THE IMPACT OF MOTHERS' KNOWLEDGE AND ATTITUDE ON MALNUTRITION PREVENTIVE PRACTICES IN THULAMELA LOCAL MUNICIPALITY, SOUTH AFRICA

By

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DECLARATION

I, Ratshibvumo Azwinndini Annah (11610021), hereby declare that the mini-dissertation titled "**The impact of mothers' knowledge and attitude on malnutrition preventive practices in Thulamela Local Municipality, South Africa"** for the Master of Public Health degree at the University of Venda, hereby submitted by me, has not previously been submitted for a degree at this or any university, and that this is my own work in design and execution and that all reference materials contained therein have been duly acknowledged.

Signature …… Date……

DEDICATION

I dedicate this mini-dissertation to Oripfa Ratshibvumo , and Ampfarisaho Ratshibvumo thank you for caring and support and believing. This is the dream that you have waited for so long to see it happening and I am saying, I made it because of you. I love you and God bless you.

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LIST of ACCRONYMS & ABBREVIATIONS

NDOH	National Department of Health
NGOs	Non-Governmental Organizations
PHC	Primary Health Care
SPSS	Statistical Package for Social Sciences
UNICEF	United Nations International Children's Emergency Fund

ABSTRACT

Malnutrition remains one of the major health problems facing South African children under five-years. Despite all efforts by the South African government to address and deal with malnutrition amongst children under-five in general, nutritional problems exist in Vhembe District. In 2017 alone, Thulamela Municipality recorded 523 severe cases of children under five-year affected with malnutrition and 68 of them died. In addition, 13 new cases of children under five-year severely affected by malnutrition were recorded in May 2018. Studies claim that mothers' knowledge and attitude play a significant role in malnutrition preventive practices. The aim of the study was to investigate the impact of mothers' knowledge on malnutrition preventive practices amongst children under the age of five years in Thulamela municipality, South Africa. A quantitative cross-sectional survey design was used. Convenience sampling technique was used to select the respondents who are mothers of children under five-years old to participate in the study. A self-administered questionnaire was used to collect data from respondents. Data was analysed using statistical package for social sciences (SPSS) version 25. In terms of frequency and percentages as well as multiple regressions to assess the impact of knowledge and Attitude on malnutrition preventive practices. Validity and reliability were ensured, and research ethics were observed. Respondents held positive attitudes towards feeding their children frequently commensurate to the need for food. The study discovered that the majority (92%) of the respondents heard and understood malnutrition. Furthermore, the study found that the majority (88.4%) of the respondents knew that eating balanced diet food prevents malnutrition. Further research is needed to expose other factors associated with mother's malnutrition preventive practices.

Keywords: Attitudes, Malnutrition, Knowledge, Mother, preventive, Thulamela, Municipality

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CHAPTER 1
OVERVIEW OF THE STUDY

1.1 Introduction

The development of childhood malnutrition is believed to be multi-faceted. According to the United Nations International Children's Emergency Fund (2016) the conceptual framework for development of child malnutrition, an interplay of basic (societal issues like cultural, political, economic and societal systems), underlying (household issues like household food security, maternal and child care practices, water and sanitation) and immediate (dietary intake and disease state) factors determine the child's nutritional outcome. This c discusses the overview of the study, the problem statement, the rationale for the study, the significance of the study, the aim of the study, the objectives of the study, the definitions of key concepts, conclusion and the layout of the study.

1.2 Background

In 2012 alone, UNICEF recorded 9.2 million deaths of children under the age of five, globally. Child mortality and poverty are linked with one third of child deaths caused by malnutrition (UNICEF, 2016). Nine hundred thousand cases of death were recorded in East Asia and the Pacific; 3.1 million in South Asia; and 300 000 in Latin America and the Caribbean. It was also reported that 26 000 children die daily from preventable causes (United Nations International Children's Emergency Fund, 2016).

Bengoa, (2015) revealed further that globally, it is estimated that third of the six million preventable deaths of children in poor and middle-income countries each year can be ascribed to under-nutrition. Of those who survived, an estimated 200 million children under five years fail to reach their potential in cognitive development because of poverty, poor health and nutrition, and deficient care. Graham (2015) revealed that according to most subjective and self-reported indicators, food security is improving over time. However, objectively measured anthropometric indicators recorded only marginal improvement in children nutrition status since the early 1990s. The global prevalence of underweight has declined from 37 % in 1990 to 25 % in 2011 (Margo, Barain, Brindtey, Green and Metz, 2016).

Malnutrition is the major cause of disease burden in developing countries and is a principal factor inhibiting further rapid declines in child mortality. Approximately 70% of world's malnourished children live in Asia, resulting in the region having the highest concentration of childhood malnutrition (Hoque, Hossain, Parvin, Rahman and Haque, 2015). Prevalence of stunting and underweight are high in South Asia where one in every two preschool children is

stunted. In fact, Bangladesh has the highest prevalence of child underweight of all countries in the world except North Korea, and only seven countries have a higher prevalence of child stunting than that of Bangladesh (Pandey, 2015). Family income, mother's education, sex and birth order of children are the important determinant of malnutrition. Poor breastfeeding habits–only 37% of children are exclusively breastfeed for the first six months of life-encourage wasting (Rayhan and Hayat, 2016). Discrimination against women leaves mothers unable to make decisions in their own households regarding the food and health of themselves and their children. In the face of rising food prices, insufficient nutritious food and illness continues to set the stage for malnutrition (Hoque et al, 2015). Malnutrition is most common in the poorest communities and in households of low educational status. Floods and other natural disasters severely compromise food security in rural areas. Rural mothers mostly lack adequate knowledge about malnutrition risk factors (Ministry of Health and Family Planning Welfare, 2014).

Research shows that mortality rates among children with severely acute malnutrition is 5-20 times higher than it is among well-nourished children. India has the highest proportion of undernourished children in the world, along with Bangladesh, Ethiopia, and Nepal (Von Braun, Ruel, and Gulati, 2014). Malnutrition causes long-term damage to a child's physical and mental development. Hence, early nutrition is very important as it defines the mental and physical growth of children. More than half of the deaths caused by malnutrition can be prevented if the children are well nourished (Mukherjee, 2014).

In Sub-Saharan Africa, 41% of children under-five years are malnourished and deaths as a result of malnutrition are increasing on daily basis in the region (Foluke, Mehrotra, Arora, and Saran, 2011). Four point eight million (4.8) child death cases were recorded in Sub-Saharan Africa and 400 000 thousand in the Middle East and North Africa. The 2008 Kenya Demographic and Health Survey showed that 35.3% of children under-five years were stunted nationwide,6.7% were wasted, and 16.3% were underweight (Kenya National Bureau of Statistics,2010). Due to an intensive effort by international organisations in the north and some in East Central Africa, the levels and trends in child malnutrition from 1990-2011 show that the global prevalence of stunting has decreased 36 % from an estimated 40 % in1990 to 26 % in 2011.

Nutritional problems exist all over the world and South Africa is not an exception. This is particularly noticeable among African children at pre-school level and this lead to them experiencing some physical and mental challenges (UNICEF, 2016). Children under five-year are the most vulnerable group in an environment that does not guarantee adequate food and

protection. There is a high nutritional requirement for children under-five year because they are undergoing a period of rapid growth. Good nutrition at this age is vital, as the unavailability of certain key nutrients that could result in an irreversible physical and mental retardation (UNICEF, 2016). In most cases African children are more affected because of their un-favourable socio-economic conditions (UNICEF, 2016).

