had been involved in research before. Involving the research assistants in the pre-test ensured they were

prepared for the main study. The researcher also monitored research assistants during data collection exercise.

3.10.3 Community Entry

Community health workers (CHW) working in the study area were important in community entry since they were known to residents in the area. Meetings with area leaders were also conducted earlier to create rapport. Leaders included ward representatives, chief and sub chiefs as well as village elders.

3.10.4 Recruitment Strategy

Any caregiver of a child below 5 years fitting the inclusion criteria was recruited into the study. Face to face interactions with potential respondents were done by the trained research assistants who identified persons fitting the inclusion criteria with the help of local leaders. The assistants acquired informed consent and then administered the questionnaire where consent was granted.

3.10.5 Interview procedures

The community health workers acted as research assistants and administered the questionnaire. During the interview, the research assistant introduced themselves and explained the purpose of the interview and how the interview would be conducted. The respondents signed the consent form first before giving information. They used structured and semi structured interviews and asked the predetermined questions and the respondents answers in their own words. The research assistants probed more on areas that needed clarification. The research assistant recorded all the information properly and gave room for questions and then thanked the respondents.

3.11 Data Management

Collected data was checked for errors of omission or commission and then entered into a computer using SPSS Version 23 software. Descriptive statistics (frequencies and percentages) were used to analyze data on individual factors, knowledge factors and practice. Content analysis was employed in the analysis of qualitative data. Bi variate analysis was conducted using Chi-square tests. Binary logistic regression was also conducted. Findings were presented in form of tables, and figures.

3.12 Ethical Considerations

Authorization to conduct the study was sought from KNH/UON ERC, Karatina Sub-County hospital and from Deputy County Commissioner Mathira west Sub County. In this study, the principle of autonomy was observed by telling respondents the truth, respecting their privacy, protecting confidential information and obtaining informed consent. In this study, the principal of beneficence was enforced by answering respondents' questions. This study did not pose any risks or threats of any nature to the respondents. Through the principle of justice, the researcher was able to distribute benefits costs and any resources equitably. Respondents were referred accordingly when it was necessary. Findings were only being used for academic purposes. Caregivers with poor practices were guided politely on the right way to carry out those practices and harmful practices were discouraged and stopped immediately and guided accordingly in a respectful manner and referred if needed be.

3.13 Study Results Dissemination Plan

A copy of the research report was submitted to KNH/UON ERC, Karatina Sub-County hospital DCC Mathira west Sub County. The researcher published a research article from the research report in international journal of community medicine and public health.

3.14 Study Assumptions

The study assumed that the participants responded to the questions honestly as anonymity and confidentiality were observed.

3.15 Study Limitations

The study was limited to mothers of children below five years in Ngandu location in Nyeri County. To mitigate this, the researcher used a large sample size to enhance generalizability of findings.

3.16 Study Closure Plan and Procedure

Study closure was done at completion of the study and dissemination of results conducted

CHAPTER FOUR

STUDY FINDINGS

4.1 Introduction

This chapter presents the results of the study. It includes the response rate, socio-demographic characteristics of respondents and findings on the level of knowledge on home management of diarrhoea, practice of home management of diarrhoea among caregivers and relationship between caregivers' individual factors and home management of passage of loose stools among caregivers.

4.2 Response Rate

The study comprised a total of 345 mothers of children below five years with diarrhoea in Ngandu location in Nyeri County. This represents a 100% response rate.

4.3 Socio-Demographic Characteristics of Respondents

Socio-demographic characteristics of respondents included age, marital status, level of education, religion, occupation and number of children. Results showed that the vast majority 90.2% (n=311) of respondents were aged below 40 years whereby 41.2% (n=142) were aged between 21 and 30 years while 39.1% (n=135) were aged between 31 and 40 years. On marital status, the findings showed that majority 62.9% (n=217) were married.

On education, findings showed that slightly above half 50.4% (n=174) of the respondents had acquired secondary education while 27% (n=93) had acquired primary education as their highest level of education. All 100% (n=345) respondents in the study were Christians. On occupation, the findings showed that slightly less than half 47.2% (n=163) of the respondents were self-employed, 18.8% (n=65) were farmers and 16.2% (n=56) were in white-collar jobs. On number children, 33.3% (n=115) of the

respondents, had three (3) children, 27.2% (n=94) had two (2) children while 23.8% (n=82) had one (1) child. (Table 4.1).

Table 4.1: Socio-Demographic Characteristics of Respondents

Characteristic	Category	Frequency (n=345)	Percent (%)
Age (years)	<20	34	9.9
	21-30	142	41.2
	31-40	135	39.1
	>41	34	9.9
Marital status	Single	95	27.5
	Married	217	62.9
	Divorced/separated	33	9.6
Education	None	14	4.1
	Primary	93	27.0
	Secondary	174	50.4
	College	59	17.1
	University	5	1.4
Religion	Christian	345	100.00
Occupation	Farming	65	18.8
	Housewife	44	12.8
	Self-employed	163	47.2
	Full-time employed	56	16.2
	Others	17	4.9
Number of children	1	82	23.8
	2	94	27.2
	3	115	33.3
	4	36	10.4
	5	13	3.8
	Over 5	5	1.4

4.4 Knowledge Factors

The study assessed respondents' level of knowledge on home management of diarrhea. The findings were presented as follows:

4.4.1 Knowledge on Diarrhoea

Respondents in the study were asked to indicate whether they knew the definition of diarrhoea. The vast majority 86.1% (n=297) of the respondents indicated that they knew

what diarrhoea was. (Figure 4.1). However, when they were asked to describe what diarrhoea was, only 25.6% (n=76) correctly described diarrhoea as passage of three or more loose or liquid stools within 24 hours among children. Wrong answers provided included diarrhoea was abdominal pain, headaches, vomiting or a combination of all those.

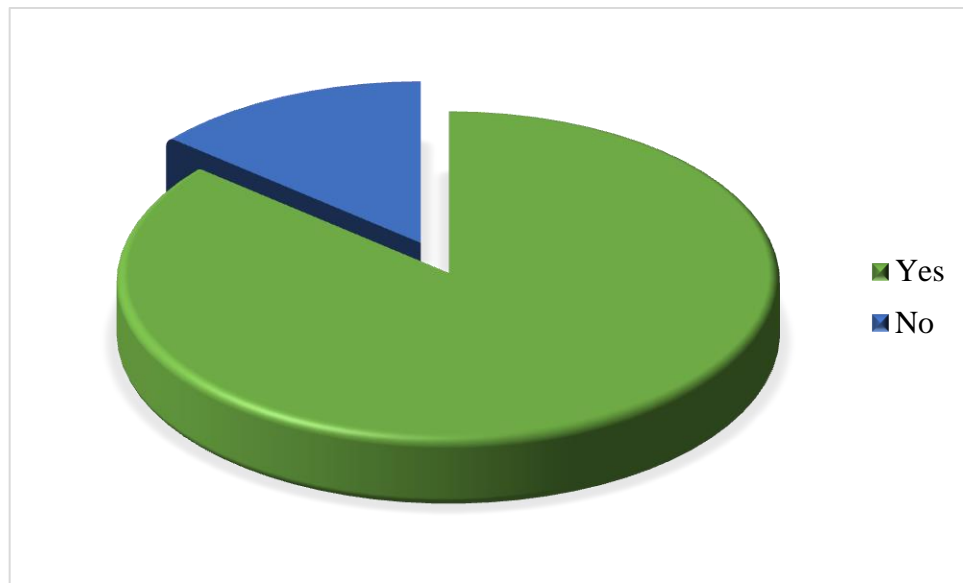


Figure 4.1: Knowledge on Definition of Diarrhea

4.4.2 Knowledge on Causes of Diarrhoea

Respondents in the study were asked to indicate the causes of diarrhoea in children. Slightly above half 53.6% (n=184) indicated that diarrhoea was caused by consuming un-boiled water. The findings showed that 23.6% (n=81) and 21.6% (n=74) cited teething and sucking dirty fingers as causes respectively (Table 4.2).

Table 4.2: Knowledge on Causes of Diarrhea

Response	Frequency	Percent
Excessive breastfeeding	6	1.8
Consuming unboiled water	184	53.3
Teething	81	23.5
Sucking dirty fingers	74	21.4
Total	345	100.0

4.4.3 Knowledge on Diarrhoea Symptoms

Respondents in the study were asked to indicate the symptoms of diarrhoea in children that they were aware of. Findings showed that majority 64.3% (n=222) indicated frequent passing of watery stool. The findings also showed that 53% (n=183) cited fever, 46.1% (n=159) indicated vomiting while 40.9% (n=141) indicated abdominal pains as symptoms of diarrhoea in children. (Table 4.3)

Table 4.3: Knowledge on Diarrhea Symptoms

Response	Frequency	Percent
Fever	183	53.0
Frequent passing of watery stool	222	64.3
Body rashes	29	8.4
Vomiting	159	46.1
Abdominal pains	141	40.9
Excessive Crying	131	38.0

4.4.4 Knowledge on Prevention of Diarrhoea

Respondents in the study were asked to indicate whether diarrhoea is preventable. Majority 79.1% (n=273) of respondents indicated that diarrhoea was preventable (Figure 4.2).

