HEALTH CARE SEEKING BEHAVIOUR OF CAREGIVERS FOR CHILDREN UNDER FIVE YEARS TOWARDS DIARRHOEA IN HAVANA – WINDHOEK, NAMIBIA

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ABSTRACT

Poor sanitation, lack of access to clean water supply and inadequate personal hygiene are responsible for 90 % of diarrheal disease occurrences worldwide. This study identified the health care seeking behaviours of caregivers toward diarrhoeal disease among children under-five years in the Havana informal settlement in Windhoek Namibia. The research methodology utilized a mixed method approach, with explanatory sequential design. The study recruited 147 participants using systematic random sampling for the quantitative data and 8 participants using purposive sampling for the qualitative data. Data was collected using a structured questionnaire for quantitative data and in-depth interviews for qualitative data. SPSS version 25.0 was used to analyse the quantitative data and thematic analysis was used to analyse the qualitative data. Quantitative findings revealed that 44.9 % of the children had diarrhoea in three months before the study and 46.94 % of those caregivers sought medical care. The study found that there is no significant association between health seeking behaviour and Caregiver's s Marital Status (p=0.474), Caregiver's Age (p= 0.478), Employment Status (p=0.95), Health Insurance Status (p=0.209) and Household Monthly Income Range (p=0.307).Qualitative data revealed that "the caregivers perceive diarrhoea a disease that is easy to treat and that they do not seek medical care because the disease disappears on its own without the need for medical care". The study recommends that the Ministry of Health and Social Services should increase awareness about diarrhoea in Informal settlement.

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LIST OF ABBREVIATIONS

ORS	Oral Rehydration Solution
HSB	Health Seeking Behaviours
MDG	Millennium Development Goals
MoHSS	Ministry of Health and Social Services
WHO	World Health Organisation
UNICEF	United Nations International Children's Emergency Fund
WASH	Water Sanitation and Hygiene
NDHS	Namibia Demographic and Health Survey
DHS	Demographic Health Survey
PHC	Primary Health Care
UHC	Universal Health Coverage

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I dedicate this paper to God almighty, creator of all things wonderful. I especially dedicate this to my dearest mother who was the main force behind me starting this project. This is the answer to your question of when I am going back to school again. There are so many words to describe what an extraordinary being you are. You have inspired me to reach for greater heights and be assured that this here is just the beginning.

DECLARATIONS

I, Joolokeni N.P Kashile, hereby declare that this study is my own words and is a true reflection of my own research, and that this work or any part thereof has not been for a degree at any other institution.

Joolokeni Kashile		**April 2023**
Student's name	**Student's signature**	**Date**

CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

This chapter includes the general overview and purpose of the study. It begins by giving a brief introduction and background of childhood diarrhoea by briefly providing an overview of the past and current state of childhood diarrhoea globally and nationally. It also presents the objectives and significance of the study and lastly the definition of key concepts used in the study write up.

1.2 Background of the study

In the year 2017 diarrhoea was the leading killer of children under age five worldwide .[1] Diarrhoea deaths accounted for 8 % of all deaths of under-five children in 2017.[1] This translates to over 1,300 young children dying daily.[1]Most deaths from diarrhoea occur among children less than 2 years of age living in South Asia and sub-Saharan Africa .[1] With only 22 percent of all children born in Sub-Saharan Africa, the region has made the least progress in terms of reduction of infant and child mortality rates compared to all other regions in the world.[1] Approximately 49 percent of the world's under-five deaths occurs in the region.[1]

Campaigns targeting childhood diarrhoea in the 1970s and 1980s attained success by promoting the use of oral rehydration solution (ORS) to prevent dehydration and by educating caregivers. [6] From 2000 to 2017, the total annual number of deaths from diarrhoea among children under 5 worldwide decreased by 60 per cent.[1]Although these

inexpensive and effective treatments for diarrhoea exist, in developing countries only 39 per cent of children with diarrhoea receive the recommended treatment.[6] Mortality rates due to diarrheal diseases is worse in developing countries but even more so in informal settlements, in these countries, which are characterized by poor hygiene and sanitation. Diarrhoea disease in children is caused by microbial agents which are usually transmitted through contaminated food and water.[4] In many countries the perceived cause of diarrhoea by mothers can be associated with cultural and spiritual reasons.[5] Because of different perception of the causes of diarrhoea, different health seeking behaviours are triggered. Therefore, it is important to ensure that prompt and appropriate health seeking behaviours (HSB) are practiced with regards to diarrhoea.[2]

In efforts to achieve the Millennium Development Goals (MDG) 4, the Ministry of Health and Social Services (MoHSS) in Namibia has created an enabling environment for the implementation of key child survival interventions.[7] The country supports national and sectoral policies and strategies. Per capita funding for health is good and access to health care for the majority of the population is at 79%.[7] In collaboration with the World Health Organisation (WHO) and United Nations International Children 's Emergency Fund (UNICEF) MoHSS committed to the implementation of the child survival strategy to reduce child mortality to below 20 per 1000 live births by 2035.[7] The strategy aims to reduce under five mortality rate to 39 per live births in 2015 to 24 by 2018 and 20 by 2035 as part of the country's regional and global commitments in the child survival initiatives.[7] Despite these efforts Namibia remains challenged in effectively reducing the under-five mortality rates which are primarily caused by diarrhoea, pneumonia and malnutrition among other conditions.[8]

Poor sanitation, lack of access to clean water supplies and inadequate personal hygiene are responsible for 90 % of diarrheal disease occurrences worldwide.[17] These characteristics which are found in urban informal settlements denotes the level of diarrhoeal disease risk in the settlements.[18,19] People living in informal settlements faces challenges including poor housing, limited access to safe water, poor sanitation and overall poor hygiene.[18,19] As a result of these living conditions young-children under the age of five are at a higher risk of being exposed to pathogens that cause diarrhoea.[18,19] Studies have shown that there is a link between diarrhoea and poor housing environments.[20] Even when health care was sought, it was often delayed leading to morbidity and mortality of large number of under-five children. In Kenyan urban informal settlements, about 100 children die every day from diarrhoea.[20] A study conducted in slums of Addis Ababa Ethiopia found that under five children in such environments were at an elevated risk of diarrhoea due to a lack of proximity of sanitation facilities, sharing of sanitation facilities, poor hygiene and poor sanitation facilities.[21] Children from poor resource settings often have inadequate access to improved water, sanitation and hygiene (WASH) facilities and are extremely vulnerable to poor hygiene practices and disease transmission.[20]

According to the Namibia Demographic and Health Survey 2013 (NDHS), diarrhoea in Namibia is seen mostly in rural areas and parts of the country where water and sanitation are a problem. The 2013 NDHS reported that 17% of under-five children had diarrhoea in the 2 weeks prior to the survey.[8] The survey found that diarrhoea was more prevalent among children with households without a satisfactory source of drinking water (20%) than children from households with improve water (17%).[8]Similarly the prevalence of

diarrhoea was high in children with household with no improved toilet facility (20 %).[8] A study conducted in two informal settlements in Nairobi, Kenya found that healthcare-seeking practices for diarrhoea remains a concern with more than half (55%) of the caregivers seeking inappropriate health care and 35 % of caregivers taking no action regarding the child diarrheal at all. Similarly, research in Tanzania revealed that only 23.0 % of children with acute diarrhea were treated at a health facility.

Health care-seeking behaviours is the greatest option when seeking to reduce morbidity and mortality due to childhood illnesses.[2] Understanding health care practices in informal settlements is essential to improve health care systems that serve the urban poor through programs that target users and suppliers.[2] Appropriate health care seeking behaviours can reduce childhood mortality among the urban poor. However, to design appropriate child survival strategies in areas where infant and child mortality rates are high, information about households' care-seeking behaviour for childhood illnesses is required. [2]

1.3 Problem Statement

As of 2017 diarrhoea was one of the leading causes of death for children, accounting for approximately 8 percent of all deaths among children under age 5 worldwide.[1] Namibia, like other developing countries, continues to struggle with reducing under- five mortality rates. The country ranks 52 in under five mortalities rates worldwide.[9] In Namibia diarrhoea is among the top three causes of under-five child deaths [8]. The World Health Report for 2005 reported that 70% of child mortalities are related to delays in health care-seeking [39]. The NDHS for 2013 in Namibia reported that only 64% of under-five

children with diarrhoea were taken to a health facility or provider for advice or treatment.[8]

As has been noted, diarrhoea mortality rates are worse in informal settlements that are characterized by poor sanitary conditions among other problems.[2] In 2015 the Okuryangava clinic in the Tobias Hainyeko constituency of Windhoek, reported approximately 300 children under the age of five having visited the clinic due to diarrhoea in a month.[43] The Havana informal settlement which is also catered by this clinic has reported to be going through sanitation woes.[35] Residents in this informal settlement complain of clogged pipes, broken toilets and insufficient sanitationfacilities.[35] Given this unhygienic situation the under-five children of Havana informal settlement are at a higher risk of developing diarrhoea Therefore there is a need to study their caregiver's health seeking behaviour regarding diarrhoea To date, there is limited research, if any at all done on the health seeking behaviours towards diarrheal disease of mothers with under-five children living in Havana informal settlements. This study seeks to provide evidence-based information about health care-seeking practices of mothers with children suffering from under-five years old diarrheal disease.

1.4 Purpose of the study

The purpose of the study involved assessing the health seeking behaviours of mothers and caregivers of under-five children with diarrheal disease in the Havana informal settlement of Windhoek, Namibia**.**

1.5 Research questions

The research questions for the study includes the following:

- What is the prevalence of diarrhoea among under-five children in households in Havana informal settlement –Tobias Hainyeko constituency Windhoek?
- What are caregiver's health seeking behaviour for diarrhoea among children under-fives in Havana informal settlement?
- Is there an association between Socio-demographic characteristics and health care seeking behaviours of caregivers of under-fives in Havana informal settlement?
- What is the level of caregiver's knowledge on diarrhoeal disease among children under-five years of age in Havana informal settlement?

1.6 Objectives

The objectives of the study are as follows**:**

- To determine the prevalence of diarrhoea among under-five children in households in Havana informal settlement –Tobias Hainyeko constituency Windhoek.
- To explore the caregivers experience on health care seeking behaviour.
- To determine association between Socio-demographic characteristics and health care seeking behaviours of caregivers for under-fives in Havana informal settlement.
- To determine caregiver's knowledge on diarrhoeal disease among children under-five years of age in Havana informal settlement.

1.7 Significance of study

Health care seeking behaviour of caregivers with under five years children with diarrhoea in the Havana informal settlement in Windhoek is significant to Namibian public health practitioners, education professionals, researchers, communities and the public at large. The public health sector in Namibia will find the studies finding practical, as a way to improve treatment of diarrhoea among children under five years of age. The findings reveal challenges encountered by caregivers while seeking healthcare for children under five in Havana. The Ministry of Health and Social Services and its partners can create and implement strategies to help care-givers access healthcare services for children under five. The findings of this study will help in prevention initiatives of diarrhoea infection among children of all ages. This will be achieved through the improvement of the environment within the informal and high-density communities.

The study will contribute to the University of Namibia's body of knowledge in public health, from which other academics interested in the topic can gain insight on the caregiving behaviour towards diarrhoea for children under five years. The findings can be used as a source of knowledge and reference material for students and researchers interested in the health seeking behaviours.

The study will also provide insight into the contextual issues regarding under-five children's mothers and caregiver's health seeking behaviour patterns which is relevant MoHSS and other stakeholders in the health sector of Namibia. The MoHSS as the main public health administrators in Namibia can use the research findings to improve public health delivery within informal communities and high-density areas.

1.8 Definition of key concepts

Health Seeking Behaviour

Health seeking behaviour has been defined as any action taken by individuals who perceive themselves as having a health problem or feel ill, for the purpose of finding effective and appropriate remedy.[33] In this study, health seeking behaviour refers to actions taken by caregivers of children with diarrheal disease in Havana informal settlement when they realised that there are sick.

Diarrhoea

Diarrhoea is defined as the passage of unusually loose or watery stools, usually at least three times in a 24-hour period.[16] Diarrhoea happens because of an imbalance in the absorption and secretion properties of the intestinal tract. It is often a symptom of gastrointestinal infection, caused by bacterial, viral, or parasitic organisms.[16] In this study diarrhoea refers to an illness episode characterised by frequent loose stool in under-five children in Havana informal settlement.

Caregiver

A caregiver is someone responsible for caring for another person, for example a child, a person with disability, an elderly person or an ill person.[79] In the context of this study a caregiver is an adult above the age of 18 responsible for caring, nurturing and parenting an under five-year child in Havana informal settlement.

Informal Settlement

Informal settlements are unplanned settlements and areas where housing is not in compliance with current housing planning and building regulations in an area.[30] Characteristics include inadequate access to safe water and sanitation, poor quality of housing, overcrowding, and insecure residential status. [30]In this report, an informal settlement refers to settlements with improper housing infrastructure in the area of Havana in Windhoek Namibia.

1.8 Overview of the study

This study comprised of six chapters as outlined below:

Chapter One: Introduction and Background of the Study

The chapter introduced the study topic by discussing the background which helped contextualise the research topic. the statement of the problem, research objectives, research questions, significance of the study and definitions of key terms were also outlined.

Chapter Two: Literature Review

This chapter reviewed books, articles, studies, and other literature related to the study. This revealed what is already known and what is unknown about the research topic. The chapter also discussed theories related to the study and explained the conceptual framework.

Chapter Three: Research Methodology

This chapter outlines how the research was conducted and the data collection process. It focuses on research design, research population, sample size as well as the research

instruments that were used to collect data. Lastly, the aspects of validity, reliability and trustworthiness.

Chapter Four: Data Analysis and Study Results

This chapter analysed the data, interpreted. and presented the study results. The chapter also addresses the research questions as posed in the first chapter.

Chapter Five: Discussion

This chapter discussed the study findings, and highlighted similarities and contradictions of the current study with those previous related studies.

Chapter Six: Conclusion and Recommendations

This chapter concluded the study and provided recommendations to various stakeholders of interest.

1.9 Summary:

This chapter focused on introduction and the background of the study. It narrated and highlighted the problem statement, purpose, objectives, significance, and definitions of study concepts. Health care-seeking has the potential of reducing morbidity and mortality due to childhood diarrhoeal disease. Reviewing and understanding caregiver health care seeking behaviours is vital because it contributes to improved health care seeking practices and improved health care services.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter focuses on describing related literatures from different authors and how they are related to this research topic. The review focuses on the definition of diarrhoea, the burden of diarrhoea, causes of diarrhoea, health seeking behaviours and the theoretical framework.

2.2 Study Literature Search Strategy

Literature was obtained from electronic journals through search engines like Google scholar, PubMed Articles, Research Gates and The University of Namibia Repository. Articles relevant to the study written in English were downloaded and reviewed. The following key words and phrases were used for internet searches:

Diarrhoea, Health seeking Behaviour, Health Seeking behaviour and diarrhoea, Caregiver's health seeking behaviour, Care giver and diarrhoea, Under-five Children with Diarrhoea, Diarrhoea in Informal Settlements.

2.3 Definition of diarrhoea

According to WHO, diarrhoea is defines as is the passage of unusually loose or watery stools, usually at least three times in a 24-hour period.[16] Diarrhoea happens as results of an imbalance in the absorption and secretion properties of the intestinal tract. It is usually a symptom of gastrointestinal infection, which can be caused by bacterial, viral, or parasitic organisms.[16] Diarrhoea is mostly spread through contaminated food or drinking-water or from person to person as a result of poor hygiene .[16]

2.3.1 Types of Diarrhoea

There are four main forms of acute childhood diarrhoea. All these types of diarrhoea are potentially life threatening and require different treatment courses .[16] The four types of diarrhoea are acute diarrhoea, bloody diarrhoea, persistent diarrhoea, and diarrhoea with severe malnutrition.

Acute diarrhoea: This diarrhoea is associated with significant loss of fluid and rapid dehydration in infected person.[16] It presents as sudden onset of frequent, watery, loose stools without visible blood and lasts less than two weeks.[10] Viral, bacterial and parasitic infections are the most common causes of acute watery diarrhoea and the episodes subside within 72 hours of onset.[10] It can be caused by pathogens such as Vibrio Cholera, E. coli or Rotavirus.[16]

Acute bloody diarrhoea: This diarrhoea is often referred to as dysentery and is marked by visible blood in the stools.[16] It is associated with intestinal damage and nutrient losses in an infected individual.[16] The most common cause of bloody diarrhoea is Shigella Flexneri and Shigella Dysenteriae, a bacterial agent that is also the most common cause of severe cases.[16]

Persistent diarrhoea: This diarrhoea is an episode of diarrhoea with or without blood that lasts at least two weeks.[16] Children with poor nutrition statuses and those with illnesses such as AIDS are more likely to get persistent diarrhoea.[16] The persistence of the diarrhoea tends to worsen their conditions.[10,16] Most diarrhoeal episodes begin acutely either as watery diarrhoea or dysentery diarrhoea and leads to weight loss in

most patients.[10 ,16] Persistent diarrhoea is responsible for about one-third to half of all diarrhoea-related deaths.[10]

Diarrhoea with severe malnutrition: This is a combination of diarrhoea and severe malnutrition.[10] It is dangerous because it causes severe systemic infection, dehydration, heart failure, vitamin and mineral deficiency.[10] Even with good fluid therapy management, some children die from diarrhoea due to severe malnutrition.[10]

2.3.2 Causative agents of diarrhoea

A wide variety of conditions including enteric infections, change in digestion and absorption of food, a variety of hormonal factors or even a response to parenteral infection can cause diarrhoea symptoms.[25] However, acute infective diarrhoea is the major clinical problem in tropical countries.[25] Diarrhoea is a common symptom of gastrointestinal infection caused by a wide range of pathogens.[16] This includes viruses, bacteria, and protozoa. Only a handful of organisms are responsible for most acute cases of childhood diarrhoea.[16]

Bacteria: Bacterial pathogens are the cause of diarrhoea in infants and children, particularly in developing countries and other settings where community hygiene is low.[10] The most common bacterial agents causing diarrhoea in children under-five are E. coli, Salmonella, Shigella, Campylobacter, Yersinia infections, Vibrio species, and Clostridium difficile.[24] In 2016 Shigella was the second leading cause of diarrhoeal mortality among all ages accounting for 13.2 % of all diarrhoeal deaths worldwide.[27] The bacteria was responsible for 63713 deaths among children younger than 5 years. Although shigellosis occurs worldwide the greatest burden is among children in low-

income countries .[27] In the same year E. coli was the eighth leading cause of diarrhoea mortality among all age, and it was responsible for 4.2 % of diarrhoea deaths in children younger than five .[27.]

Viruses: The most common cause of severe diarrhoea is rotavirus.[10, 16, 26] The virus is responsible for about 40 % of all hospital admissions due to diarrhoea among children under five worldwide.[16] Other viruses that causes diarrhoeal disease in human, includes: Norwalk virus, Norwalk-like virus, enteric adenovirus, Calicivirus, and astrovirus.[10]

Parasites: Intestinal parasitic infections are common infections among children in developing countries.[28] Giardia species, Cryptosporidium Parvum and Entamoeba Histolytica are among the most common protozoan parasites that cause acute diarrhoeal illnesses in children .[28] Cryptosporidium is the most frequently isolated protozoan pathogen among children identified and treated at health facilities 14orldwide.[16] The main route through which Parasites enter the body is through food or water and settle in the human digestive system.

2.4 Transmission of agents that causes diarrhoea.

The infectious agents that cause diarrhoea are usually spread by the faecal-oral route. This happens through ingestion of faecal contaminated water or food and direct contact with infected faeces.[26] Many specific behaviours promote the transmission of enteric pathogens and thus increase the risk of diarrhoea .[26] This includes behaviours such as: failing to breastfeed exclusively for the first 4-6 months of life, feeding children in unclean feeding bottles and containers, drinking contaminated water or unclean water and lack of general personal hygiene such as hand washing .[26]

2.5 Diarrhoea Management Protocol

WHO and UNICEF released revised recommendations to reduce the number of child deaths due to diarrhoea.[16] This includes a new formulation of Oral rehydration solution (ORS) containing lower concentrations of glucose and salt and use of zinc supplementation.[16],[29] The use of ORS is effective in treating acute watery diarrhoea and has markedly contributed to reducing childhood deaths.[16] In cases where ORS is not available , increased amounts of almost any fluid could also help to prevent dehydration.[16] An important development in diarrhoea treatment is the addition of zinc to the regimen. The intake of zinc is important for overall health, growth, and development in children. The mineral supports proper functioning of the immune system.

2.6 Diarrhoea burden in under-five children worldwide

Diarrhoea remains one of the leading causes of death among the under-five children worldwide.[22] About one in five child deaths which is about 1.5 million deaths in a year are caused by diarrhoea .[22]The disease causes more child deaths than malaria and measles combined .[22] Annually, an estimated 2.5 billion cases of diarrhoea occurs among children less than five years of age.[22] In 2017, diarrhoea was the leading cause of death of children under age five worldwide .[1] Diarrhoea deaths accounted for 8 % of all of deaths of under-five children in 2017.[1] More than half of these cases are recorded in Africa and Asia. Nearly 80 % of childhood deaths in these continents are due to diarrhoea.[1, 22] The incidence of diarrhoeal diseases varies greatly with a child's age. Incidence is highest in the first two years of life and declines as a child grows older.[22]

2.7 Informal settlements characteristics and diarrhoea burden

Informal settlements are classified and explained differently in different countries but there are major features that are universal and can be identified almost in all areas and countries with informal settlements.[30] Characteristics include inadequate access to safe water and sanitation, poor quality of housing, overcrowding, and insecure residential status. Shared toilets, be they flush or other types, are widely used in informal settlements, especially in Windhoek.[30] Many informal settlements in Windhoek are densely populated, filling river valleys and sprawling across hillsides.[30] The sizes of erven in dense informal settlements are extremely small. In Havana Extension 7, the average size of the mapped erven is about 100 square metres[30.]

People living in urban and rural areas are exposed to various health challenges that define how they seek healthcare. As early as 1974, Vogel[32] and his colleagues outlined the three major health problems in urban areas.[32] These included housing, water supply and sewage and refuse disposal.[32] These problems are more intense in informal settlements where there is a conspicuous absence of basic services.[32] People living in informal settlements often work in the informal sector, engaging in occupations with low wages. A few who work in the formal sector, either in government or private offices, hold lower cadre jobs that are unstable as well as poorly paying.[32] The little money they get as wages or salaries is used to meet their most immediate basic necessities, such as food, rent, paying school fees and transport. Little, if any, is left for health care.