Malnutrition continues to be an important risk factor for child deaths in developing countries, including South Africa. According to Griesel, (2016), malnutrition is reported to be a public health problem in South Africa with stunting as the most prevalent anthropometric outcome. Among all age groups, 1-3 year children are reported to be most affected. Gerald and Combs, (2014) reported that children under-five years mortality ranged between 69 and 76 per thousand, approximately 60 000 per annum in 2010. Despite the introduction of Child Support Grants, South Africa has been found to increase food consumption and dietary diversity in poor households

According to Rao, Swaminathan, Swarup, and Patwardhan (2014) the South African Department of Health reported that 17%, 6%, and 3% of 1–5 years old children in Gauteng province were stunted, underweight, and wasted respectively. On the other hand, 24%, 12%, and 4% of 1–5 years old children in Limpopo province were stunted, underweight, and wasting, respectively. In addition, a high percentage of 1–5 years old children in Limpopo province were deficient in vitamin A (76%) and iron (14%) compared to Gauteng whose 1–5 years children were deficient in vitamin A (65%) and iron (10%).

1.3 Problem Statement

Despite all efforts by the South African government to deal with malnutrition among children under five-years, in general, malnutrition is still one of the major health problems in Vhembe District. In 2017 alone, Thulamela Municipality recorded 523 severe cases of children under five-year affected with malnutrition and 68 of them died (Vhembe District Report, 2017). In addition, 13 new cases of children under five-year severely affected by malnutrition were recorded in May 2018. The researcher who is a professional nurse working at one of the clinics within Thulamela municipality discovered that most children under-five years are malnourished upon examination. The concern is that malnourished children suffer stunted growth, blindness, dwarfism, mental retardation, neural tube defects and may ultimately lose their life. It is against this background that this study emerged.

1.4 Rationale for the study

The researcher was inspired to conduct the study because of the intent to bridge the gap left by other researchers. Though, many studies conducted in Thulamela Municipality assessed food and nutrition security of children, none of them has attempted to look at the impact of mothers 'knowledge and attitudes on children under five-year affected with malnutrition within Thulamela municipality. For instance, a study by Mushapi (2015) looked at the "effects of a nutrition education programme on nutritional status of children aged 3 – 5 years". This led to limited reported data on malnutrition and the knowledge of mothers on malnutrition among children under five-year within the research setting.

This study therefore, aims to explore the impact of mothers 'knowledge and attitudes on malnutrition among children under 5 year children in Thulamela Municipality in Limpopo province, in order to help them deal with, address and actively participate in programme development and implementation aimed at preventing, reducing and eradicating malnutrition amongst under-five year old children in Vhembe.

1.5 Significance of the study

The study findings may add to the existing knowledge about malnutrition amongst children under five- year old. The findings may also be used by the Primary Health Care directorate in the Department of Health to identify learning needs of mothers regarding malnutrition amongst under five-year old children. Moreover, the findings may also be used as a point of reference during malnutrition awareness programmes. The findings may also be used by policy makers during developing malnutrition related policies. The study findings might also help the researcher and other future researchers to gain more insight about knowledge and attitudes of mothers regarding malnutrition. Moreover, the study findings may serve as a knowledge base for Non-Government Organization and, other Government departments. This study may also open new doors for further studies or research in the same field, by doing so the researcher hopes to have contributed to the body of scientific knowledge.

1.6. Aim of the study

The aim of the study is to investigate the impact of mothers' knowledge and attitudes on malnutrition preventive practices amongst children under five-year old in Thulamela municipality, South Africa.

1.7. Objectives of the study

In this study, the research objectives are to:

- Assess knowledge of mothers regarding malnutrition
- Describe mothers' malnutrition preventive practices amongst children under-five.
- Describe the attitudes of mothers towards malnutrition and its preventive practices amongst under-five children.
- Determine the association between mothers' knowledge and their malnutrition preventive practices
- Determine the association between mothers' attitudes and their malnutrition preventive practices.

1.8 Definitions of key concepts

Child malnutrition: Child malnutrition, in all its forms, includes under nutrition (wasting, stunting, underweight), inadequate vitamins or minerals, overweight, obesity, and resulting diet-related non-communicable diseases (WHO, 2012). In this study, child malnutrition refers to a condition when a child is severely underweight due to lack of sufficient food to keep him/her health. The developmental, economic, social, and medical impacts of the global burden of malnutrition are serious and long lasting for individuals, families, in communities and for countries in general.

Children under five-years: refers to children who are aged below 5 years. In this study, a child under the age of 5 years refers to a young human being whose age ranges from 6 to 59 months from his date of birth.

Knowledge: refers to what someone knows about a specific subject (Rossouw, 2014). For this study, knowledge means what mothers know about malnutrition as a condition affecting children under five-years.

Attitude: refers to the views or feelings that one holds about something, and that is expressed through actions (Schlemmer, and Stopforth, 2014). For this study, attitude means how mothers view or feel about malnutrition.

1.9 Conclusion

This chapter discussed the overview of the study and this included the problem statement, rationale of the study, significance of the study, aim of the study, objectives of the study, definitions of key concepts, conclusion and layout of the study.

1.10 Layout of the study

Chapter 1: This chapter forms the basis of the study. It describes the background of the study, the problem statement, the rationale of the study, the significance of the study, the aim and objectives of the study, and the key definitions.

Chapter 2: This chapter provides literature that was reviewed regarding the study.

Chapter 3: This chapter outlines methods that were used to conduct the study.

Chapter 4: This chapter presents collected data and analysis.

‘Chapter 5: This chapter presents interpretation and discussion of findings.

Chapter 6: This chapter presents study recommendations.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

The previous chapter provided the study overview including problem the statement, rationale of the study, significance of the study, aim and objectives, definitions of key terms and the layout of the study. This chapter outlines the literature review in wherein the concept of malnutrition is discussed, the prevalence of malnutrition in South Africa, the knowledge of mothers regarding malnutrition, mothers' malnutrition preventive practices, and the attitudes of mothers towards malnutrition. Moreover, the section also covers factors that influence malnutrition and strategies to prevent malnutrition among under five year old children as well as South African policies on malnutrition.

Gray (2009) defines a literature review as a report about an assortment of documents (published or unpublished) on a topic that has certain facts, ideas and evidence in relation to a particular research topic and the evaluation of these documents.

2.2 The concept of malnutrition

Malnutrition is a condition that develops when the body does not get the require food nutrients in their right proportions. Such food nutrients include vitamins, minerals, proteins, carbohydrate and fat and lipids it needs to maintain healthy tissues and organ functions (Cumber, Ankraleh, and Monju, 2016). William (2004) stated that malnutrition can also occur when an individual's diet does not provide him/her with adequate calories and proteins needed for maintenance and growth or they cannot fully utilize the food they eat due to illness (under nutrition), while those who suffer from over nutrition consumes too many calories. During neonatal development, there is high nutritional needs for vitamins and minerals, and children are advised to follow up their daily food plan for months to meet most of these increased needs for important nutrients such as, folic acid and iron (Anderson & Ray, 2012). The World Food Programme (WFP) provided the definition of malnutrition as "a state in which the physical function of an individual is impaired to the point where he/she can no longer maintain sufficient bodily performance process such as growth, pregnancy, lactation, physical work and resisting and recovering from ailment" (World Food Programme, 2012a cited in Bain et al., 2013, p. 120). The WFP also explained that malnutrition can be influenced by a lack of micronutrients

and macronutrients (World Food Programme, 2012b). Malnutrition often occurs in developing countries with low-income households (Kraemer, 2014).