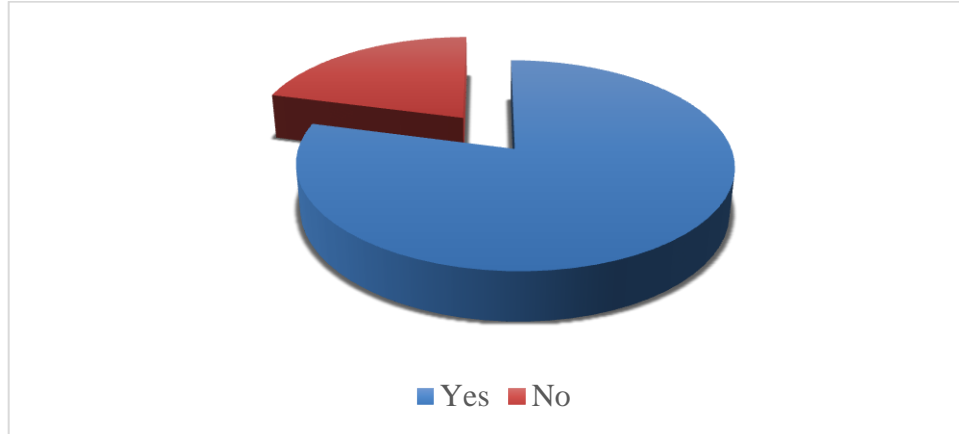


Figure 4.2: Knowledge on Prevention of Diarrhea

4.4.5 Knowledge of Home Management of Diarrhoea

Majority 62.6% (n=216) of the respondents indicated that it was possible for a mother to manage diarrhea of a child at home (Figure 4.3).

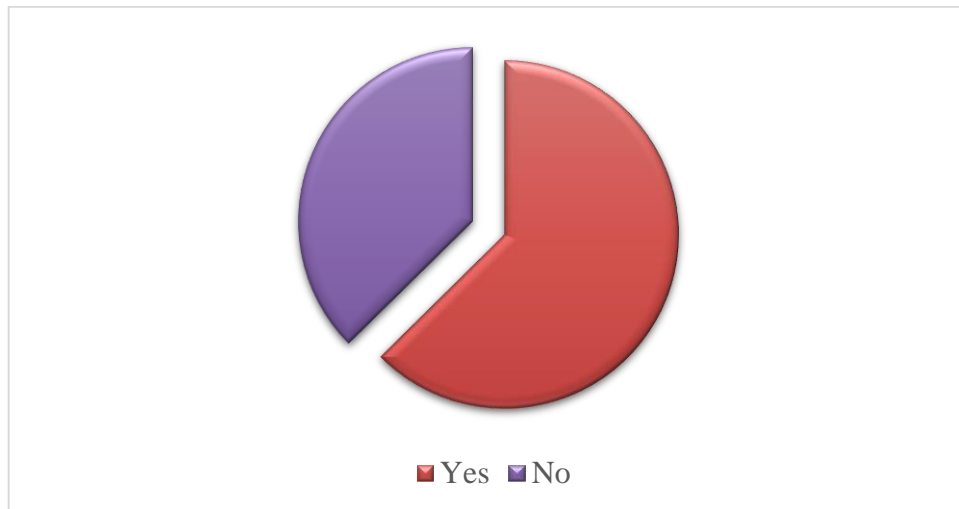


Figure 4.3: Knowledge of Home Management of Diarrhea

4.4.6 Training on Home Management of Diarrhoea

The vast majority 84.6% (n=292) of respondents in the study indicated that they had not received training on home management of diarrhoea of child at home (Figure 4.4).

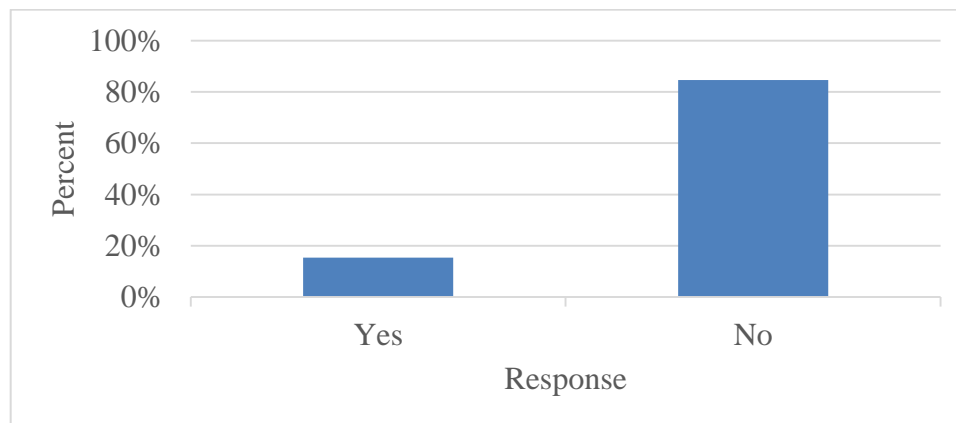


Figure 4.4: Training on Home Management of Diarrhea

4.4.7 Knowledge on Home Management of Diarrhea

Respondents in the study were asked to name ways one can manage diarrhoea of a child at home. Findings in Table 4.4 showed that 28.1% (n=97) indicated they use ORS. A small percentage 19.7% (n=68) indicated boiling water while 18.8% (n=65) indicated giving water to the child. However, 6.1% (n=21) indicated that they did not know how to manage diarrhoea.

Table 4.4: Knowledge on Home Management of Diarrhea

Response	Frequency	Percent
Giving water	65	18.8
ORS	97	28.1
Boiling water	68	19.7
Washing hands	51	14.8
General hygiene	43	12.5
Don't know	21	6.1
Total	345	100.0

4.4.8 Knowledge on Nutrition in Management of Diarrhoea

Respondents in the study were asked to indicate what foods one should give to a child who is suffering from diarrhoea. Slightly above half 53.9% (n=186) indicated that a child should be given solid foods while 19.7% (n=68) indicated boiled foods. Results

showed that 15.4% (n=53) indicated that all foods should be given. Respondents in the study were asked to indicate what type of foods one should not give to a child who is suffering from diarrhoea. Slightly less than half 42.6% (n=147) indicated fatty foods, 22.9% (n=79) said milk while 18% (n=62) indicated fluids. Respondents in the study were also asked to indicate whether one should continue breastfeeding a child who is having diarrhoea. Findings showed that majority 79.4% (n=274) of the respondents indicated that one should continue breastfeeding a child who is having diarrhoea. (Table 4.5)

Table 4.5: Knowledge of Foods to Give in Management of Diarrhea

Aspect of nutrition	Category	Frequency	Percent
Knowledge on Foods to Give in Management of Diarrhea	All foods	53	15.4
	Solid foods	186	53.9
	Boiled foods	68	19.7
	Breastfeeding	12	3.5
	Others	8	2.3
	Don't know	18	5.2
Knowledge on Foods not to Give in Management of Diarrhea	Total	345	100.0
	Fatty foods	147	42.6
	Milk	79	22.9
	Fluids	62	18.0
	None	23	6.7
	Others	20	5.8
Knowledge on Breastfeeding in Management of Diarrhea	Don't know	14	4.1
	Total	345	100.0
	Yes	274	79.4
	No	52	15.1
	Don't know	19	5.5
	Total	345	100.0

4.4.9 Knowledge of ORS

Respondents in the study were asked to indicate whether they had ever heard of ORS. Findings in Figure 4.5 showed that majority 83.2% (n=287) of the respondents indicated that they had ever heard of ORS.