The unsanitary conditions in which they live in expose them to different health problems. Studies established that diseases such as malnutrition, diarrhoea, intestinal worms, malaria and STDS/AIDS, are common among these populations .[31] Diarrhoea is more prevalent in the developing world due, in large part, to the lack of safe drinking

water, sanitation and hygiene, as well as poorer overall health and nutritional status.[16]An estimated 2.5 billion people lack improved sanitation facilities, and nearly one billion people do not have access to safe drinking water.[16]

These unsanitary environments allow diarrhoea-causing pathogens to spread.[16] Considering this, people living in informal settlements face a high risk of diarrhoea. Studies indicate that there is a link between diarrhoea and poor housing environment.[20] In Kenyan urban informal settlements, about 100 children die every day from diarrhoea.[20]A study that conducted in slums of Addis Ababa Ethiopia found that under five children in slum environments were at a high risk of diarrhoea due to proximity of sanitation facilities, sharing of sanitation facilities ,poor hygiene and poor sanitation facilities.[21] Children from poor resource settings often have inadequate access to improved water, sanitation and hygiene (WASH) facilities and are therefore vulnerable to poor hygiene practices and disease transmission.[20]

2.8 Health seeking behaviours.

Health seeking behaviour are actions taken by individuals who perceive themselves as having a health problem or feel ill for the purpose of finding an effective and appropriate remedy.[33] This process is preceded by a decision-making process that is influenced by individual behaviours, community beliefs and the health provider's characteristics and behaviours.[33] As such, health seeking behaviours among individuals, community and group ages varies. Studies show visits to the hospital or clinics were the most common sources health care sought, followed by visit to the pharmacies and traditional healers .[34]

Factors such as good service delivery, proximity of health care facilities, affordability are among the major reasons factors affecting HSB.

2.9 Determinants of health seeking behaviours

Socio-economic status is the social standing of an individual or group. It is measured as a combination of different aspects such as education, income, and occupation.[45] Individuals with higher social standing often make better health decisions and have better health outcome.[45]

2.9.1 Education

Being educated is associated with better health decisions and health outcomes.[46] In developing countries high education rates and literacy rates in the population has a positive impact on people's health.[47]According to a study in Ghana, education differences yielded differences in health seeking behaviours. The study revealed that respondents with secondary school education were likely to seek health care than people with lower education level.[14] Similarly a South African study found that approximately 48.1 % of the respondents who had consulted a health worker attained secondary education.[14] "This is closely followed by those who have a primary school education (29 %) and those respondents with no form of schooling (19.7 %)."[47] This was attributed to the observation that better educated healthcare consumers appreciate the benefits of health facilities compared to those with less education. Although a patient's education might not help them when they are on a surgery operation table, it might help them to choose a better health facility for medical attention .[47] The level of education affects the type of health facility one chooses for medical attention.

2.9.2 Income

Income is a driving force behind the health disparities many countries experience. Income is an important determinant of health. Health care of any form comes at a cost .[46] Those that are doing well financially can pay for health services directly, or through the purchase of health insurance coverage.[46] In Nigeria it was reported that the poorest quartile were 6 times more likely to have inappropriate health seeking behaviours than the richest quartile (Q4:Q1 =5, 83; O.R 16.12,95 % C.L:2.61-11.03).[34] Population health is influenced by not only personal finance but also by the economic vitality of the community.[48] People who live in low income communities often struggle with challenges such as: lack of access to nutritional food[48], over-populated environments with poor sewage systems, limited ablution facilities and a lack of clean water. Such environments serve as major reservoirs of potential disease-causing agents .[48]

2.9.3 Gender differences

Health is a basic human right that is important to sustainable development. Men and women face different health burdens, and have different socioeconomic characteristics. As such men and women have different behaviours when it comes to health seeking. In many cultures and societies, seeking health care is perceived as being weak and not masculine and this influences some men to not to seek health care.[49] In most countries' women are likely to visit health care facilities than men. According to Akinyemi et al [50] a study form Ibadan Nigeria indicated that men are often reluctant to seek medical help. A Ugandan study reported that both men and women in Uganda prefer using clinics, private hospitals and private clinics because of efficient services and providers treat clients with respect in comparison to government facilities .[51] Men however were more

likely to use private care while women have an overall higher demand for government hospitals.

2.9.4 Point of call for health seeking behaviours

People use different points of call to seek health services. Some of these services are formal health care service providers, whereas others are informal health providers. Some people prefer to go to hospitals and clinics while others prefer pharmacies, home remedies or traditional healers. Factors such as education, income, culture, and access to services are factor that affects individual choice of the health care provider. Costs of prescribed medicines, poor access to facilities and patient delays affect the usage of public health services and this increases the use of other treatment sources such as community pharmacies, drug peddlers, herbal medicine, religious or spiritual care organizations.[52] Ofalabi et al[52] found that self –medication was the commonest form among the students .[52] This was followed by the visit to health providers and then the visit to the pharmacy .[52] This is contrary to the study done among civil servants in Ibadan Nigeria in which 62.2 % of the respondent indicated the hospital and clinic and as the common source of health care sought .[34]

2.10 Health seeking behaviours in different settings.

2.10.1 Globally

Webair et al [91] identified elements that influence health seeking behavior (HSB) for pediatric diseases, to enhance child survival. A cross-sectional study was conducted between January 11 and April 2, 2012. There were 212 caregivers of children younger

than 5 years old who participated. They discovered that around half of the ill youngsters (n=109, 51.42%) sought medical attention. Frequent medical attention was sought for conditions that did not improve or worsened. "sickness was light" (n=40, 38.83%) and "illness is not medically treatable" (n=32, 31.07%) were the leading reasons for not seeking medical care. Significantly more caretakers sought medical assistance when they had a higher level of education (POR: 5.85, 95% CI: 2.34–14.61), when the sickness was viewed as serious (POR: 5.39, 95% CI: 2.81–10.33), and when the child had trouble breathing (POR: 2.93, 95% CI: 1.10–7.43).

Pandor[92] explored factors that influence mothers' healthcare-seeking behavior for their children in a tribal community of the Narmada area in India, as well as the reasons for not seeking curative care for children who are believed to be ill. A community-based, cross-sectional study was conducted on 405 mothers of the Dediyapada Block in the Narmada District of Gujarat, India, utilizing a two-stage cluster sampling technique. The survey utilized a questionnaire and a chi-square test was used to examine the relationship between various characteristics and mothers' healthcare-seeking behaviour. The study revealed that the ages of the motehrs ranged from 17 to 44 years, with a mean (+SD) of 26,2+3.2 years. Without regard to gender, 91% of the children finished their primary vaccine. In terms of curative healthcare-seeking behavior, 16.5% of men and 42% of women did not seek treatment.

Aravind[93] investigated the health seeking behavior of primary care providers in the coastal region of India and discovered related characteristics. Methods: A cross-sectional study was undertaken with 238 mothers of 304 children (0-5 years) from a coastal region

in the Trivandrum district of Kerala. Using a systematic interview schedule, information about treatment seeking patterns and healthcare seeking behavior for pediatric diseases was gathered. The interview schedule was developed using characteristics discovered in the literature review. 62.5 percent of participants in the coastal region sought early treatment (=2 days), but subset analysis of fishermen revealed a substantially lower proportion of 51.2 percent. Occupation of the father [OR 2.002;95% CI 1.103-3.634, p 0.05], and regular newspaper reading [OR 3.593;95% CI 1.404-9.191, p 0.01] were linked with health seeking behavior. Participation in health education by the caregiver was significant only among fishermen [OR = 2.80; 95% CI = 1.430-5.505; p 0.05].

2.10.2 Regionally

Fissehaye et al [12] evaluated the health care seeking behavior and associated factors of mothers in Mekelle, Northern Ethiopia, regarding diarrheal sickness in children under the age of five. This study found that 72.5% (n=58) of mothers whose children reported diarrhoea sought medical attention. Seventy-five percent sought health care at a public facility. The majority, 89.3%, of children with severe diarrhea sought medical attention. In the multivariable analysis, the severity of diarrhea (P=0.04) and the presence of blood in stool were significantly linked with mothers' health seeking behavior for childhood diarrhea.

In Ghana, Budu et al [94]investigated the relationship between women's healthcare decision-making ability and their healthcare seeking behavior for childhood illnesses, using data from the 2014 Ghana Demographic and Health Survey. The investigation included a sample of 2,900 moms with children less than five years. Using STATA

version 14.0, data were processed and analyzed. A Chi-square test of independence and binary logistic regression were conducted to ascertain results, which revealed that 95% confidence intervals were deemed statistically significant (CIs). The study indicated that around 25.7% of the 2,900 women could make healthcare decisions on their own and that 89.7% sought care for childhood ailments. Compared to women who did not make healthcare decisions alone, those who did had 30% lower odds of seeking care for pediatric illnesses [AOR = 0.70, CI = 0.51–0.95].

Kukeba et al [95] assessed caregivers' knowledge, attitude, and practice related diarrhoea in children under five years old in sub-Saharan Africa, utilsing an integrated narrative review, with a thorough search of two electronic databases. Inclusion and exclusion criteria were applied to the search results. Following the_process, 37 studies were included in the review. According to research conducted in Sub-Saharan Africa, caregivers have limited information of diarrhoea. In numerous studies, caregiver attitudes regarding diarrhoea prevention and treatment were negative. On care techniques, prevention practices, and management/treatment practices, such as the use of ORS and Zinc, there were generally little reports.

In Maun Botswana, Tshuma[96] evaluated factors related with health-seeking behaviors among caregivers of children younger than five years old with diarrhea. Using a researcher-administered questionnaire, sociodemographic and diarrhoea-related factors were obtained from 238 caregivers of children younger than five years old who experienced diarrhoea in the past. Six clinics offering child welfare services in Maun, Botswana, collected data between March and April of 2018. The link between health

seeking behaviour and factors related to diarrhoea in children under five years, as well as the demographic characteristics of their caregivers, was analyzed using logistic regression. According to the data, forty-three percent of caregivers exhibited proper health seeking behavior. Those with a household income of >1200 – 4000 Pula (OR=0.201, 95%CI 0.043 – 0.943) and >8000 – 12 000 Pula (OR=0.255, 95%CI: 0.066 – 0.989) compared to the reference group earning 0 – 1200Pula had a reduced likelihood of appropriate health seeking behavior.

Dantong[97] analyzed the household care-giving and treatment-seeking behavior of the community for children under five with diarrhea in the North Subdistrict of the Kassena-Nankana District in Ghana. Analysis and conclusions were drawn from in-depth interviews with key informants, focus group discussions, and a cross-sectional survey. This subdistrict has one of the highest under-five death rates in Ghana. The respondents viewed diarrhea as a frequent ailment that mothers can characterise and identify in their children.The study revealed that ORS and other medications administered at home are the initial line of defense. Whereas some of the respondents treat themselves or their childen at home with herbs or traditional treatments such as "fermented flour fluid."

2.10.3 Locally

A study conducted in Engela district in the Ohangwena region of Namibia, to assess the epidemiology and factors associated with acute diarrhoea amongst children under-five years of age. A total of 530 children from 530 households were included in the study. The study found that the prevalence of diarrhoea was 23.8 % in the 2 weeks preceding the survey. The strongest predictor of the prevalence of diarrhoea was the residential area ‘informal settlement’ with an odd ratio of 36.42.[103] This implied that children living

in informal settlements were more at risk of contracting diarrhoea as compared to those living in other residential areas.

The prevalence of diarrhoea was greater among mothers or caregivers aged 31-40 years (37.6 5 ;95 Cl of 29.58 ;37.62; $p \leq 0.001$);the observed difference was statistically different .[103] Mothers and caregivers reported children having shown the following symptoms: fever (48 %), sunken eyes (45%),child being thirsty (39 %), unable to eat or drink (30 %), vomiting (24%) and blood in stool (13 %).[103] The highest proportion of children who suffered from diarrhoea were from households with the lowest income of N$ 109-N$ 2000 .

2.11Theoretical Framework

The theoretical framework for the study was derived from the Health Belief Model (HBM) that originates from the 1950s, founded by social psychologists in the United States Public Health Service, to explain why people do not engage in initiatives to prevent, detect, and cure diseases [98]. This hypothesis was expanded to include individuals' responses to symptoms and their reactions to the revealed sickness, namely compliance with medical therapy. The HBM has been used to estimate an wide range of health behaviours among a diverse population [99].

The Health Belief Model aids in elucidating patients' decisions regarding the utilization of preventative health treatments and the adoption of healthy habits. It was designed to predict the likelihood that an individual will seek suggested preventative health care and

to comprehend an individual's motivation and decision to seek preventative health care. [100] It also recommended that caregivers should be able to determine the severity of the illnesses so that they decide to seek healthcare; they also claimed that to modify health behaviour effectively, the individual must believe in both susceptibility and severity of the sickness [64]. HBM is related to the current study in the following ways: perceived care of children with childhood diseases, comprehension of caregivers on early indications of childhood illnesses, and the patterns of conduct exhibited by unwell children's parents while seeking care.

In addition, HBM notes that impediments to optimal health-seeking behaviour can include accessibility and availability of health care facilities, insufficient awareness of danger indications in child disease, low socioeconomic position, and the inability to identify the severity of the illness [99]. Similarly, in numerous empirical studies, financial constraints and lack of information relate to incorrect health care seeking behaviours.

2.12 Conceptual Framework

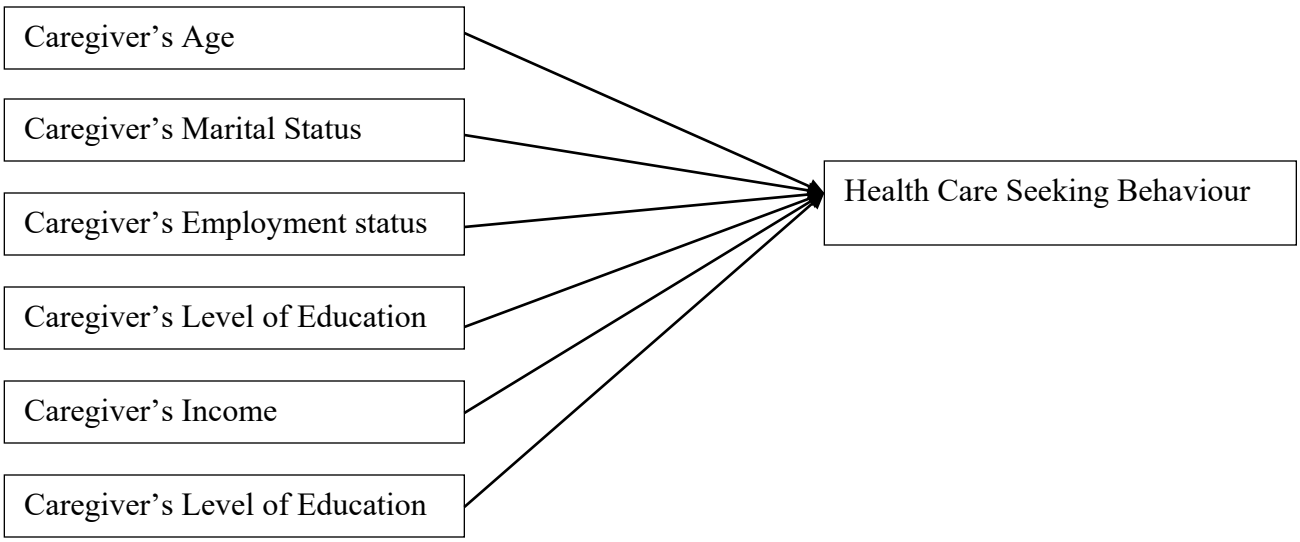

Figure 2.1 Conceptual Framework

The conceptual framework describes the effect of the demographic effect on the care giver health care seeking behaviour.

2.10 Summary

This chapter provided an in-depth literature review on diarrhoea using existing literature and available knowledge. The researcher defined diarrhoea and highlighted different types of diarrhoea. The researcher further explained the causes of diarrhoea and the burden of diarrhoea disease among five years globally and nationally. The review proceeded provided insight on health seeking behaviours and the determinants of health seeking behaviours thereof. The chapter also reviewed previous health seeking behaviour studies and theoretical frameworks.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the research design, population, sampling, research instrument and procedure for data collection, data analysis, validity and reliability, research ethics were put into consideration in this study.

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3. 2 Research Design

A research design is meant to maximize control over factors that can interfere with the validity of the study findings .[83] The study adopted a mixed method research approach, with explanatory sequential research as design. The purpose of this design is that the qualitative data will explain or build upon on the initial quantitative results.[15]**.** In this study priority is being given to the quantitative phase. The quantitative phase is the primary mode of inquiry. The quantitative aspect was a cross-sectional analytical study by design. Despite their limitation in establishing causal inference, cross-sectional studies have the advantage of presenting researchers the opportunity to have control over the measurement process, leading to better understanding of the relationships within representative samples.[15]

The qualitative aspects of the study were phenomenological by design. This design explored what caregivers experience and focuses on their experience of the phenomena of interest. The rationale for including the qualitative designs is that results yielded from the first phase required further explanations that provided in-depth descriptions of health

seeking behaviours in reference to appropriate and specific experiences of participants that were outlined in the quantitative phase. The qualitative phase provided an opportunity to explore motivations for different health seeking behaviours.

Figure: 3.1. A summarized overview of the research design.

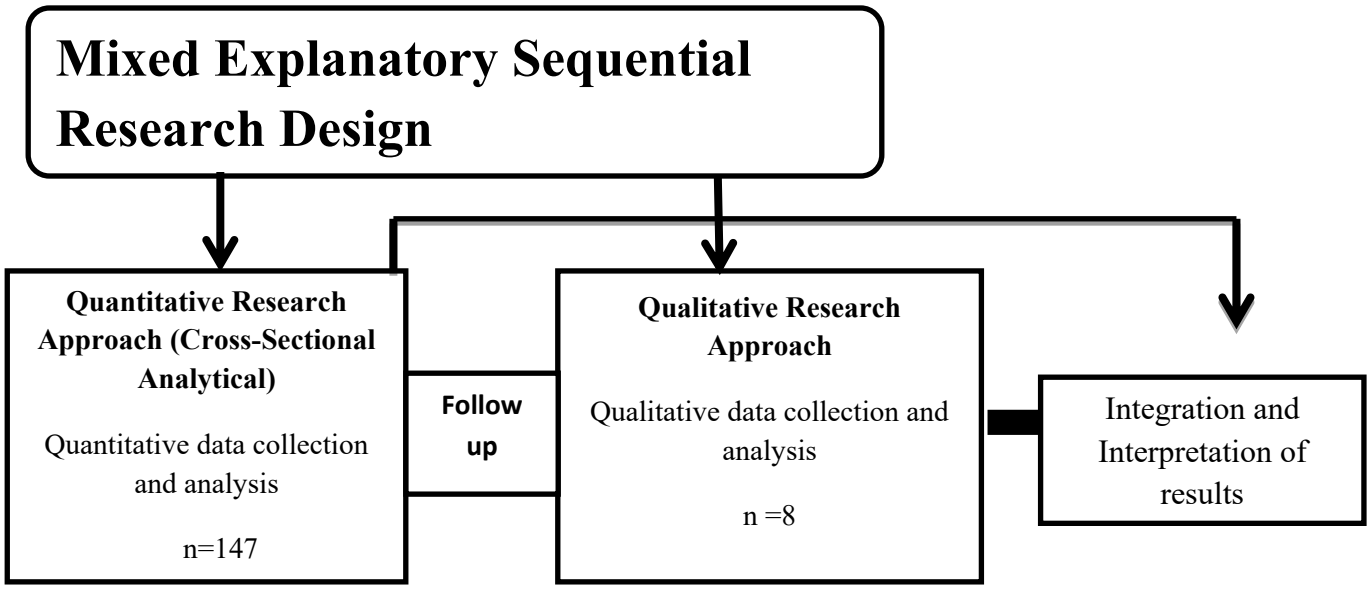

Figure 3.1: Sequential explanatory mixed method design

3.3 Research Paradigms

This study was based on the pragmatism research paradigm because pragmatism can serve as a philosophical basis for the mixed research methodology. Denscombe [102], notes that pragmatism is "the philosophical partner" of the mixed research methodology, as its fundamental principles serve as the basis for combining research methodologies. In addition, [102] concurs that pragmatism is a sophisticated philosophy that provides the epistemology and logic for merging quantitative and qualitative approaches and

procedures. Moreover, according to Creswell [101], pragmatism permits the blending of paradigms, assumptions, methodologies, and methods of data gathering and analysis. Pragmatism is predicated on the maxim "what works." This primarily refers to the pragmatic approach to truth. Rather than being based on assumptions about the nature of knowledge, pragmatism is concerned with solving practical problems [101].

3.4 Research setting

Havana is a suburb of Namibia's capital, Windhoek. It is among Windhoek's poorest informal communities. Havana is located in the Khomas area, northwest of Windhoek. It was given the name of Cuba's capital city. It was founded approximately twenty years ago, when the City of Windhoek had a high rate of urbanisation as a result of people migrating to the capital city in search of a better standard of life and economic opportunities. [37] In 2019, the settlement accommodating a population of about 50000 permanent residents. The settlement is faced with human settlement problems such as poor infrastructure, lack of water, drainage system and ablution facilities.[37] Most houses in the settlement are made of corrugated iron and other informal housing materials. Figure 3.2 below depicts the appearance of Havana informal settlement.

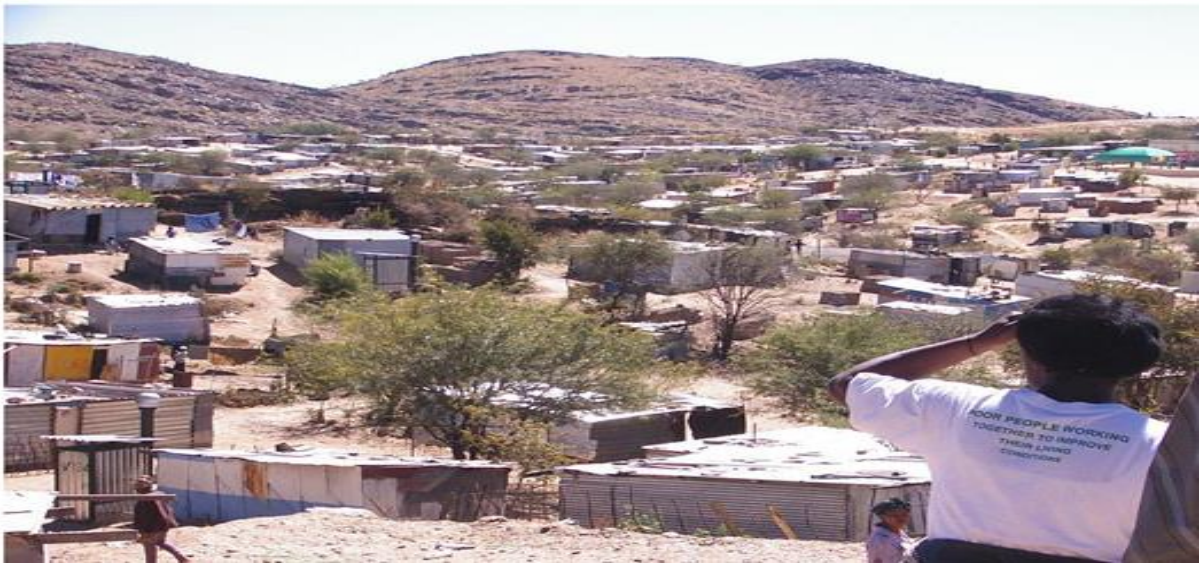

Figure 3.2 Havana Informal Settlement

3.5. Population and Sample

3.5.1 Population

A study population refers to all members of a specific group or the subjects who possess the attributes that the researcher aspires to study and about whom the researcher draws conclusions with regard to the findings of the study [83] In this study the total population of the study was 1400 households (the estimated number of households in Havana informal settlement was obtained from the profile of informal settlement in Namibia for 2009).[37] The target populations were caregivers of under-five children in Havana informal settlement.