There are two major types of malnutrition namely; protein energy malnutrition resulting from deficiencies of any or all nutrients and micronutrients malnutrition resulting from deficiency in vitamins and minerals (World Health organization, 2006). There are three types of protein-energy malnutrition in children described as follows:

i. Acute malnutrition is wasting or thinness, acute inadequate nutrients leading to rapid weight loss or failure to gain weight normally.

ii. Chronic malnutrition refers to shortness caused by inadequate nutrition over a long period of time leading to failure in linear growth.

iii. Wasting and stunting are very different forms of malnutrition. Stunting is chronic and its causative factors are poorly understood. Stunting usually does not pose an immediate threat to life and is relatively common in many populations in the less developed countries. Some signs and symptoms may include weight loss, breathing difficulties, higher susceptibility to cold and other diseases, higher risk of hypothermia. Severely malnourished children typically experience slow behavioural development; even mental retardation may occur (Nkou, Sumbele, Markah , Njunda , Samje & kanga, 2008).

2.3 The prevalence of malnutrition in south africa

In 2013, South Africa had 1.3 million children under the age of 9 years who were underweight and 2.3 million with stunted growth (Berry, Biersteker, Dawes, Lake, and Smith, 2013). Between 2009 and 2013, all provinces in South Africa, except the Free State (3.9% in 2009 to 10.7% in 2013), were able to reduce the incidence of severe malnutrition. However, the incidence of malnutrition is still higher than the national target of 10 per 1000 children under the age of 5. In 2011, the Free State also had the highest under-5 mortality rate (72.1 per 1000 live births) compared to the country's mortality rate of 38.5 (Koetaan, Smith, and Liebenberg, 2018).

2.4 Knowledge of mothers regarding malnutrition.

A study conducted by Cumber, Ankraleh, and Monju, (2016) which assessed the knowledge of mothers on malnutrition found that majority of (22) mothers (73%) said malnutrition during child hood is when the child has a large head and swollen stomach, weight loss and not having proper nutritional requirements for the body. Moreover, Cumber, Ankraleh, and Monju, (2016) also discovered that about 15 (50%) mothers who were participants in the study said that a child's malnutrition is as a result of poor hygienic conditions whilst preparing the child's food, poverty, unsafe water diseases and infections. On the definitive signs and symptoms of

malnutrition, 12(40%) mothers reported that signs and symptoms of malnutrition in children include; skin that may become inelastic and a longer time for recovery from infection and illness (Cumber, Ankraleh, and Monju, 2016).

Bodzewan (2015) also conducted a study that assessed mothers' knowledge on malnutrition and he discovered that 72 (60%) mothers who were respondents in his study had good knowledge on what malnutrition is. These mothers reported that malnutrition results from inadequate intake of nutrients that the body needs to maintain healthy tissues and organ functions ;40% had no knowledge of malnutrition and for this reason, some women do not practice preventive measures against malnutrition because they do not know its importance.

2.5 Mothers' malnutrition preventive practices for children under-five children.

In the study conducted by Bodzewan (2015), he explored mothers preventive practices on malnutrition among their children and it was discovered that most mothers [56 (48.28%)] prevented malnutrition by feeding the child with a balanced diet. Moreover, in the same study mothers also indicated that they practice exclusive breastfeeding. In another study by Reiher and Mohammadnezhad (2017), it was discovered that majority of mothers (80.9%) who were respondents in the study stated that they take their children for immunisation as part of malnutrition prevention.'

A study conducted by Manohar, Reddy, Vyshnavi, and Sruthi (2018) assessed knowledge, attitude and practice of mothers with severe acute malnutrition children regarding child feeding. The study found that 60% of mothers wash their hands before feeding their children, 29.16% clean their breast before and after feeding their child, cut their child's nails regularly, bath daily, and 88% wash their hands after using the toilet or after changing their child's diaper.

2.6 Attitudes of mothers towards malnutrition and its preventive practices among under-five children.

Based on the study conducted by Edith and Priya (2016) mothers of under-five children who were respondents in their study were found to have moderately favourable attitude. Another study by Berra (2013) showed that majority (72%) of mothers had positive attitude towards colostrum and 55.4% of the mothers practiced starting complementary food from six months of age.

2.7 Factors that influence malnutrition amongst children under five years

2.7.1 Socio economic factors

- **Poverty**

Socioeconomic factors play a big role in the issue of malnutrition amongst children in South Africa. Lack of financial resources makes it difficult for many families to afford healthy food. Foods such as vegetables and fruits are significantly more expensive than foods that are high in carbohydrates, fats and sugar. These foods do not contain enough nutrients, but since they are more affordable, many families buy them anyway to be able to provide a sufficient quantity of food for their family and to prevent hunger (Southern Africa Labour and Development research unit, 2016). High energy foods such as maze meal, white rice and white bread also keeps the individuals full for a longer time than after eating vegetables and fruits. Because of these factors, it is hard for poor families to find the economical possibility or motivation to buy healthier foods since they cannot afford it, and will be hungrier if they switch from consuming high energy foods to vegetables and fruits (Vorster, 2010).

- **Food security**

Another factor driving malnutrition is food security. Many poor people in cannot prepare and consume fresh food because they do not have access to electricity or running water. Access to functioning sanitation facilities is also a major problem in big parts of South Africa (World Bank, 2015). Due to the lack of clean water and sanitation, many children suffer from diseases such as diarrhoea, which is strongly connected to malnutrition and increased mortality. The lack of food security is most severe in rural areas, where families also do not have access to or the economy to buy healthy food that is sufficient, safe and nutritious enough to meet dietary needs (Enström and Pettersson,2015).

- **Access to healthcare**

The lack of financial resources is also a determining factor for parents to be able to provide good medical care for their children. Many families are in need of proper support and education on how to provide the right nutritional support for their children (Motadi, Mbhenyane, Mbhatsani, Mabapa, and Mamabolo, 2014). However, a visit to a private clinic is often too expensive for many families. The families can then seek help at a public clinic, but waiting times are often long. The opportunity to give proper education is also often limited due to undermanned staff. Since the staff is too few, it is problematic for them to have enough time to provide education to the patients. Because of this, many families choose to not seek help at all (Enström and Pettersson, 2015).

Another problem regarding access to healthcare is large distances within the country. Many people live in rural areas that are far away from a hospital or other care facilities. Therefore, it

takes long and exhausting journeys to reach medical care, which results in that many people in these areas not receiving any medical care when they get sick (Enström and Pettersson, 2015).

- **Culture**

In some high-income communities, breastfeeding is defective but not due to restricted economical resources or physical problems with breastfeeding. In these communities, mothers choose not to breastfeed since it is considered unfashionable. The mentality around breastfeeding is orbiting around a wish to keep their breasts attractive and avoiding pain in the breasts associated with breastfeeding. It is also a matter of peer-pressure in these communities. When most women bottle-feed their babies, increasingly more mothers start to question why they should breastfeed when others bottle-feed (Enström and Pettersson, 2015).