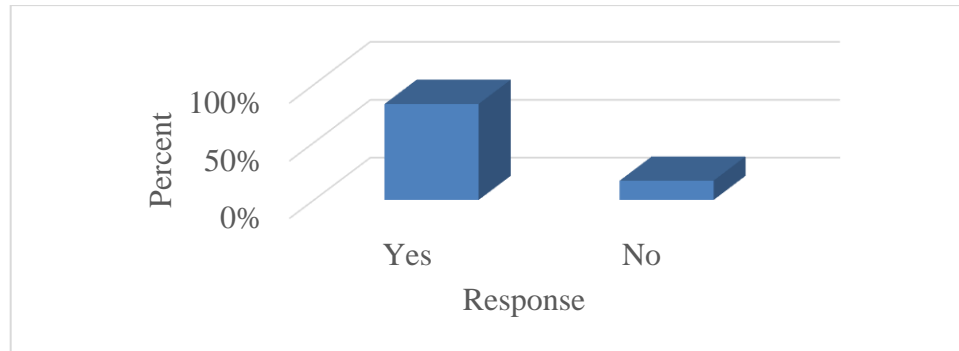


Figure 4.5: Whether Respondent Had Ever Heard Of ORS

Respondents in the study were asked to indicate how ORS was prepared. Slightly above half 51.3% (n=147) of the respondents did not know how ORS was prepared. Among those who described its preparation, only 16.2% (n=47) described the correct method of ORS preparation.

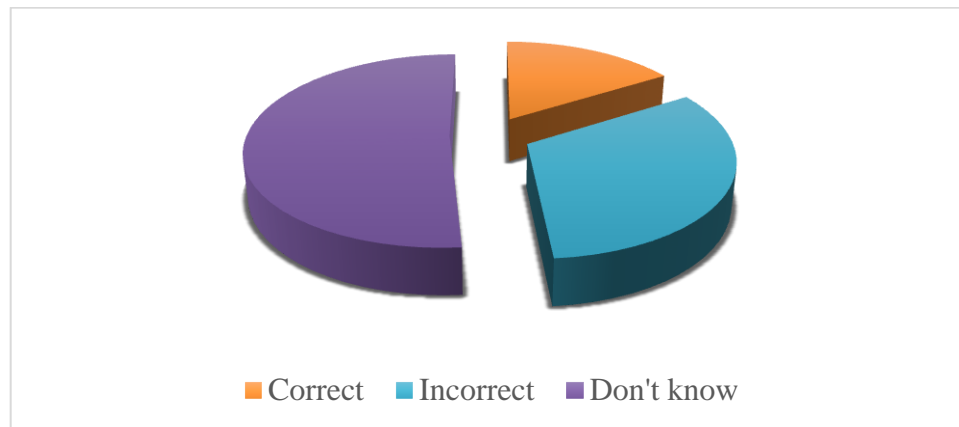


Figure 4.6: Knowledge on Preparation of ORS

Respondents in the study were asked to indicate how ORS was administered to the child. Findings in figure 4.8 showed that 43.6% (n=125) described an incorrect administration procedure while 33.1% (n=95) indicate that they did not know.

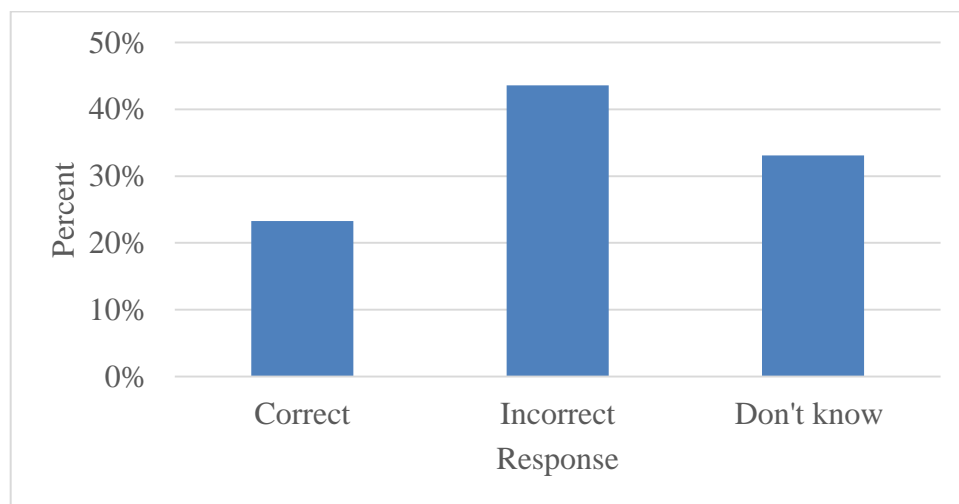


Figure 4.7: Knowledge on Administration of ORS

4.4.10 Summary of Respondents' Knowledge

Respondents who had correct answers in 5 or more of the indicators of knowledge were classified as having “high” knowledge while those who got 4 or less correct responses were classified as having “low” knowledge {Desta et al. (2017); Masiha et al. (2015)}.

Findings in Figure 4.8 showed that slightly above half 52.2% (n=180) had low knowledge on management of diarrhoea.

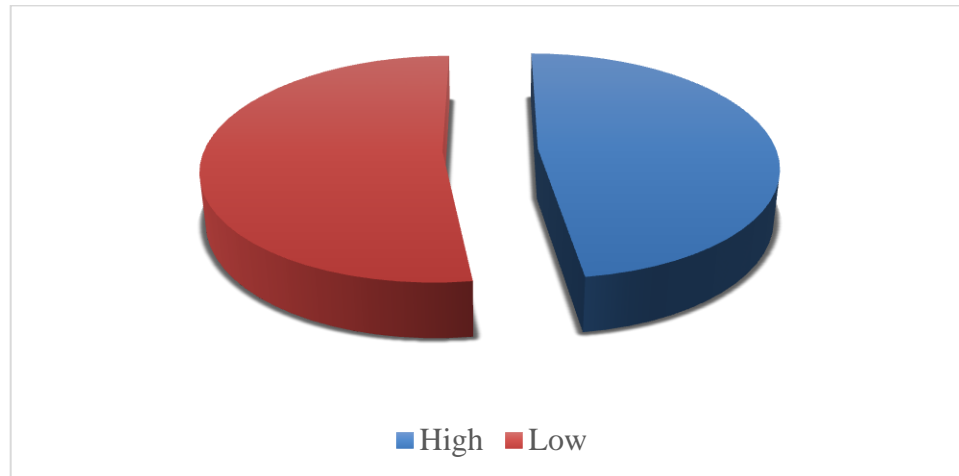


Figure 4.8: Summary of Respondents' Knowledge

4.5 Practice on Home Management of Diarrhoea among Caregivers

4.5.1 Diarrhoea Prevention Practices

Respondents in the study were asked to indicate what they did to prevent diarrhoea in their child. Slightly above half 54.5% (n=188) indicated that they maintained general hygiene which comprised environmental and personal cleanliness. The findings also showed that 25.8% (n=89) of the respondents indicated that they boiled water while 15.7% (n=54) indicated they washed hands. (Table 4.6) Using an observation checklist, the researcher observed that slightly above half 57.4% (n=198) did not breastfeed their child during diarrhoea. Majority 76.5% (n=264) gave fluids during diarrhoea. ORS was prepared incorrectly in 67.1% (n=231) of the respondents. ORS was stored correctly in 67.1% (n=231) of the respondents. Slightly above half 55.9% (n=193) administered ORS correctly.

Table 4.6: Diarrhea Prevention Practices

Response	Frequency	Percent
General hygiene	188	54.5
Boiling drinking water	89	25.8
Washing hands	54	15.7
Others	14	4.1
Total	345	100.0

4.5.2 Management of Diarrhoea

Majority 73.3% (n=253) of respondents indicated that their child had at one time suffered from diarrhoea. Respondents who indicated that their child had experienced diarrhoea were asked to explain how they managed it at home. Findings in Table 4.7 showed that 35.2% (n=89) gave their child water while 22.9% (n=58) gave ORS and 22.1% (n=56) gave food.

Table 4.7: Management of Diarrhoea Practices

Response	Frequency	Percent
Giving water	89	35.2
Gave ORS	58	22.9
Gave food	56	22.1
Breastfeeding	38	15.0
Others	12	4.7
Total	253	100.0

4.5.3 Use of ORS in Management of Diarrhoea

Respondents who indicated that their child had experienced diarrhoea and gave ORS were asked whether they prepared ORS themselves. The vast majority 78.7% (n=199) indicated that they did not prepare the ORS themselves.