3.5.2 Sampling Method and Procedure

Quantitative Sampling

Systematic random sampling was used to obtain the sample for the quantitative data collection. With an estimate of 1400 households and an estimated sample size of 188 participants. The Nth number was calculated, Nth number = 1400/188 = 7. , every 7th household was approached for participation in the study. If a house was selected but there is no under-five child, the next house was approached for participation in the study.

Qualitative Sampling

For the in-depth interviews, the participants were recruited from the participants who took part in the quantitative aspect of the study. A non-probability purposive sampling was used to recruit participants. Participants were recruited based on their demographic characteristics, groups used in comparisons during the quantitative phase. Data collection was stopped when data was saturated.

3.5.3 Sample size

Quantitative sample size

The estimated number of households in Havana informal settlement was obtained from the profile of informal settlement in Namibia for 2009.[37] the Shack Dwellers Federation of Namibia did the profiling.[37]Havana informal settlement was estimated to have approximately 1400 households. To estimate the sample size required for the study epi info software version 7.2.2.6 was used to calculate the estimate.[44] As per in build what sample size is representative enough for a specific population: For an estimated population of 1400 households in Havana informal settlement[37] and a 17 % prevalence of diarrhoea in under-five children of 17 % in Namibia[8], 5% margin of error at 95 %

confidence level and design effect of 1: The epi info software estimated a sample size a sample size of 188 households.[44]

Qualitative sample size

Eight participants were recruited in the in-depth-interviews. The researcher only conducted in-depth interviews until data was saturated. When there was no more new information the interviews were ended.

3.6 Inclusion Criteria

Caregivers of children under five years old in the community were enrolled into the study after giving consent. Only those caregivers who were at home during the time of the study were included in the study.

3.7 Exclusion Criteria

Caregivers who were not mentally well were not included and also caregivers below the age of 18 were not recruited to participate in the study.

3.8 Data collection tool

The study used a questionnaire for the quantitative design and in-depth interview guide for the qualitative design to collect data from the respondents and participants.

3.8.1 Household questionnaire for quantitative design

A semi structured questionnaire of closed and open-ended questions was developed to collect data. The questionnaire was developed and modified from existing studies[10, 11, 12, 42] that have similar ideas and interest. The questionnaire had four sections covering the socio-demographic variables of the study, participant's knowledge on diarrhoeal disease

and management, and diarrhoea occurrence and health seeking behaviour. The questionnaire was subjected to expert review and pilot evaluated.

3.8.2 In-depth individual interview Guide for qualitative design

An in-depth interview guide was developed for caregivers of under five children. The questions of the interview guide were informed by the results of the data collected from the quantitative phase of the study. The questions in the interview guide sought to explain and answer questions from the statistically significant results yielded in the quantitative phase. It also explored what caregivers experience and focus on their experience of the phenomena of interest.

3.9 Validity and Reliability

Validity is the core of any assessment that presents an accurate and trustworthy outcome. The research instrument was developed based on existing literature and other studies of the same interest. The data collection instruments were made simple and unambiguous for easier completion by the participants. To ensure the validity of the instrument, the instrument was assessed and reviewed by experts such as the study's main supervisor, research committee and senior staff within Ministry of Health and Social Services. A pilot study was conducted before the study commenced. The pilot study demonstrated that the study protocol is feasible. The project did not appear to be disruptive to the respondents. It was possible to recruit respondents based on the inclusion criteria. It provided a better understanding of how to implement the survey; in this case, the research assistant was required to provide respondents with occasional help with the questionnaire and to check item completion. To gain trust of the participants, to

minimise the distrust and maximize the provision of truthful responses the researcher presented official identification documents to participants and assigned them participants with fictious identities .

The reliability of an instrument denotes the consistency of the measures obtained of an attribute or situation in a study. In this study, self-structured questionnaire and in-depth interview guide were used as data collection instrument. The questionnaire and in-depth interview guide contained the same question for all participants. The data collected was continuously scrutinized to ensure accuracy, consistency, and reliability.

3.10 Trustworthiness

The concept of trustworthiness in qualitative research is often questioned because the concept of validity and reliability cannot be addressed in the same way as in quantitative studies .[90] However, Lincoln and Guba proposed four criteria that they believe should be considered by qualitative researchers in pursuit for trustworthiness.[90]

3.10.1 Credibility

Credibility determines if the research findings represent believable information gathered from the participants' original data and are an accurate assessment of the participants' original perspectives.[90] To ensure credibility, the researcher used prolonged engagement which means that more time was spent observing and becoming familiar with the research setting. Participants were also encouraged to be frank and were assured that there are no wrong or right answers. In addition, the researcher used iterative questioning which involved the use of probes to elicit detailed data.

3.10.2 Transferability

Transferability represents the extent to which the study findings can be applied to other situations.[90] The researcher is responsible for providing a "thorough description" of the participants and the research procedure. To ensure transferability, the researchers supplied a comprehensive overview of descriptive data, including the research's context, setting, sample, sample size, sampling strategy, demographic, socio-economic, inclusion and exclusion criteria, interview procedure and subjects, variations in interview questions based on the iterative research process, and excerpts from the interview guide.

3.10.3 Dependability

For dependability, the researcher confirmed that the study process is rational, traceable, and well-documented. [90] When readers can analyse the research procedure, they can better evaluate the study's reliability.

3.10.4 Confirmability

Confirmability is focused with demonstrating how conclusions and findings were obtained and that the researcher's interpretations and findings were clearly drawn from the data.[90] Here steps must be taken to ensure that as far as possible, the findings are the results of the experience of the participants and not the preferences of the researcher.[90] Confirmability is accomplished when credibility, transferability, and dependability are all attained. The researcher ensured conformability by explaining reasons for the methodological choices.

3.11 Data Collection procedures

3.11.1 Household questionnaires for quantitative design

The data collection process commenced in February 2021. It took 45 days to collect the quantitative data. A door-to-door approach was used to recruit participants into the study. Every seventh house was approached for the participation in the study. If there was no under-five child in the house or if the caregiver did not give consent for participation the next household was approached for participation in the study. A maximum of one participant was recruited from each household. . At every household, the researcher introduced themselves, showed identification and explained the purpose of their visit. The researcher explained the purpose of the study to the participants and explained their rights of participation or non-participation. Once an individual agreed to participate in the study, they were given the consent form to document their consent before participating. The participants answered the questionnaires in privacy and those that needed clarity or assistance on completing the questionnaire were assisted by the researcher. The average completion time was estimated between 25 to 30 minutes.

3.11.2 In-depth interviews for qualitative design

Before the interview, the researcher prepared the interview tools, tape recorder, notepad and pen. The researcher visited the sampled caregivers to take part in the qualitative phase. On the day of the interview the researcher explained the purpose of the interview to the participant and explained their rights of participation. After the participants documented their consent, the interviews were commenced. The researcher asked the participants questions and lead the entire interview. The interview was recorded on a tape recorder and field notes were taken during each interview. On average each

interview was approximately 35 minutes. The interviews took place at the participants' home.

3.12 Data analysis

3.12.1 Quantitative data

To analyse the data statistical program, SPSS version 25.0 was used to conduct descriptive and inferential statistics. Frequency tables, graphs and charts were used to determine the health seeking rate, type health care consulted during diarrhoea episode, health insurance coverage rate. Logistic regression was also conducted to investigate the effect of demographic variable on health seeking behaviour. The predictors' variable was age, gender, status of employment, income, health insurance and the dependent variable were health seeking status.

3.12.2 Qualitative data

The researcher used the narrative thematic analysis process for data analysis. The researcher organized the data by transcribing the audio tapes and consolidating them with the field notes taken during the discussion.[36] First, interview records were transcribed into Microsoft word. Transcripts were reviewed several times to search for irregularities. Next the researcher highlighted quotes and phrases from the interviews that were significant to the study. The researcher went back and forth among transcripts until categories emerged that were consistent. The researcher named these categories, coded the transcripts, and consolidated the coded interviews and field notes and looked for relationships within and across the data sources.

3.13. Research ethics

Before this study was conducted, ethical clearance was sought from the University of Namibia Human Research Ethics Committee (HREC); annexure 1. After that permission was sought from the Ministry of Health and Social Services (MoHSS) (annexure 2) and the Havana Informal settlement Local authorities (annexure 3). This study involved human participants who were asked to participate in the study. Ethics in research refer to moral principles that respect and protect the rights of research participants by researchers Tulchinsky et al .[80] Ethical principles of confidentiality, justice, autonomy, and beneficence was applied to the study. Upon receiving the permission commence the study; the following took place to address the ethical issues that may arise from the research:

3.13.1 Informed consent

Informed consent is meant to ensure that participants enter the research process freely with full information about what the study entails and how it impacts them. Participants give consent before they enter the research. Participants were briefed thoroughly on the study and given opportunities to ask questions about the study before indicating their consent. During the quantitative phase, participants documented their consent on the consent form before taking part in the study. Since the qualitative participants were part of the quantitative phase, during the interviews, participants were further required to give their consent verbally after the intentions and details of the second phase were explained. Again, participants were allowed time to think and ask questions with regards to the qualitative phase. No consent form was developed for the qualitative phase.

3.13.2 Confidentiality

Confidentiality refers to a condition in which the researcher knows the identity of the participants but takes steps to protect that identity from being discovered by others .[84] Confidentiality and anonymity of participant the identity of the participants was kept confidential study. The participants were given codes for identification during the study. These codes could not be linked to the participants' real identity. The data remained confidential and only used for the purpose of the study. All research document where locked in a drawer that only the researcher had access.

3.13.3 Beneficence

The ethical principle of beneficence is the principle of doing good (or providing benefit) for the participants and acting in accordance with the participant's welfare.[84] The participants were informed that there is no direct individual benefit from the study but that the findings will be shared with relevant stakeholders, such as UNAM, Ministry of Health and Social Services and The Havana informal settlement Local authorities. This shared information may result in creation of improved services for the community.

3.13.4 Autonomy

The rights of the participants not to participate should be respected at all times and it should explain that they have the right to refuse to participate or to choose to withdraw their participation.[81] Participants were informed on their right to voluntary participation and their right to withdraw from the study any time without consequence. The participants were given the consent form to document their consent. Participants were

informed that their participation or non-participation will not in any way disadvantage them or their families.

3.13.5 Justice

The fundamental ethical principle to fair treatment is based on the ethical principle of justice which implies being fair and impartial .[83]The use of statistical sampling and selection methods used in the study ensured that the participants were selected fairly. Participants were selected for reasons that are linked to research problem, objectives, and interests and not on their availability to participate. Participants were given the same questionnaire and interviewed using the same tools. All the participants were treated fairly.

3.13.6 non-maleficence

The principle of non-maleficence indicates that researchers ensure that they do no harm to participants during their research[82] This study did not cause physical harm to the participants; however, the questionnaire and interviews could pose discomfort and emotional uncertainties. The questionnaires were easy to answer, and participants were made to feel comfortable, and their wellbeing was assured by offering them the opportunity to ask questions afterwards.

3.13 Summary

Chapter 3 presented in-depth discussions about the research methodology. The chapter outlined the study approach from research design, research population, sample and sampling methods, inclusion and exclusion criteria, data collection methods and tools, validity and reliability, data analysis and the application of research ethics.

CHAPTER 4: DATA ANALYSIS AND STUDY RESULTS

4.1 INTRODUCTION

A mixed explanatory research design was followed, constituting a sample size of 188 respondents from Havana informal settlement. The study was based on the following objectives:

- To determine the prevalence of diarrhoea among under-five children in households in Havana informal settlement.
- To explore the caregivers experience on health care seeking behaviour.

- To determine association between Socio-demographic characteristics and health care seeking behaviours of caregivers of under-fives in Havana informal settlement.
- To determine caregiver's knowledge on diarrhoeal disease among children under-five years of age in Havana informal settlement.

This chapter focuses on data analysis of the data collected during the study. This chapter is divided into four main sections as per the research objectives. The initial section presents the response rate and the demographic profile of the study respondents.

4.2 Response Rate for quantitative data

Doyle *et al* stated that a response rate is defined "as the total number of completed interviews divided by the total number of completed participants with whom contact was made".[53] In terms of recommended response rate Nworie et al[56] asserted that surveys which obtain a response rate of 50 percent and higher are excellent and that high response rates are a result of high levels of motivation.[56] The researcher administered

188 questionnaires and 147 were returned to achieve a response rate of 78 percent. The data collection process took 30 days, followed by another month of data capturing, cleaning and analysis. Table 4.1 below illustrates the response rate of the study.

Table 4.1 Response rate for quantitative data

	Number of questionnaires administered	Number of questionnaires completed	Response rate
Questionnaires	188	147	78%

4.3 Demographic Profile of the Respondents

According to [47] demographic profile or characteristics refers to the features of the research sample or the statistics that describes the research sample, the researcher has no control over the demographic characteristics of the study sample. The following sections reveals the descriptive statistics of the sample by gender, age, income level, education level, employment status, health insurance status, access to information, access to clean water, and access to flashing toilets.

4.3.1 Child's age

Table 4.2 below shows the frequency distribution of the ages of the child or children; these responses were provided by the child's caregiver. The study focused on children who were five years and younger.

Table 4.2: Child's Age

Child 'age		Frequency	Percentage	Valid Percent	Cumulative Percent
Valid		1	.7	.7	.7
	1 Year	32	21.8	21.8	22.4
	10 Months	1	.7	.7	23.1
	11 Months	5	3.4	3.4	26.5
	12 Months	1	.7	.7	27.2
	2 Months	3	2.0	2.0	29.3
	2 Weeks	2	1.4	1.4	30.6
	2 Years	37	25.2	25.2	56.5
	3 Months	4	2.7	2.7	58.5
	3 Years	33	22.4	22.4	81.0
	4 Months	2	1.4	1.4	82.3
	4 Years	14	9.5	9.5	91.8
	5 Months	1	.7	.7	92.5
	5 Years	2	1.4	1.4	93.9
	7 Months	2	1.4	1.4	95.2
	8 Months	3	2.0	2.0	97.3
	9 Months	4	2.7	2.7	100.0
	Total	147	100.0	100.0	

According to Table 4.2 ages of the children ranged from 2 weeks to 5 years. The age with the highest frequency was 2 years which had a frequency of 25.2 % (n=37), 3 years olds constituted 22.4 % (n=33), 1year olds constituted 21.8 (n=32) of the children. 4year olds were represented by 9.54% (n=14). Only 1.4 % (n=2) of the children were 2 weeks old.

4.3.2 Caregiver's Age

Figure 4.1 below shows the ages of the caregivers.

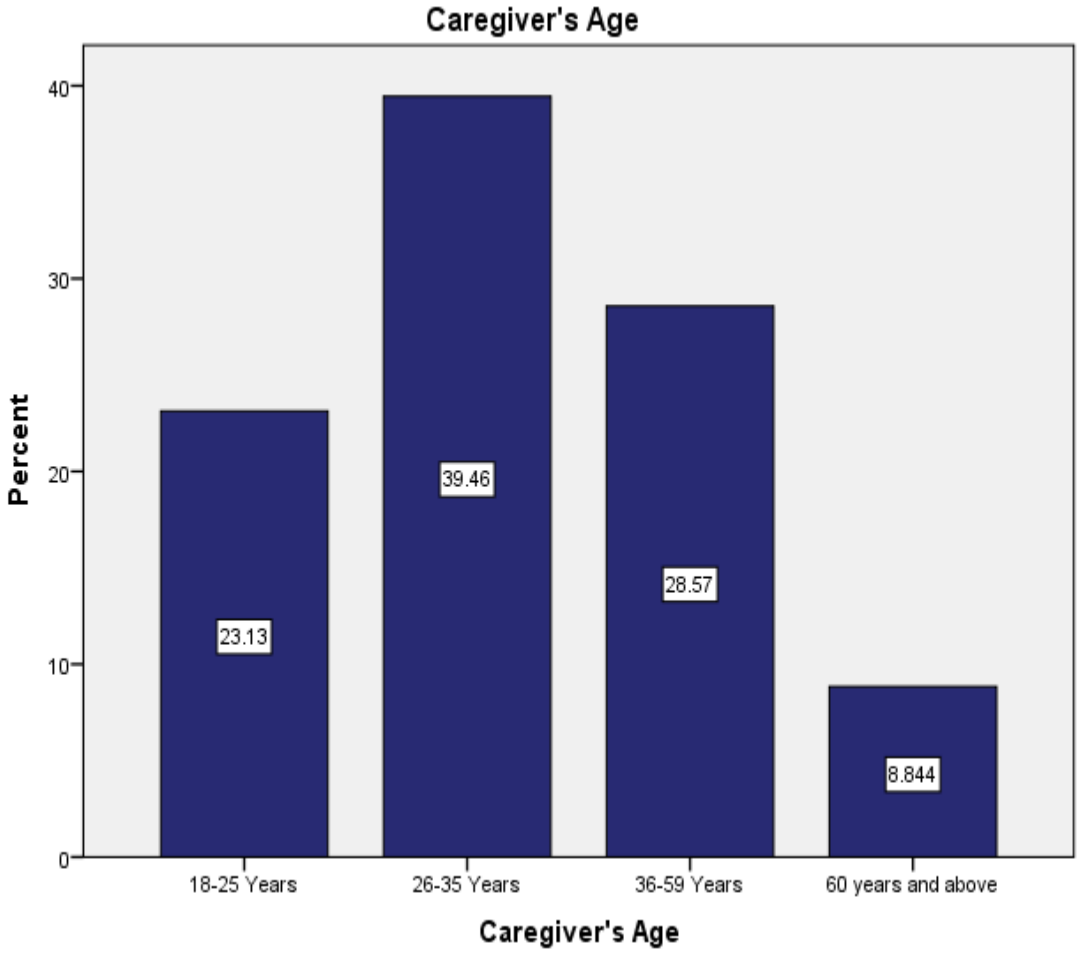

Figure 4.1 Caregiver's age

Figure 4.1 above shows that the majority 39.46% (n=58) of the respondents were aged between 26-35 years of age. 28.57% (n=42) of the respondents were aged between 36-59 years of age, 23.13% (n=34) of the respondents were aged between 18-25 years of age and only 8.84 % (n=13) were aged 60 years and above.

4.3.3 Caregiver's Gender

Table 4.3 below shows the gender of the child and that of their caregivers.

Table 4.3: Caregiver's gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Caregiver's Gender	Female	105	71.4	71.4	71.4
	Male	42	28.6	28.6	100
	Total	147	100	100	

According to Table 4.3 above it can be deduced that majority of the caregivers were females with 71.4 % (n=105) and most of the children are under the care of females.

4.3.4 Caregiver's Level of Education

Figure 4.2 below shows the caregiver's level of education.

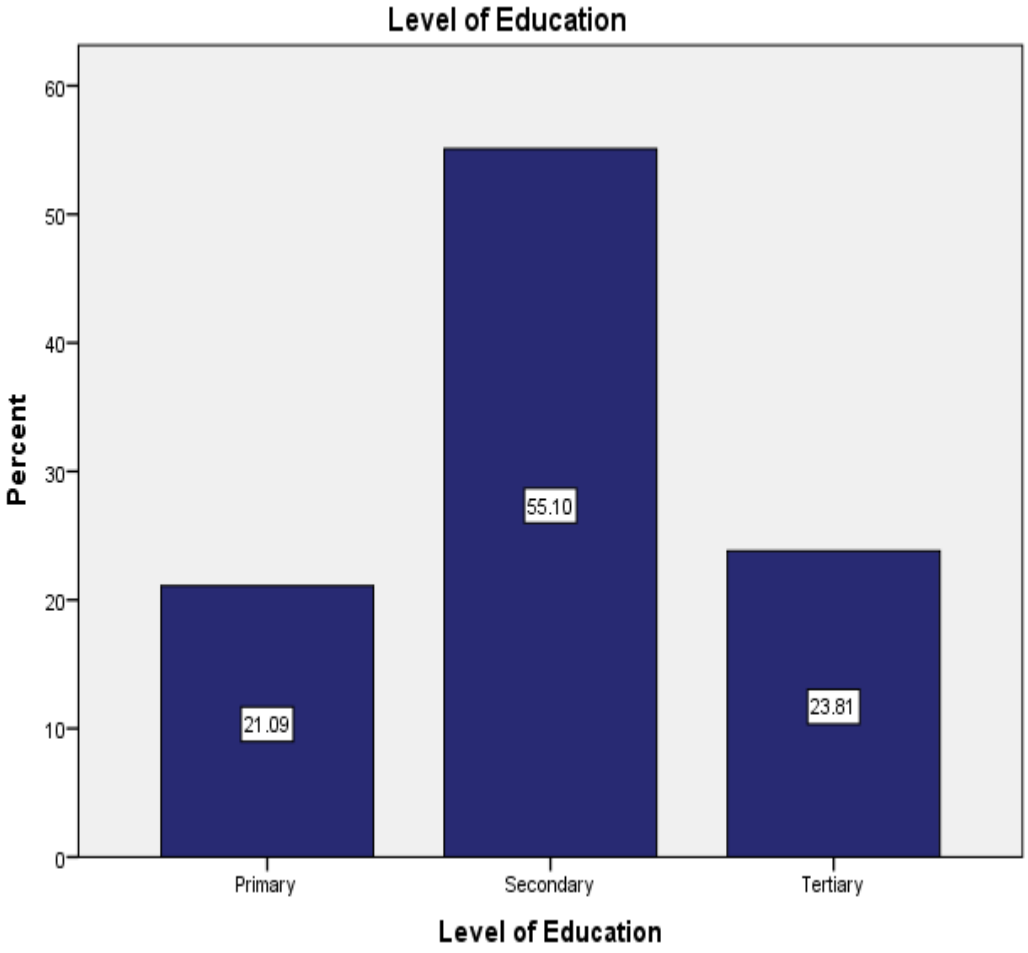

Figure 4.2 Caregiver's Level of Education

Figure 4.2 above shows that the majority of the respondents had completed secondary education. This is represented by 55.10 % (n=81) of the respondents while 23.81% (n= 35) of the respondents had tertiary education and 21.01 % (n=31) had primary education. Based on these findings it can be deduced that most of the study respondents were educated.