2.8 Malnutrition prevention

Most children are at greatest risk of malnutrition from the age of six months when they are growing fast and breast milk alone cannot cover nutritional needs until they are 2-3 years old when growth slows and they can feed themselves. Families and health workers can find out if children are well nourished or malnourished by weighing them regularly and plotting their weights on growth charts (Piniel, 2016). A child may: gain weight at the healthy rate, which means the child is almost certainly eating well and is healthy; gain weight too slowly or not gain any weight, which signals that something is wrong. The child may be sick and/or not eating enough; lose weight, which is a very dangerous sign (WHO, 2008). The child may not be eating enough and almost certainly ill; gaining weight faster than the healthy rate, which will probably mean the child is catching up on the weight lost during an illness but can also mean that the child has a health problem that could lead to obesity. Care-givers and health workers need to pay attention to these changes in a child. Health workers need to work with the family of a malnourished child to find out why the child is not growing well and discuss the feeding pattern, i.e. amount, variety and frequency of meals, appetite, behaviour and illnesses (Piniel, 2016). They should examine the child for infections or other medical conditions in order to find the underlying causes such as family food shortages; poor feeding practices; child receives insufficient care (Von Braun, et al, 2014). The intervention plan for the child should be worked on together with the caregivers. In order for the child's nutritional status to improve, a family will need to feed the child better.

This may mean increasing breastfeeding, improving complementary feeding, feeding more frequently and/or giving more attention during meals (Von Braun, et al, 2014). Family beliefs on child feeding and blocks to better feeding e.g. lack of resources, such as food, cash, time

or cooking facilities should be discussed and addressed. Then the decisions on improved feeding practices should be determined based on what the family is able and willing to adopt (Piniel, 2016). The child should be taken for treatment if sick and caregivers should be taught how to prevent childhood infections in the future. Health workers should monitor undernourished children's weights closely (Von Braun et al, 2014). If a family is unable to provide a healthy, balanced diet for a child, they may need to be assisted with provision of food by enrolling the child in a supplementary feeding programme for a while. Sometimes a family should be referred to a social worker, agricultural field worker or other community service to help deal with underlying reasons for poor nutrition. Hospital admission is required for severe cases of malnutrition until the child is stable enough to be managed as an outpatient (Edith and Priya, 2016).

2.9 South African policies on malnutrition prevention

2.9.1The overall legislative and policy framework

The South African Constitution provides for the right to health care and the protection of children. For example, Section 27 of the Constitution of South Africa stipulates that "everyone has the right to have access to health-care services;" section 28(1) (c) gives children "the right to basic nutrition and basic health care services". South Africa thus has a strong commitment to the rights of children and children have the right to basic nutrition. The Constitution places an obligation on the state to adopt policies that give meaning to these rights.

These provisions are in keeping with the African Charter on the Rights and Welfare of the Child. Article 14(1) of this charter states that, "every child shall have the right to enjoy the best attainable state of physical, mental and spiritual health" and Article 14(2) states that the state should take measures to "ensure the provision of adequate nutrition". The United Nations Convention on the Rights of a Child (1989) also deals with the issue of health care for children and Article 24 says that State Parties should recognise "the right of the child to the enjoyment of the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health". It obliges the State to take measures "to diminish infant and child mortality" and "to combat disease and malnutrition". All of these policies were formulated for the purpose of protection children worldwide.

The Integrated Nutrition Programme (INP)

Soon after the first democratic elections in 1994, the Minister of Health appointed a committee to develop a more comprehensive nutrition strategy for South Africa. This resulted in the adoption of the Integrated Nutrition Programme (INP). The INP differed from previous nutrition programmes in South Africa which just focused on the immediate causes of malnutrition and provided food to the needy. The INP emphasized the need to address all the causes of

malnutrition and stressed the need for all sectors to work in an integrated manner (Saitowitz and Hendricks, undated)

According to Saitowitz and Hendricks, (undated), the overall aims of the INP are to:

- "Enable all women to breastfeed their children exclusively until six months of age and thereafter to continue breast-feeding in addition to the introduction of appropriate complementary foods, until twenty-four months of age and beyond.
- Ensure optimal growth of infants and young children.
- Promote the health of women and in particular pregnant and lactating women
- Prevent an increase in mortality due to diseases of lifestyle. Improve the capacity of communities to solve the problems of malnutrition and hunger.
- Improve inter-sectoral collaboration and community ownership of nutrition programmes."

The INP was intended to be a broad nutritional strategy which focuses on children under six years old, at-risk pregnant and lactating mothers as well those suffering from communicable and chronic life style diseases (Bourne et al, 2007). The vision of INP is "optimum nutrition for all South Africans (INP, undated: 3) and it rests on the principle that good nutrition is a basic human right. It acknowledges the interconnectedness of factors contributing to malnutrition and thus adopts an integrated holistic approach in which different sectors and stakeholders are expected to co-operate and work together. The INP is therefore implemented at various levels – community sites, households, health facilities and schools (Iversen et al, 2012).
The INP is administered by a Cabinet appointed Inter-Ministerial Committee (IMC) on food security, jointly led by the Ministers of Social Development and of Agriculture, Forestry and Fisheries, aimed at fighting food insecurity, hunger and malnutrition" (Strategic Plan 2012-2015 DSD).

A number of programmes form part of the INP. These include Primary School Nutrition Programme, which was started as a Presidential Lead Project in 1994 and was initially located in the INP initiative. According to Iversen et al (2012), its main aim was to address short term hunger and so improve the capacity of children to learn. Iversen et al (2012) commented that this programme has been evaluated several times. In 2000, it was recommended that the programme be continued but improved and that clarity be given on whether it was a nutritional, educational or social relief intervention. It was also found that the goals had not been met and that in many areas of the country the scheme was not working well. A study by Bourne (2010) found that targets had been reached in many areas with more than six million learners in over

18 000 schools receiving food. In addition, about 4000 schools had food gardens. According to Iversen et al (2012) many of the problems with the implementation of this scheme are related to poor management, a lack of capacity, inefficient and inappropriate management systems, poor infrastructure and corruption. Currently the programme is known as the National School Nutrition programme and is located within the Department of Education.

Nutrition Therapeutic Programme: This was previously known as the "Nutrition Supplementation Programme" and "aims to correct under-nutrition by providing nutrition supplements as well as nutrition education and counselling" (Iversen et al, 2012) uneven results have emerged from evaluation studies of this programme. Hendricks et al (2016) reported that about 38% of children in the Eastern Cape who received supplements showed good progress. However, in the Northern Cape, only about 10% of children moved back into the normal weight category (Hendricks, Roux, Fernandes and Irlam 2003). A study conducted Andersen, Wandel, Eide, Herselman and Iversen (2009) in Cape Town revealed problems with the implementation of the programme. Despite mothers being given breast milk substitutes, porridge and energy drinks, malnutrition was effectively addressed. These studies suggested that a lack of staff training, incorrect distribution of supplements and ineffective counselling and education of caregivers resulted in poor delivery of services. Iversen et al (2012) comment that "despite huge efforts and funds allocated to execute this programme, it is yet to undergo a full evaluation"

Baby friendly facilities are maternity ward and clinics where practices promote breast-feeding. For example, mothers and their infants are not separated. These facilities implement a modified "Ten steps to successful breast-feeding" which were initially adopted by WHO/UNICEF in 1989.

The South African Infant and Young Child Feeding Policy: This was adopted in 2008 and aims to standardise messages about infant feeding practice and to ensure health care providers provide consistent advice about how to feed infants and young children. (Iversen et al, 2012).

2.10 Conclusion

In this chapter literature related to the study topic was reviewed. This chapter covered concept of malnutrition, prevalence of malnutrition in South Africa, knowledge of mothers regarding malnutrition, mothers' malnutrition preventive practices, and the attitudes of mothers towards malnutrition. Moreover, the section also covered factors that influence malnutrition and strategies to prevent malnutrition amongst under five year children as well as South African policies on malnutrition. The next chapter will discuss methodology that was used to conduct the study.

