SCHOOL OF MEDICINE AND HEALTH SCIENCES

MOTHERS KNOWLEDGE AND PRACTICES TOWARDS DIARRHOEA DISEASE IN UNDER FIVE CHILDREN AT ARTHUR DAVISON CHILDRENS HOSPITAL IN NDOLA

BY

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A dissertation submitted to the University of Lusaka in partial fulfillment of a Bachelor of Science in Public Health

DECLARATION

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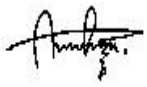
I declare that this proposal is my creative work and to the best of my acquaintance has not been presented for a degree in any other institution.

Signature:  **Date: 26/05/2023.**

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This dissertation has been submitted with my approval as a University of Lusaka (UNILUS) supervisor.

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DEDICATION

This dissertation is dedicated to my parents who have made this possible because I wouldn't have made it this far without your support, my brother Solomon Monta who has encouraged me and believed in me, my late elder sister Joanna Monta, I know you are proud because you were my biggest support system from the beginning of this journey and this is what you wished for me. Lastly, I dedicate this to my beautiful daughter Shekinah Mpatso Chelelwa who has been my source of strength and my reason to keep keeping on. I appreciate you all may God bless you.

LIST OF ACRONYM

ADH: Arthur Davison Children's Hospital

MDG's: Millennium Development Goals

NHRA: National Health Research Authority

ORS: Oral Rehydration Solution

UNICEF: United Nations International Children's Emergency Fund

UNILUS-REC: University of Lusaka Research and Ethics Committee

UN: United Nations

WHO: World Health Organization

ZDHS: Zambia Demographic Health Survey

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ABSTRACT

Background: World Health Organization describes diarrhoea disease as having to pass three or more loose watery bowel movement a day. Diarrhea is one of the leading causes of morbidity and mortality, especially among under-five children. About 15,000 Zambian children under the age of five years suffer at least three or more episodes of diarrhea every year and as many as 800,000 children die each year from severe dehydration resulting from diarrhea globally.
The aim of this study was to draw understanding on the knowledge and practices of mother towards diarrhoea disease among under-five children at Arthur Davison Children's Hospital in Ndola.

Methods: A phenomenology study design was used to gather information among mothers at ADH in Ndola were data was collected according to the participant's explanations of their experience with the use of an interview guide.

Results: The findings of this study identified the participant's demographic characteristics, their themes of knowledge and their practices towards under-five diarrhoea disease as contributing factors towards the disease as mothers may or may not have the necessary knowledge regarding diarrhoea and poor practices in the home. A total number of 8 mothers participated in the study. The study revealed that most of the mothers in this study where young women of age ranging between 22-30 years old who were unable to get basic education due to a number of reasons.

Conclusion: while some mothers were unable to explain the transmission of diarrhoea and the use of oral rehydration solution during diarrhoea, they were knowledgeable about diarrhoea disease.

Recommendations: The study recommends that there is need to implement and monitor well-packaged health education and promotion protocols for women as well as improving sanitation especially in rural areas. In addition, there is need to strengthen community sensitization which would empower mothers with under-five children with knowledge which influences better practices and the importance of administering ORS. There is need for more vigilant government support through laws and policies such as waste removal, building of latrines, safe water and others. This would reduce diarrhea morbidity and mortality in Zambia.

CHAPTER ONE

1.0 Introduction

Childhood diarrhoea is a major public health concern around the globe especially in low and middle-income countries (Harriet U. et al 2020). According to World Health Organization, Diarrhoea disease is a condition of having to pass at least three loose or watery bowel movements each day which often occurs more frequently than usual and in most cases can result in dehydration (i.e. a dangerous loss of body fluids) which if not properly managed can result to loss of life. Diarrhoea disease is usually a symptom of an infection in the intestinal tract caused by a variety of either bacterial, viral or parasitic organisms found in the environment (WHO 2017). Infection is typically spread through the fecal-oral route, meaning that fecal matter that has infectious particles in it is spread and carried around through water, contaminated food or from person-to-person as a result of poor hygiene. An approximation of about 15,000 Zambian children under the age of five years suffer at least three or more episodes of diarrhea every year (Chilambwe et al, 2014).

There are three clinical types of diarrhoea which are acute watery diarrhoea that lasts several hours or days and includes cholera, acute bloody diarrhoea also called dysentery as well as persistent diarrhoea which lasts 14 days or even longer. In Zambia, the prevalence of diarrhea is at 16% (non-bloody), and 3% (bloody) second to fever (21%) among the children under-five years (CSO, 2014). The preventable disease is the second leading cause of mortality and morbidity among under-five children and is responsible for around 800 000 deaths of children every year globally. According to the latest WHO data published, low income countries including Zambia are at high risk of having a higher number of under-five children experiencing diarrhoea each year despite the several interventions and health care initiative that government implements. The first five years of a child's life is the most crucial stage, and passed studies have shown that every time a child experiences diarrhoea infection, it deprives the child of the necessary nutrition for a normal growth and as a result is a major cause of malnutrition and stunted growth in children. It has a detrimental impact on cognitive development which has lifelong implications for health and general well-being (UNICEF 2018). The leading cause of

death from acute Diarrhoea is the loss of water and essential minerals, which can be compensated in most cases by an oral re hydration solution. In addition, diarrhoea disease in under-five children causes serious economic and educational problems for developing countries, which are missed school days for the child and workdays for parents affecting family resources that in return influences health outcomes. Indeed, diarrhea is a preventable disease and mothers play a major role in taking care of children which implies that their knowledge on diarrhea might contribute to the occurrence of diarrhea among under-five children and hence, it needs to be assessed. Mothers' knowledge is one of the possible predictors of diarrheal disease among under-five children. Awareness of and perception towards diarrhoea, and individual as well as household actions to prevent and/or manage the disease have paramount importance to reduce diarrhoea-related morbidity and mortality. On the other hand, mothers' poor knowledge and attitude about the cause of diarrhoea might limit them from taking appropriate timely actions. The comprehensive knowledge on diarrhea might play an important role in the decision-making and action among mothers related to diarrhea prevention for their children.

1.1 Statement of the Problem

Under-five diarrhoea disease affects a child's overall development if not properly managed and these effects can either be long term or short term. Infection can cause dehydration which is life threatening if left untreated. The problem of diarrhea disease is a more complex problem in most of the low income countries including Zambia due to increasing poverty levels (CIDRZ, 2013), and is largely linked to living conditions, poor sanitation, lack of safe drinking water and other related factors (Aristide R, 2016). Diarrhoea disease affects a child's cognitive development as well as a major cause of malnutrition. The Zambia Demographic Health Survey (ZDHS) report done in 2018-2020 shows that under-five diarrhoea disease in Zambia remains a public health concern and this is because the occurrence of the disease continues to be experienced in different parts of the country if not almost yearly due to a number of reasons and remains the leading cause of clinic visits. Ideally, children should not have to suffer from the disease especially that it is preventable and the 4th of the United Nations Millennium Development Goals (MDGs) is reducing child mortality but however, this does not seem to be the case in Zambia. The study

attempts to give a better understanding on how the mothers' knowledge and practices can influence the occurrence of diarrhoea disease in under-five children besides the general causes. By understanding this, it will give insight on how much knowledge mothers have about diarrhoea disease.