4.3.5 Caregiver's Employment Status

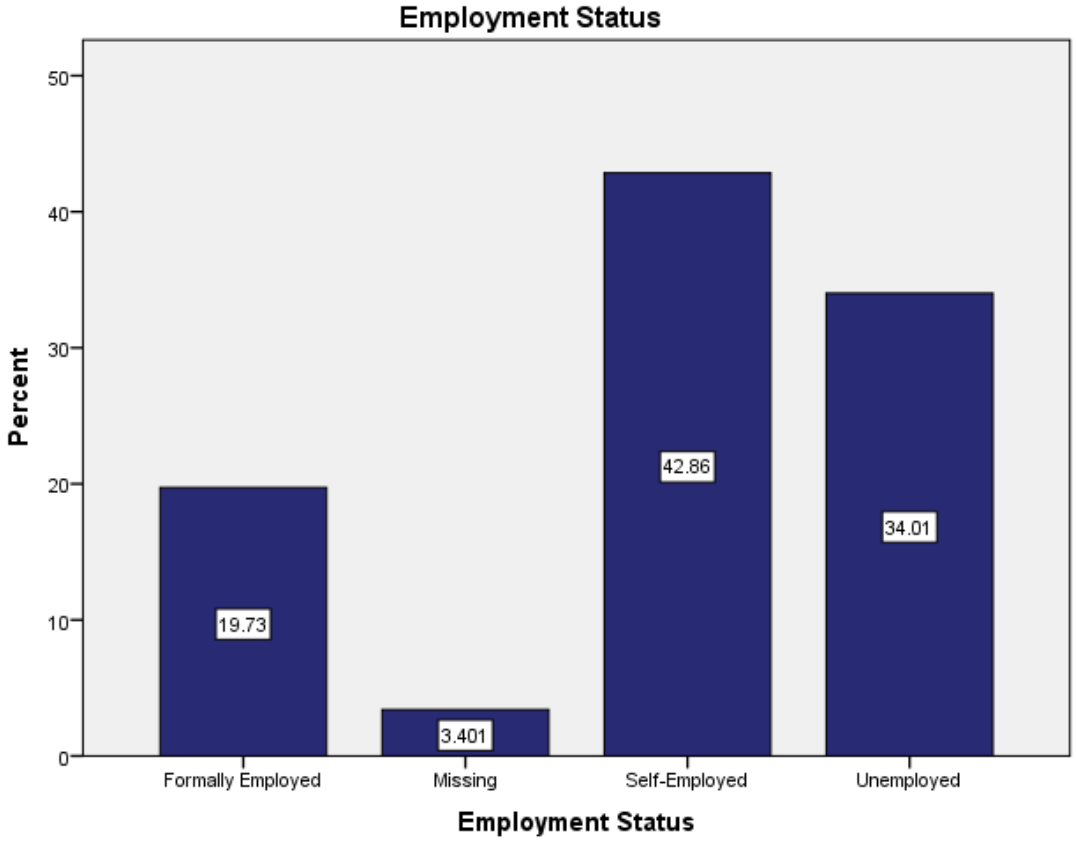

Figure 4.3: Caregiver's Employment Status

Figure 4.3 shows that most of the respondents were self-employed; this is represented by 42.86 % (n=63) of the respondents while 34.01 % (n=50) of the respondents were unemployed and only 19.73 % (n=29) of the respondents were formally employed. 3.4 % (n=5) of the respondents did not indicate their employment status. According to the results shown on figure 4.3 it can be inferred that most of the respondents had no formal employment.

4.3.6 Caregiver's Health Insurance Status

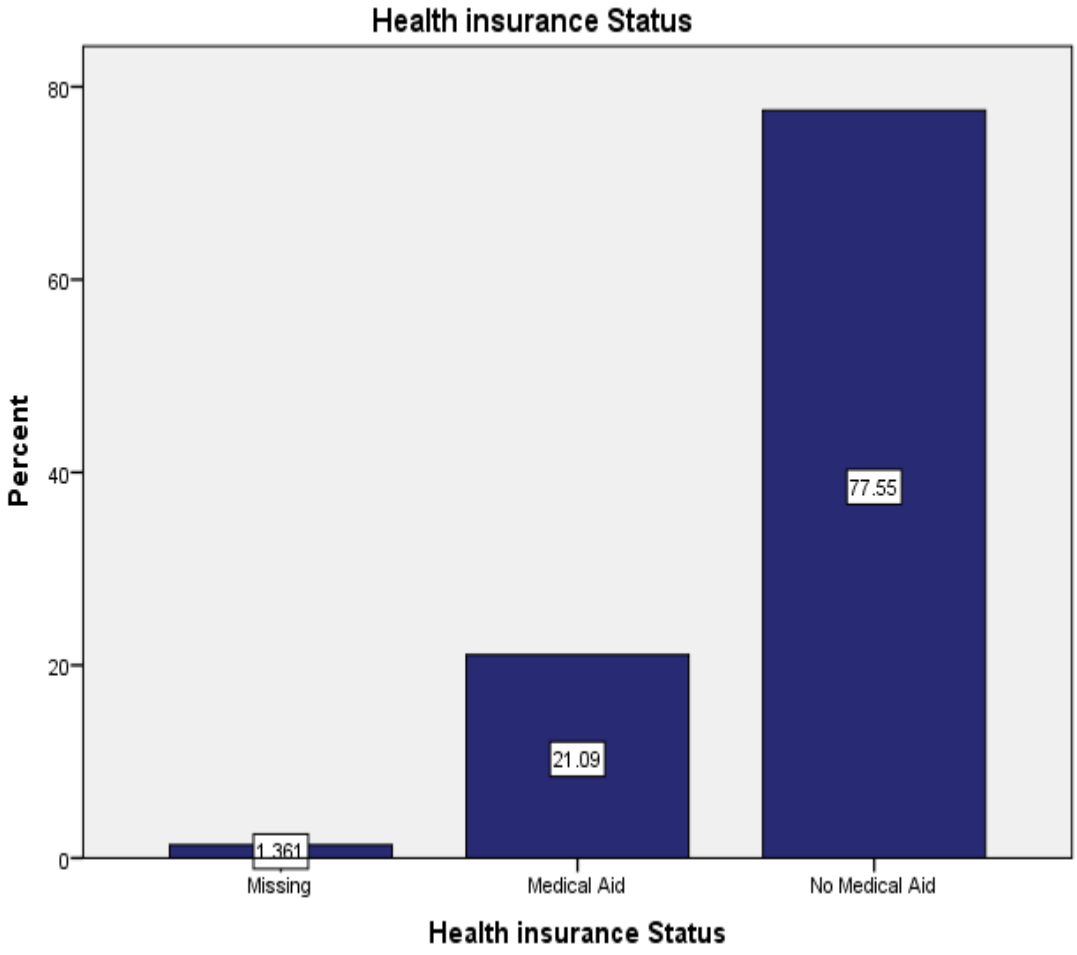

Figure 4.4: Caregiver's Health Insurance Status

The respondents shared their health insurance status and the majority indicated that they had no medical aid; this is represented by 77.55% (n=114) of the respondents while only 21.09 % (n=31) of the respondents indicated that they had medical aid. Only 1.36 % (n=2) did not respond to the question.

4.3.7 Household Income

The respondents were asked to indicate their monthly income from the income levels illustrated on the questionnaire.

Table 4.4: Household Income

Household Monthly Income range		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-5000	123	83.7	83.7	83.7
	6000-10000	21	14.3	14.3	100.00
	11000-15000	2	1.4	1.4	85.0
	16 000 and more	1	.7	.7	85.7
	Total	147	100.0	100.0	

The respondents were asked to indicate their monthly income from the income levels that were illustrated on the questionnaire. Table 4.4 above shows that the majority of the respondents earned between 0-5000 Namibian Dollars per month, this was represented by 83.7 % (n=123) of the respondents while 14.3 % (n=21) indicated that they earned between 6000 and 10000 Namibian Dollars. 1.4 % (n=2) of the respondents earned between 11000 and 15 000 Namibian dollars and only 0.7 percent (n=1) earned above 16 000 Namibian dollars.

4.3.8 Numbers of household members

The respondents were asked about the number of people in their families, the following chart presents the findings.

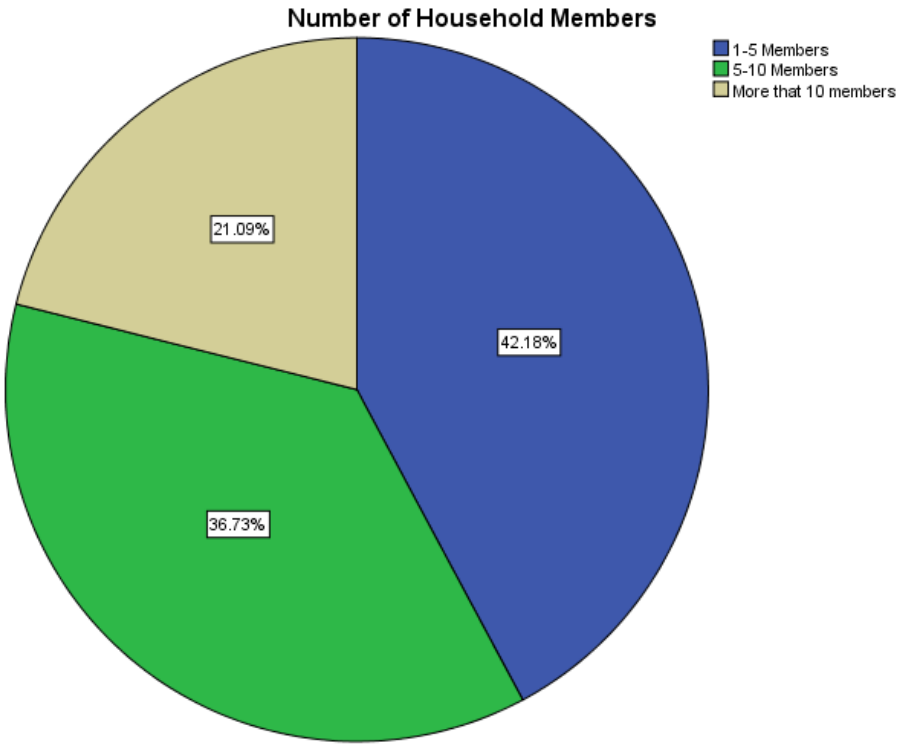

Figure 4.5: Numbers of household members

Figure 4.5 shows that most of the respondents had between 1-5 family members; this is represented by 42.18% (n=62) of the respondents. 36.73% (n=54) of the respondents had family members of between 5-10 members while 21.09% (n=31) of the respondents had more than 10 members in their family.

4.3.9 Participant's access to Information

The respondents were asked about their access to information. Figure 4.6 below shows the findings.

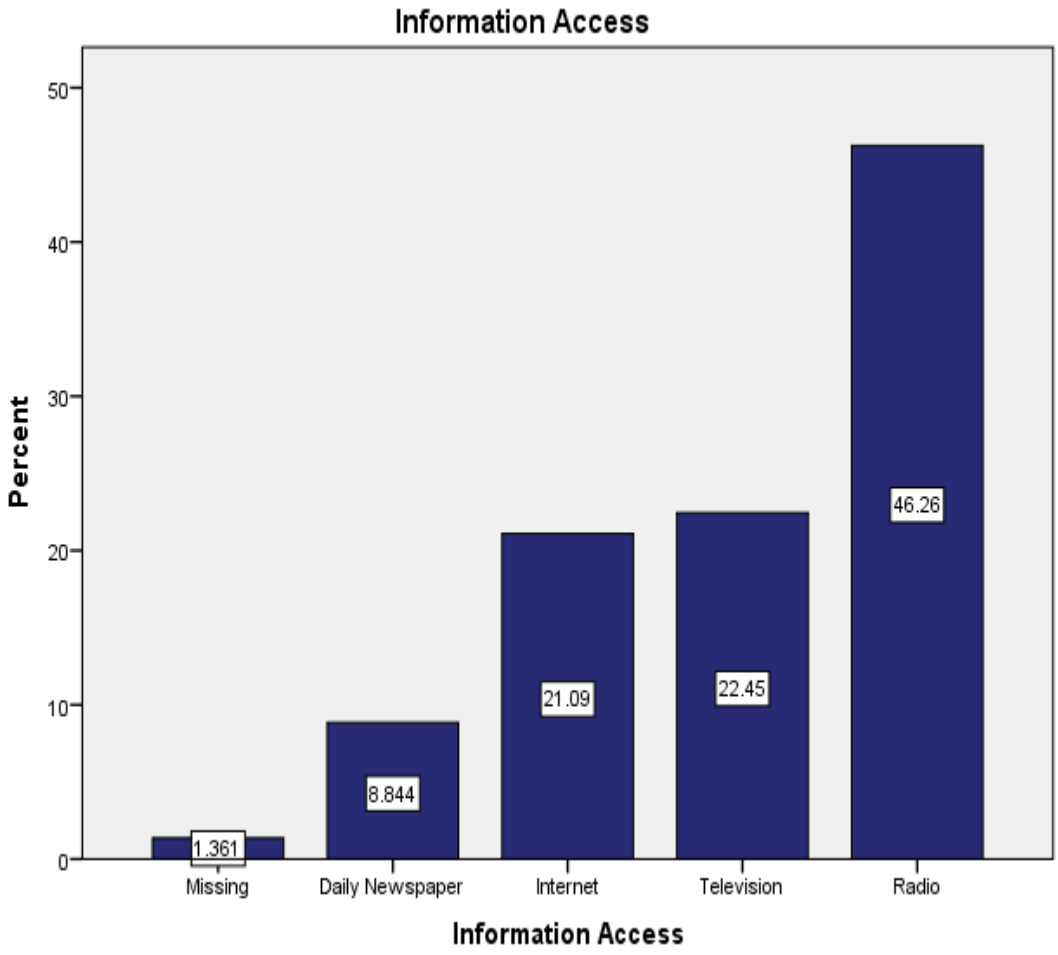

Figure 4.6 Participant's Access to Information

Figure 4.6 above shows that the majority of the respondents accessed information through radio; this is represented by 46.26% (n=68) of the respondents. 22.45% (n=33) of the respondents indicated that they accessed their information through televisions. 21.09% (n=31) of the respondents accessed information through the internet. 8.84% (n=13) of the respondents accessed their information through daily newspapers while only 1.36% (n=2) of the respondents did not provide any response.

4.3.10 Access to Clean Water

The respondents were asked if they had access to clean water. Figure 4.7 below shows the study findings.

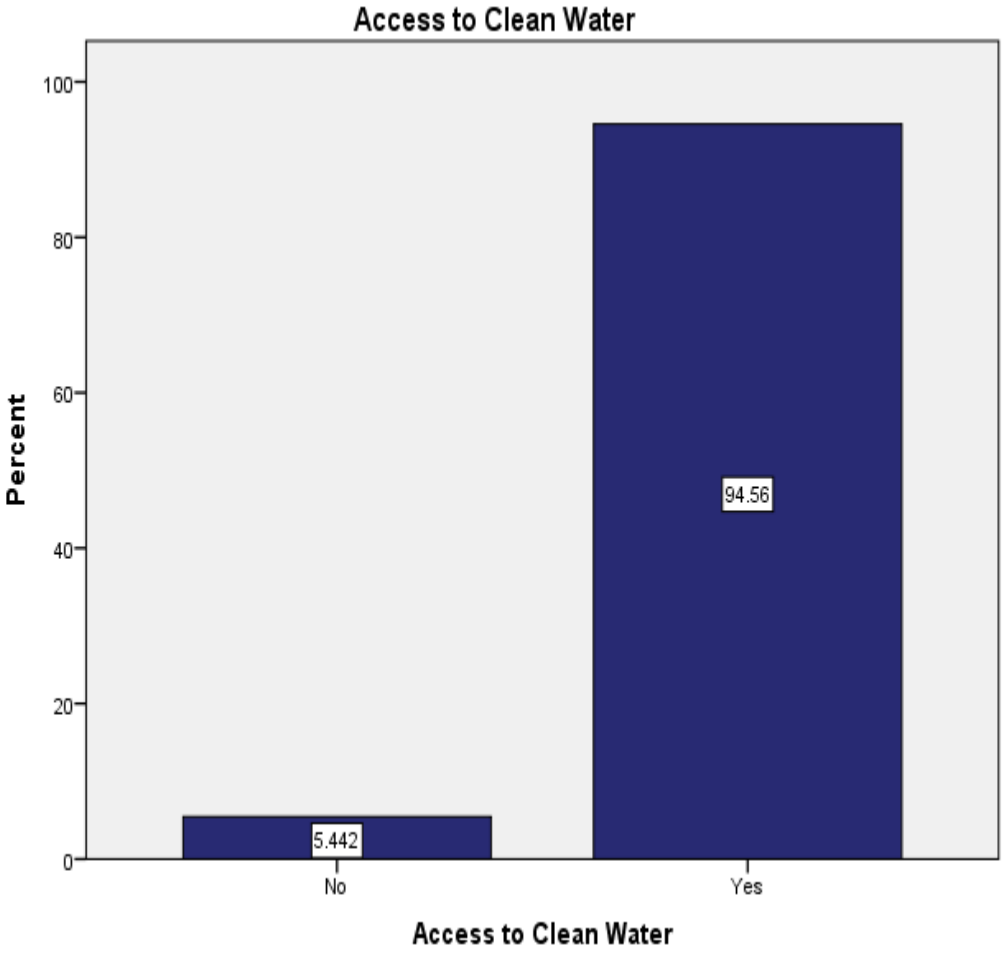

Figure 4.7: Access to Clean Water

Figure 4.7 above shows that the majority of the respondents had access to clean water, represented by an overwhelming 94.56% (n=139) of the respondents while only 5.44 % (n=8) of the respondents had no access to clean water.

4.3.11 Access to Flashing Toilets

The study sought to determine if the respondents had access to flashing toilets, figure 4.8 below shows the study findings.

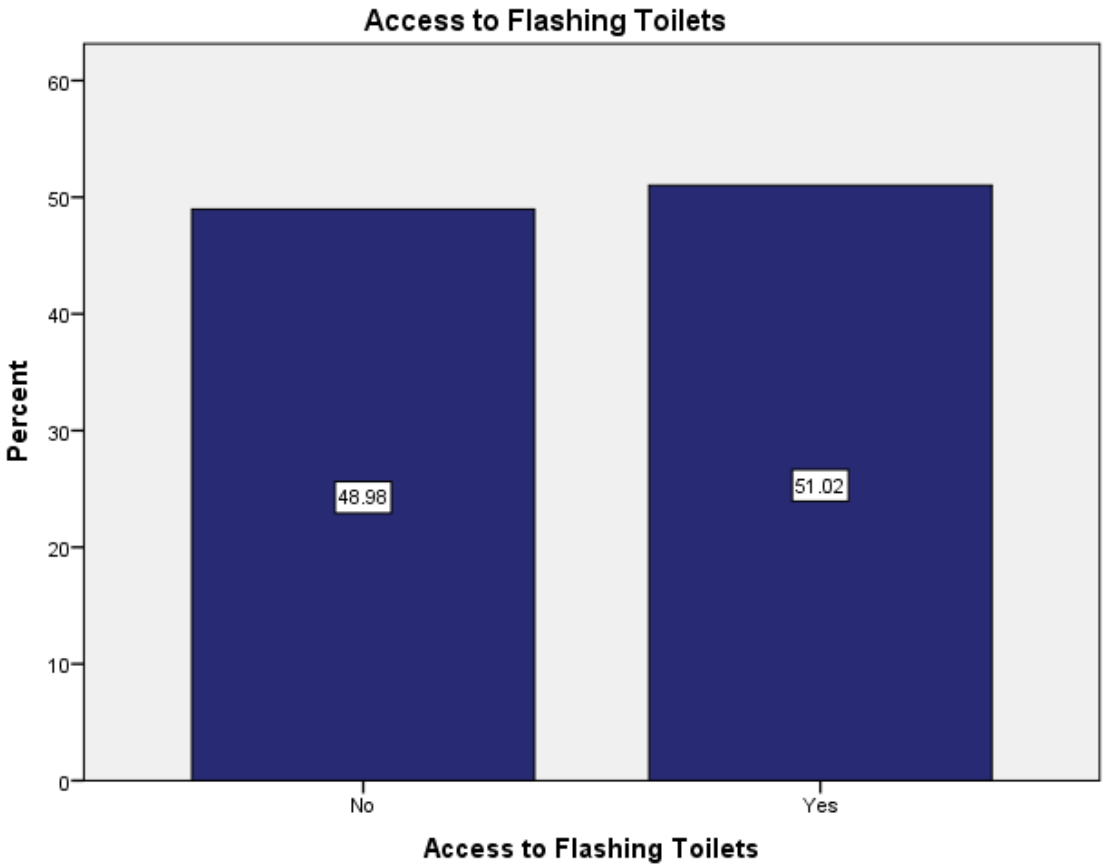

Figure 4.8: Access to Flashing Toilets

Figure 4.8 above shows that most of the respondents 51.02% (n=75) had access to flashing toilets while 48.98% (n=72) of the respondents had no access to flashing toilets.

4.4 The prevalence of diarrhoea among under-five children in households in Havana informal settlement.

The first objective of the study sought to determine the prevalence of diarrhoea among under-five children in households in Havana informal settlement. This section focuses on presenting the study finding according to the data collected.

4.4.1 Prevalence of Diarrhoea

To determine the prevalence of diarrhoea in the Havana informal settlement, the respondents were asked if their children had diarrhoea infection in the last three months. Figure 4.9 below shows the prevalence of diarrhoea in the Havana informal settlement.

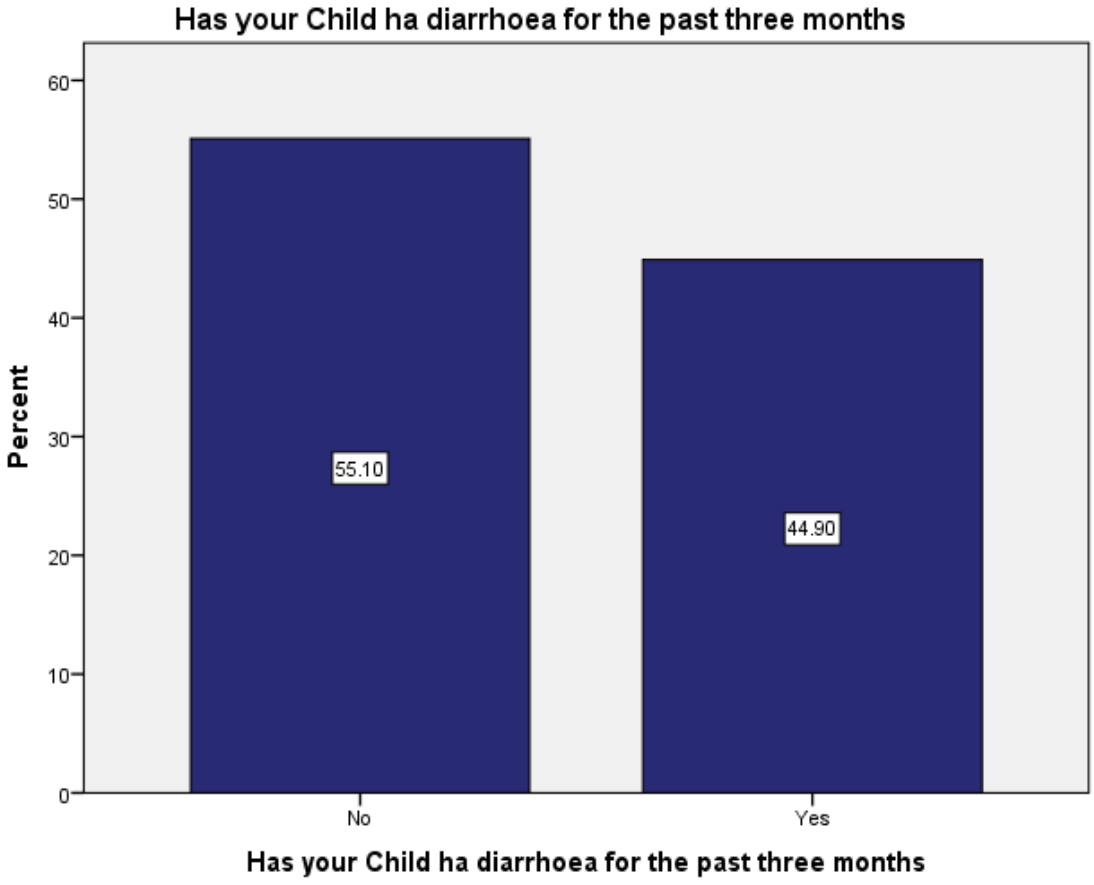

Figure 4.9: Prevalence of Diarrhoea

Figure 4.9 above reveals that most of the children had not contracted diarrhoea in the last 3 months; this is represented by 55.10% (n=81) of the respondents while 44.90% (n=66) of the respondents indicated that their children had diarrhoea infection in the last 3 months.