CHAPTER 3
RESEARCH METHODOLOGY

3.1. Introduction

The previous chapter discussed literature reviewed and this included concept of malnutrition, prevalence of malnutrition in South Africa, knowledge of mothers regarding malnutrition, mothers' malnutrition preventive practices, and the attitudes of mothers towards malnutrition. This chapter describes the research approach, research design, study setting, study population, sampling and data collection instrument to be used in the study are addressed. Measures to ensure the reliability of the study findings, the data collection method, data analysis, and research ethics are also explained in this section.

3.2 Research approach

The study is quantitative in nature. Ndlovu, (2015) defines research methodology as a theory of how an inquiry should be preceded. Quantitative research comprises of the accumulation of information so that data can be measured and subjected to statistical treatment in order to support or disprove knowledge claims (Cresswell, 2016). In this study, the researcher used quantitative approach because it allowed her to gather information numerically and measure association between the variables under investigation.

3.3 Research design

Babbie and Mouton (2016) define research design as a plan or blueprint of how the researcher intends to conduct the study in order to bring solutions to the research problem. For the purpose of this study, cross-sectional descriptive survey design was used. Cross-sectional descriptive survey design describes phenomena as they exist and collect data at one point in time. It is used to identify and obtain information on the characteristic of a particular issue (Cresswell, 2016). The researcher used cross-sectional descriptive design because the study described the impact of mothers' knowledge on malnutrition preventive practices among under five- year children in Thulamela Municipality, Limpopo Province. The researcher chose cross-sectional survey design because data were collected at one point in time.

- **Descriptive design**

  Descriptive research design is a scientific method which involves observing and describing the behaviour of a subject without influencing it in any way (Babbie and

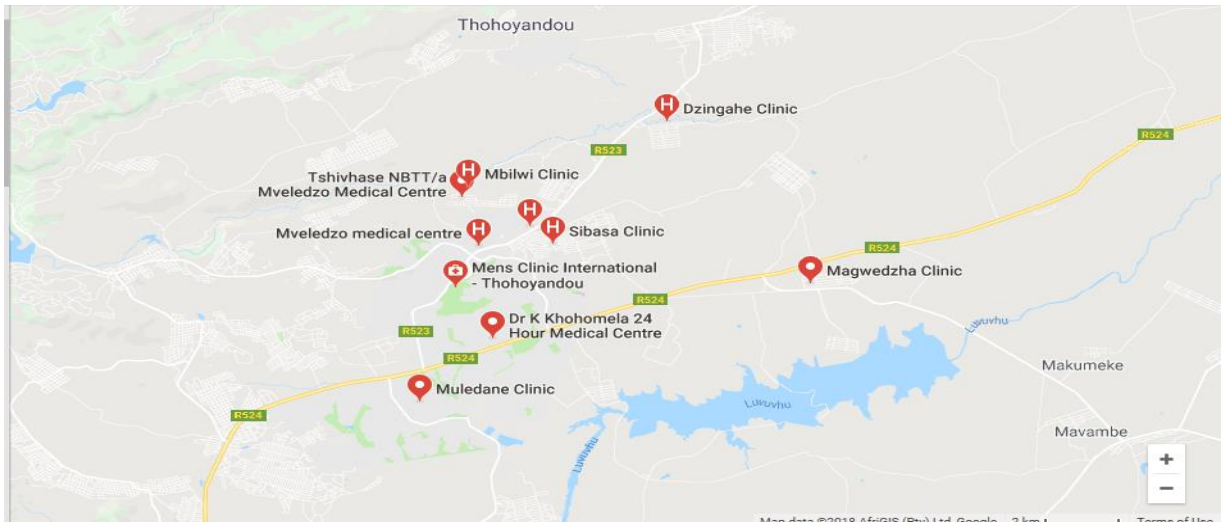
Mouton, 2016). The researcher chose descriptive design because it gave the researcher valuable pointers as to what variables are worth testing quantitatively. It also allowed the researcher to observe and describe Knowledge, attitudes and preventive practices of mothers regarding malnutrition without influencing behaviour.

- **Cross-sectional study**

  Cross-sectional study describes a group of subjects at one point in time (Turner, 2013). The researcher used because it is inexpensive and requires little time to conduct and it allowed the researcher to estimate the prevalence of knowledge of malnutrition among mothers.

3.4 Study setting

This study was conducted in clinics that were selected to take part in the study within Thulamela Municipality. Thulamela Municipality consists of 41 clinics and 6 community health centers. Thulamela Municipality is 188.3 KM away from Polokwane and 453.8 KM away from Pretoria via N1. The area comprise of Venda speaking people who are about 700 000 and some few Tsongas, they speak both Tshivenda and Xitsonga. Thulamela Municipality has two hospitals, namely Tshilidzini Regional Hospital and Donald Fraser Hospital. It is dominated mostly by people who fall within the lower class. Unemployment is also a problem facing many individuals in the area. Much of the children who live in rural areas are beneficiaries of social grants provided by the South African Social Security Agency (SASSA).



Source: Map data @ 2018 AfriGis (PTY) Ltd, Google

3.5. Population of the study

De Vos, Strydom, Delport and Fouche (2010) defines population as the group upon which the researcher is interested in making inferences. Population is also described as a number of objects from which knowledge is sought (Cresswell, 2016). For Babbie and Mouton (2016) it is the entire group of elements or objects that meet the criteria for inclusion in a study. The population for this study was mothers of under-five year children who reside in Thulamela municipality.

A target population represents elements in a population that conform to specifications such as the people living a location and period (Cresswell, 2016). A target population represents elements in a population that conform to specifications such as the people living a location and period (Babbie and Mouton (2016). The target population for this study was all mothers of children under five-years, who were attending child immunization service and identified through participating clinics.

3.6. Sample and sampling technique

In this study sampling refers to the process of selecting a portion of the population to represent the population. According to Cresswell (2016) sampling designs are classified as either probability or nonprobability. In this study, the sampling used to select site and study respondents is explained bellow.

3.6.1 Sampling of a site

Thulamela Municipality has 6 local areas namely; Madala local area, Shayandima, Tshaulu, William Eddie, Mutale and Sibasa. For this study, Sibasa local area was purposively selected to take part in the study because it recorded higher number of malnutrition cases than other local areas, and all the clinics falling under this local area formed part of the study.

Table 3.1: Distribution of the average number of children immunized from July 2018 to September 2018

Name of the PHC facility	frequency
Sibasa	737
Mbilwi	98
Tshififi	118
Phiphidi	177
Thohoyandou Health Centre	198
Pfanani	192

Fondwe	165
Murangoni	58
Dzingahe	133
Total	1876

3.6.2 Sampling of study respondents

Convenience sampling technique was used to select respondents for the study. Convenience sampling is a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher (Babbie and Mouton, 2016). This means that all mothers of children under five-year children who were attending child immunization service and identified through participating clinics were selected to participate in the study. The researcher used convenience sampling technique because data is collected within a short period of time, respondents were readily available and cost effective.