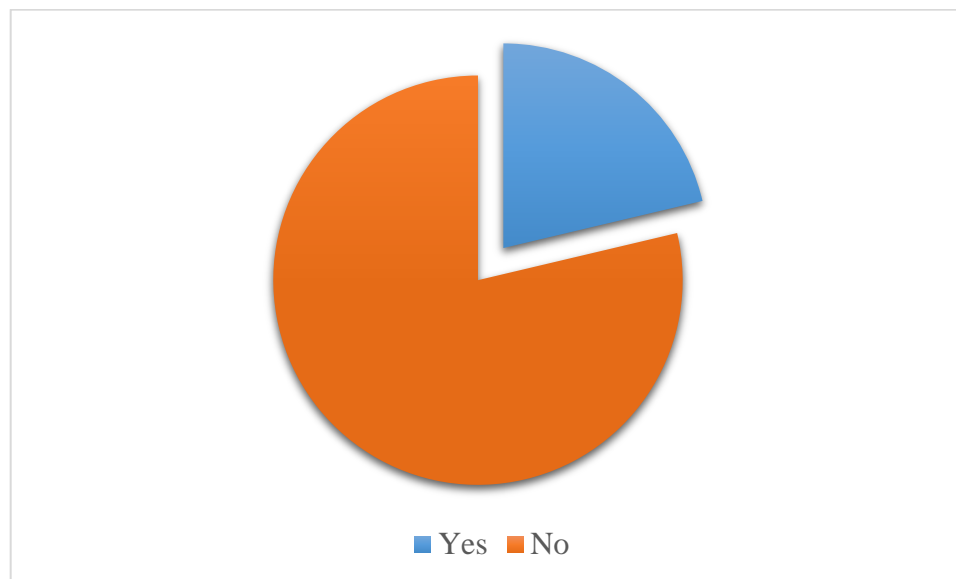


Figure 4.9: Preparation of ORS

Respondents were also asked to indicate after how long they gave the child the ORS. Findings in Table 4.8 showed that 37.9% (n=22) gave the ORS later than 1 hour after preparation while 22.4% (n=13) gave the ORS between 31 and 60 minutes after preparation. This suggests poor practices regarding administration of ORS.

Table 4.8: Time of Administration of ORS

Response	Frequency	Percent
Immediately after preparation of mixture	11	19.0
1-30 minutes	12	20.7
31- 60 Minutes	13	22.4
Over 1 hour	22	37.9
Total	58	100.0

4.5.4 Nutrition Practices in Management of Diarrhoea

Respondents in the study were asked to indicate the foods they gave their child when they were experiencing diarrhoea. Slightly less than half 44.7% (n=113) indicated that they gave their child “hard foods” like bananas, bread and ugali. The findings showed that 22.5% (n=57) gave their child the normal foods while 18.2% (n=46) gave the child

liquids and fluids. Respondents in the study were also asked to indicate the foods they did not give their child when they were experiencing diarrhoea. Findings in Table 4.9 showed that 38.3% (n=97) did not give fatty foods, 28.1% (n=71) did not give fluids foods while 22.5% (n=57) did not give milk. Slightly above half 56.8% (n=144) of the respondents did not continue to breast feed during their child’s diarrhoea episode. This shows that parents of children with diarrhoea perceived that more solid foods are beneficial contrary to recommendations.

Table 4.9: Foods Given to Child with Diarrhea

Nutrition aspect	Category	Frequency	Percent
Foods Given to Child with Diarrhea	Normal foods	57	22.5
	“Hard foods”	113	44.7
	Liquids and fluids	46	18.2
	Other foods	37	14.6
	Total	253	100.0
Foods not given to Child with Diarrhea	Fatty foods	97	38.3
	Milk	57	22.5
	Fluid foods	71	28.1
	Others	28	11.1
	Total	253	100.0
Breastfeeding during Diarrhea	Yes	109	43.2
	No	144	56.8
	Total	253	100.0

4.5.5 Perceived Success of Diarrhoea Management Methods

Respondents in the study were asked how successful the diarrhoea management methods they used were. Slightly less than half 46.1% (n=117) indicated that the methods used were fairly successful while 39.9% (n=101) indicated that the methods were successful.

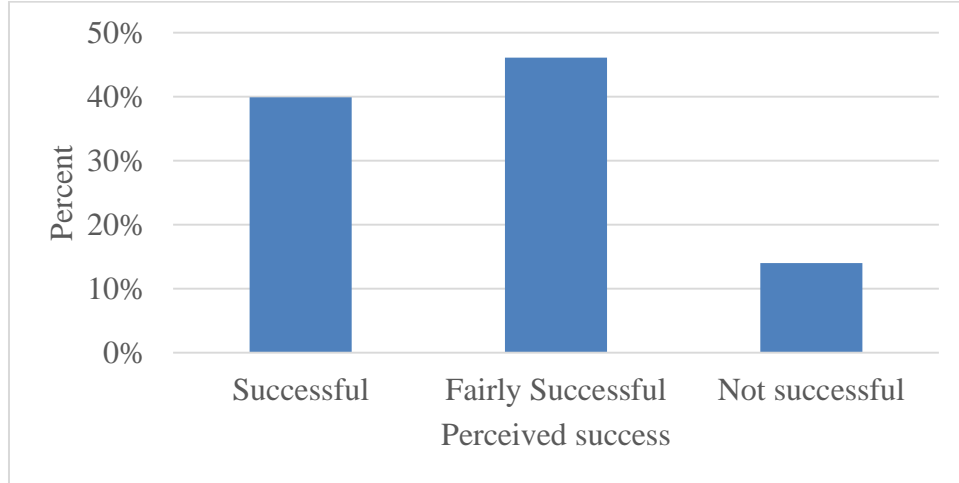


Figure 4.10: Perceived Success of Diarrhea Management Methods

4.5.6 Seeking Medical Help

Majority 84.3% (n=213) of the respondents indicated that they sought medical help for their child's diarrhoea. This was through going to the hospital or buying drugs from a chemist.



Figure 4.11: Seeking Medical Help

4.5.7 Boiling of Drinking Water

Majority 66.8% (n=230) of the respondents indicated that they boiled water for drinking.

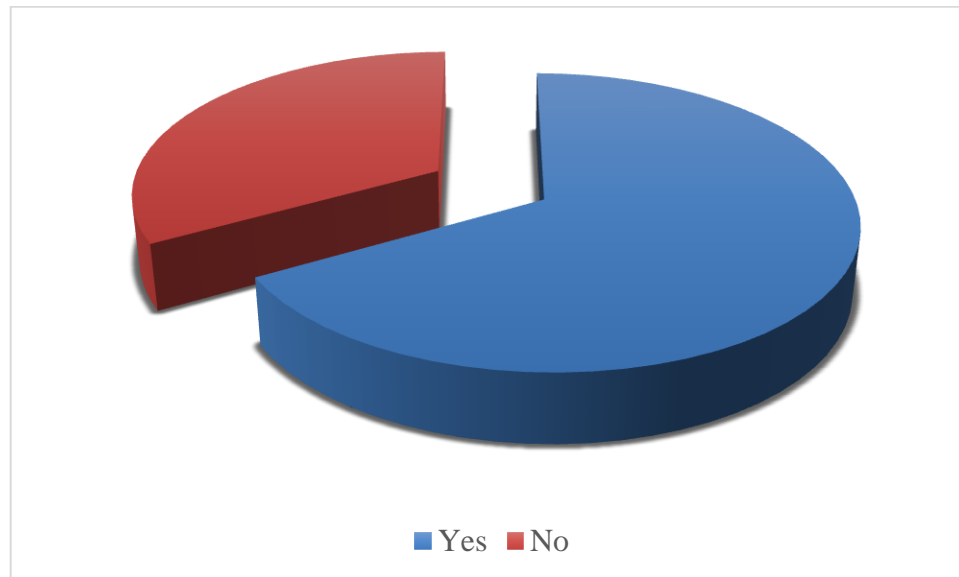


Figure 4.12: Boiling of Drinking Water

4.5.8 Washing of Hands

Respondents in the study were asked when they washed their hands. Majority 80.3% (n=203) indicated after visiting the toilet while 68.4% (n=173) indicated that they washed their hands before preparing meals. The findings also showed that slightly above half 57.3% (n=145) indicated that they washed their hands after cleaning the baby.

Table 4.10: Washing of Hands

Response	Frequency	Percent
After visiting toilet	203	80.3%
After cleaning baby	145	57.3%
Before preparing meals	173	68.4%

4.5.9 Summary of Practices of Home Management of Diarrhoea

Respondents who observed 5-7 of the recommended home management of diarrhoea practices were classified as having “good” practices while those who observed 4 or less of the recommended home management of diarrhoea practices were classified as having “poor” practices {Desta et al. (2017); Masiha et al. (2015)}. Findings in Figure 4.13 shows that 67.1% (n=231) of the respondents had poor practices in regards to home management of diarrhoea.