4.4.2 Duration of the Diarrhoea Infection in Children

Figure 4.10 below indicates the frequency distribution of the responses of caregivers whose children had diarrhoea when asked about the duration of the diarrhoea infection of the infected children.

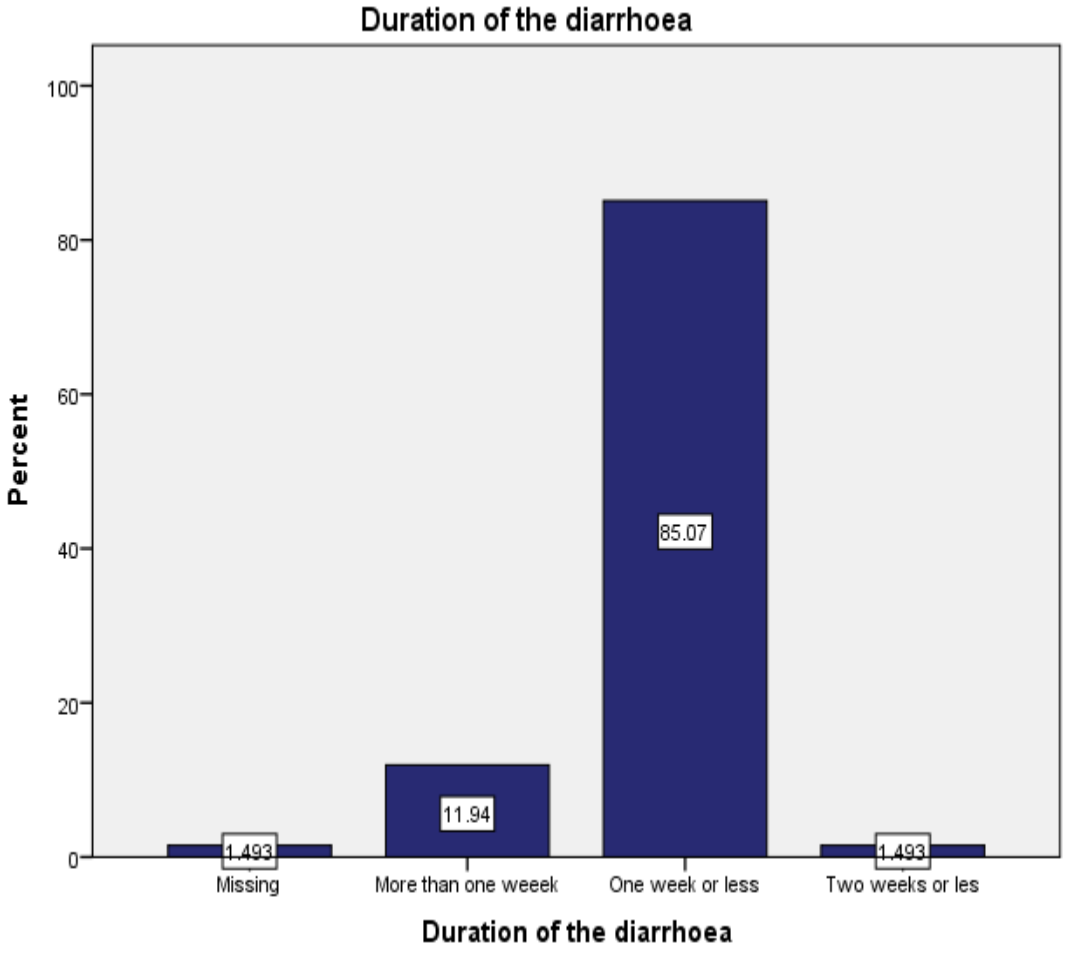

Figure 4.10 Duration of the Diarrhoea in children

Figure 4.10 above shows that the majority of the children had diarrhoea infection for one week or less, this is represented by 85.07% (n=56) of the respondents while 11.94% (n=8) of the respondents indicated that the children had diarrhoea for more than one week and only 1.493%(n=1) of the respondents indicated that their children had diarrhoea for two weeks.1.493 % (n=1) did not indicate the duration of their children's diarrhoea. According to the findings in figure 4.10 it can be inferred that diarrhoea has a short infection period in children.

4.4.3 Clinical Manifestations in the Infected Child

The respondents whose children had diarrhoea were asked about the clinical manifestation that presented in the infected child; their responses were captured and illustrated as shown in figure 4.11 below.

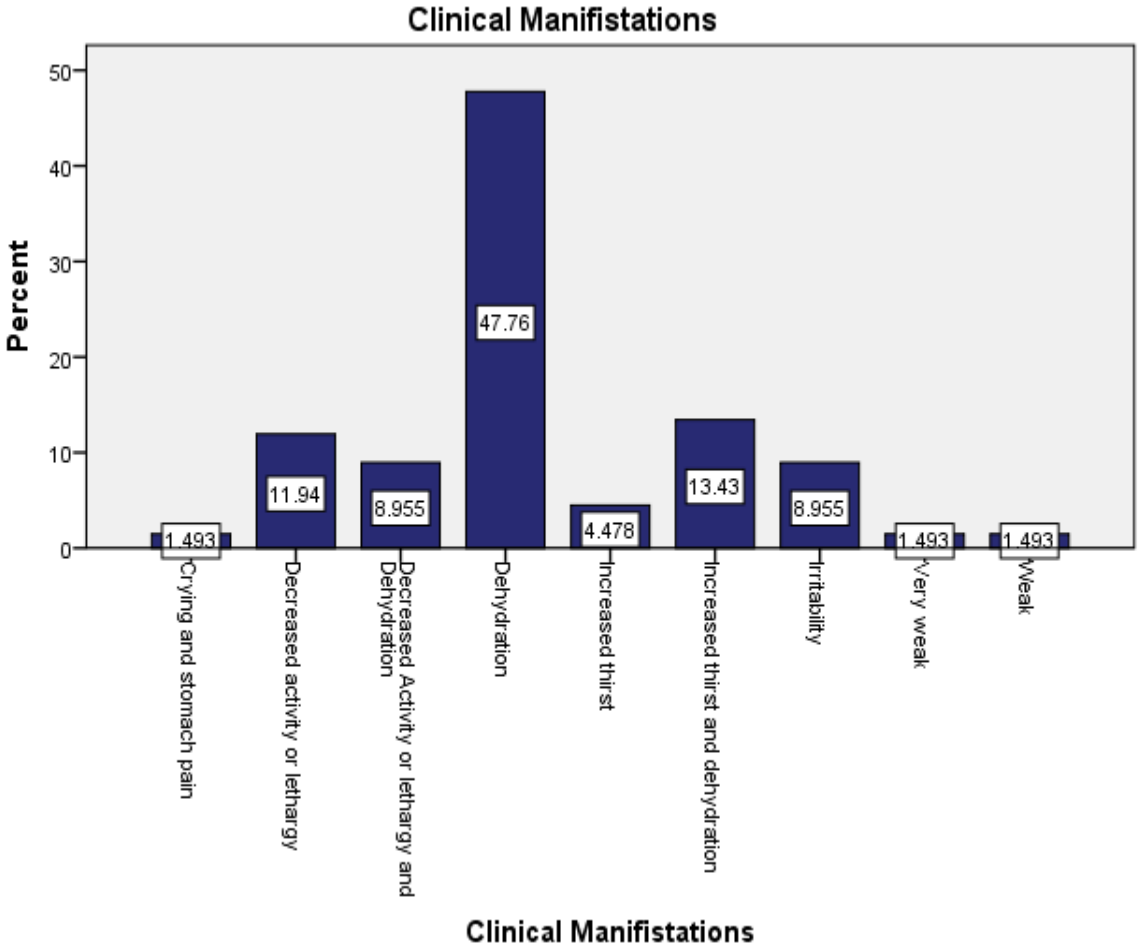

Figure 4.11: Clinical Manifestations of diarrhoea in children

Figure 4.11 above shows that that most of the children had dehydration; this is represented by 47.76% (n=32) of the respondents. 13.43% (n=9) of the respondents

indicated that the children experienced increased thirst and dehydration. 11.94 % (n=8) of the respondents stated that the children showed experience decreased activity and lethargy while another 8.95% (n=6) of the respondents indicated that the diarrhoea resulted in increased irritability in the infected children. This confirms that the children in Havana informal settlement had weakness, dehydration, irritability, decreased activity, stomach pain, crying and increased thirst as the clinical presentations.

4.4.4 Causes if Diarrhoea in Children

The researcher endeavoured to identify the causes of diarrhoea in children in the Havana informal settlement. The respondents were asked to indicate the causes of diarrhoea and their responses were captured, analysed, and presented in Table 4.5 below.

Table 4.5 Causes of Diarrhoea in Children

Causes of Diarrhoea					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Consuming unclean water	9	6.1	6.1	6.1
	consuming unclean water and eating contaminated food	3	2.0	2.0	8.2
	Consuming unclean water and not washing hands regularly	2	1.4	1.4	9.5
	Consuming unclean water and Unhygienic living environment	3	2.0	2.0	11.6
	Consuming unclean water, Not washing hands regularly and Unhygienic living conditions	9	6.1	6.1	17.7
	consuming unclean water and eating contaminated food	1	.7	.7	18.4
	Do not know	1	.7	.7	19.0
	Eating contaminated and Unhygienic living environment	1	.7	.7	19.7
	Eating contaminated food	17	11.6	11.6	31.3
	Eating contaminated food and Unhygienic living environment	3	2.0	2.0	33.3

	Not washing hands regularly	57	38.8	38.8	72.1
	Unhygienic living environment	41	27.9	27.9	100.0
	Total	147	100.0	100.0	

From Table 4.5 above it can be deduced that most of the respondents believe that "Not washing of hands" is the major cause of diarrhoea in the Havana informal settlement followed by 38.8 % (n=57) who stated that "unhygienic living environment" was the cause of diarrhoea in the children living in Havana informal settlement.

4.4.5 Caregiver's diarrhoeal health care seeking status.

The caregivers whose child had diarrhoea were asked if they sought medical care outside their home. Figure 4.12 below shows the caregiver's responses on medical care seeking.

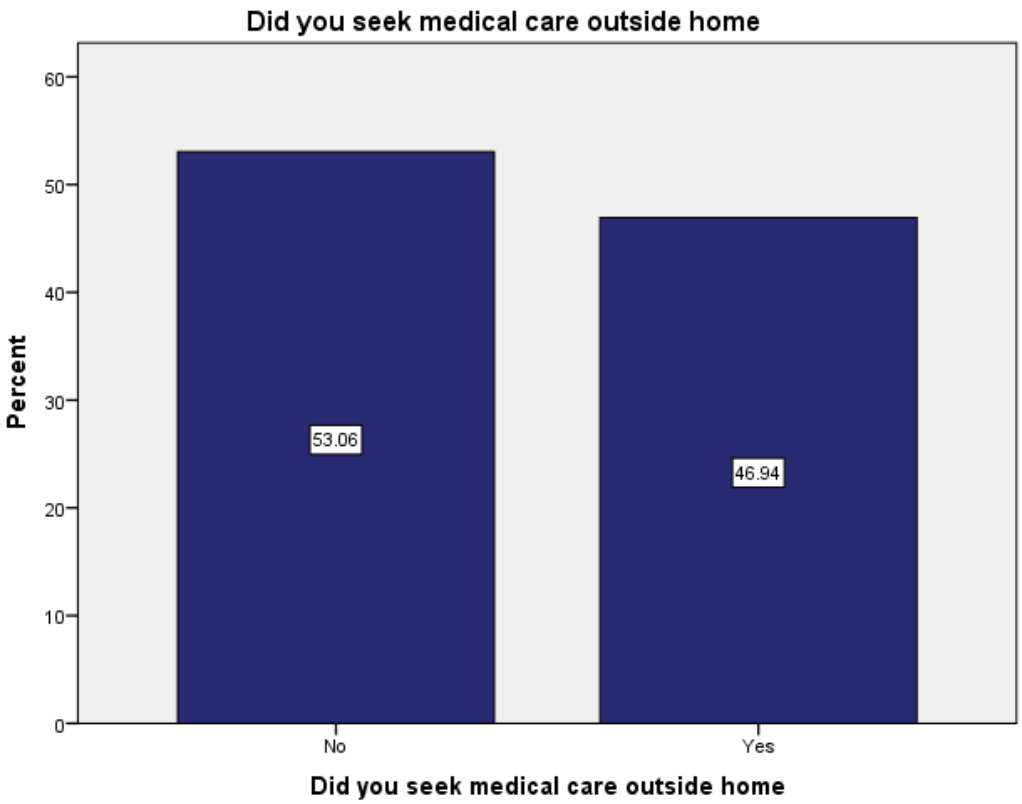

Figure 4.12 Caregiver's diarrhoeal health care seeking status.

Figure 4.12 above shows that most of the respondents did not seek medical attention to help the infected child; this is represented by 53.06 % (n=35) while 46.94 % (n=31) of the respondents who indicated that they sought medical care to help the infected child.

4.5 Caregiver's Health Seeking Behaviour for Diarrhoea among Children under-five in Havana Informal Settlement.

The second objective of the study explored caregivers experience on health care seeking behaviour. The following section presents the research results that address the objective.

4.5.1 Caregiver's health seeking behaviour.

The researcher sought to understand all the caregiver's health seeking behaviour. All the caregivers where asked if they would seek care if their child were infected. Figure 4.14 below presents the results according to the data that was collected.

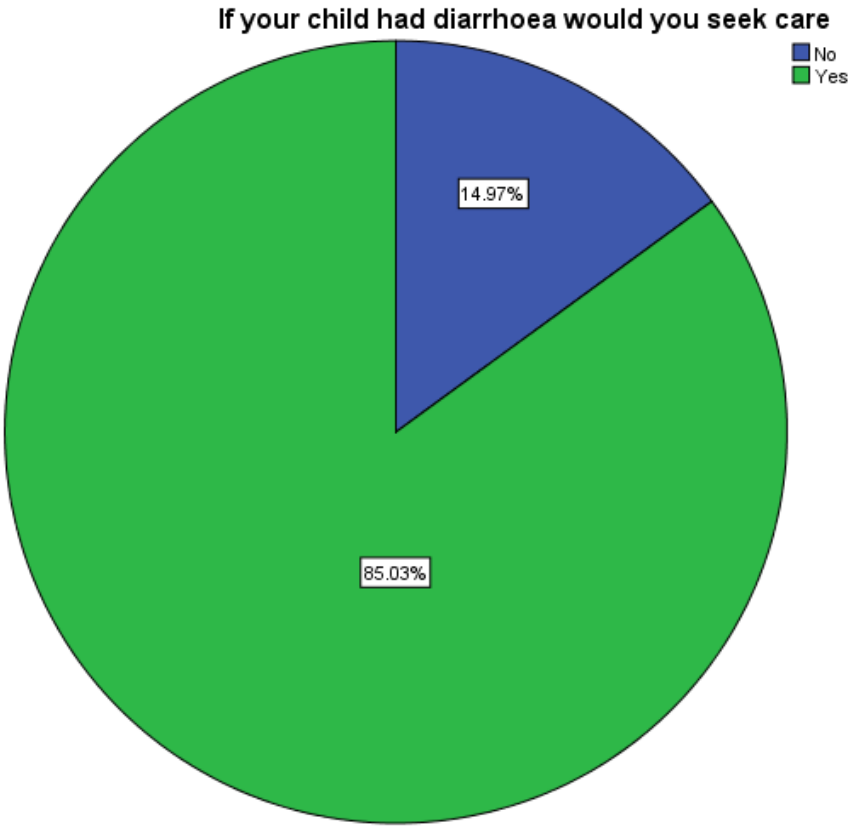

Figure 4.13: Caregiver's Health seeking behaviour

According to figure 4.13 above the majority of the respondents would seek medical care if the child were infected with diarrhoea; this is represented by 85.03% (n=125) while 14.97 % (n=22) of the respondents indicated that they would not seek medical care if the child were infected with diarrhoea.

4.5.2 Where would you seek health care for a child with diarrhoea

The study sought to determine where the caregivers would seek medical care for their infected children. Figure 4.14 shows the results according to the data collected.

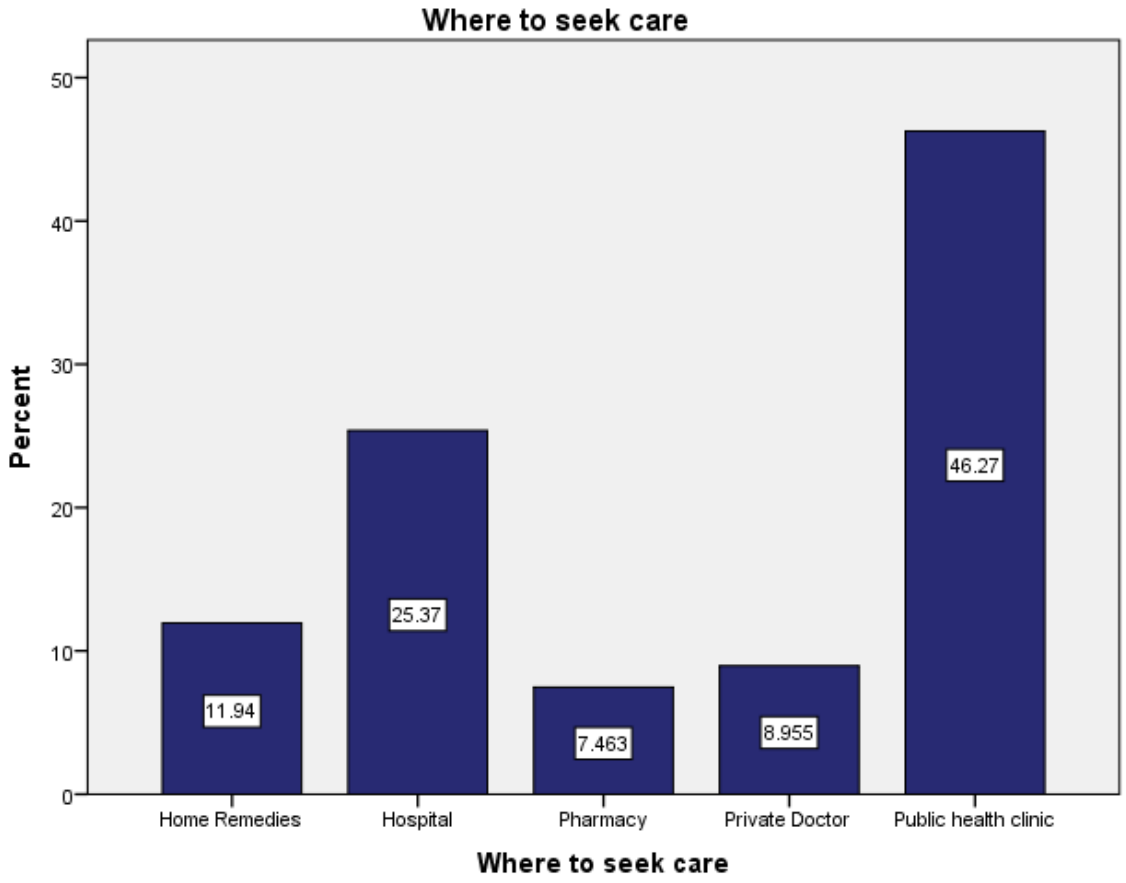

Figure 4.14: Where to seek care

Figure 4.14 above show that 46.27 (n=68) percent of the respondents preferred public health clinic over the other places. This is followed by 25.37 % (n=37) of the respondents who preferred hospitals while 11.94 % (n=18) preferred to use home remedies.

4.6 The association between Socio-demographic characteristics and health care seeking status of caregivers of under-fives in Havana informal settlement.

The third objective sought to determine associations between Socio-demographic characteristics and health care seeking behaviours of caregivers of under-fives in Havana informal settlement. The following section presents the research results that address the objective.

Table 4.6 Logistic Regression Analysis

		B	S.E.	Wald	Df	Sig.	Exp(B)
Step 1[a]	Caregiver's Gender	.346	.575	.361	1	.548	1.413
	Caregiver's Marital Status	.110	.154	.513	1	.474	1.116
	Caregiver's Age	-.155	.219	.504	1	.478	.856
	Employment Status	.618	.370	2.785	1	.095	1.855
	Health insurance Status	.959	.763	1.581	1	.209	2.609
	Household Monthly Income Range	.187	.183	1.045	1	.307	1.206
	Constant	-1.932	2.010	.925	1	.336	.145

a. Variable(s) entered on step 1: Caregiver' s Gender, Caregiver's Marital Status, Caregiver's Age, Employment Status, Health Insurance Status, Household Monthly Income Range.

The Wald test ("Wald" column) is used to determine statistical significance for each of the independent variables. The statistical significance of the test is found in the "Sig." column. From these results we can see that Caregiver's s Marital Status (p=0.474), Caregiver's Age (p= 0.478), Employment Status (p=0.95), Health Insurance Status (p=0.209), Household Monthly Income Range (p=0.307) and Caregiver's Gender (p=0.548) had a p-value higher than the critical value or criterion for statistical significance ($p \leq 0.05$). Statistically, this infers that the study has no sufficient evidence

to reject the null hypothesis. From these results, we can conclude that there is no significant association between health seeking and the following variables: caregiver's marital status, caregiver 'age, Employment status, Health insurance status and household income. The health seeking behaviour of the caregivers of the Havana informal settlement is not dependent on any of the above variable used in the Wald's test.

4.7 Caregiver's knowledge on diarrhoeal disease among children under-five years of age in Havana informal settlement.

The last objective of the study assessed the caregiver's knowledge on diarrhoeal disease among children under-five years of age in Havana informal settlement. The following section presents the study findings according to the research data.

4.7.1 Knowledge of Diarrhoea

Figure 4.15 below shows the responses from the respondents according to their knowledge of diarrhoea.