Table 3.2: sampling frame

Name of the PHC facility	Average number of children immunized each month per facility	Sample size per facility
Sibasa	737	129
Mbilwi	98	17
Tshififi	118	21
Phiphidi	177	31
Thohoyandou Health Centre	198	35
Pfanani	192	34
Fondwe	165	29
Murangoni	58	10
Dzingahe	133	23
Total	1876	329

Sample size calculation

The sample size was calculated using the Slovin (1960) formula as cited by Guilford and Fruchter (1973).

$$n = \frac{N}{1 + Ne2}$$

n=sample size of adjusted population

N=population size

e=accepted level of error usually set at 0.05

$$n = \frac{N}{1 + Ne2}$$

$$n = \frac{1876}{[1+ (1876 \times 0.05)2]}$$

$$n = \frac{1876}{(1+ 4.69)}$$

$$n = \frac{1876}{5.69}$$

n= 329

The total sample size of the study was calculated using Slovin's formula above. The population size which makes the sum of 1876 was added with value 1 and multiplied by level of error 0.05^2. Therefore, the population size which is a denominator was divided by the numerator obtained after adding population size with the value of 1 and multiplying with $0.05^{2.}$

3.6.3 Inclusion criteria

For respondents to be selected and form part of the study, they should be a mother of child younger than five years of age, and be at the selected clinics and accompanying a child or children to immunization at the time of the study.

3.7 Measurement instrument

Data was collected by means of a self-administered questionnaire that the researcher developed for the purpose of providing answers to the research questions and achieve the aim of the study. A self-administered questionnaire is a questionnaire that has been designed specifically to be completed by respondent without intervention of the researcher collecting data (Babbie and Mouton, 2016). The researcher chose self-administered questionnaire because it allowed the respondents to answer at their convenience, there was no need to set up interview appointments, the researcher did not inject bias in the way questions were asked and it was cost effective. The questionnaire consisted of closed ended questions based on the aim and objectives of the study. The questionnaire was developed in English and translated into Tshivhenda, Xitsonga and Spedi languages.

The questionnaire consisted of the following sections:

•Biographical information

•Mothers' malnutrition preventive practices amongst children under-five

•Knowledge of mothers regarding under the age of five years malnutrition.

•Attitudes of mothers towards malnutrition preventive practices.

•Determine the association between mothers' knowledge and their malnutrition preventive practices

•Determine the association between mothers' attitudes and their malnutrition preventive practices

3.8 Pre-test study

The questionnaire was pre-tested with mothers of children under the age of five-year who were not part of the study. These mothers were given the questionnaire and filled it and it was then checked looking at the responses that were given by theses mothers. Pretesting was done to ensure that the instrument being used is answerable and understandable as well as identifying errors that may be seen when respondents are completing the questionnaire. As a result of pretesting, it was discovered that some times in the questionnaire had no responses assigned to them. The researcher modified and adjusted the questionnaire where necessary.

3.9 Validity and Reliability

Cresswell (2016) states, that an important attribute of a research tool is the existence of validity and reliability which are both essential in any study.

3.9.1 Validity

Cresswell (2016) explains validity as the degree to which a research tool actually measures what it is supposed to measure or the extent to which findings correctly represent what is happening in the situation. Face validity and content validity were used as methods of ensuring validity and bellow it is explained how they were ensured.

- **Face validity**

Face validity means the instrument looks as though it should measure what we want to measure (De Vos, Strydom, Delport and Fouche, 2010) In this study, face validity was ensured by taking the questionnaire to research supervisors who are expects to validate if the instrument appeared. The experts validated if the instrument will be able to measure the variable under consideration through the answers that would be provided by respondents.

- **Content validity**

Content validity means the instrument covers all aspects of the concept being measured (De Vos et al, 2010). In this study, the researcher ensured content validity by checking the instrument thoroughly to insure that questions in the instrument are relevant to the aim and objectives of the study. Research supervisors who are experts also thoroughly checked the instrument and they found the questions in the instrument to be relevant to malnutrition knowledge, attitudes towards malnutrition and knowledge of malnutrition prevention.

3.9.2. Reliability

The researcher conducted the pre-test on 10% of the population size to check the effectiveness of the questionnaire in different period of time. According Babbie and Mouton (2016), reliability involves the accuracy of the researcher's research methods and techniques and to what degree they may be maximized. Additionally, reliability is associated with accuracy, stability, consistency and the repeatability of the study. Test-retest method was used to ensure reliability of the findings. The instrument was administered twice on 10% of the mothers of children under the age of five on different occasions and the scores were subjected to reliability coefficient test in order to measure consistency of the instrument.

3.10 Data collection

Data collection is the precise, systematic gathering of information relevant to the research purpose or specific objective of a study. Data collection in quantitative study is usually numerical (Cresswell, 2016). The researcher applied for ethical clearance certificate at the university of Venda ethics committee and it was granted. Thereafter an application to collect data from mothers of children under the age of five in PHC facilities was made with Limpopo provincial and district department of Health. Permission was granted by above institutions and an arrangement made with the management of PHC facilities that were selected to take part in the study in order to get access to see the respondents. On the day of child immunisation, mothers of children under the age five who met the criteria for selection were informed of the study. They were also be asked to give consent to participate in the study and those who gave consent were given questionnaires to fill. For those that could not read and write, the researcher read and explained to them what the items meant and how they should answer. The researcher was available to clarify those who had questions during completion of a questionnaire.

3.11. Data analysis and interpretation

Flick (2013) defines data analysis as the way toward bringing order, structure and sense out of the mass of assembled data. In this study, gathered data was analysed using the Statistical Package for Social Sciences (SPSS) version 25.0. Descriptive statistics was used to analyse the data. Data were presented in the form of bar charts, graphs and frequency tables. Since the study data was ordinal, a multiple regression test was performed to determine the impact of knowledge and attitude on the mothers' malnutrition preventative practices. The level of significance was set at $P \leq 0.05$, any value that was equal to, or less than 0.05 was regarded as significant (association), while any value above 0.05 was regarded as being not significant (no association).

3.12. Ethical considerations

Ethical consideration refers to using reference sources and taking in to account ethical misconduct that may affect research participants or respondents. The purpose of ethical consideration in this study is to ensure that all sources used consulted for information are acknowledged and reasonable measures are taken in to consideration to protect respondents from harm. Ethical contracts deal with matters of right and wrong. Ethics is the social, religious or civil code of behaviour that is considered correct. The ethical considerations pertaining to the study are the following:

3.12.1 Permission to conduct the study

The proposal was presented to the School of Health Sciences and submitted to the university higher degree committee for approval and to the university ethics committee for ethical clearance. Permission to conduct the study was obtained from the provincial and district department of health to use the clinics to meet mothers of children under five years during data collection. Clinics managers were approached and informed about the study.

3.12.2 Informed consent

De Vos, et al (2010) indicate that informed consent holds that respondents or participants are being sufficiently informed of the type of information required from them, why the information is being required, how they are expected to participate in the study, and how it will directly or indirectly affect them, and how they will benefit from the study. The researcher explained to the respondents what is expected from them and the nature of the study (the purpose of the study), so that they can give voluntary consent. The researcher informed respondents that they could terminate or opt out of the study at any stage without any penalty. Writen consent was obtained from every respondent who participated in this study and sample of the written informed consent is attached as appendix D.

3.12.3. Confidentiality

According to Bless, et al. (2006), confidentiality is an ethical obligation in most research. Information given by respondents, particularly delicate and personal information, should be safeguarded and made inaccessible to anyone other than the researcher. The researcher ensured that information from respondents was kept in a confidential manner; unauthorised access to the information was prohibited. The information obtained from respondents was locked in a safe place to which no other person had access. Respondents' personal information that might lead to the identification of respondents has not been published anywhere in the research report.

3.12.4 Anonymity

The researcher reported her findings in a complete and honest fashion, without misrepresenting what they have done or intentionally misleading others about the nature of their findings. And under no circumstances should a researcher fabricate data to support a particular conclusion, no matter how seemingly “noble” that conclusion may be. In this study, respondents were assured of anonymity and the information provided by the respondents was treated as confidential. Names of participants were never revealed during data coding and analysis, instead, numbers were assigned to respondents to avoid easy identification of respondents.