1.2 Justification of the Study

Infection is associated with growth faltering, micro-nutrient deficiencies, impaired neurodevelopment and a high chance of having other childhood infections because frequent episodes of diarrhoea will cause a reduction in the body's immune system making it difficult to fight off other infections. Therefore, the significance of this study is to understanding what knowledge mothers have regarding the disease and what practices they are carrying out in such instances. It is important to broaden the investigation so as to assess how this can be a leading cause of diarrhoea disease. The findings of this study would add to the pool of knowledge and provide base line data for future research. Furthermore, the information will help policy makers come up with policy statements that would help in implementing and building effective and acceptable measures as well as disseminate health promotion messages.

1.3 General Objective

To understand the knowledge and practices of mothers towards diarrhoea disease in under-five children at ADH.

1.4 Specific Objectives

1. To draw themes of knowledge on diarrhoea from mothers of under-five children at ADH.
2. To identify and have insight on mother's practices towards diarrhoea disease in under-five children at ADH.
3. To draw recommendations on diarrhoea prevention.

1.5 Research Questions

1. What are the themes of knowledge of mother's effect diarrhoea disease in children under the age of five years?
2. How do the practices of mothers affect diarrhoea disease in under-five children?
3. What can be done to improve the knowledge and the practices of mothers regarding under-five diarrhoea disease prevention?

CHAPTER TWO

2.0 Literature Review

2.0.1 Introduction

Diarrhoea is a leading cause of child mortality and morbidity across the globe especially in developing countries. This chapter presents some of the reviews from past literature that give insight regarding the knowledge and practices of mothers towards prevention of diarrhoea disease in children under the age of five years old.

2.0.2 Knowledge

The knowledge of mothers has a huge influence on how they will care for their children. Findings of a study done by Mwambete and Joseph in Tanzania (2010) showed that 1/3 of caregivers were aware of the risk factors of and causes of under-five diarrhoea disease, 33% where not aware of the risk factors and causes while the other 30% described the disease as normal in children. This showed a deficit in the knowledge of caregivers. Similarly, a study done by Chilambwe M et al in 2014 on diarrhoea prevalence in under five children in two urban settings, Chipulukusu and Kansenshi of Ndola, an assessment of the knowledge and attitude at household level. The study reported 44.6% of children under five years had diarrhoea in that year, where Chipulukusu recorded a greater number 305 (84.5%) because of its high density and low education levels, while only 15 (4.2) cases were recorded in Kansenshi. It was concluded that knowledge was significantly associated with the prevalence of diarrhoea disease in the two areas.

In a study done by Nigatu Merga and Tadesse Alemayehu in Western Ethiopia 2015, Mothers' knowledge level regarding the cause/transmission of diarrhoea by drinking unclean/unsafe water was found to be low (20.15%) compared to other studies. For example, a study conducted in Malawi showed that 55% were knowledgeable about causes and transmission, in another study in rural community of Kenya 58.2% reported contaminated water as principal cause of diarrhoea. Such disparity might be due to difference in educational background between the women in these studies. The Malawian study showed that 79% of women attended elementary school and above whereas only 25% of mothers in Ethiopian study attended schooling at the same level. The findings of this study showed that the prevalence in under-five children is found to be very high. On the other hand, the knowledge of mothers on perceived cause, recognition of danger signs, prevention, and management of diarrhoea is inadequate. The knowledge of mothers was found to be essential for reducing occurrence of diarrhoea for under-five children.

Several studies have been shown that mothers in low-and middle-income countries have a reasonable level of knowledge about the causes, symptoms and prevention of diarrhoea. For example, a study conducted in Nigeria showed that majority of mothers knew that diarrhoea was caused by poor sanitation, contaminated food and water. Araoye et al. (2020). However, despite the knowledge, the practices of mothers in preventing diarrhoea are often inadequate. For instance, a study done in Pakistan by Nisar et al. (2017) found that although mothers knew the importance of hand washing, only a small percentage practiced it consistently. Some factors contributing to the gap between knowledge and practices among mothers include cultural beliefs, lack of resources and inadequate access to health care services. For instance in some cultures, giving water to infants is believed to cause diarrhoea, leading to dehydration. Such beliefs can contribute to inadequate fluid intake and increase the risk of dehydration in children during diarrhoea episodes. Okumura et al. (2020).

Trykker et al (1994) conducted a baseline survey in a rural district of Choma, Zambia. It was focused on immunization, diarrhea incidence and treatment, sanitation and children nutrition status. Results showed that "79% of children aged 12-23 months were fully immunized, the incidence of diarrhea was high and estimated at 4.8 episodes per child per year, and treatment

with Oral Re-hydration Salts (ORS) was used in 52% of cases dehydration. About 2/3 of the households had no safe water supply or pit latrine and only a few had a refuse pit. Only about 40% of children aged 12-2 months and 75% of those aged 24-59 months were adequately nourished". It was concluded that the district needed intensified sanitary and nutritional programs, and periodic baseline surveys of 2-3 years intervals.

2.0.3 Practices

In Thailand, a secondary analysis study of Thailand multiple indicator cluster survey on factors associated with diarrhea among children less than 5 years old was done. Wilunda (2009) argued that 12% was in households with poor sanitary conditions, 6.7% in households that had more than one under-five children. (Wilunda 2009). In a study done in Yemen, poor preparation techniques, limited knowledge of ORS with less than half (47.8 %) of the mothers showing attitude of increasing breastfeeding during diarrhea (Abdulla et al., 2021). Sadly, only the minority wash their hands after cleaning the child's feces and before preparing the food (Abdulla et al., 2021). Similarly, a study conducted in Kenya revealed more mothers (79 %) who were taking their children to a health facility with 64 % being able to use ORS, while 59.1 % of those users could not prepare it correctly (Njeru et al., 2017).

Victoria et al. in 1992 conducted a study in Brazil whose findings showed that, compared to children that were exclusively breastfed, children who were partially breastfed had a 4.2 times higher chance of death caused by diarrhoea which increased to 14.2 times higher for those not been breast fed at all. A similar study done by Mary Katepa B et al (2015) aimed to describe feeding practices and nutritional status among infants and young children in two districts in Zambia and results showed the importance of complementary feeding, exclusive breastfeeding, continued breastfeeding and if any difficult in breastfeeding so as to understand the nutrition of the child. Literature has shown that traditional practices by mothers have an important role to play in the management of diarrhoea. A study done in Turkey (2021) found that mothers in the sample knew about traditional practices and they preferred these practices if their children had diarrhoea as compared to medical treatment from the heath facility. The practices included feeding the child banana (92.5%), feeding fat free mashed potatoes (90.6%) and 79.0% preferred feeding the child rice porridge.