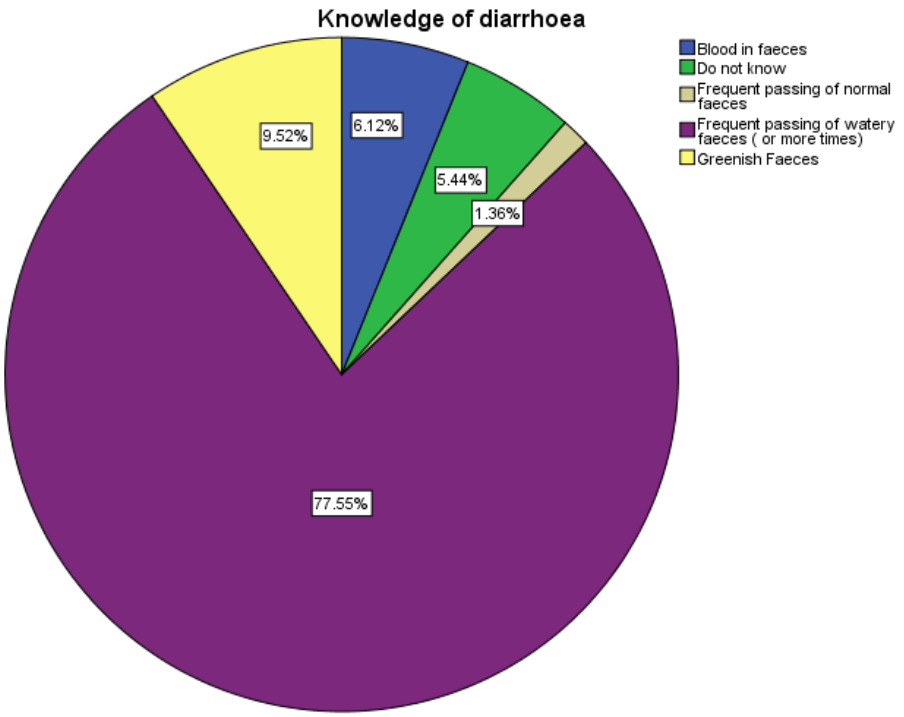

Figure 4.15: Knowledge of Diarrhoea

Figure 4.15 above shows that the majority of the respondents understood what diarrhoea is, as confirmed by 77.55 % (n=114) of the respondents who indicated that diarrhoea is the frequent passing of watery faeces. This is consistent with WHO which defined diarrhoea as the passage of unusually loose or watery stools, usually at least three times in a 24-hour period. [16] According to this result it can be inferred that respondents had knowledge about diarrhoea because they managed to provide the precise definition.

4.7.2 Danger Signs of Diarrhoea

Figure 4.16 below shows the danger signs of diarrhoea according to the research findings.

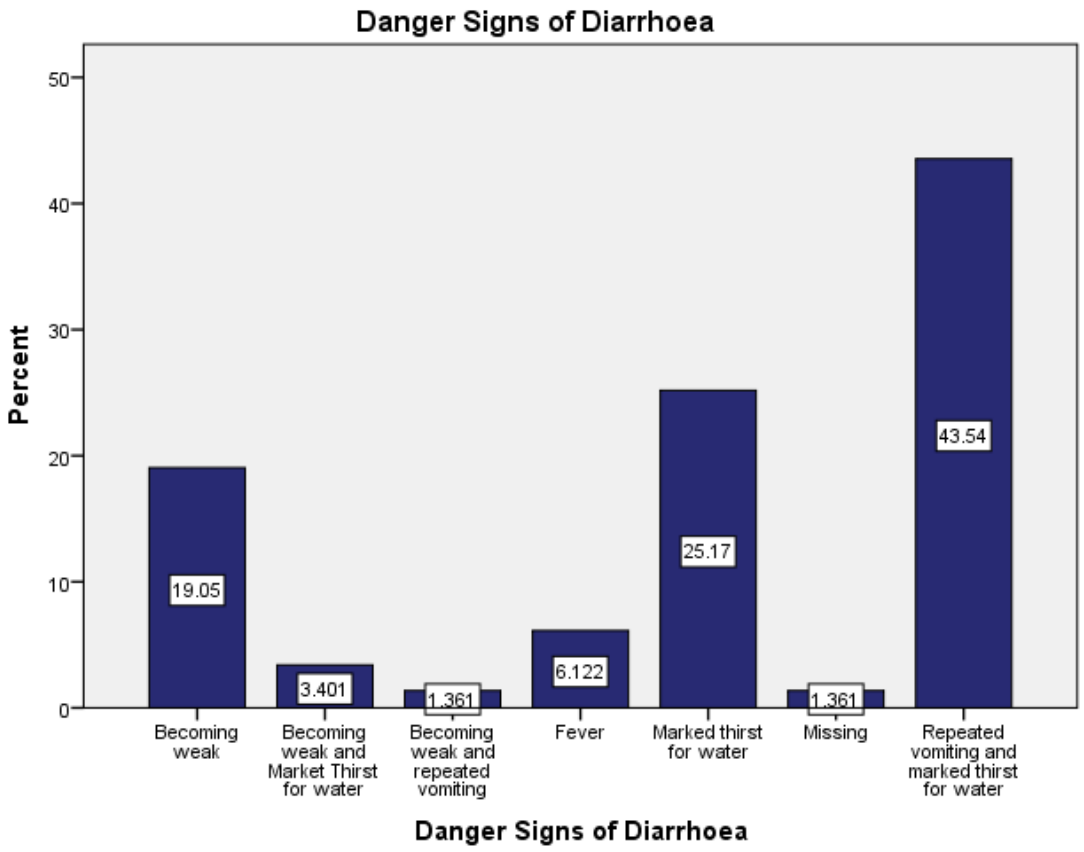

Figure 4.16: Danger signs of diarrhoea

Figure 4.16 above shows that the majority 43.54%(n=64) of the respondents indicated that repeated vomiting and marked thirst for water are the danger signs of diarrhoea while 25.17 % (n=37) indicated that only marked thirst for water is the danger sign of diarrhoea. 19.05% (n=28) of the respondents indicated that the danger sign of diarrhoea is becoming weak. These findings reveal good knowledge of the danger sign of diarrhoea among the caregivers of children under-five years in Havana informal settlement.

4.7.3 Knowledge of Oral Rehydration Solution

Table 4.8 below shows the caregiver's knowledge about the preparation of ORS, duration of the ORS and how often the ORS should be given to the children infected with diarrhoea.

Table 4.7: Knowledge of Oral Rehydration Solution

Demography	Response	Frequency	Frequency%
Do you know what oral Dehydration solution?	Yes	77	52.4
	No	70	47.6
	N	**147**	**100**
How often should the ORS be given?	147	100	100
	Once a day	6	4.1
	2–3 times a day	46	31.1
	Whenever the child wants to drink	22	15
	After the passing of very loose stool	1	.7
	Missing	72	49
	N	147	100
Duration of the ORS	24 h. (1 day)	68	42
	48 h. (2 days)	10	6.8
	72 h. (3 days)	2	1.4
	96 h. (4 days)	1	0.7
	Missing	72	49
	N	147	100

How is ORS prepared?	1 sachet of ORS-1000ml (1 1) of water	57	38.8
	1 sachet of ORS-1500ml (1.5 1) of water	3	2
	1 sachet of ORS-300ml of water	9	6.1
	1 sachet of ors-500ml	1	0.7
	1 sachet of ORS-600ml of water	6	4.1
	Missing	71	48.3
	N	147	100

Regarding methods of ORS giving, about 38.8% (n=57) caregivers used 1 sachet of ORS-1000ml (1 1) of water. Concerning frequency, only 31.1% (n=46) caregivers administered ORS 2-3 times a day while 15 % (n=22) caregivers gave it only whenever the child wants to drink. About 42% (n=68) caregivers said that they keep the reconstituted ORS for 24 hours while 6.8% (n=10) kept it for 48hours.

4.9 Qualitative Data Results

The following section presents the study results according to the in-depth interviews. The in-depth interview were based on data collected using the semi structured questionnaire whose results are presented above. The quantitative data results found that

a significant number of caregivers did not seek health when their child was sick with diarrhoea. The following section explores reasons why health care was not sought and to determine the factors that contribute to caregivers not seeking health care. The interviews also sought to explore why caregivers prefer public health clinics.

Three themes emerged from the data collected and under the three themes were subthemes. The table below presents the themes and subthemes that emerged from the analysis of the data.

Table 4.8: Themes and Subthemes of Qualitative data

Theme	Subthemes
1.Knowledge of diarrhoea	• Causes of diarrhoea
2.Health care seeking Behaviour	• Using traditional medicines • Public clinics
3.Logistic aspects of obtaining care	• Long queues • Distance to the clinics

4.10 Theme 1. Knowledge of diarrhoea

Causes of diarrhoea

The caregivers indicated during the interviews that the diarrhoea in children under five years were caused by poor hygiene, bacterial infection, drinking contaminated water or cold milk and overdose of medication. The respondents stated that poor hygiene by the caregiver leads to bacterial infections in children. This was also confirmed in the

quantitative data analysis which showed that the majority of diarrhoea in children under 5 years was caused by not washing of hands. One particular respondent indicated that:

Respondent 1: "*Diarrhoea can be caused by a dirty place or if the person who is giving the child food has dirty hands."*

Another caregiver indicated that her child suffered from diarrhoea after a bacterial infection, the respondent stated that:

Respondent 2: *"When I took my child to the doctor, the doctor said the diarrhoea was caused by a stomach infection."*

During an interview one caregiver believed that giving the cold food or milk and water might have caused the diarrhoea, this particular respondent indicated that:

Respondent 3: "*Normally it is the cold food or cold milk, if you give the child cold food, they can have diarrhoea."*

Other respondents echoed the same sentiment as the others. Emphasizing that the cause of diarrhoea is unhygienic practices by caregivers. They stated that:

Respondent 6: "*I think what causes diarrhoea in children is that eating without washing their hands."*

Respondent 7: "*Diarrhoea is mostly caused by poor hygiene and failure by the parent to properly boil the milk bottle; some parents fail to follow instructions given by their nurses."*

According to WHO[16] diarrhoea is usually a symptom of an infection in the intestinal tract, which can be caused by a variety of bacterial, viral and parasitic organisms.[16] Infection is spread through contaminated food or drinking-water, or from one person to the next as a result of poor personal hygiene practices.[16] Interventions to prevent diarrhoea, including safe drinking-water, use of improved sanitation and hand washing with soap can reduce disease risk.

4.11 Theme 2: Health Care Seeking Behaviours

Using Traditional Medicines

The use of home and traditional remedies is a common management practices of diarrhoea in the Havana informal settlement. Some participants indicated that they use traditional medicines or homemade remedies to take care of their children at home. They indicated that home remedies such as using mixtures of brown bread and water helps with diarrhoea. One respondent responded that:

Respondent 1: *"Sometimes you can manage it by using traditional methods; you can mix brown bread with water and give it to the child. That can cure the child."*

This is usually based on their previous experiences and suggestions from neighbours, friends or family member. One participant narrated that:

Respondent 4: "*I do not take my child to the hospital or clinic because the elders tell me to use traditional medicine".*

Use of traditional medicines in sub-Saharan Africa is widely practiced and this practice is generally acceptable in African culture. In the DHS for 2013 22% of under-five children with diarrhoea were treated with home remedies.[8] This is commonly happening in most parts of Africa. The World Health Organization (WHO) has initiated a diarrhoea disease control program to study traditional medicine practices and prevention approaches.[85] This may have valuable advantages in reducing mortality rates in developing countries due to diarrhoea.

Public clinics

The majority of the participants preferred to take their children public health centres or clinics, rather than to public hospital, or private doctor if the traditional and homemade remedies are not effective .Some participants mentioned that they take their child to the hospital because they do not know what to do to help their children when they are ill with diarrhoea .One participant stated that:

Respondent 3: "*Most people do not know how to treat diarrhoea that is why they choose to take the child to the clinic."*

Respondents 8: "*I am not sure about any practices, but we usually take the child to the clinic."*

The participants stated that their hospital also encourages them to visit public clinic first before they bring their child to the hospital. This is done to avoid overcrowding of public hospitals with acute conditions that can be managed at the clinic. The participant indicated:

Respondent 7: "*The hospitals encourage us to go to our local clinics".*

Affordability of the clinic was praised as to why participants prefer taking their children to the clinic. The majority of participant indicated that clinic affordability allows them to seek health for their children. They echoed the following statements:

Respondent 6: "*The public clinics are very cheap compared to private doctors, at the private doctors we are asked to pay at least N$400.00 dollars just for consultation and the medicines at the pharmacies cost at least N$50.00."*

Respondent 8: *"Clinics are cheaper not many people have medical aid to take their children to private doctors."*

Respondent 2: *"Sometimes at the clinic we are not asked to pay and most of the times we only pay only N$8.00".*

One respondent stated that they do not go to public health clinics because their quality of the health care is poor compared to private health facility. For instance, the respondent stated that:

Respondent 2: "*I never visited the public health clinic when my child had diarrhoea; I only go to the private clinics because they provide quality health care."*

Public health clinics are easier to access and more affordable compared to pharmacies and private doctors.[33] Public health clinics fall under the level of primary health care (PHC). The principles of PHC were first outlined in the Declaration of Alma-Ata in 1978; a seminal milestone in global health.[86] The main purpose of primary health care is to provide continuous and comprehensive care to the communities. The role of a primary

health care centre is to offer quality health and social services to the underprivileged sections of the society. Primary health care offers the first set of professional care to patients. According to WHO primary health care is best to provide health care and services to everyone, everywhere, is the most efficient and effective way to achieve health for all.[86] Having primary health care facilities is one of the steps towards reaching universal health coverage. Universal health coverage means that all individuals and communities receive the health services they need without suffering financial hardship.[87] It is therefore important for countries to strive for universal health coverage.

4.12. Theme 3: The logistical aspects of obtaining care

Long queues

The participants have stated long queues at the health facilities as one of the most challenging things that encounter when seeking health care. The majority of participants feel that the queues are too long and that waiting at the clinics is time consuming. Participants stated that they sometimes spend the whole day at the clinics. This is stated in the following statements:

Respondent 1: "*It takes long to get help from the clinics for instance you can join the queue very early in the morning but the clinic starts helping patients after 9 and by the time they help you it will be afternoon time already."*

Respondent 7: "*The queues at the clinic are very long because many people bring their children there, so it takes long before you get assistance."*

“The common trend of long queues and delayed services at healthcare centres across the country discourage those who are ill from visiting health centres, with some opting to lie sick at their homes instead of seeking medical help. “These were the words of former minister of Health and Social services DR Bernhard Haufiku.[89] The same sentiments are confirmed by other occurrences in other countries, Egbujie et al[88] indicated that long waiting times and long queues are a major source of dissatisfaction for patients attending public healthcare facilities in South Africa.[88]

Distance to the clinics

The participants also indicated that the clinics are far, and it is one of the reasons why the caregivers do not seek health care. Some participants indicated that they sometimes walk to the clinic to seek care. The participants narrated the following:

Respondent 5: *Some caregivers decide not to send their children to clinic because they live far from the clinic otherwise, I do not see other reasons why they decide not to take their child to the clinic.*

Respondent 7*: Sometimes we walk to the clinic because we do not have transport money and the clinic is far.”*

4.9 Summary

This chapter presented the findings of the study. The demographic characteristics of the respondents were presented then the following sections focused on presenting the study findings according to the research objectives. Tables, graphs, and charts were used to present the study findings while a small description followed thereafter. The last section of this chapter presented the qualitative study result; the data was collected through in-

depth interviews. This helped provide more insight into the study questions and helped strengthen the study findings. The following section focuses on the discussion, recommendations, and conclusion of the study.

CHAPTER 5: DISCUSSION

5.1 Introduction

The previous chapter presented the study findings according to the descriptive data analysis. The data was presented in the form of tables, graphs, and figures. This chapter discusses the study findings to give more meaning to the study results. The discussion was done by showing the link or contradiction between this study's results with previous studies which were reviewed in the literature review section of this study. This section comprises of 9 sub sections, the first section will focus on the discussion concerning the demographic profile of the respondents, and the following sections will provide a discussion of the study findings according to the research objectives while the last sections will provide the conclusion, recommendations, and area of further study.

5.2 Section A: Demographic Profile of the Caregivers

The study focused on children under the age of five in the Havana informal settlement. The study revealed that the majority (25.2) of the children where aged 2 years and 56.5 % of the children were male. A similar study by [58] which focused on assessing the prevalence of diarrhoea among children under-five years had a mean age of 2 with male dominating the study. The socio demographic profile also shows that the majorities (71.4%) of the caregivers were female and 55.10% had attained at least a secondary school education. This shows that the study respondents were educated enough to understand the purpose of the study. However most (42.86%) of the respondents were self-employed, and this also affected the health insurance status of the respondents, with the majority (77.55%) indicating that they had no medical aid. Because the majority of the respondents had no formal employment the income levels of the respondents were

between 0-5000 Namibian Dollars. The majority (42.18%) of the families had between 1 and 5 people in their household. Surprisingly, most (51.02%) of the respondents had access to flashing toilets and clean water and they had access to information through radio.

These findings show that most of the caregiver of children under 5 years in the Havana informal settlement had low-income levels which impacts their medical insurance status. However, the majority had access to flushing toilets and clean water. When asked to indicate where they accessed to the clean water the respondents stated that the City of Windhoek installed public toilets and water taps in the informal settlements. Other studies usually show lack of access to clean water, flushing toilets, access to information in informal settlements or slums for instance a Getachew et.al[59] revealed that children under 5 in Enderta Woreda Tigray Ethiopia had no access to clean water and the environment they lived in had no waste disposal services.[59] Getachew et.al [59] went on to reveal that environmental factors had an effect on the health of the child for instance the water storage method used, and that the odds of having diarrhoea were higher in children living in slums and low income families compared to those living in better suburbs and higher income families.[59] The demographic profile of the respondents was important in understanding the health seeking behaviour of the caregivers.

5.3 Prevalence of diarrhoea among under-five children in households in Havana informal settlement.

The first objective of the study sought to determine the prevalence of diarrhoea among under-five children in households in Havana informal settlement. This section focuses on presenting the discussion of the study findings.

5.3.1 Prevalence of Diarrhoea in Children under 5 years in Havana informal settlement

According to Getachew et.al[59] diarrhoea is responsible for 17 percent of all deaths of children under the age of five worldwide (approximately 2.5 million deaths each year). This is more than malaria, AIDS and measles combined.[59] The majority of these deaths (42%) take place in Sub-Saharan African.[59]

The study findings revealed that 55.1 % of the children did not contract diarrhoea in the last 3 months in Havana informal settlement. This can be attributed to access to clean water and flushing toilets within the Havana community. However, 44.9 % of the children under-five years who contracted diarrhoea is still a big number although this does not represent the bigger part of the children considered under this study. Several studies measured the prevalence of diarrhoea among children under –five years and their findings have shown a prevalence rate much lower than 47%. For instance, a study conducted by Owiti et al [60] found that only 21.5% of the children had contracted diarrhoea 14 days before the study. This was also supported by the findings from a study performed in Kashmir India whose results showed a prevalence rate of 25.5% in children younger than 5 years.

In addition, Owiti et al[60] found that the overwhelming majority of children (53.74 %) had no diarrhoea in the past three months Moreover, Owiti et al[60] reported that the incidence of diarrhoea among children under the age of five years old ranges between 18 and 31%t in different parts of the world, according to a few surveys. The current finding was also substantially higher than those observed in studies conducted in Nakemet, Western Ethiopia, and Jigjiga District, Somali Province, Eastern Ethiopia, which found diarrhoea rates of 28.9% and 27.3 % among children younger than 5 years old, respectively [.61] Nevertheless, the present study finding is higher than that of the Ethiopian demographic and health survey 2011 (EDHS), which found a prevalence of diarrhoea among children younger than 5 years old of 13% [62], as well as a finding from Mecha district, West Gojjiam, Ethiopia, which found a prevalence of diarrhoea of 18%. The current findings, on the other hand, were similar to those of a study carried out in rural households in North-western Burundi, where diarrhoea prevalence was 32.6% [63], and a study conducted in the Arba Minch area of south Ethiopia, where diarrhoea prevalence was 30.5 % [63]. Sample size, study length, environmental conditions, and socioeconomic and cultural differences can all contribute to the discrepancy.

5.3.2 Duration of the Diarrhoea Infection in Children under 5 years in Havana informal Settlement.

Diarrhoea usually lasts 3-5 days, but can extend up to 14 days, according to IIjima et al [64] and Aniugbo[67] it only lasts a few days after the vomiting ends.[64, 67] Slightly loose stools can persist for another week or so before returning to a regular pattern. Symptoms will often linger a long time [65]. The present study results revealed that most (85.07 %) had diarrhoea for one week. This is consistent with a study in which it is indicated that

"acute infective diarrhoea is described by a brief incubation time, a rapid onset manifested by irregular watery or loose stools, and a full recovery within 14 days."[58]

The majority of diarrheal diseases are caused by self-limiting intestinal infections which last 5–7 days. Acute diarrhoea is the term used to describe these episodes (AD). Diarrheal outbreaks are graded as AD if they last less than 14 days and as "persistent or recurrent diarrhoea" if they last longer than 14 days, according to Desta et al.[66] A group of infants, though, develops acute onset diarrhoea that lasts 7 days or longer but not longer than 14 days. This is known as persistent diarrhoea (ProD) and typically means an episode that lasts longer than a normal acute infectious diarrhoea episode. In this study, we describe ProD as an acute episode of diarrhoea that lasts 7 to 13 days, and chronic diarrhoea (PD) as diarrhoea that lasts 14 days or longer. Based on this it can be concluded that the children that were infected with diarrhoea had no prolonged diarrhoea.

5.3.3 Clinical Manifestations in the Infected Child

According to IIjima et al[67], healthcare staff in Malawi are qualified and resourced to diagnose all sick children systematically for main signs and symptoms and handle them appropriately under the Malawi Integrated Management of Childhood Illness.[67] The general risk symptoms of diarrhoea, such as abdominal discomfort and vomiting, are measured in all children aged 2 to 59 months. This study investigated the clinical manifestations in children with diarrhoea and the results showed that the clinical manifestation of diarrhoea of children under the age of 5 years in Havana informal settlement included dehydration while others experienced irritability, decreased activity, stomach pain and crying. Initial correct determination of hydration status in children

with diarrhoea is a difficult yet necessary process. Although children with little dehydration may be handled as outpatients and some with any dehydration can be managed with oral rehydration solution alone in a primary care environment, some with extreme dehydration need hospital admission and intravenous fluid therapy. Patients may be harmed by improper triaging of patients based on a misclassification of their hydration state, which may result in either inadequate care of their deficiency or unwanted and aggressive procedures. Numerous experiments have shown the limited usefulness of laboratory testing in determining hydration status; individual clinical results have poor sensitivity. Many scholars argue that the evaluation of clinically significant dehydration can depend on a mixture of clinical signs. [59] ,[68] present one of the first empirically derived and tested behavioural frameworks for assessing dehydration of children with severe diarrhoea, which is intended for usage by healthcare professionals in resource-constrained environments.

5.3.4 Causes of diarrhoea in Children under -five years in Havana informal settlement.

Diarrhoea is triggered by a mix of bacterial, viral, and parasitic infections. The overwhelming majority of incidents of diarrhoea in Europe, North America, and other developing countries are triggered by viral infections of distinct winter seasonality.[68] Enteric bacteria and parasites are more common in developed countries with bad hygiene and sanitation, and these agents usually peak during the summer months [68].