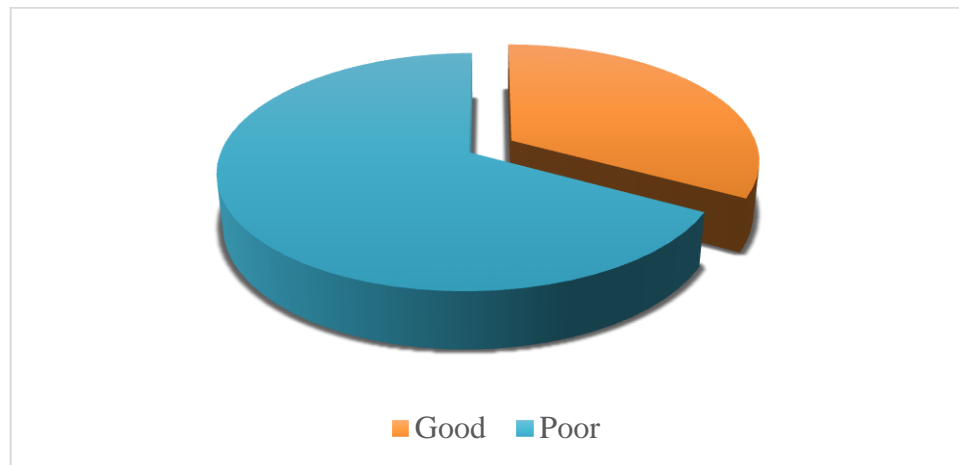


Figure 4.13: Summary of Practices of Home Management of Diarrhoea

4.6 Relationship between Caregivers’ Individual Factors and Home Management of Diarrhoea

4.6.1 Chi-Square Analysis

Chi-square tests were conducted between individual factors comprising the age, level of education, marital status socio-economic status and knowledge and practice of home management of diarrhoea. Results in Table 4.11 show that there was an association ($\chi^2 = 7.340$, $df=1$, $p<0.001$, $OR=2.4$) between respondent’s’ age and practice of home management of diarrhoea. Cross tabulation showed that 73.8% of respondents who were classified as old (40 years and above) had poor practice.

There was also a significant relationship ($\chi^2 = 62.413$, $df=1$, $p<0.001$, $OR=3.4$) between caregiver's knowledge and practice of home management of diarrhoea. Caregivers who had high knowledge were 3.4 more likely to have proper home management of diarrhoea practices. Respondents' level of education, marital status and socio-economic status showed no significant association with practice of home management of diarrhoea as shown in Table 4.11

Table 4.11: Chi-Square Results between Individual Factors and Practice

		Practice			Chi-square
		Poor	Good	Total	
Age	Young	106	70	176	$\chi^2 = 7.340$ $df=1$ $p=0.007$
	Old	125	44	169	$OR=2.410$
Marital status	Married	114	103	217	$\chi^2 = 0.002$ $df=1$ $p=0.965$
	Unmarried	117	11	128	$OR=0.870$
Education	Low	181	100	281	$\chi^2 = 2.428$ $df=1$ $p=0.119$
	High	50	14	64	$OR=1.021$
Economic Status	Low	70	39	109	$\chi^2 = 0.025$ $df=1$ $p=0.876$
	High	161	75	236	$OR=0.870$
Parity	Low	99	77	176	$\chi^2 = 1.396$ $df=1$ $p=0.651$
	High	132	37	169	$OR=0.870$
Knowledge	Low	155	25	180	$\chi^2 = 62.413$ $df=1$ $p=0.000$
	High	76	89	165	$OR=3.402$

4.6.2 Regression Analysis

Logistic binary regression analysis was conducted. Findings in Table 4.12 show that knowledge ($p < 0.05$) was significant. An odds ratio showed an increase in knowledge yielded better practice by 1.64 units.

Table 4.12: Regression Output between Individual Factors and Practice

Model	Unstandardized Coefficients		Standardized AOR t		Sig.
	B	Std. Error	Beta	t	
(Constant)	2.441	.116		21.084	.000
Age	-.021	.018	-.058	0.97	-1.132 .258
Knowledge	.494	.087	.294	1.64	5.690 .000

Logistic Regression between Individual Factors and Practice

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion of the study findings. The researcher's conclusions on the research questions are presented. In addition, recommendations for policy, practice and further research are made.

5.2 Discussion

5.2.1 Demographic Characteristics of the respondents.

Results showed that the vast majority 90.2% (n=311) of respondents were aged below 40 years. This finding shows that the majority of respondent were relatively young. This is similar to findings of Mumtaz et al. (2014) in Pakistan and Osonwa et al. (2016) in Nigeria where majority of respondents were between 20 and 40 years.

The study found that majority (62.9%) were married. This result is similar to many others such as Ogunrinde et al. (2012), Amare et al. (2014), Mukiira and Ibisomi (2015), Njeru et al. (2017) and Padhy et al. (2017) in Nigeria, Ethiopia, Kenya and India respectively where majority of women respondents were married.

On level of education, the study found that slightly above half 50.4% (n=174) of the respondents had acquired secondary education. This result therefore shows that majority of the respondents were well educated. The result tally with findings of Naseem and Swetha (2012), Amare et al. (2014) and Géa-Horta et al. (2016) in India, Ethiopia and Brazil where most of the respondents had acquired secondary education or higher. However, the result does not tally with findings of Mumtaz et al. (2014), Osonwa et al. (2016) and Verma et al. (2017) in Pakistan, Nigeria and India where majority of respondents had not acquired secondary education.

All the respondents in the study were Christians. This result is in tandem with many other studies such as Ogunrinde et al. (2012), Masiha et al. (2015), Kitony (2016), Chandra and Wanda (2017) and Chiabi et al. (2018) in Nigeria, Pakistan, Kenya, Indonesia and Cameroon where Christianity was the main religion.

On occupation, the findings showed that slightly less than half (47.2%) of the respondents were self-employed. This result therefore shows that there was a high level of unemployment in the study sample. This is similar with findings of Naseem and Swetha (2012), Mumtaz et al. (2014), Géa-Horta et al. (2016), Padhy et al. (2017) and Ghimire et al. (2018) in India, Pakistan, Brazil, India and Nepal where majority of respondents were self-employed.

On parity, 33.3% of the respondents had three (3) children while 27.2% had two (2) children. This finding therefore shows that the respondents had low parity. This tally with findings of Kitony (2016), Verma et al. (2017) and Desta et al. (2017) in Kenya, India and Ethiopia where there was low parity. However, do not tally with studies by Ogunrinde et al. (2012) and Géa-Horta et al. (2016) in Nigeria and Brazil respectively where parity was higher.

5.2.2 Level of Knowledge on Home Management of Diarrhoea

The study sought to assess the level of knowledge on home management of diarrhoea among caregivers of children below five years with diarrhoea in Ngandu location in Nyeri County. The study found that slightly above half 52.2% (n=180) of the respondents had low knowledge on management of diarrhoea. The findings showed that 23.6% (n=81) and 21.6% (n=74) cited teething and sucking dirty fingers as causes of diarrhoea respectively. There was a significant relationship ($\chi^2 = 7.340$, $df=1$, $p < 0.001$, $OR=2.4$) between respondent's age and practice of home management of diarrhoea. Respondents also showed poor knowledge in home management of diarrhoea especially in preparation of ORS. The low knowledge can be attributed to the low level of education among the respondents and the lack of training on home management of

diarrhoea among caregivers. The vast majority 84.6% (n=292) of respondents in the study indicated that they had not received training on home management of diarrhoea of child at a home

This finding is similar to Pandey *et al.* (2017) study who found that only a few of the mothers in India had good knowledge, over half of mothers had average knowledge and rest had poor knowledge. This finding is however, in discrepancy with findings of Desta *et al.* (2017) found that majority of women in Ethiopia had correct knowledge on the signs of diarrhea; sunken eyes and weakness/lethargic were the most mentioned sign. The finding does not tally with findings of Jha, *et al.* (2006) who found that majority of Nepalese mothers had more understanding on ORS as well as its beneficial effects in the correction of fluid volume deficit secondary to diarrhoea. The finding is also dissimilar with findings of Masiha *et al.* (2015) in Pakistan who found that the vast majority had heard of ORS, with majority mothers with adequate knowledge about ORS, its preparation and administration

5.2.3 Home Management of Diarrhoea Practices

The study sought to establish the practice of home management of diarrhoea among caregivers of children below five years with diarrhoea in Ngandu location in Nyeri County. The study found that majority 67.1% (n=231) of the respondents had poor practices in regards to home management of diarrhoea. Only 25.8% (n=89) of the respondents indicated that they boiled water while only 15.7% (n=54) indicated they washed hands the researcher observed that slightly above half 57.4% (n=198) did not breastfeed their child during diarrhoea. The vast majority 78.7% (n=199) indicated that they did not prepare the ORS themselves. ORS was prepared incorrectly in 67.1% (n=231) of the respondents. The poor practice can be attributed to poor knowledge regarding home management of diarrhoea and lack of proper training on ORS preparation.