2.1 Conceptual framework

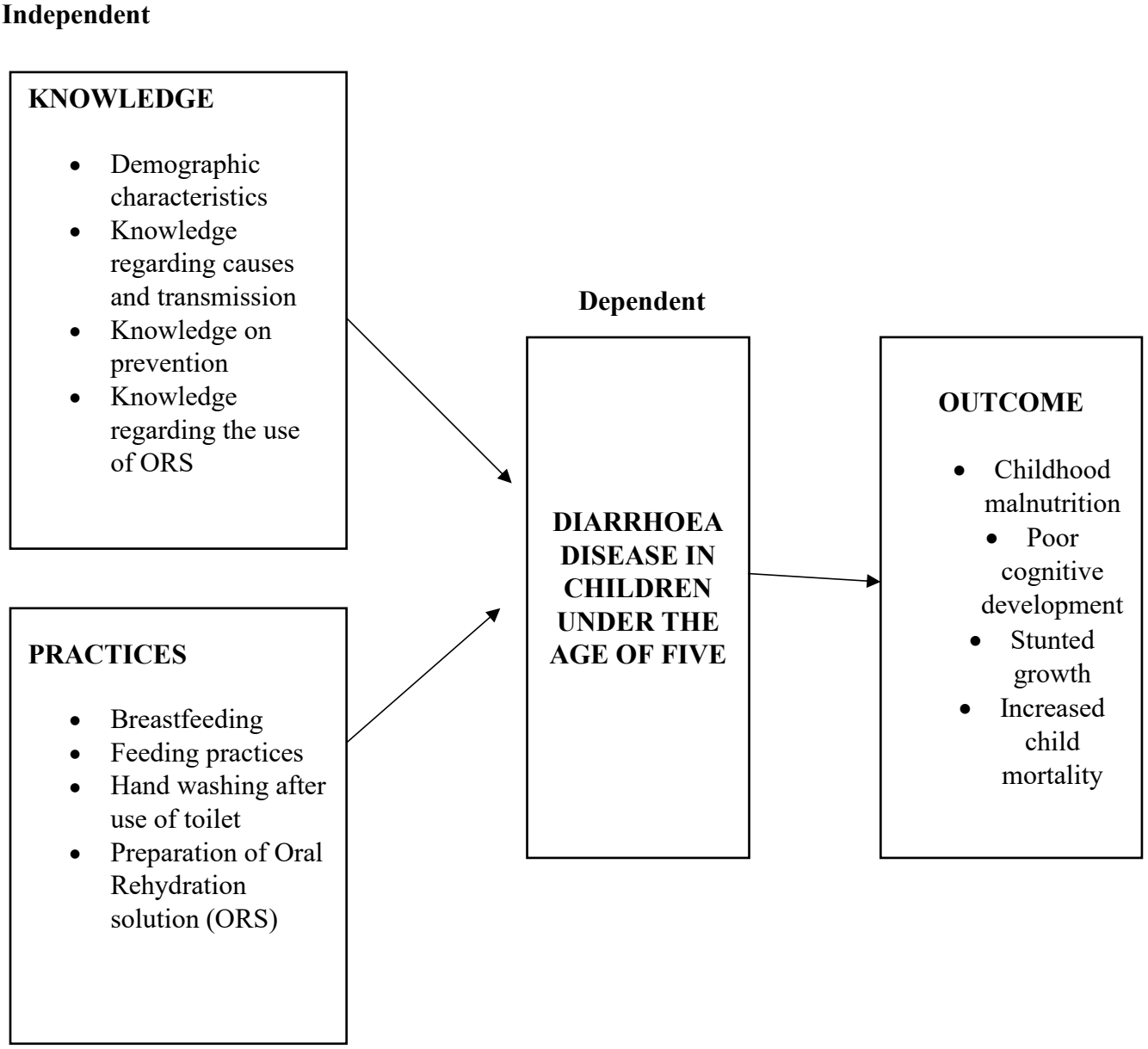

Fig 1: Mothers knowledge and practices associated with diarrhoea disease among children under the age of five years.

2.2 Theoretical Perspective

The theoretical perspectives helps to explain how the researchers defines their study ensuring that it is meaningful. To understand the risk factors associated with childhood diarrhoea disease the Germ Theory is used in this study. The germ theory was proposed in the mid- 16th century and gained widespread credence by scientific discoveries of the 17th through the late 19th century. The theory Germ theory states that specific microscopic organisms (pathogen) are the cause of specific diseases (infectious diseases). These small organisms, too small to see without the use of magnification, invade humans, animals and other living organisms. Environmental and hereditary factors also have an influence on the severity of disease. The use of the germ theory is to understand how the factors mentioned above have an influence on the occurrence of diarrhoea among under-five children. Germ theory required a new public awareness not only of germs as the causes of diseases, but also of the ways in which germs were spread from one person to another.

CHAPTER THREE

3.0 Methodology

The research methodology chapter describes the approach and design that was used in this study, it includes the population of interest, sampling procedures, data collection and data analysis procedures used.

3.1 Study Approach

The study used a qualitative approach which is a process of collecting, analyzing and interpreting non-numerical data. This approach was chosen because it focuses on understanding people's beliefs, attitude, experiences, behaviors and interactions, therefore it was helpful in giving the themes of knowledge and first hand insight on mothers practices. (Pathak V, 2013).

3.2 Study Design

A research study design is a framework used to collect and analyze data on variables specified in a particular research problem (Ranganathan, 2018). This study however used a phenomenology study design which looks to gather information that explains how individuals experience a phenomenon. The outcome was described from the participant's point of view from which themes surrounding the phenomena was identified. (Lissie Hoover, 2021).

3.3 Study Setting/Study population

The study was conducted at ADH in Ndola. This study setting was picked because ADH is a secondary level hospital which is expected to receive a higher number of diarrhoea cases, therefore, more mother were found seeking health services from there.

The capacity at ADH is approximately 250 bed spaces catering for all children. However, the target population for this study were mothers that had children under the age of five years old and had experienced diarrhoea disease.

3.4 Sample size

A sample size refers to the number of individuals included in a research study to represent a population. In a qualitative research the determination of sample size is contextual, priority is more on quality over quantity as well as the attainment of saturation. A general recommendation for an in depth interview is to have a sample size of a small number of not more than 30 participants to explore their perspectives on diarrhoea disease in children. Therefore, the number 8 was arrived at when detailed information was given and responses from participants no longer brought out new additional information. (Carolyn B, et al. 2006).