This present study revealed that diarrhoea is mainly (38.8%) caused by not washing of hands among children aged below years in Havana informal settlement. This was also supported by 27.9% who indicated that diarrhoea is as result of unhygienic living

conditions in Havana. This is in line with the findings of Kobayashi et al [69], who stated that variations in the epidemiologic trends of bacterial and viral diarrhoea agents offer clues to their modes of dissemination and have implications for disease prevention.[69] Since bacterial infections are common in developed nations, faecal–oral transmission is one of the most effective forms of transmission, which is also aided by inadequate hygiene and sanitation. This is also in line with the findings of Anteneh et al[58], who discovered that pathogens propagate due to inadequate hygiene.[58] They concluded that the fact that some agents, such as rotavirus, infect virtually all children in both developing and developed countries by the time they reach the age of three means that transmission through other pathways, such as fomites and respiratory secretions, may occur.[58] It also means that, as rates of diarrheal mortality decrease and infectious agents become more prevalent, conventional hygiene and sanitation interventions will not be effective in reducing disease incidence. Vaccines, for example, are more likely to be successful in preventing certain diseases. According to Khalakheti et al[68] "the prevalent bacterial pathogens differ with the child's age and even over time, showing both seasonal and secular variations, as well as regional variance."[68]

While each child's experience is distinct, diarrheagenic Escherichia coli, Shigella spp., Campylobacter spp., Vibrio spp., and Salmonella spp. are among the most widely known bacterial causes of diarrhoea in small children." Rotavirus was the most regularly diagnosed enteropathogenic in a reported summary of 73 reports of children seeking treatment for diarrhoea in 33 nations, with a median of 20% [68]. Bacterial infections predominated overall, with enterotoxigenic E. coli (median 11%), Campylobacter (median 7%), and Shigella species (median 5%) becoming the most frequently reported

agents. Vibrio spp. (including Vibrio cholerae O1, the source of cholera) and other diarrheagenic E. coli (including enterohemorrhagic E. coli, such as E. coli O157:H7) are two less often known but clinically significant bacterial pathogens [68]. It's worth mentioning that certain enteric pathogens trigger mild or asymptomatic infections, and that asymptomatic carriage may last for a long time, particularly in young children. As a result, finding a pathogenic germ, virus, or disease in a stool sample from a child does not often mean that it is the source of the illness [68]. Nonetheless, these findings provide some insight into the diversity and relative significance of the numerous enteric pathogens that afflict countless children born and raised in unfitting 21st-century environments.[68] Handwashing with soap on a regular basis and preventing children from playing in filthy areas can help to minimize diarrhoea transmission in informal settlements.

According to the qualitative data findings, diarrhoea in the communities is caused by drinking contaminated water, not washing of hands, and giving children cold food. This is consistent with Hussein[77] who in his 2017 study also found that that drinking untreated water contributed to the prevalence of diarrhoea in pre-urban communities. The study also found that the diarrhoea in children under five years was caused by bacteria infection.[77] Similarly in 2018 Kakulu [78] found that failure by children to wash their hands contributed to them becoming ill with diarrhoea. It was found that children come into contact with pathogens when playing on the mud of sand floor.[78]

5.3.5 Action taken by caregiver to help infected Child.

According to Kobayashi et al [69], caregivers' prevention practices are relevant in preventing diarrhoea-related morbidity and mortality in children. As a result, the study's goal determines what caregivers did to protect the infected child. Enhanced under-five diarrhoea preventive practices might support the whole population in the study region. In this study, the plurality of caregivers (53.06 percent) did little to treat the infected child. In their research, Kobayashi et al [69] found that caregivers who did not intervene to aid their sick child did so because they were not knowledgeable about diarrhoea treatment at home. Despite the findings of this survey, Kobayashi et al[69] discovered that the majority of caregivers in their study took steps to support the infected child. The plurality of caregivers (55%) said they went to the doctor, although just 11.3 % said they produced homemade drinks for the period of the diarrhoea and others said they used conventional herbs.[69] In their research, Mosweu et al[70] discovered that the majority of caregivers (65%) have a strong understanding of the triggers of diarrhoea yet limited understanding of the symptoms of dehydration. Furthermore, they[70] discovered that most caregivers were not following WHO guidelines for diarrheal home management. Their research also discovered that caregivers with adequate awareness of diarrhoea causes were more willing to include water and maintain feeding during diarrhoea, although not ORS. [70]

5.4 Caregiver's health seeking behaviour for diarrhoea among children under-fives in Havana informal settlement.

The second objective of the study sought to determine the caregiver's health seeking behaviour for diarrhoea among children under five in the Havana informal settlement. The following section presents the discussion of the study findings.

5.4.1: Caregiver's health seeking behaviour

Disease recovery is often determined by clinicians' knowledge of disease, prompt decision-making, and receiving treatment from a professional health practitioner. Diarrheal causes preventable morbidity and mortality due to a lack of illness identification by family caregivers and a pause in receiving treatment from qualified professionals. The study findings revealed that the majority (85.03%) of the caregivers would seek medical care if the child were infected with diarrhoea. This might be attributed to high education levels within the respondents which might mean they understood the danger of diarrhoea in children, causing them to consult health facilities. This is consistent with Sha et al[71] who found that the majority of the caregivers opted to consult local health clinic when the child became sick with diarrhoea.

The qualitative approach results also revealed that caregivers preferred taking their children to the clinic or using home remedies as the common diarrhoea management practice. The caregivers who had no knowledge about home remedies chose to take their children to the clinic while those who stated that they knew how to treat diarrhoea decided not to take their child to the clinic. This was also confirmed by Sha et al [71] in their 2020 study, who found that 65% of the respondents said it was not easy for them to treat diarrhoea at home.

5.4.2 Health Facilities Consulted

The children's caregivers opted to consult public health clinics compared to other health facilities like government hospitals, pharmacies, and private doctors. This was represented by (46.27 %) of the respondents. The majority of caregivers are not on medical aid and are not formally employed, influence on their choice of health facility consulted. Public health clinic are easier to access and more affordable compared to pharmacies and private doctors.[33] suggested that the health seeking behaviour is preceded by a decision making process that is further influenced by individual behaviours, community beliefs and the health provider's related characteristics and behaviours.[33] As such, health seeking behaviours among individuals, community, and group ages is not similar. Studies have shown that visits to the hospital or clinics were the most common sources of health care sought, followed by visits to the pharmacies and traditional healers .[34] Different factors such as good service delivery, proximity of health care facilities, and affordability are among the major reasons factors affecting HSB. Furthermore, the respondents indicated during the in-depth interviews that they preferred taking their children to public health clinics because they are provided free health care services unlike the private clinics. [33] also stated that different factors such as good service delivery, proximity of health care facilities, affordability are among the major reasons factors affecting health seeking behaviour. The qualitative study findings revealed that caregivers who did not seek medical care outside their homes because they live far from clinics; they have knowledge on diarrhoea treatment and due to traditional beliefs. This is in accordance with Njuguna[78] who reported in 2014 that caregivers used various herbs to treat diarrhoea in children due to traditional beliefs.[78] Njuguna[78] also

highlighted that caregiver made use of herbs such as Aloe Vera and some tree roots such as Akech.

5.5 Association between Socio-demographic characteristics and health care seeking behaviours of caregivers of under-fives in Havana informal settlement.

The result indicates that there is no significant association between health seeking behaviour and the following variables: caregiver's marital status, caregiver 'age, Employment status, Health insurance status and household income. The study results shows that Caregiver's Marital Status ($p=0.474$), Caregiver's Age ($p= 0.478$), Employment Status ($p=0.95$), Health Insurance Status ($p=0.209$), Household Monthly Income Range ($p=0.307$) and Caregiver's Gender ($p=0.548$) had a p-value higher than the critical value or criterion for statistical significance ($p\leq 0.05$).This is contrary to several studies who found an association between demographic profile and health seeking behaviour among care givers, for instance Babilola et al[72] used the logistic regression analysis to investigate the relationship between the propensity of public health care, with age, gender and education from the field data through odds ratio and 95 % confidence interval.[72] The results showed an association between the level of education and the propensity to use public health facilities.[72] Similarly, Hashi[73] in 2016 found a strong association between education of the caregivers and health care seeking outside for children under-five years who have diarrhoea.[73] This means health seeking behaviour can be influenced by socio demographic profiles, for example, education can determine the behaviour of the care giver in terms of the health facility consulted and the time taken to respond to a child's illness. Level of income or employment status

influences the type of health facility visited, caregivers with a higher income tend to consult private doctors compared to those with less income who opt for more affordable health facilities.

5.6 Caregiver's knowledge on diarrhoeal disease among children under-five years of age in Havana informal settlement.

The last objective of the study assessed the caregiver's knowledge on diarrhoeal disease among children under-five years of age in Havana informal settlement. The following section presents the discussion of the study findings.

5.6.1 Caregiver's Knowledge of diarrhoea

The study findings showed significant (77.55%) of the participants knew the meaning of diarrhoea. This is in line with the findings of [74], who observed that caregivers in refugee camps had strong (68 %) awareness of childhood diarrhoea. Some surveys however have shown the contrary. For example, Mohammed et al [75] found that just 32% of respondents have strong knowledge of diarrhea.[75] This disparity may be attributable to socioeconomic differences among study participants. The qualitative study findings also confirmed that the caregivers in the community had knowledge about the common diarrhoea management practices. Kakulu[77] found that caregivers were familiar with ORS and that it contributed water and essential minerals to the child's body.[77] This is in line with the findings of this study which reveals that caregivers had knowledge on common diarrhoea management practices.

5.6.2 Danger Signs of Diarrhoea

The study findings showed a good understanding of the danger signs of diarrhoea among caregivers of children under-five years in Havana informal settlement. This was represented by 43.54% of the respondents who indicated that repeated vomiting and marked thirst were danger signs of diarrhoea. This was also confirmed by Mohammed et al[75] who in 2016 suggested that the danger signs of diarrhoea were vomiting, dehydration and even death.[7] This was also supported by Kobayashi et al[69] who stated that previous studies have reported that nursing mothers have high knowledge of causes, sign, and symptoms of diarrhoea.

5.6.3 Knowledge of Oral Rehydration Solution

This present research showed that the caregivers of children under 5 years in Havana informal settlement had high knowledge about the preparation of ORS; they had knowledge on how to administer the ORS in terms of the frequency and knew what ORS is. This is consistent with Kakulu ,2018 who found that half of the respondents in a study done in rural Zimbabwe had good knowledge ORS.[77] The present study results are encouraging because they show that the caregiver have the capabilities of treating their children's diarrhoea, unlike in other studies which produced disappointing results, where Kobayashi *et al*[69] found low knowledge levels of knowledge ORS, where only 9.55% of the mothers had knowledge about the preparation of ORS.

5.7. Summary

This chapter provided a comprehensive discussion of the study findings. The discussion linked or contradicted this study's results with previous studies reviewed in the study's

literature review. The chapter highlights the similarities of the findings to other studies as well the differences in the findings in comparison to other studies.

6. CONCLUSION AND LIMITATIONS

6.1 Conclusion

The study concluded the following:

Objective 1: To determine the prevalence of diarrhoea among under-five children in households in Havana informal settlement –Tobias Hainyeko constituency Windhoek.

The prevalence of diarrhoea among under-five children is high in the Havana informal settlement. Half of the children had a diarrhoea episode three months before the study was conducted. This is despite the accessibility to clean water, flushing toilets and high education levels among the caregivers. Diarrhoea in Havana informal settlement is mostly attributed to poor hygiene or lack of proper hygiene practices. Practices like drinking contaminated water, not washing hands, and giving children cold meals were presumed to be the most common causes of diarrhoea in the community.

Objective 2: To explore the caregivers experience on health care seeking behaviour.

About half of the caregivers in Havana informal settlement sought care when their child was suffering from diarrhoea. Some participants in Havana informal settlement presume diarrhoea to be an easy to treat condition, thus they don't see the need to seek care. The majority of the participants indicated that they would seek care if their child became ill with diarrhoea in the future. The caregivers in Havana informal settlement prefer clinics

as their first point of call for diarrhoea treatment. The caregivers preferred clinics because of their affordability.

Objective 3: To determine association between Socio-demographic characteristics and health care seeking behaviours of caregivers of under-fives in Havana informal settlement.

The study found no significant association between health seeking behaviour and the following variables: caregiver's marital status, caregiver 'age, employment status, health insurance status and household income. The health seeking behaviour of the caregivers of the Havana informal settlement is not depended on any of the above variable.

Objective 4: To determine caregiver's knowledge on diarrhoeal disease among children under-five years of age in Havana informal settlement.

Most of the respondents understood what diarrhoea is and showed substantial knowledge of the danger signs of diarrhoea. The caregivers of children under 5 years in Havana informal settlement were knowledgeable about the preparation of ORS; they had knowledge on how to administer the ORS in terms of the frequency and knew what ORS is. Most caregivers of Havana informal settlement were knowledgeable on how to manage their children's diarrhoea.

6.2 Limitations of the study

The limitation of this study relates to the use of self-report methodology. The limitations of this method are declining response rates which as a limitation, accentuates the problem of response bias. To improve the quality of the responses, the language of the questionnaire content was kept simple and brief to enable participants to fully

understand the questions. Participants also might give responses that are socially acceptable and not necessarily their true responses. To improve these aspect participants were thoroughly informed about the research intentions, anonymity in data collection and confidentiality in data collection.

Another limitation was that; due to the ongoing pandemic some eligible participants were not willing to participate in fear of COVID-19. COVID-19 restrictions also increased the duration time of the study. This affected the study negatively as it was difficult to recruit the sample of the participants initially calculated for the study. This translated into increased use of funds as the researcher had to make numerous visits to the settlement than expected. To counteract the limitations, proper prevention measures for COVID-19 were implemented. The researcher purchased extra masks and sanitizers to put participants at ease, social distancing was maintained. The data collection was also postponed during lockdown periods and started again where restrictions were relaxed.

6.3 Recommendation

Based on the findings the study recommends the following:

6.3.1 Recommendation to the Ministry of Health and Social Services

- The study found that the prevalence of diarrhoea is high in under -five children in Havana Informal settlement. Therefore, the study recommends that the Ministry of Health and Social Services raise awareness about diarrhoea in informal settlements and provide training on home-based treatment in line with

the WHO guidelines. The Ministry should empower community health workers to effectively train caregivers on knowledge and practices in management of diarrhoea. This will improve caregiver's knowledge about diarrhoea and as a result reduce the prevalence of diarrhoea in Havana.

- The majorities of the caregivers are unemployed and might not afford private healthcare insurance. Therefore, free access to public health facilities must create for children infected with diarrhoea.

6.3.2 Recommendations to the Caregivers

The caregivers within the Havana community must ensure that their children are not exposed to unhygienic environments. Cooking areas and utensils must be kept clean to ensure that the children are not fed contaminated food. The highest standards of hygiene must be maintained within and outside the house to protect the child from infection.

6.3.3 Recommendation to the University of Namibia

This study only assessed the health seeking behaviour for caregivers, in regard to treating diarrhoea among children under-five years of age in Havana informal settlement in Windhoek, Namibia. Future researchers should focus on environmental factors that contribute to high prevalence of diarrhoea in Havana. Further studies should be also conducted in other informal settlements around the country.

6.4. Summary

The last chapter of the study contains the conclusion of the study. In this chapter the researcher concluded by providing an overview of the findings in relation to the study objectives. The researcher highlighted the limitations and struggles that were encountered during the study and indicated how these limitations were mitigated. This last also provided the recommendations for caregivers, the Ministry of Health and Social Services, and the University of Namibia.

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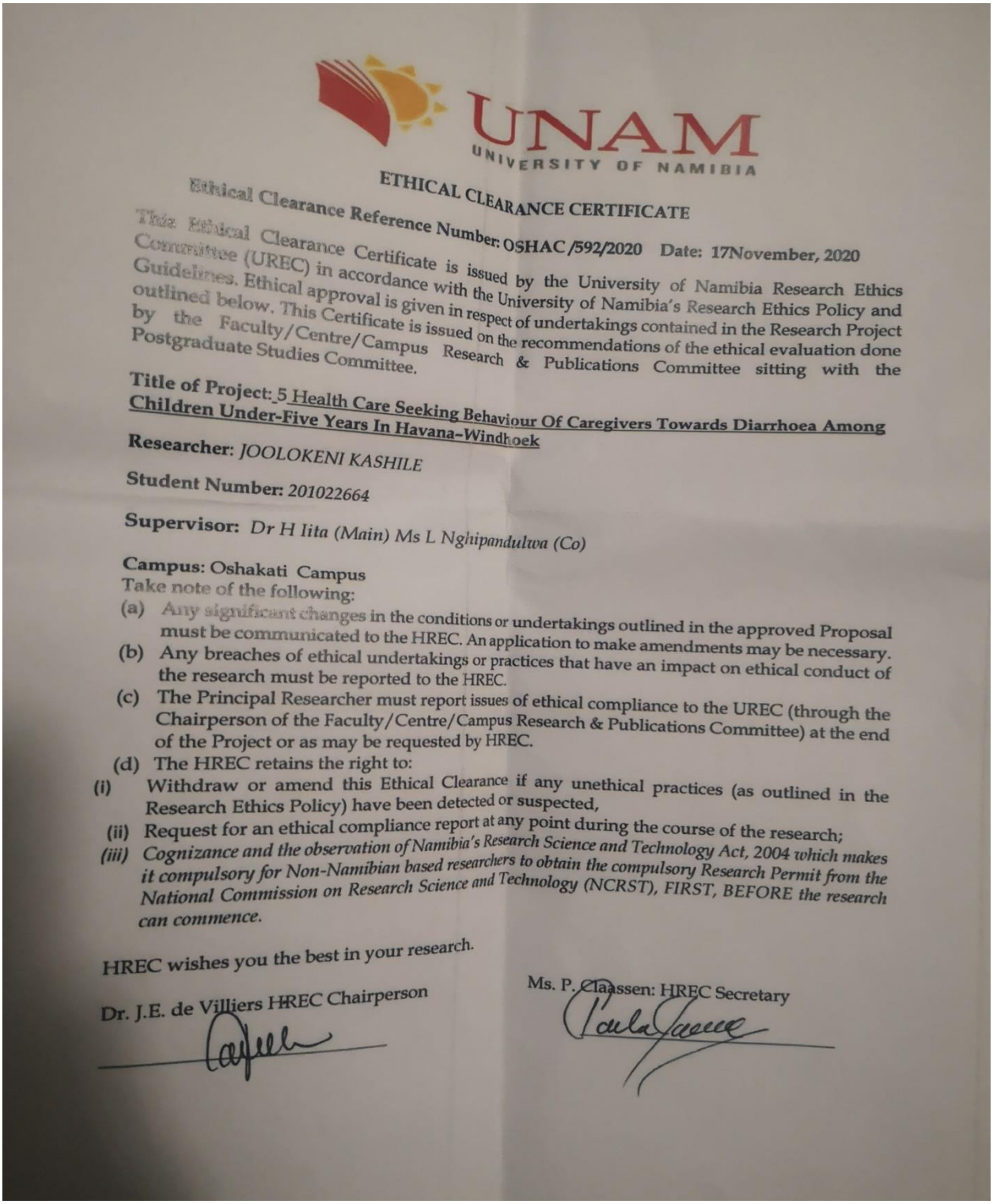
ANNEXURE 1: UNAM ETHICAL CLEARANCE CERTIFICATE



UNAM
UNIVERSITY OF NAMIBIA

ETHICAL CLEARANCE CERTIFICATE

Ethical Clearance Reference Number: OSHAC /592/2020 Date: 17November, 2020

This Ethical Clearance Certificate is issued by the University of Namibia Research Ethics Committee (UREC) in accordance with the University of Namibia's Research Ethics Policy and Guidelines. Ethical approval is given in respect of undertakings contained in the Research Project outlined below. This Certificate is issued on the recommendations of the ethical evaluation done by the Faculty/Centre/Campus Research & Publications Committee sitting with the Postgraduate Studies Committee.

Title of Project: 5 Health Care Seeking Behaviour Of Caregivers Towards Diarrhoea Among Children Under-Five Years In Havana–Windhoek

Researcher: *JOOLOKENI KASHILE*

Student Number: *201022664*

Supervisor: *Dr H Iita (Main) Ms L Nghipandulwa (Co)*

Campus: Oshakati Campus

Take note of the following:

(a) Any significant changes in the conditions or undertakings outlined in the approved Proposal must be communicated to the HREC. An application to make amendments may be necessary.

(b) Any breaches of ethical undertakings or practices that have an impact on ethical conduct of the research must be reported to the HREC.

(c) The Principal Researcher must report issues of ethical compliance to the UREC (through the Chairperson of the Faculty/Centre/Campus Research & Publications Committee) at the end of the Project or as may be requested by HREC.

(d) The HREC retains the right to:

(i) Withdraw or amend this Ethical Clearance if any unethical practices (as outlined in the Research Ethics Policy) have been detected or suspected,

(ii) Request for an ethical compliance report at any point during the course of the research;

(iii) Cognizance and the observation of Namibia's Research Science and Technology Act, 2004 which makes it compulsory for Non-Namibian based researchers to obtain the compulsory Research Permit from the National Commission on Research Science and Technology (NCRST), FIRST, BEFORE the research can commence.

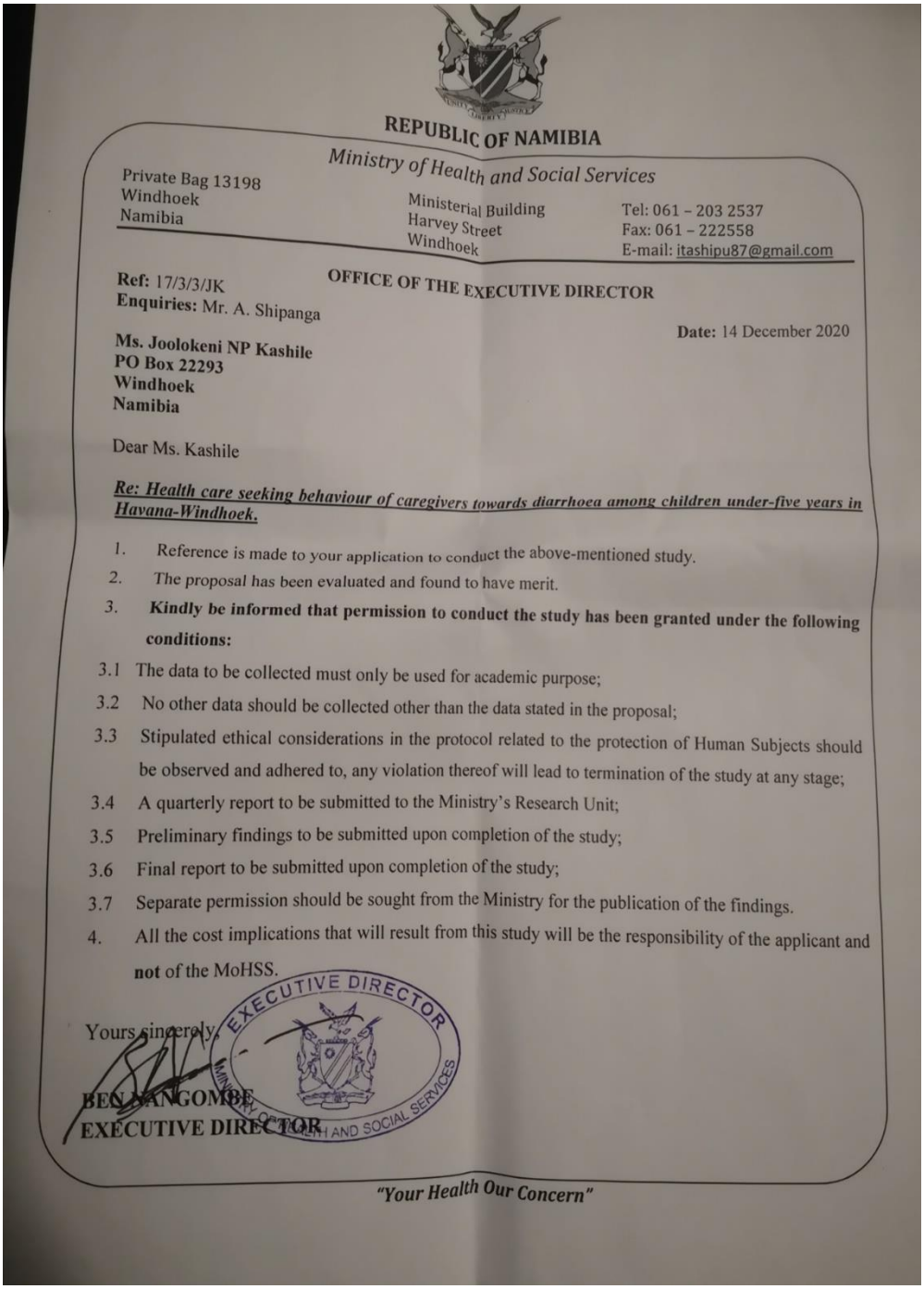
HREC wishes you the best in your research.