This finding is similar to Njeru *et al.* (2017) who found that 41% of the respondents in Kenya managed diarrhoea cases with non-recommended home remedies such as salt and sugar solutions. It is similar to Mukiira and Ibisomi (2015) who showed that 55% of the caregivers in Kenya who were above half of the study population searched for incorrect health care for the treatment of diarrhoea for their young ones. This finding is however dissimilar to findings of Verma *et al.* (2017) where 54.76% Indian mothers were able to provide oral rehydration solution (ORS) to their young ones with frequent watery loose motions. Similarly, in Ogunrinde *et al.* (2012) study in Nigeria where a minority of the caregivers (8.6%) gave their children ORS. In addition, the findings are inconsistent with a study in Kenya Olsson *et al.* (2011) study whereby 61% of mothers gave oral rehydration therapy (ORT) as a remedy 45% gave ORS and those mothers who continued to feed their young ones were 64%.

5.2.4 Relationship between caregivers' individual factors and home management of diarrhoea

The study also sought to determine the relationship between caregivers' individual factors and home management of diarrhoea among caregivers of children below five years with diarrhoea in Ngandu location in Nyeri County. There was an association ($\chi^2 = 7.340$, $df=1$, $p<0.001$) between respondent's age and practice of home management of diarrhoea. Cross tabulation showed that 73.8% respondents' who were classified as old (40 years and above) had poor practice. This finding differs with findings of Kitony (2016) who found that there was a significant relationship between age and home management of diarrhoea in Kenya. The finding is dissimilar to findings of Desta *et al.* (2017) study, whereby the caregivers in Ethiopia who had a higher chance of having good practice by 4 and 3.6 times were in an age range of 25 to 35 years and between 36 to 45 years of age. The finding is also different with that of Amare *et al.* (2014) where mothers over 45 years of age in Ethiopia were the most vulnerable population for lack of enough information as compared to age group of 15-24 years. However, the finding is similar to the results of Hornimann (2017) which revealed no statistical major difference

between the age and the effective home-based care of diarrhoea in South Africa. Similarly, age of the mother was also no significant in Gazi *et al.* (2015) study.

There was also a significant relationship ($\chi^2 = 62.413$, $df=1$, $p<0.001$) caregiver's knowledge and practice of home management of diarrhoea. Caregivers who had high knowledge were more likely to have proper home management of diarrhoea practices. This tally with studies by Jha *et al.* (2006), Masiha *et al.* (2015), Pandey *et al.* (2017) and Desta *et al.* (2017) in Nepal, Pakistan, India and Ethiopia which also found that knowledge was a predictor of good home management of diarrhoea practices.

5.3 Conclusion

The study concludes that the level of knowledge on home management of diarrhea among caregivers of children below five years with diarrhea in Ngandu location in Nyeri County was low

There was poor practice of home management of diarrhea among caregivers of children below five years with diarrhea in Ngandu location in Nyeri County

There was a relationship between knowledge and home management of diarrhoea among caregivers of children below five years with diarrhoea in Ngandu location in Nyeri County

5.4 Recommendations

Going by the findings of the study, it was clear that there was need for health education on diarrhea and its home management among mothers.

The study recommends enhanced education of mothers on home management of diarrhea by community health workers

Training to community workers on demonstration to caregivers on ORS preparation, administration and storage as part of home management of diarrhea

Public health officers should also teach mothers on handwashing and other hygiene practices to prevent diarrhea

Nutritionists should be engaged in educating the mothers on infant and young child feeding especially during diarrhea

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APPENDICES

Appendix I: Informed Consent

CONSENT FORM

Study on determinants of home management of diarrhea among mothers of children below 5 years.

Introduction: I Leah Wambui MScN student in Pediatrics at Jomo Kenyatta University of Agriculture and Technology, am conducting a **study on home management of diarrhea among mothers of children below 5 years** and would like to recruit you/ your next of kin into the study. Your participation will involve you allowing me to access your/ your next of kin personal information like the age, marital status and level of knowledge on home management of diarrhea.

Study procedures: I am going to use a questionnaire to ask you questions on individual factors, knowledge and practice regarding management of diarrhea in your child. Please answer to the best of your ability. If you do not understand anything, please ask me to clarify. I will use English or Kiswahili depending on which language you will be comfortable with. The interview will take approximately 15 minutes.

Broad Objective: the aim of the study is to evaluate the determinants of home management of diarrhea among caregivers of children below five years in Ngandu location in Nyeri County.

Voluntariness of Participation: Your participation in this study is on a voluntary basis and should you wish to withdraw from the study at any point then you will be at liberty to do so.

Confidentiality: Your / your kin participation in this study will be kept in confidence and your/ your kin's actual name will not be used in the study. Confidentiality of information obtained from you/ from your/your kin's record will be protected through such processes as using code numbers for concealed identity and limiting the number of people with access to the information.

Benefits: The benefits to you for being involved in the study will not be direct. The indirect benefit include early diagnosis and management of diarrhea before signs and symptoms of dehydration appears.

Risks: There are no risks from you getting involved in this study. The study findings will not be used for any monetary gains.

Right to Withdrawal: Should you decide to withdraw from the study at any point, you will not be subjected to any discriminatory treatment.

Should you require any further information or clarification then the main researcher may be contacted using the contacts on the consent certificate/form.

Leah Wambui Gathogo

Telephone No. 0722 557193

Email Address leahkuct@gmail.com.

Address/ P.O. BOX 257 Karatina.

Supervisors:

Dr Sherry Orushina

Jomo Kenyatta University of Agriculture and Technology

Address/ P. OBOX 62000-00200, Nairobi

Tel.No. - 0724668425

Dr Elijah Githinji Mwangi

Jomo Kenyatta University of Agriculture and Technology

Address/ P. OBOX 62000-00200, Nairobi

Telephone No. 0722 349473

The Ethics and research committee secretariat may also be contacted on the following contacts

Telephone 726300-9

Email- uonknh_erc@uonbi.ac.ke

Address/ P.O. BOX 20723-00202, Nairobi

Respondents Statement: I have been explained to the above and have understood therefore am willing to participate in the study.

Signature: _____

Investigator: _____

Date: _____

Signature: _____

Investigators Statement

I am suitably qualified and experienced to conduct the above research study. I agree to conduct or supervise the described study personally in accordance with the relevant, current protocol after approval by the KNH/UON ERC. I agree to timeously report to the KNH/UON ERC serious adverse events that may occur in the course of the investigation. I agree to maintain adequate and accurate records and to make those records available for inspection by the appropriate authorized agents when and if necessary.

Signature: _____

Date: _____

FOMU YA MARIDHIANO

Utafiti kuhusu kiukilia cha upangaji wa kinyumbani kwa kina mama wenye watoto ambao ni wa umri wa chini ya miaka mitano.

Utangulizi: mimi Leah Wambui MScN mwanafunzi wa udaktari wa watoto na magonjwa yao kutoka chuo kikuu cha Jomo Kenyatta. Nafanya utafiti kuhusu kukabiliana na kipindupindu nyumbani kati ya akina mama walio na watoto wenye umri wa chini ya miaka mitano na ningependa kukuhusisha wewe/mridhi wako katika utafiti huu.

Nitakuuliza maswali kuhusu maelezo ya kibinafsi na kuhusu kukabiliana na kipindupindu nyumbani kwa mtoto wako. Tafadhali jibu venye unaelewa Zaidi na kama huelewi swali lolote tafadhali niulize nielezee Zaidi. Nitatumia Kiingereza ama Kiswahili kulingana na lugha yenye unaelewa Zaidi. Hawa maswali itashukua munda wa karibu ndakika kumi.

Kusudio pana: Nia ya utafiti wangu ni kutadhmini, viukilia vya kinyumbani kuhusu jinsi ya kupambana na kipindupindu kati ya kina mama wenye watoto wa umri wa chini ya miaka mitano katika Kata ya Ngandu Kaunti ya Nyeri.

Watakaojitolea kutoa habari: Kuchangia kwako katika utafiti huu ni kwa hiari. Ikiwa ungetaka kujiuzulu, hatuna budi kukuacha huru.

Udumishaji wa siri: Kushiriki kwa mridhi wako katika utafiti huu ni siri kubwa, na jina lake halisi halitatumika kamwe wakati wa kuwasilisha utafiti. Tutahakikisha tumelinda maelezo yoyote tutakayopata kukuhusu na pia yanayohusu mridhi wako. Hili litafanikishwa kwa kutumia nambari za siri ili kuzuia kujulikana kwa moja kwa moja na pia kupunguza idadi ya watu ambao wanaweza kuwa na maelezo yoyote kukuhusu.