Table 1: Sample size of study participants

Participants	**Number of participants**	**Data collection method**

Mothers with under five children who have experienced diarrhoea disease.	8 Mothers	Interview

3.5 Sample Procedure

The sampling procedure that was used for this study was the snowball sampling which is a type of non-probability sampling that selects participants based on referrals from other participants of the study. This method involved a primary data source nominating other potential data sources that were able to participate. Therefore, due to its nature, it was an easy and quick way to find samples and it was cost effective (Abi Bhat).

Inclusion criteria

The study included mothers who were:

Aged between 22-30 years old

Had children under the age of five

Exclusion criteria

The study will exclude:

Mothers who were mentally challenged

Mothers under 18 years

3.6 Data Collection Methods and Tools

Data was collected through one-on-one interviews between the researcher and the participants which were conducted at Arthur Davison Children's Hospital were mothers visited the health facility to seek medical attention for their sick children. An interview schedule was prepared by the researcher consisting of a list of questions that the researcher asked the participants to elicit

their knowledge or perception related to the study. Each interview took 20-30 minutes. The advantage of using this method to collect data was that the schedule was prepared beforehand and the researcher knew what data to look for, therefore it reduced the likelihood of collecting information that was irrelevant to the study. However the researcher was open to other emerging responses from the participant which were helpful to obtain more information and understand new ideas. Information from an interview can be mixed up by the researcher during data entry and for this reason, notes were taken down on paper with the help of an assistant who also recorded each interview using a voice recorder which was timed at 30 minutes.

3.7 Pilot Study

A pilot study was done prior to the study so as to test validity of the data collection tool that was used. The study included a one-on-one interview with two selected mothers from Chipulukusu Community Health Hospital that were seeking health services for their child. The purpose of carrying out this pilot study was to determine whether or not the interview guide was clear enough to yield the desired result as well as to calculate and set an appropriate time that each interview will take and how questions were to be asked. The outcome of the pilot study was good because the interaction with the mothers at Chipulukusu Community Health generated other questions that were relevant for the study which were replaced with other questions. For instance, question 16 was an additional question that emerged from mothers giving different treatment methods they prefer to use. The time was set for 10-15 minutes before conducting the pilot study but it was observed that the time took longer than that and for that reason, time period for each interview was adjusted to 25-30 minutes including the time that was taken for mothers to ask questions were not clear.

3.8 Data Analysis

The data was analyzed using Thematic Analysis which emphasizes identifying, analyzing and interpreting qualitative data patterns where the researcher looks closely at the data from different participants in order to find common themes, i.e. repeated ideas, identify emerging responses that can be of interest to the study as well as interpretate the participant’s body language during the

study. Data was examined to identify broad themes and patterns that were coded to represent the researcher's content and presented in a narrative way. Thematic Analysis can emphasize the social, cultural and structural contexts that influence individual experiences, enabling the development of knowledge that is constructed through interactions between the researcher and the participants.

3.9 Ethical Consideration

Ethical clearance to conduct this study was sought from University of Lusaka Research and Ethics Committee (UNILUS-Rec) as well as from National Health Research Authority (NHRA) and Arthur Davison Children Hospital. A well-informed consent form for participants was provided with a clear idea of what the purpose of the study was so as to allow the participants decide if they are willing to take part in the study or not. The study used responses of participants and confidentiality was observed during the study. The information was strictly only used for the purpose of this study and not shared with any other individual or organization for other purposes. The results of this study can be used to improve interventions and enhance future research.

CHAPTER FOUR

4.0 Results

This chapter presents the findings of the study on the knowledge and practices of mothers regarding diarrhoea disease in children under the age of five years at Arthur Davison Children Hospital based on the responses given by the study participants. The findings were under the sub-headings: demographic characteristics, themes of knowledge from mothers on diarrhoea disease and insight on mother's practices. A total number of 8 people participated in the study who were young mothers of age ranging between 22-30 years old.

4.0.1 Participants demographic characteristics

The table below shows the number of mothers that participated in this study. This included the demographic characteristics such as age, employment, educational level, and source of income. The findings showed that most of the mothers were aged between 22-25 years (62.5%) while the others were aged between 26 & 30 years. Based on the data given from participants, it was observed that majority of the mothers had reached secondary education but dropped out of school before completing 62.5 (%). The data also showed that among these mothers 50% were in formal employment while 25% were in self-employment (i.e. entrepreneurship).

Table 2: the table above gives the responses of mothers regarding their level of education.

Demographic characteristics	**Responses**	**Frequency**	**Percentage (%)**
Mothers age	Between 22-25	5	62.5%
	Between 25-30	3	37.5%
Academic level	Secondary level	5	62.5%
	Tertiary level	3	37.5%
Employment status	Formal employment	4	50%
	Self employed	3	37.5%
	Not working	1	12.5%
Source of income	Business	4	50%
	Salary from place of work.	4	50%
		1	12.5%

	Husband		
Marital status	Single Married	2 6	25% 75%

4.0.2 Participants themes of Knowledge on diarrhoea

The first objective of the study was to draw themes of knowledge from mothers on under-five diarrhoea disease. The responses given by the mothers who participated in this study regarding the knowledge they have on diarrhoea disease in general including signs and symptoms, causes, transmission and ORS use. Participants were asked to describe and explain in their own words what they think diarrhoea is. One of the mothers said "*diarrhoea is the passage of watery stool frequently in a single day, so whenever I notice this then I know my child indeed has diarrhoea"* while another said *"I know it is diarrhoea when I see my child passing greenish stool which is unusual"*. Among these mothers, only one seemed not to know, she mentioned that she was unable to put it into words because her child's stool looks the same to her.

To further understand their knowledge, they gave different responses on how they are able to identify the signs and symptoms of diarrhoea in their under-five children. One mother said *"when my child passes stool more than three times in a day and is being difficult to eat I am able to know that the diarrhoea is progressing"*. Another mother responded by saying *"I notice that when my child has been passing stool more times than usual, his eyes start to look pale and he is not as active as he is on a normal day"* while another said *"once I notice any vomiting I assume that this is probably diarrhoea".* However when asked on what they think cause diarrhoea and also how it is transmitted. One of the mothers responded saying *"my child rarely experiences diarrhoea so whenever I notice it then I know that she is possibly just teething and that is what is giving her diarrhoea"* one other mother said the same. Another said *"I assume it could be from water or food which might have been contaminated because she was not the only person in the house that experienced diarrhoea".* According to another mother, her response was *"I don't really think it could have been caused by anything, sometimes the body cleanses itself differently*

and so when I notice this, I assumes so, unless it persists over a couple of days then I seek medical advice from the hospital".