3.12.5. Protection from harm

A researcher did not expose research respondents to unnecessary physical or psychological harm. In cases where the nature of study involved creating a small amount of psychological discomfort, respondents were informed prior to the participation in the study to know this ahead of time.

3.12.6 Voluntary participation

According to Babbie & Mouton (2016) respondents should do so voluntarily, should not be threatened and compelled to participate in the study, and they should do it out of their own free will. In this study, respondents participated voluntarily, the researcher informed the respondents about the right to withdraw participation at any time during the study.

3.13 Plan for dissemination and implementation of results

A copy of the research report will be submitted to the Library of the University of Venda, and Department of Health. The findings will also be published in accredited journals and presented at both national and international research conferences.

CHAPTER 4
ANALYSIS AND PRESENTATION OF DATA

4.1 Introduction

In this chapter the findings of the study are presented. Responses from study respondents were compiled into frequency tables, converted into percentages and presented in charts, bar graphs and tables. This was done to facilitate easy analysis and understanding of the data of the study that sought to explore the impact of mothers' knowledge and attitudes on malnutrition preventive practices amongst children under five-year in Thulamela municipality, South Africa.

The data were analysed based on the study specific objectives and results related to specific study objectives are presented in the subsequent sections. Three hundred and twenty-nine (329) questionnaires were distributed to respondents and 300 questionnaires were satisfactorily filled in and returned, thus the response rate was 91%.

The objectives were to:

- Assess knowledge of mothers regarding malnutrition
- Describe mothers' malnutrition preventive practices amongst children under-five.
- Describe the attitudes of mothers towards malnutrition and its preventive practices amongst children under-five.
- Measure the association between mothers' knowledge and their malnutrition preventive practices
- Measure the association between mothers' attitudes and their malnutrition preventive practices.

4.2 Demographic information

In order to gather demographic information about the study respondents, questions on issues such as age, marital status and level of education were asked in the first section of the questionnaire.

4.2.1 Respondents demographic information

4.2.1.1 Age of respondents

Figure 4.1 shows that 127(42.6%) were aged 31 to 40 years old, followed by 84(28.2%) respondents aged 21 to 30. Moreover, figure 4.1 also shows that 52(17.4%) were aged 20 years old and below while 29(9.7%) were aged 41 to 50 years old. However, only 6(2%) respondents were 51 years old and above.

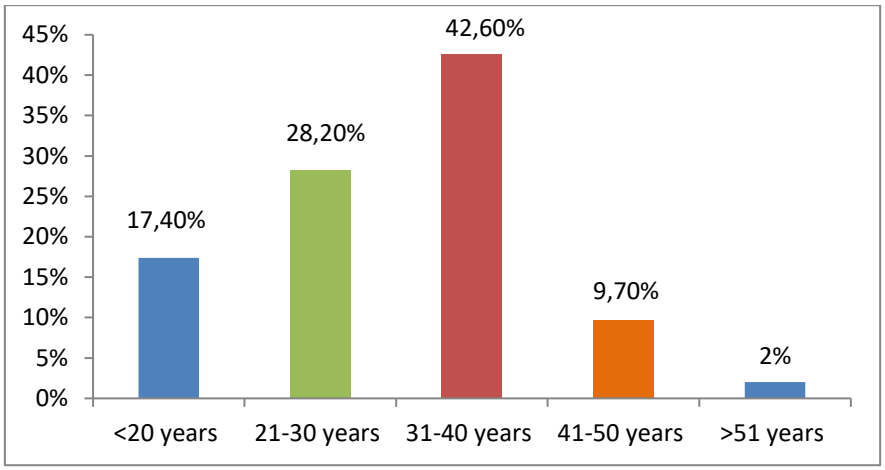


Figure 4.1: Age of respondents (N=298)

4.2.1.2 Marital status of respondents

The findings show that 134(45.4%) respondents were married while 113(38.9%) were single. Moreover, 28(9.6%) divorced and 18 (6.10%) were widows.

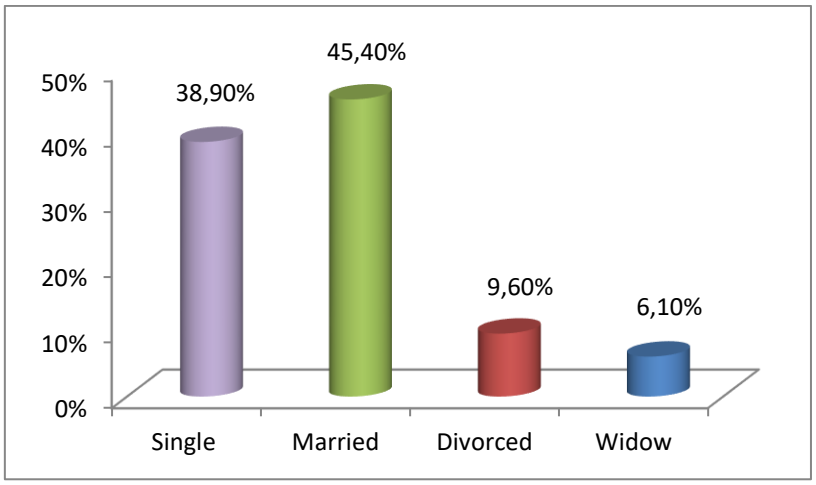


Figure 4.2: Respondents' marital status (N=293)

4.2.1.3 Respondents' level of education

The findings indicate that 205(70%) respondents had secondary level of education, followed by 41 (14%) with tertiary level of education. Moreover, 34(11.6%) respondents only had primary level of education, while 13(4.4%) reported never been to school.

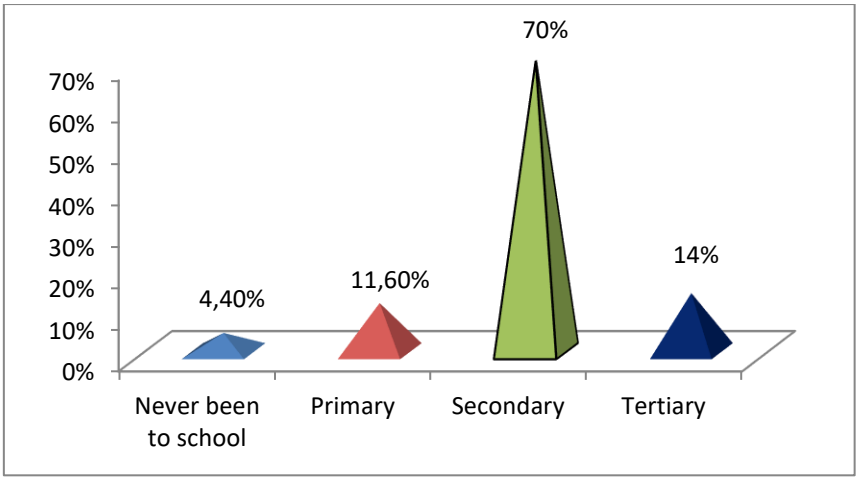


Figure 4.3: Respondents' level of education (N=293)

4.3 Knowledge on malnutrition

4.3.1 Have you ever heard of malnutrition?

Figure 4.4 indicates that 261(92%) respondents heard about malnutrition while 23(8%) never heard about it.