Faida: faida zako kutokana na utafiti huu hazitakuwa za moja kwa moja. Lakini kunazo faida kama vile, iwapo utapatikana na ugonjwa wa kipindupindu utatambulika mapema na kuwezesha kuudhibiti kabla ya dalili za kukosa maji mwilini hazijajitokeza.

Hatari :Hakuna hasara zozote utakazokumbana nazo kwa kushiriki katika mahojiano

Uamuzi wa kujiaondoa kwenye mahojiano: Iwapo utaamua kutoendelea na mahojiano haya, hakuna hukumu yoyote itakayotolewa dhidi yako.

Ingawaje, ukiwa na maelezo yoyote au ufafanuzi wowote una ruhusa ya kuwasilisna na mhojaji mkuu kwa kutumia nambari zilizoko kwenye cheti chake.

Leah Wambui Gathogo

Mhojiwa : nimeelezwa kila kitu kilichoandikwa na nimeelewa na niko tayari kuchangia katika utafiti huu.

Sahihi

Tarehe.....

Mtahini

Sahihi.....

Leah Wambui Gathogo

Nambari ya simu 0722557193

Barua pepe: leahkuct@gmail.com.

Sanduku la posta P.O BOX 257 Karatina

wasimamizi

Dk. Sherry Orushina

Chuo Kikuu Cha Jomo Kenyatta

S.L.P/P. O BOX 62000-00200, Nairobi

Nambari ya simu 0724668425

Mr.. Elijah Githinji Mwangi

Chuo Kikuu Cha Jomo Kenyatta

S.L.P. /P. O BOX 62000-00200, Nairobi

Kamati ya nidhamu na utafiti inaweza pia fikiwa kwa nambari zifuatazo

Simu 7263000-9

Barua pepe-erc@uonbi.ac.ke

S.L. P/P. O BOX 20723-00202.Nairobi

Maoni ya mhojiwa----Nimeelezewa kuhusu utafuti huu na nimeelewa na nimejitolea kuhusishwa na utafuti huu.

Sahihi.....

Mhojaji.....

Tarehe.....

Sahihi.....

MATAMSHI YA MHOJAJI

Mimi nimehitimu na niko na ujuzi wa kufannya utafuti huu.Nimekubali kufanya utafuti huu mimi mwenyewe kulingana na binu zenye zimewekwa na mimi naweza tu kubandilisha binu hizi baada ya kupewa ruhusa na KHH/UON/ERC isipokuwa kwenye mikakati ya haraka sana itakayohitajika kuzuia hasara yoyotekwa mhojiwa.Kukiwa na shinda kama hii mimi naelewa kwamba lazima nijulishe KHH/UON/ERC bila kupoteza wakati wowote .Nimekubali kuwajulisha KHH/UON/ERC kila wakati madhala yoyote ikitokea wakati wa kuhojiwa.Nimekubali kuweka vizuri mahojiwa yote na nitafanya

haya mahojiwa kupatikana kwa ushuguzi wowote wenye umekubaliwa wakati wowote utahitajika.

Sahihi.....

Tarehe.....

Appendix II: Questionnaire

Title: To assess the determinants of home management of diarrhea among caregivers of children below five years in Ngandu location in Nyeri County.

Participant ID NO

Date

Instructions: The purpose of this questionnaire is to assess the determinants of home management of diarrhea among caregivers of children below five years in Ngandu location in Nyeri County. The questionnaire has 3 sections in section A, am going to ask you questions on individual factors, section B, I will ask questions on knowledge about diarrhea and in section C, I will ask about home practice regarding management of diarrhea in your child. Please answer to the best of your ability. If you do not understand anything, please ask me to clarify.

Section A: Individual Factors

1. How old are you?

Below 20 years [] 21 – 30 years [] 31 – 40 years [] Over 40 years []

2. What is your marital status?

Single [] Married [] Divorced/Separated []

3. What is your highest level of education?

No education [] Primary [] Secondary [] College [] University []

4. What is your religion?

Christian [] Muslim [] African traditional religion [] Others []

5. What is your occupation?

.....

6. How many children do you have?

.....

Section B: Knowledge Factors

7. Do you know what diarrhea is?

Yes [] No []

If yes, describe it,.....

8. What causes diarrhea in children (tick appropriately)

- a. Excessive breast feeding
- b. Consuming un boiled drinking water
- c. Teething
- d. sucking dirty fingers

9. Name three symptoms of diarrhea in children (tick appropriately)

- a. Fever.
- b. Frequent passing of watery stool
- c. Body rashes
- d. Vomiting
- e. Abdominal pains
- f. Excessive crying

10. Is diarrhea preventable?

Yes [] No []

11. Is it possible for a mother to manage diarrhea of a child at home?

Yes [] No []

12. Have you received training on home management of diarrhea of a child at home?

Yes [] No []

13. In what ways can one manage diarrhea of a child at home?

.....
.....
.....

14. What foods should one give a child who is having diarrhea?

.....
.....
.....

15. What foods should not be given to a child who is having diarrhea?

.....
.....
.....

16. Should one continue breastfeeding a child who is having diarrhea?

Yes [] No []

17. Have you ever heard of ORS?

Yes [] No []

18. How is ORS prepared?

.....
...
.....
...

19. How is ORS given to the child?

.....
...

Section C: Home management Practices

22. What do you do to prevent diarrhea in your child?

.....
.....
.....

23. Has your child had another episode of passing loose stool before?

Yes [] No []

24. If yes, how did you address the passing of watery stool? Please explain

.....
.....
.....

25. Did you prepare ORS?

Yes [] No []

If yes, how?

.....
...

If yes after how long did you give the child ORS?

.....
...

26. Which foods are you giving to the child when they are experiencing diarrhea?

.....
...

27. Which foods are you not giving the child when they are experiencing diarrhea?

.....
...

28. Are you continuing to breast feed when the child has diarrhea?

Yes [] No []

29. How successful were the methods you are using?

Successful [] Fairly successful [] Not successful at all []

30. Did you seek any medical help?

Yes [] No []

.....
.....
.....

31. Do you boil your drinking water?

Yes [] No []

32. When do you wash your hands?

After visiting the toilet [] After cleaning the baby []

Before preparing meals [] Others specify []

HOJAJI

Utafiti kuhusu kiukilia cha upangaji wa kinyumbani kwa kina mama wenye watoto ambao ni wa umri wa chini ya miaka mitano.

Sahihi ya mhojiwa **Tarehe**.....

Mawaidha:Umuhimu wa hojaji hii nikutafutilia viukilia vya kinyumbani kuhusu jinsi ya kupambana na kipindupindu kati ya kina mama wenye watoto wa umri wa chini ya miaka mitano katika Kata ya Ngandu Kaunti ya Nyeri.Nitakuuliza maswali kuhusu maelezo ya kibinafsi na kuhusu kukabiliana na kipindupindu nyumbani kwa mtoto wako.Tafadhali nijibu kwa uwezo wako wote na kama huelewi chochote tafadhali niruhusu nirudie.

Sehemu A: maelezo ya kibinafsi

1. Uko na miaka mingapi?

Chini ya 20 [] 21-30 [] 31-40 [] zaidi ya miaka 40 []

2. Hali ya ndoa

Sijaolewa/sijaoa [] nimeolewa/nimeoa [] tumeachana/tumetengana
[]

3. Kiwango cha juu cha elimu

Sijasoma [] masomo ya msingi [] masomo ya sekondari [] chuo kuku

4. Dini

Mkristo [] muislamu [] madhehebu [] nyinginezo []

5. Kazi yako ni

gani?.....

6. Je, uko na watoto wangapi?

.....

Sehemu B

7. Je, unaelewa maana ya kipindupindu?

Ndio [] Apana []

Kama ndio, fafania.....

8. Ni nini haswa kiini cha kipindupindu kwa watoto (weka alama ipasavyo)

- a. Kunyonyesha motto mfululizo
- b. Kunywa maji ambayo hayajachemshwa
- c. Motto anapoota meno
- d. Kunyonya vidole vichafu

9. Taja dalili zozote tatu za kipindupindu kwa watoto (weka alama ipasavyo)

- a. Joto mwilini
- b. Kuendesha
- c. Mwili kuwa na vipete
- d. Kutapika
- e. Maumivu ya tumbo
- f. Kulia sana

10. Je, unaweza kuzuia kipindupindu

Ndio [] La []

11. Kuna uwezwano wa mama kuweza kukabiliana na kipindupindu kwa mtoto akiwa nyumbani?

Ndio [] La []

12. Je, umepokea mafunzo yoyote kuhusu jinsi ya kukabiliana na kipindupindu kwamtoto ukiwa nyumbani?

Ndio [] La []

13. Ni njia zipi za kukabiliana na kipindupindu kwa mtoto mtu akiwa nyumbani?

.....
.....