On the other hand, there seemed to be misconceptions with regards to transmission of diarrhoea disease. One mother said *"It is transmitted from one person to another. I noticed that my older son had experienced diarrhoea which I am sure of that my four year old son could have gotten it from him".* Others were unable to trace how or where the child could have gotten the disease, they had no idea.

Participants were asked on oral rehydration solution and a good number of mothers knew about it. However, it was observed that despite knowing what ORS is, they were unable to correctly tell what it is important for and why it is recommended. Participants gave a number of responses to this. One mother said *"it is a medicine that is used to treat diarrhoea"* while another said *"when my child has no appetite I use it to boost his appetite especially when he has diarrhoea"*.

However from the interviews conducted, nearly all mothers were able to mention some ways to prevent diarrhoea disease, for instance the use of clean water, staying in a clean environment, eating clean and well cooked foods, proper sanitation use and good hygiene in general, while others had the knowledge that once a child has received a full immunization course once in their lives, they are not expected to experience an occurrence of diarrhoea disease for the rest of their childhood. This however is a call for concern as it is important that mothers are fully knowledgeable about this concept.

4.0.3 Participants insight on Practices

The second objective of this study was to identify and have insight on practices of mothers towards under-five diarrhoea disease. Participants narrated some of the practices done in the home from which the study will understand how these practices could be leading/ increasing the number of under-five diarrhoea disease cases. When asked if they are still breastfeeding how often they breastfeed during diarrhoea occurrence, one mother said *"when I notice diarrhoea, I*

usually breast feed more times than I often do because children tend to experience loss of appetite, therefore breast feeding is easier" while another said *"I don't usually have time with my child because of work so I do not breast feed as much, instead I prefer giving my child banana juice or maheu drink which I think works the same as breast milk"*. It was observed that this was because some mothers have more than 1 child under the age of 5 years old while others are busy with work and barely have time for their children. The same was observed concerning the feeding practices for children that are no longer breast feeding, majority of mothers offered their child less food with the excuse of appetite loss.

To have insight on the practice of good sanitation, mothers were asked how often they wash their hands and majority of the mothers that participated in this study narrated that,

"Yes I do wash my hands often"

"I always wash my hands every after toilet use or diaper change"

"Before and after handling food, I make sure to wash my hands"

Participants were further asked to give some of the water treatment methods they practice in the home to ensure that there is clean and safe drinking water for their children. Responses included the use of chlorine and boiling of water while one mother said *"our water source is clean and trusted and I don't see the need to boil it so we drink it just as it is, I don't believe it could be the reason my child would have diarrhoea"*

On the other hand, mothers narrated the various practices of diarrhoea treatment that they prefer to use on their children. One of the mother said *"I normally give my child water mixed with activated charcoal to stop the diarrhoea, I find it more effective than other medications"* another said *"I prefer giving my child boiled guava leaves water"* while another said *"I feed my child with a lot of crushed bananas when she has diarrhoea because it helps normalize the passage of watery stool while putting the child on self-home medication"*. From the responses given on diarrhoea treatment, the study observed that only a few of mothers opt to take their child to the

hospital and give medicine that is prescribed by the doctor. Instead majority would rather use medication or home remedies they believe work better even without the help of doctors.

CHAPTER FIVE

5.0 Discussion

It is widely recognized that diarrhea is a major cause of morbidity and mortality among children, especially children in developing countries like Zambia. This chapter discusses the finding of this study with other supporting literature by other researchers that have done similar studies on the knowledge and practices of mothers towards under-five diarrhoea disease.

5.1 Discussion with supporting literature

The finding of this study showed that (62.5%) did not complete their high school education, they dropped out of school before grade 12 and as a result it has disadvantaged them into pursuing their education up to tertiary level. Furthermore, these mothers have not been able to explore careers that can get them secure job opportunities and as a result they are surviving off small businesses to make ends meet. However, even with poor levels of education, it was observed that this did not have much effect on the knowledge they had concerning diarrhoea disease, unlike a similar study done by (Hellen H, 2016) on factors associated with diarrhoea disease which found that mother's level of education had a strong association with childhood diarrhoea.

Mother's age was not a significant characteristic in this study because most of the mothers were of maternal age (22-30 years old), this was similar to a study conducted in Egypt. However, in relation to age, a study done in (Onyango D.M, 2012) reported that diarrhoea prevalence was shown to be high in children whose mothers were below the age of 18years old.

The findings of this study showed that source of income was normal in their setting, in the sense that majority believe they are living a comfortable life with what they earn from either there place of employment and businesses they run. However it was observed that half of the mothers were from low income compounds were it is highly populated. This drew a conclusion that poor outcome of academic level has compromised their living conditions. Similarly, a study conducted by Pintu Paul (2020) in India on social-demographic and environmental factors associated with diarrhoea among children showed a higher proportion of children suffering from diarrhoea were children whose mothers have settled in low income areas with poor sanitation.

The knowledge of mothers in this study on what diarrhoea is was positive as more than half of the mothers were able to define what diarrhoea disease is. A good number mentioned that passage of watery stool three or more times a day is the immediate danger sign of diarrhoea. This means that they are able to recognize the danger signs and symptoms when the child experiences an episode of the disease. The findings were however contrary to the findings of a similar study done in Kenya by Othero DM which reported 76.4% of mothers were not able to mention any danger signs (2008).

Additionally, the knowledge level regarding the cause and transmission of diarrhoea was poor with only 3 mothers (37.5%) having the knowledge that the cause is as a result of unsafe water and dirty environment. More mothers agreed with the statement “teething causes diarrhoea”, this shows that mothers at ADH had more misconceptions about the relation between teething and diarrhoea which is a common misconception in other parts of the world. However compared to other studies, for example, Masangwi et al. (2012) conducted a study in Malawi which showed that 55% of mothers were aware of this while also in a different study done in a rural community in Kenya, 58.2% were able to report contaminated water as a principal cause of diarrhoea. Contrary to a similar study done in Assosa district of Western Ethiopia by Nigatu M and Tadesse (2015) only 20.15% had the knowledge that contaminated water is a principal cause. Such disparities might be as a result of difference in educational background between women in Zambia and women in Malawi.

In this study, it was observed that (37.5%) of the participants are educated up to tertiary level while majority have not completed their secondary education, on the other hand, the Malawian study showed that 79% of women attended elementary school and above.
According to a study done in Sudan Khartoum State (2017) by Raja HM et al. on the knowledge of mothers regarding under-five diarrhoea disease, it revealed that 54.6 % of mothers did not know what diarrhoea was and how to manage it, therefore they could not recognize the danger signs of the disease, however, in this study, at least 87.5% had the knowledge on this. This showed that a good number of mothers were knowledgeable about diarrhoea disease.
Additionally, in the same study done in Sudan, it was observed that 75% of the mothers that participated in the study did not know how to prepare ORS and what its use was for, this was concluded due to the fact that all the children included in the study had signs of dehydration. On the other hand, the findings of this study showed that mothers had the knowledge on what ORS is and how to prepare it, but similar to the Sudan study, children showed signs of dehydration. This means that mothers had poor knowledge regarding signs of dehydration and the correct use of ORS during diarrhoea occurrence.