Dr. J.E. de Villiers HREC Chairperson

Ms. P. Claassen: HREC Secretary

ANNEXURE 2: MINISTRY OF HEALTH AND SOCIAL SERVICES

APPROVAL



REPUBLIC OF NAMIBIA

Ministry of Health and Social Services

Private Bag 13198
Windhoek
Namibia

Ministerial Building
Harvey Street
Windhoek

Tel: 061 – 203 2537
Fax: 061 – 222558
E-mail: itashipu87@gmail.com

OFFICE OF THE EXECUTIVE DIRECTOR

Ref: 17/3/3/JK
Enquiries: Mr. A. Shipanga

Date: 14 December 2020

Ms. Joolokeni NP Kashile
PO Box 22293
Windhoek
Namibia

Dear Ms. Kashile

Re: Health care seeking behaviour of caregivers towards diarrhoea among children under-five years in Havana-Windhoek.

1. Reference is made to your application to conduct the above-mentioned study.
2. The proposal has been evaluated and found to have merit.
3. **Kindly be informed that permission to conduct the study has been granted under the following conditions:**

3.1 The data to be collected must only be used for academic purpose;
3.2 No other data should be collected other than the data stated in the proposal;
3.3 Stipulated ethical considerations in the protocol related to the protection of Human Subjects should be observed and adhered to, any violation thereof will lead to termination of the study at any stage;
3.4 A quarterly report to be submitted to the Ministry's Research Unit;
3.5 Preliminary findings to be submitted upon completion of the study;
3.6 Final report to be submitted upon completion of the study;
3.7 Separate permission should be sought from the Ministry for the publication of the findings.

4. All the cost implications that will result from this study will be the responsibility of the applicant and **not** of the MoHSS.

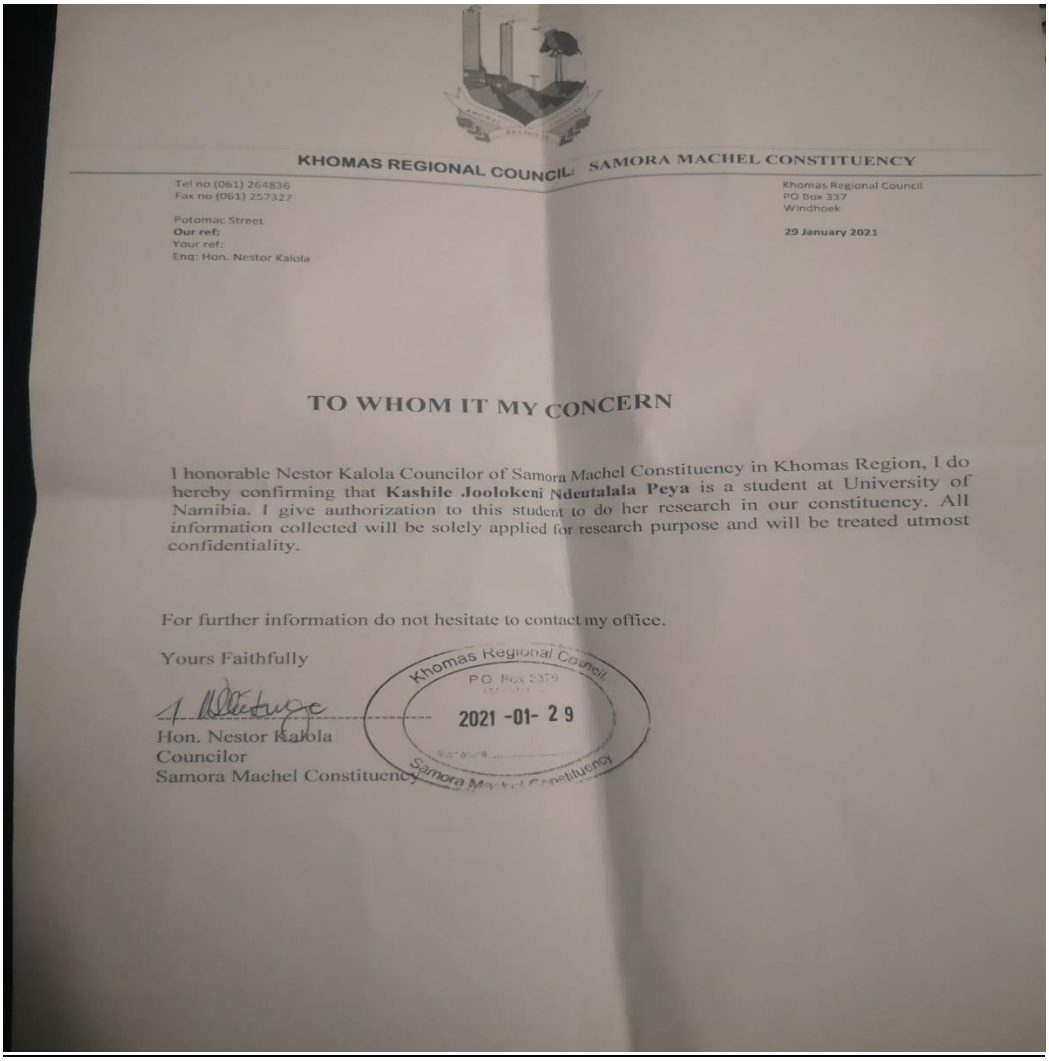
EXECUTIVE DIRECTOR
MINISTRY OF HEALTH AND SOCIAL SERVICES

Yours sincerely,

BEN NANGOMBE
EXECUTIVE DIRECTOR

"Your Health Our Concern"

ANNEXURE 3: PERMISSION LETTER FROM SAMORA MACHEL CONSTITUENCY



KHOMAS REGIONAL COUNCIL: SAMORA MACHEL CONSTITUENCY

Tel no (061) 264836
Fax no (061) 257327

Potomac Street
Our ref:
Your ref:
Enq: Hon. Nestor Kalola

Khomas Regional Council
PO Box 337
Windhoek

29 January 2021

TO WHOM IT MY CONCERN

I honorable Nestor Kalola Councilor of Samora Machel Constituency in Khomas Region, I do hereby confirming that **Kashile Joolokeni Ndeutalala Peya** is a student at University of Namibia. I give authorization to this student to do her research in our constituency. All information collected will be solely applied for research purpose and will be treated utmost confidentiality.

For further information do not hesitate to contact my office.

Yours Faithfully

Hon. Nestor Kalola
Councilor
Samora Machel Constituency

Khomas Regional Council
P.O. Box 2379
2021 -01- 29
Samora Machel Constituency

ANNEXURE 4: QUESTIONNAIRE

HEALTH CARE SEEKING BEHAVIOUR OF CAREGIVERS FOR CHILDREN UNDER FIVE YEARS TOWARDS DIARRHOEA IN HAVANA, WINDHOEK

Student name: Joolokeni N.P Kashile

Student number: 201022664

Cell Number : 0814130897

Email : joolokeni20@gmail.com

I am Joolokeni Kashile a student at the University of Namibia. I am pursuing a Master's Degree in Public health. As partial fulfilment of attaining my degree I am required to conduct research and write a mini thesis. I am doing research on the health seeking behaviours of mothers and caregiver towards diarrheal disease of children less than five years in Havana Informal settlement.

The results from the study will help us see the health needs of the residents and hopefully create initiative on how better the people living in informal settlements can be served health wise. Participation in this part of the study is voluntary. Be assured that information provided in this study will be treated as confidential and will only be used for the purpose of the study. Your participation or non-participation will not disadvantage you in any way.

Thank you.

SECTION A: PARTICIPANT 'S SOCIO-DEMOGRAPHIC INFORMATION

1. Are there any children under-five living in this household? Yes No

   If "no" proceed to next household.

   If "yes" go to question 2

2. How many under-five children do you have in your household?

   ……

   ….

   If the household has more than one child under-five years, the caregiver should answer in reference to the youngest child.

3. How old is the child? ……. months

4. What is the gender of the child? Male ☐ Female ☐

5. What is your relation to the child

   Mother ☐ Father ☐ Grandmother ☐ Grandfather ☐ Aunt ☐

   Sister ☐ Other ……..

6. Caregiver's gender ? Male ☐ Female ☐

7. Caregiver's marital status : Single ☐ Married ☐ Widowed ☐ Divorced ☐

   Cohabitating ☐

8. Caregiver's s age :

   18-25 years old ☐

   26-35 years old ☐

   36-59 years old ☐

   60 years and older ☐

9. Religion: Christian ☐ Muslim ☐ Atheist ☐ African tradition ☐ other

   ……

10. Level of Education: Primary ☐ Secondary ☐ Tertiary ☐

11. Employment status : Formally Employed ☐ Self-employed ☐ Unemployed

    ☐

12. Health insurance status: Medical aid ☐ No Medical Aid ☐

13. Household Monthly Income range:

    A) 0-5000 ☐ B) 6000- 10000 ☐ C) 11000- 15000 ☐ 16000 and more ☐

14. Numbers of household members.

1-5 member ☐ 5-10 members ☐ more than 10 members ☐

15. Which of the following do you have access to:

a) Radio

b) Television

c) Daily newspaper

d) Internet

16. Do you have access to clean water

Yes ☐ No ☐

17. Do you have a flushing toilet at home?

Yes ☐ No ☐

If no where do you relieve yourself?

(Specify)……

……

……

B. KNOWLEDGE ON DIARRHOEA DISEASE, PREVENTION AND MANAGEMENT.

18. What is diarrhoea?

a. Frequent passing of watery faeces (3 or more time)

b. Frequent passing of normal faeces

c. Blood in faeces

d. Greenish faeces

e. Others

(specify)……

f. Do not know

19. What are the common causes of diarrhoea? You can choose more than one option

a. Consuming unclean water

b. Eating contaminated food

c. Not washing hands regularly

d. Unhygienic living environment

e. Others ……

f. Do not know

20. What are the danger signs of diarrhoea? **You can choose more than one** option

a. Becoming weak

b. Repeated vomiting

c. Fever

d. Blood in faeces

e. Marked thirst for water

f. Others

(specify)……

…..

g. Do not know

21. How do you prevent diarrhoea among your children?

……

……

……

22. Do you know what oral Dehydration solution (ORS) is? **If no got to section C**

Yes ☐ No ☐

23. How is ORS prepared?

a. 1 sachet of ORS- 300 ml of water

b. 1 sachet of ORS- 500 ml (1 small size of mineral bottle) of water

c. 1 sachet of ORS- 600 ml of water

d. 1 sachet of ORS- 1000 ml (1 l) of water

e. 1 sachet of ORS- 1500 ml (1.5 l) of water

24. How often should ORS be given?

a. Once a day 50

b. 2–3 times a day

c. Whatever child wants to drink

d. After the passing of very loose stool

25. How long should the mixed ORS last?

a. 24 h. (1 day)

b. 48 h. (2 days)

c. 72 h. (3 days)

d. 96 h. (4 days)

SECTION C: OCCURRENCE OF DIARRHOEA AND HEALTH SEEKING BEHAVIOUR

Part A

26. Has your child had diarrhoea in the last three months? **(IF your answer is no go to Section C part B)**

Yes ☐ No ☐

27. How long did the diarrhoea last for?

One week or less ☐ more than one week ☐ Two weeks or more

28. What clinical manifestations did the child have? You can choose more than one clinical manifestation.

a. Increased thirst
b. Irritability
c. Decreased activity or lethargy
d. Dehydration (Sunken eye
e. Blood in faeces
f. Others

(specify)……
…

29. What do you think caused the diarrhoea?

a. Teething
b. Evil eye

c. Contaminated water or food

d. Bacteria or Parasite

e. No idea

f. Others (specify)

30. Did you seek medical care for the child outside your home? **(If no answer 5b and questionnaire ends with this question, if yes proceed to question 6).**

a. Yes ☐ No ☐

b. If you did not seek care outside your home, what were the reasons?

1. Thought the child will heal without treatment.
2. Unable to find transport
3. Cost for travel high
4. Cost for treatment high
5. Long distance to the health facility
6. Other children at home could not be left alone
7. Do not know where to seek health care
8. No treatment for the sickness
9. Others ……..

31. How long did it take you to seek healthcare for your child's illness?

a. On the same day, the illness started.

b. After one day of the illness

c. After two days of the illness

d. After three or more days of the illness

32. Where did you seek the help?

a. Public health clinic

b. Hospital

c. Private Doctor

d. Pharmacy

e. Home remedies

f. Traditional healer

g. Others **(please specify)**

……

33. What was the reason for choosing that facility? Tick all the options that apply to you.

a. It is near ☐

b. It is cheaper ☐

c. It is saves time ☐

d. The quality of the service is good ☐

e. Symptoms were major. ☐

f. Other (specify)

……

34. What formal health facility do you as a mother / caregiver prefer?

Government health facility ☐ Private health facilities

35. Why do you prefer the previously chosen facility

……

……

……

……

Part B

Now I am going to ask what you might do if your child have severe diarrhoea.

36. If your child had diarrhoea (more than three watery stools in 24-hour period) would you seek care?

Yes ☐ No ☐

If no, please tell us why you will not seek care**. (If yes go to question 37)**

……

…….

……

…….

……

……

37. Where would you seek health care?

a) Hospital
b) Public health clinic
c) Private Doctor
d) Pharmacy

e) Home remedies

f) Traditional healer

g) Others (please specify)

……

38. Why would you seek care from the response you indicated in question 37?

……

……

……

……

……

ANNEXURE 5: IN-DEPTH INTERVIEW GUIDE

HEALTH CARE SEEKING BEHAVIOUR OF CAREGIVERS FOR CHILDREN UNDER FIVE YEARS TOWARDS DIARRHOEA IN HAVANA, WINDHOEK

STUDENT NUMBER: 201022664

PRINCIPAL INVESTIGATOR: JOOLOKENI N.P KASHILE (9302120017)

ADDRESS : P.O BOX 22293 WINDHOEK, NAMIBIA**.**

EMAIL: JOOLOKENI20@GMAIL.COM

CONTACT NUMBER: 0814130897

Items required

- Pen
- Note pad
- Tape recorder

1. Introduction: The interviewer greets and introduces themselves to the participant. The interview then explains the purpose of the study to the participant. The interviewer also explained the rights of the participant and obtain consent from participant. The participant sign consent form and then the interview will begin. The interviewer then asks open-ended questions and if relevant asks probing questions focusing on the objectives of the study.

2. Participant questions.

NB: The questions of the interview guide were informed by the results of the data collected from the questionnaire. The questions sought to explain and answer questions arising from the statistically significant results yielded in phase I. In the first phase of the interview, it was found that quite a large percentage of participants did not seek health care when their child was sick with diarrhoea. The second phase seeks to explore why health care was not sought and to identify the factors that contribute to caregivers not seeking health care. The interviews will also seek to explore the common management practices of diarrhoea in the community.

1. In your own opinion what causes diarrhoea in children in your community?
2. In cases of diarrhoea disease in children under-five years of age, what are the common management practices in the community?
3. Do you think caregivers in the community have knowledge on proper diarrhoeal management?
4. In your own opinion why do caregivers do not seek medical care outside their home when their children are sick with diarrhoea?
5. What challenges do you experience as a caregiver when seeking health care when your child has diarrhoea?
6. In your own opinion what are the implication of not seeking health care when your child is sick with diarrhoea?
7. Why do you think caregivers prefer public health clinics for diarrhoeal health care when their children are sick?

ANNEXURE 6: PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM

TITLE OF THE RESEARCH PROJECT: HEALTH CARE SEEKING BEHAVIOUR OF CAREGIVERS FOR CHILDREN UNDER FIVE YEARS TOWARDS DIARRHOEA IN HAVANA, WINDHOEK

STUDENT NUMBER: 201022664

PRINCIPAL INVESTIGATOR: JOOLOKENI N.P KASHILE (9302120017)

ADDRESS : P.O BOX 22293 WINDHOEK, NAMIBIA**.**

EMAIL: JOOLOKENI20@GMAIL.COM

CONTACT NUMBER: 0814130897

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the study staff /Researcher any questions about any part of this project that you do not fully understand. It is especially important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary,** and you are free to decline to participate. If you say

no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the Research Ethics Committee at The University of Namibia and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and Namibian National Research Ethics Guidelines.

1. What is this research study all about?

I am doing research on the health seeking behaviours of mothers and caregiver towards diarrheal disease of children less than five years in Havana Informal settlement. The results from the study will help us see the health needs of the residents and hopefully create initiative on how better the people living in informal settlements can be served health wise.

2. Why have you been invited to participate?

You are invited to participate in this study because as caregiver a child under-five you will provide us relevant information to help us understand how you manage and seek health care when your child has diarrhoea. This inform us on how better you and your community can be served in preventing and managing childhood diarrhoea.

3. What will your responsibilities be?

Your responsibility is to answer the questions provided to you as truthful as possible and to ask question where you need clarity. Your session will take approximately 20 minutes to complete.

4. Will you benefit from taking part in this research?

There is no direct benefit for you as an individual from this study; however, the information you will provide will be used to better the health services provided to your community. There are also no monetary benefits from this study.

5. Are there any risks involved in your taking part in this research?

There is no risk to taking part in this study. The study only requires you to answer the questions that will be provided to you.

6. If you do not agree to take part, what alternatives do you have?

If you do not agree to take part in the study, you will not in any way be disadvantage. Your disagreement will not disadvantage you and your household.

7. Who will have access to your information?

The information collected will be treated as confidential and protected. If it is used in a publication or thesis, the identity of the participant will remain anonymous. The Ministry of Health and Social Services, the Tobias Hainyeko local authorities and the University of Namibia will have access to this information.

8. What will happen in the unlikely event of some form injury occurring as a direct result of your taking part in this research study?

This study is using self-reporting method; therefore, there are no injuries that can be inflicted on the participant.

9. Will you be paid to take part in this study and are there any costs involved?

You will not be paid or given any form of compensation in this study.

10. Is there anything else that you should know or do?

You will receive a copy of this information and consent form for your own records.

11. Declaration by participant

By signing below, I ……..……. agree to take part in a research study entitled *(insert title of study)*.

I declare that:

a) I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
b) I have had a chance to ask questions and all my questions have been adequately answered.

c) I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.

d) I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

e) I may be asked to leave the study before it has finished, if the study doctor or researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) .....…….. on (*date*) ……...…….. 2005.

..... **.....**

Signature of participant Signature of witness

12. Declaration by investigator

I *(name)* declare that:

- I explained the information in this document to ……..

- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter. (*If an interpreter is used then the interpreter must sign the declaration below.*

Signed at (*place*) .....…..…….. on (*date*) ……...…….. 2005.

..... **.....**

Signature of investigator Signature of witness

13. Declaration by interpreter

I *(name)* declare that:

a) I assisted the investigator (*name*) ……. to explain the information in this document to (*name of participant*) ……..…….. using the language medium of (Oshiwambo, Oshiherero, Afrikaans, etc.

ANNEXURE 7: INTEVIEW TRANSCRIPT RESPONDENT 2

Interviewer started by greeting the interviewee and explained the purpose of the interview by briefly going through the questions before the interviewee consents to take part in the interview. After consenting to the interview, the interviewer then started recording the interview. Interviewee's consent was sought before recording of the interview and interviewer explained that the transcripts will used for research purposes only. Interviewee consented to recording verbally.

Interviewer: How old is your child?

Interviewee: Now which one, I have two.

Interviewer: How old are they?

Interviewee: They are five and two years old.

Interviewer: What gender are the children?

Interviewee: I have a boy and a girl

Interviewer: Did your two children have diarrhoea?

Interviewee: Yes, they did. The boy gets diarrhoea many times.

Interviewer: What do you think caused the diarrhoea in the children?

Interviewee: I do not know what caused the diarrhoea but when I took the child to doctor, the doctor said it was a tummy/stomach infection.

Interviewer: What do you normally do when your child has diarrhoea how do you manage it?

Interviewee: I take the child to the Doctor

Interviewer: Why did you take the child to the Doctor?

Interviewee: I took the child to the doctor because he was looking very sick, and I didn't know what to do.

Interviewer: What else did you do besides take the child to the doctor, did you perhaps use home remedies like salt and sugar solution?

Interviewee: No, I never tried it, I normally just take the child to the doctor.

Interviewer: Do you think caregivers in your community have knowledge on proper diarrhoeal management?

Interviewee: Yes, we do have the knowledge.

Interviewer: In your own opinion why do caregivers do not seek medical care outside their home when their children are sick with diarrhoea?

Interviewee: I think sometimes they have medications in their houses and some use home remedies that they make themselves.

Interviewer: Did you take the child to the private or public clinic?

Interviewee: To the private clinic.

Interviewer: Did you experience any challenges there?

Interviewee: No so far I have not experienced any challenges

Interviewer: In your own opinion what are the implication of not seeking health care when your child is sick with diarrhoea?

Interviewee: The child will get dehydrated. The child will be seriously ill.

Interviewer: Why do you think parents prefer public health centres compared to the private once?

Interviewee: No, it depends to who, me I prefer private maybe they prefer public hospitals.

Interviewer: Why do you prefer private hospitals?

Interviewee: Because I can afford the private and I cannot be in the line for five hours while I can make an appointment at home and just go straight.

Interviewer: But is there a difference between the quality of service in terms of public and private health care facilities?

Interviewee: I never visited the public health clinic when my child had diarrhoea; I only go to the private clinics because they provide quality health care

Interviewer: That will be all thank you for your time.