14. Ni chakula kipi bora zaidi kwa motto aliye na kipindupindu?

.....

15. Ni chakula kipi ambacho hakipaswi kulishwa motto aliye na kipindupindu

.....

...

16. Je, mama anaweza kuendelea kumnyonyesha mtoto aliye na kipindupindu?

Ndio [] La []

17. Je, umewahi sikia kuhusu ORS?

Ndio [] La []

18. Je, ORS hutayarishwaje?

.....

.....

19. Je, motto hupewa aje ORS?

.....

**Sehemu C: mambo ya kinyumbani ya kusaidia kukabiliana na
kipindupindu**

20. Je, unafanyaje kuzuia kipindupindu kwa mtoto wako?

.....

.....

23. Je, motto wako amewahi kuendesha hapo mbeleni?

Ndio [] La []

24. kama ndio, uliwezaje kukabiliana na hali hiyo. Tafadhali elezea

.....

...

.....

...

25. je, ulitayarisha ORS?

Ndio [] La []

Kama ndio, kivipi?

.....

Kama ndio ulimpa mtoto ORS baada yamuda gani?

.....

26. Ni chakula kipi ambacho unamlisha mtoto aliye na kipindupindu

.....

27. Ni chakula kipi ambacho hupaswi kulisha mtoto anapokuwa na kipindupindu?

.....

...

28. Je unaendelea kumnyonyesha mtoto wakati ako na kipindupindu

Ndio [] La []

29. baadhi ya njia unazotumia kukabiliana na kupindupindu zimekufaidi vipi?

Zimefaidi vizuri [] zimefaidi kidogo [] hazijafaidi hata kidogo []

30 Je. Ulitafuta matibabu yoyote

Ndio [] La []

.....

31. Je, huwa unachemsha maji yako ya kunywa

Ndio [] La []

32. Je huwa unaosha mikono yako lini?

Baada ya kwenda haja [] baada ya kuosha motto []

Kabla ya kutayarisha maakuli [] kama kuna wakati mwingine elezea

Appendix III: Checklist

	Yes	No	Remarks
Child breastfed during diarrhea			
Child given fluids during diarrhea			
ORS prepared correctly			
ORS stored correctly			
ORS administered correctly			


~Thank you for your participation ~


Kioo/Chekilisti

	Ndio	La	Maoni
Mtoto alinyonyeshwa alipokuwa na kipindupindu			
Mtoto alipewa vyakula vya majimaji alipokuwa na kipindupindu			
Dawa ya ORS ilitayarishwa ipasavyo			
Dawa ya ORS ilihifadhiwa ipasavyo			
Dawa ya ORS ilinywewa ipasavyo			

~Asanti kwa ushirikiano wako mzuri~

Appendix IV: Letters of Authorization from JKUAT


**JOMO KENYATTA UNIVERSITY
OF
AGRICULTURE AND TECHNOLOGY**
SCHOOL OF NURSING
DEPARTMENT OF NURSING EDUCATION, LEADERSHIP, MANAGEMENT & RESEARCH
TEL: 067-5352181-4 Extn. 24064 FAX: 067-52030 Email :nursingeducation@jkuat.ac.ke


09 JUL 2019
10/7/2019
see for further action
3rd July, 2019
see for further action
[Signature]

TO WHOM IT MAY CONCERN

Dear Sir/Madam

**RE: REQUEST FOR DATA COLLECTION -
LEAH WAMBUI GATHOGO – REG. NO. HSN311-2610/2017**

The above named is a bonafide Masters student of Jomo Kenyatta University of Agriculture and Technology pursuing Master of Science in Nursing. As part of their curriculum fulfillment, the students are required to undertake a research project.

The purpose of this letter is to inform you that the student's proposal titled "**Determinants of Home Management of Diarrhoea among Caregivers of Children below 5 Years in Nganda Location Nyeri County**" has been approved for data collection.

We are therefore requesting you to accord the student the necessary assistance.

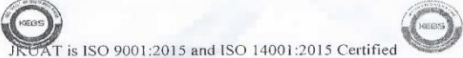
Thank you.

JKUAT
www.jkuat.ac.ke
PO Box 0500-00200, NAIROBI




04 JUL 2019

SCHOOL OF NURSING
RECEIVED
ROSEMARY KAWIR

Ag COD, Nursing Education Leadership, Management & Research



JKUAT is ISO 9001:2015 and ISO 14001:2015 Certified
Setting Trends in Higher Education, Research, Innovation and Entrepreneurship

Appendix V: Ethical Approval Letter from KNH/UON

 UNIVERSITY OF NAIROBI COLLEGE OF HEALTH SCIENCES P O BOX 19676 Code 00202 Telegrams: varsity Tel: (254-020) 2726300 Ext 44355		 KENYATTA NATIONAL HOSPITAL P O BOX 20723 Code 00202 Tel: 726300-9 Fax: 725272 Telegrams: MEDSUP, Nairobi
Ref: KNH-ERC/A/229	KNH-UON ERC Email: uonknh_erc@uonbi.ac.ke Website: http://www.erc.uonbi.ac.ke Facebook: https://www.facebook.com/uonknh.erc Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC	13 th June, 2019
Leah Wambui Gathogo Reg. No.HSN311-2610/2017 Paediatric and Child Health Department School of Nursing <u>J.K.U.A.T</u>		
Dear Leah		
RESEARCH PROPOSAL: DETERMINANTS OF HOME MANAGEMENT OF DIARRHEA AMONG CARE GIVERS OF CHILDREN BELOW 5 YEARS IN NGANDU LOCATION, NYERI COUNTY (P214/03/2019)		
This is to inform you that the KNH- UoN Ethics & Research Committee (KNH- UoN ERC) has reviewed and approved your above research proposal. The approval period is 13 th June 2019 – 12 th June 2020.		
This approval is subject to compliance with the following requirements:		
<ol style="list-style-type: none">Only approved documents (informed consents, study instruments, advertising materials etc) will be used.All changes (amendments, deviations, violations etc.) are submitted for review and approval by KNH-UoN ERC before implementation.Death and life threatening problems and serious adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH-UoN ERC within 72 hours of notification.Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH- UoN ERC within 72 hours.Clearance for export of biological specimens must be obtained from KNH- UoN ERC for each batch of shipment.Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (<i>Attach a comprehensive progress report to support the renewal</i>).Submission of an <i>executive summary</i> report within 90 days upon completion of the study. This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/ or plagiarism.		
Protect to discover		

For more details consult the KNH- UoN ERC website <http://www.erc.uonbi.ac.ke>

Yours sincerely,



PROF. M. L. CHINDIA

SECRETARY, KNH-UoN ERC

c.c. The Principal, College of Health Sciences,
UoN The Director, CS, KNH
The Chairperson, KNH- UoN ERC
The Assistant Director, Health Information, KNH
Supervisors: Dr. Sherry Oluchina (J.K.U.A.T), Mr. Elijah Mwang (J.K.U.A.T)

Apendix VI: Approval Letter from Mathira West Sub-County

LEAH WAMBUI GATHOGO

BOX 257-10101

KARATINA

PHONE-0722557193

email-leahkuet@gmail.com

DATE :08/07/2019

TO: DEPUTY COUNTY COMMISSIONER

MATHIRA WEST SUB COUNTY

BOX 153-10101

KARATINA.

Dear sir,



Approved.
Mei
9th July, 2019.

RE: APPROVAL TO CONDUCT RESEARCH STUDY.

I am writing to request Approval to conduct a research study at Ngandu location in Mathira West Sub County. I am currently enrolled in Masters in Nursing Science program at Jomo Kenyatta university and specializing in pediatric nursing. The study title is, **Determinants of home management of diarrhea among mothers of children below 5 years in Ngandu location, Nyeri county.**

I hope to follow care givers of children below five years who have been admitted at Karatina Sub county hospital to assess their continuity of care and diarrheal management at home. The care givers will be from Ngandu Location in Mathira Sub County.

The care givers who volunteer to participate will be given consent forms to sign before starting the survey.

The survey results will be pooled for the thesis project and individual results of this study will remain absolutely confidential and anonymous. Should this study be published, only pooled results will be documented. No costs will be incurred by either the individual participants.

Your approval to conduct this study will be greatly appreciated.

Yours faithfully

A handwritten signature in blue ink, appearing to be "Leah Gathogo".

Leah Gathogo.

Appendix VII: Map of Study Area