The findings of this study reported a good number of mothers (87.5%) that practice good hygiene before and after food preparation. A similar study done in Indonesia by Usfar et al. (2010) most mothers associated the importance of food hygiene with disease prevention, contaminating agents and health. Results showed that the mothers wiped cutting boards with kitchen towels and also washed their hands without soap most of the time after performing house chores and cooking.
The study established that only half (50%) of the mothers responded that they have a washing bay nearby their toilets/latrine and always wash their hands after toilet use. The findings were in agreement with a study done by Joseph (2012) revealed that ¾ of mothers did not have a hand washing bay near their latrines thus they did not practice hand washing regularly which is a crucial practice in diarrhoea prevention. Therefore, this has a serious public health implication in that if mothers do not wash their hands often then this could increase the occurrence of diarrhoea in children. This occurs because children are affected by the practices of the caregivers who in

most cases are the mothers. If mothers do not practice washing their hands after toilet use, children will ingest microorganisms that cause diarrhoea.

Findings of the study revealed that mothers practiced poor disposal of waste including children's diapers within the compound and this observation of poor sanitation practice was mostly from those using shared latrines. Presence of feces in the compound is a breeding ground for diarrhea. This study showed that children who lived in the households where feces is present in the compound were more likely to have diarrhea as compared to those children who lived in households where feces are properly disposed. The more the feces is in the compound, the more children suffered from diarrhea. This result is similar to a study done in Indonesia by Aidan (2016) and Bangladesh (2016) which reported that the child feces disposal in open spaces near to the households compound and in location designated for households waste fail the children on the risk of diarrhea because unsanitary environment leads to diarrhoea. It seems universally true that mothers perceive that the feces of infants or children are less dirty than those of adults. It seems because of its less smell, its smaller size, and because of less likely to have food residuals though may possibly have a higher loading of pathogens. Unsanitary environmental conditions put children at increased risk of diarrhea. Those children develop diarrhea where feces seen in open field may be due to the children either crawling or walking and putting in the mouth dirt or other contaminated objects while playing or eating.

Globally, about 1.1 billion people have no access to improved water sources and 2.4 billion do not have basic sanitation (WHO, 2000). Among the practices, this study found that (62.5%) of participants had a reliable source of water while (37.5%) did not. It was further observed that some do not practices any water treatment techniques to prevent diarrhoea disease in case the water is contaminated. The children who came from households that had protected water sources and use one of the water treatment methods had children that had experienced diarrhoea episodes less as compared to those that had unreliable water sources and did not apply any of the water treatment methods. This is similar with a study that was conducted by Mengistie and Godana, 2012 in Ethiopia which found that the households that had lack of improved water sources also had a higher percentage of children with diarrhea.

This study showed that among the practices used by mothers to treat diarrhoea in their children. A number of treatment methods have been used such as the use of boiled guava leaves, rice water, ashes from burning charcoal and so on and so for the, however majority (75%) of mothers know about oral rehydration solution but rather have chosen to use other alternative methods for personal reason which can either be myths or beliefs. Similar to a study done in Turkey (2021) mothers in the sample knew about traditional practices and they preferred these practices if their children had diarrhoea as compared to medical treatment from the heath facility. The practices included feeding the child banana (92.5%), feeding fat free mashed potatoes (90.6%) and 79.0% preferred feeding the child rice porridge. This could be as a result of different cultural myths or religious beliefs that make certain groups of people have certain preferences over the other.

Another similar study done in Eastern Ethiopia by Hailemariam et al. (2016) found that nearly 51.5% 0f mothers disagreed to giving their children ORS because their children did not like the taste of it and so they resorted to other treatment methods. In the same line, this study found that over half of the participants in the study responded to having to administer self-home medication to their children and only took then to the clinic or hospital when the condition showed no improvement. The study conducted in Ethiopia was in agreement to this as it had 115 participants agree to self-medication at home. This is similar to the findings of this study that showed that mothers did not use ORS because they had little knowledge of the fact that it is important to prevent dehydration. Mothers of this study (75%) equally agreed to self-home medication rather than clinic visitation.

5.2 Study Limitations

1. Due to the nature of the study, the sample size limited the number of participants. It did not represent the larger population which may not be enough data to draw conclusions because it was restricted to the sample picked from ADH.
2. Other underlying conditions that are causes of diarrhoea such as measles are not considered in this study.

CHAPTER SIX

6.0 Conclusion and Recommendations

6.0.1 Conclusion

The study set out to draw understanding on the knowledge that mothers had regarding diarrhoea disease in under-five children and to give insight on home practices. This is in relation to the fact that childhood diarrhoea is a disease burden in Zambia and it remains a public health concern for a disease that is preventable. The study established that while some mother were unable to explain causes and transmitted, the overall level of knowledge on diarrhoea disease was good. Mothers were able to recognize and identify diarrhoea as well as signs and symptoms which showed that participants were knowledgeable regardless of educational level. Health workers in health facilities should however continue to encourage and educate mothers on such issues, this is owed to the fact that most of the mothers said they have acquired this knowledge from under-five hospital visits, during child health week as well as platforms such as social media, TV broadcast and so on.

Furthermore, findings on the practices showed that most mothers observed poor sanitation practices in the home. They were knowledgeable about good sanitation practices but instead showed negligence on the importance of observing good practices to prevent diarrhoea disease. Mothers with adequate knowledge of the causes, symptoms and prevention are more likely to adopt appropriate preventive and treatment practices while those with inadequate knowledge and poor practices towards diarrhoea in under five children may delay in seeking of medical attention which can lead to potentially fatal outcomes. Therefore, there is need for women to be equipped with accurate and comprehensive information on the importance of hygiene, proper sanitation and timely medical care. Another practices includes breastfeeding which most mothers showed not to do especially during diarrhoea episodes, instead they were knowledgeable about other methods to opt for other than breastfeeding which was a positive observation.

6.0.2 Recommendations

More similar studies can be conducted in other study settings and should consider other health related conditions that can cause diarrhoea for example measles.

This study used a qualitative approach with a small sample size of 8 participants. Therefore, other researchers should consider conduct a similar study on a larger population and using other study approaches.

Generally, there is need to strengthen community education and sensitization on what causes diarrhoea diseases in under-five children and what dangers come with frequent occurrence of the disease. If mothers are empowered with knowledge, they will be more aware on how to identify the severity of the diarrhoea and how to prevent it.

Mothers should be educated on the importance of administering oral rehydration solution (ORS) when children experience diarrhoea including feeding children with nutrient rich foods to support their recovery process. In addition, mothers should be sensitized and constantly reminded about preventive practices such as washing hands with soap and water, breast feeding and latrines.

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APPENDIX

Appendix I: INTERVIEW GUIDE

Understanding how the knowledge and practices of mothers towards diarrhoea disease among under- five children can contribute to the disease.

1. Child's age
2. How many under five child do you have in your home?
3. Is your child still breast feeding and often do you breast feed when the child has diarrhoea?
4. At what age did your child stop breast feeding?
5. What do you know about diarrhoea disease?
6. What do you think cause diarrhoea disease in children?
7. Mention any developmental complications you know of that are as a result of early childhood diarrhoea
8. Explain how the following have affected your knowledge on the disease
    - Level of education
    - Social class
    - Living conditions
    - Source of income
9. How often does your child experience an episode of diarrhoea?
10. Explain what you do to manage the diarrhoea
11. At what point do you administer ORS when your child has diarrhoea?
12. How often do you have access to clean drinking water?
13. What water treatment method do you use in your house?
14. What type of toilet do you use in your household?
15. What sanitary measures do you take after toilet use?

16. Explain some of the traditional practices you have used for diarrhoea disease on your child/children

Appendix II: FORM OF CONSENT

My names are Natasha Monta, a 4th year student at University of Lusaka pursuing a Bachelor of Science in Public Health. As part of my program, I am required to conduct a research project to analyze the knowledge and practices of mothers towards diarrhoea disease in under-five children. This research will be conducted with permission from the university.

With this been said, you have been selected among others to be a participant in this study. You are however allowed the right to make a choice as to whether or not you are willing to take part in the study and can therefore withdraw at any point you may uncomfortable. All questions asked will be to help understand your views on diarrhoea disease and what practices you engage in that can have an association with under-five diarrhoea disease and all your responses are strictly for the purpose of this study and is highly confidential. This project does not in any way link individual responses to participants' identity, you will remain anonymous to the researcher throughout the study.

Researcher's signature:

Participant's signature:

Data of consent agreement:

WORK PLAN

The work plan below was a schedule outlining each event in conducting this study from the time of developing the proposal, data collection until the final submission of the complete dissertation to University of Lusaka and the period of time it took for each.

	ACTIVITY	MONTH							
		AUG 2022	SEP 2022	OCT 2022	NOV 2022	FEB 2023	MAR 2023	APR 2023	MAY 2023
1	Development of proposal								
2	Proposal review								
3	Proposal writing								
4	Proposal presentation								
5	Proposal submission								
6	Data collection								

7	Final draft writing								
8	Dissertation submission								

BUDGET

The budget below is a representation of what was needed to conduct this research study and how funds were allocated.

Budget Item	**Unit cost (K)**	**Total**
Assistant allowance	K50 per day for 5 days	K250
Transportation	Researcher and Assistants	K500
Ream of paper	1*140	K140
Pens & pencils	15 of each at K2.5 K2.5*30	K75
Questionnaire photocopying	200 copies at k2 per copy 200*K2	K400
Data bundles		K200
Printing and final binding of report		K300

Refreshments		K250
Ethical clearance		K500
TOTAL		**= K2615**

ETHICAL CLEARANCE LETTER

SCHOOL OF MEDICINE AND HEALTH SCIENCES LEOPARDS HILL CAMPUS

Plot No. 37413, Off Alick Nkhata Mass Media. P. O Box 36711, Lusaka.

Phone: +260211258505, 258409 Fax +260211233409; Cell +260976075850,961917862,

E-mail:unilus@zamnet.zm,ictar@zamnet.zm

SCHOOL OF MEDICINE AND HEALTH SCIENCES

RESEARCH ETHICS COMMITTEE

Ref no: IORG0010092-2023/042

Date: 15th DECEMBER, 2022

NATASHA NAOMI MONTA - BSPH19216843

Re: RESEARCH TITLE: MOTHERS KNOWLEDGE AND PRACTICES TOWARDS DIARRHOEA DISEASE IN UNDER FIVE CHILDREN AT ARTHUR DAVISON CHILDREN'S HOSPITAL IN NDOLA

The above research was submitted to the research ethics committee for review. The study has no major ethical problems and is approved subject to the following:

1. The study cannot be changed without express permission of the UNILUS Research ethics committee
2. Approval from the Lusaka District health Management or equivalent health authorities should be sought.
3. The study tools should be added.
4. An informed consent form should be attached and filled by all study participants (If dealing with primary data)
5. The risks and benefits should be included in the consent form.
6. Ensure before commencement that approval is sought from ZNHRA Congratulations and the committee wishes you success in your work.

Prof Kasonde Bowa

MSc(Glasgow),M.Med(UNZA),FRCS(Glasgow),FACS,FCS,DPH(LSTMH),MPH(UCL)

Chairman- UNILUS REC

Professor of Urology and Consultant Urologist

Executive Dean

University of Lusaka and University Teaching Hospital School of Medicine and Health Sciences.

PERMISSION LETTER

SCHOOL OF MEDICINE AND HEALTH SCIENCES LEOPARDS HILL CAMPUS

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Phone: +260211258505, 258409 Fax +260211233409; Cell +260976075850,961917862,

E-mail:unilus@zamnet.zm,ictar@zamnet.zm

Date: 15th DECEMBER, 2022

……

……..

……..

PERMISSION FOR **NATASHA NAOMI MONTA - BSPH19216843 TO** CONDUCT A RESEARCH STUDY AT YOUR FACILITY/ INSTITUTION/ORGANIZATION

Reference is made to the above subject matter

The University of Lusaka, School of Medicine and Health Sciences here by requests for permission for **NATASHA NAOMI MONTA** Public Health Student to conduct research at your facility/ institution/ organization, entitled**; MOTHERS KNOWLEDGE AND PRACTICES TOWARDS DIARRHOEA DISEASE IN UNDER FIVE CHILDREN AT ARTHUR DAVISON CHILDREN'S HOSPITAL IN NDOLA.** The research is in partial fulfillment of the requirements for the degree of Bachelor of Science Public Health. This is purely for academic purposes and information gained in such a way will not be used in the public domain without prior authorization from the institutions/ organizations involved.

The research topic has been cleared by the University of Lusaka, School of Medicine and Health Sciences Research Ethics Committee as per the attached copy. Data collection is expected to be done from **1st January, 2023 to 31st March, 2023**.

The University of Lusaka avails itself of this opportunity to review to your office the assurances of its highest considerations and looks forward to your timely and favorable response.

Prof Kasonde Bowa

MSc(Glasgow),M.Med(UNZA),FRCS(Glasgow),FACS,FCS,DPH(LSTMH),MPH(UCL)

Chairman- UNILUS REC

Professor of Urology and Consultant Urologist

Executive Dean University of Lusaka and University Teaching Hospital School of Medicine and Health Sciences.

NATIONAL HEALTH RESEARCH AUTHORITY

Lot No. 18961/M, off Kasama Road, Chalala, P.O. Box 30075, LUSAKA

Tell: +260211 250309 | Email: znhrasec@nhra.org.zm | www.nhra.org.zm

Ref No: NHRA00001/21/02/2023 **Date: 21st February, 2023**

The Principal Investigator,
Natasha Monta, University of Lusaka, **Lusaka, Zambia.**

Dear Ms. Monta,

Re: Request for Ethical Clearance and Authority to Conduct Research

The National Health Research Authority is in receipt of your request for ethical clearance and authority to conduct research titled **"Mothers Knowledge and Practices towards Diarrhoeal Disease in Under-Five Children at Arthur Davison Children's Hospital in Ndola."**

I wish to inform you that following submission of your request to the Authority, our review of the same and in view of the ethical clearance, this study has been **approved** on condition that:

1. The relevant Provincial and District Medical Officers where the study is being conducted are fully appraised;
2. Progress updates are provided to NHRA bi-annually from the date of commencement of the study;
3. The final study report is cleared by the NHRA before any publication or dissemination within or outside the country;
4. After clearance for publication or dissemination by the NHRA, the final study report is shared with all relevant Provincial and District

Directors of Health where the study was being conducted, University leadership, and all key respondents.

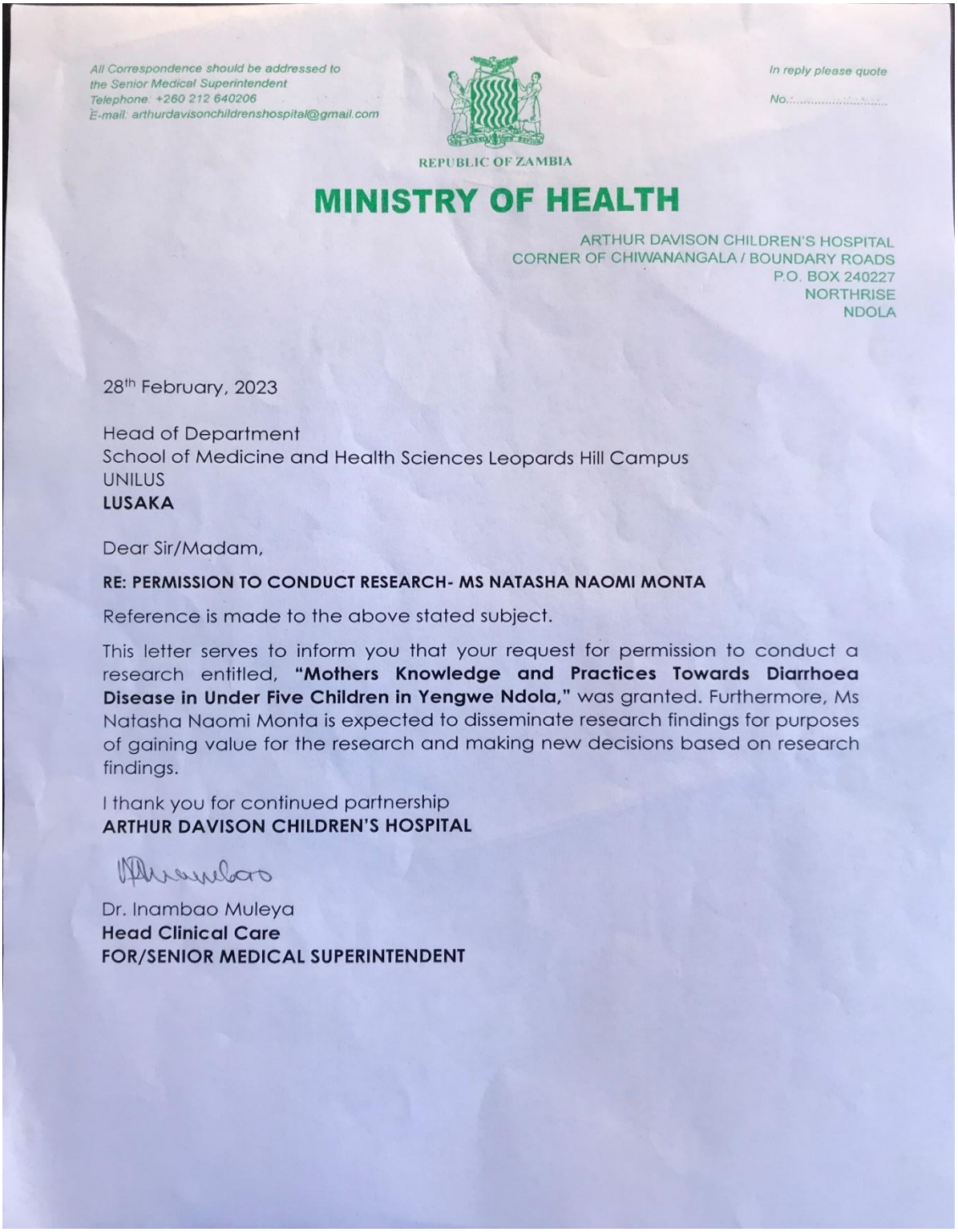
Yours sincerely,

NATIONAL HEALTH RESEARCH AUTHORITY

Ms. Sandra Chilengi-Sakala,

ACTING DIRECTOR/CHIEF EXECUTIVE OFFICER

ARTHUR DAVISON CHILDREN'S HOSPITAL PERMISSION LETTER



All Correspondence should be addressed to
the Senior Medical Superintendent
Telephone: +260 212 640206
E-mail: arthurdavisonchildrenshospital@gmail.com

In reply please quote
No.:.....

REPUBLIC OF ZAMBIA

MINISTRY OF HEALTH

ARTHUR DAVISON CHILDREN'S HOSPITAL
CORNER OF CHIWANANGALA / BOUNDARY ROADS
P.O. BOX 240227
NORTHRISE
NDOLA

28th February, 2023

Head of Department
School of Medicine and Health Sciences Leopards Hill Campus
UNILUS
LUSAKA

Dear Sir/Madam,

RE: PERMISSION TO CONDUCT RESEARCH- MS NATASHA NAOMI MONTA

Reference is made to the above stated subject.

This letter serves to inform you that your request for permission to conduct a research entitled, **"Mothers Knowledge and Practices Towards Diarrhoea Disease in Under Five Children in Yengwe Ndola,"** was granted. Furthermore, Ms Natasha Naomi Monta is expected to disseminate research findings for purposes of gaining value for the research and making new decisions based on research findings.

I thank you for continued partnership
ARTHUR DAVISON CHILDREN'S HOSPITAL

Dr. Inambao Muleya
Head Clinical Care
FOR/SENIOR MEDICAL SUPERINTENDENT