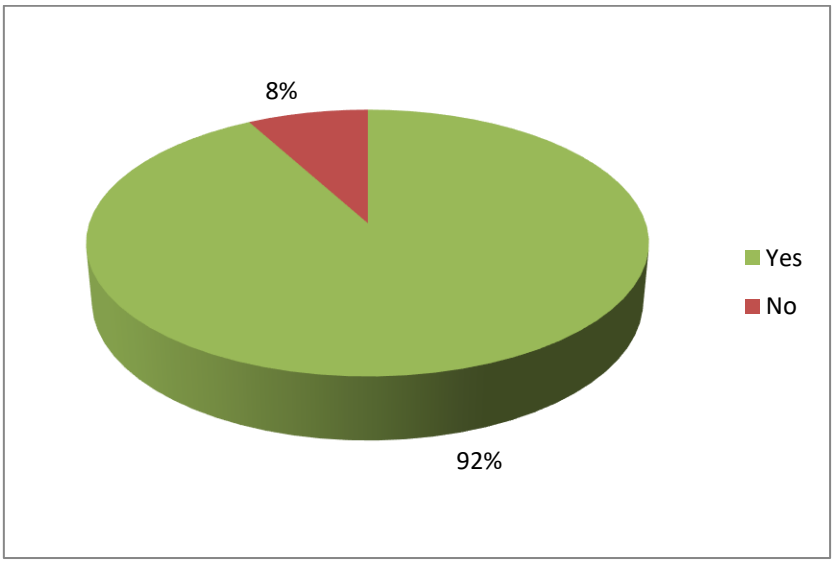


Figure 4.4: Distribution of respondents who heard and those who never heard about malnutrition (N=284).

4.3.1.1 Where did you hear about malnutrition?

This question was designed specifically for respondents who heard about malnutrition.

Figure 4.5 shows that 145(54.3%) respondents heard about malnutrition from the clinic, followed by 79(29.6%) respondents who heard from the hospital. Moreover, radio was the third common source of malnutrition knowledge as reported by 34(12.7%) followed by television

with 7(2.6%) respondents. Friends were the least source of knowledge with 2(0.7%) respondents.

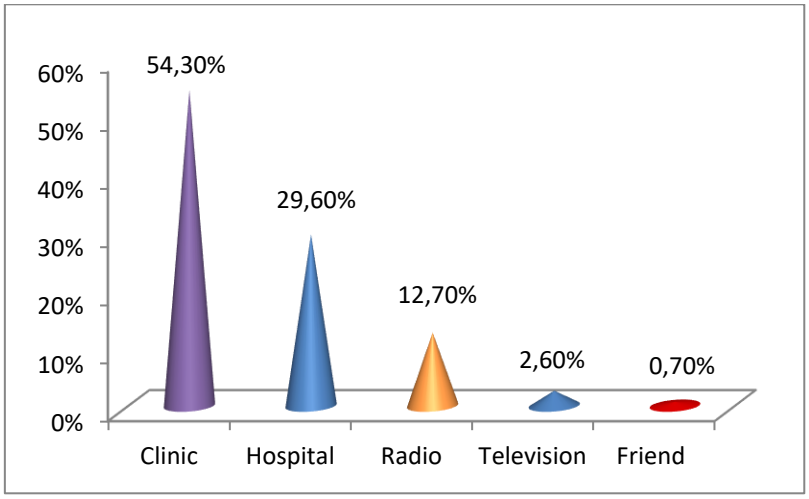


Figure 4.5: respondents' sources of malnutrition knowledge (N=261)

4.3.2 Malnutrition involves a dietary deficiency

Figure 4.6 shows that 249(85%0 respondents agreed that malnutrition involves dietary deficiency while 44(15%) disagreed with the statement.

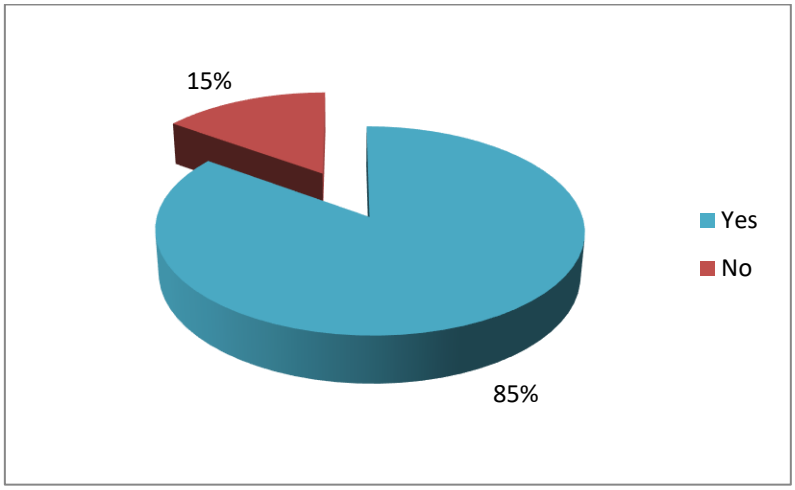


Figure 4.6: Responses on whether malnutrition involves dietary deficiency (N=293)

4.3.3 Underweight, swelling of face and legs are symptoms of malnutrition

Figure 4.7 show that 210(73%) respondents agreed that Underweight, swelling of face and legs are symptoms of malnutrition, while 79(27%) disagreed with the statement.

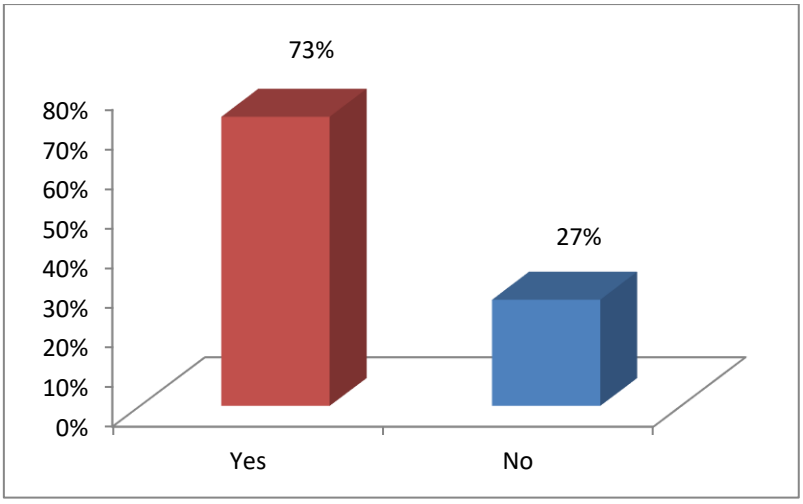


Figure 4.7: Respondents knowledge about symptoms of malnutrition (N=289)

4.3.4 What cause Malnutrition?

Table 4.1 indicates that 184(62.8%) respondents reported lack of nutrients in the body as the cause of malnutrition, while 61(20.8%) reported HIV/AIDS as the cause. Moreover, 38(13%) respondents reported cholera as the cause of malnutrition while 10(3.4%) reported diarrhoea as the cause.

Table 4.1: Respondents responses on causes malnutrition (N=293)

Possible causes	*(f)*	(%)
HIV/AIDS	61	20.8
Lack of nutrients in the BODY	184	62.8
Choleara	38	13.0
Diarrhoea	10	3.4
Total	293	100.0

4.3.5 Breathing difficulties and increased risk of chest infection and death are complications of malnutrition

Figure 4.8 shows that 284(97%) of the respondents knew that breathing difficulties and increased risk of chest infection and death are complications of malnutrition, and 9(3%) did not know.

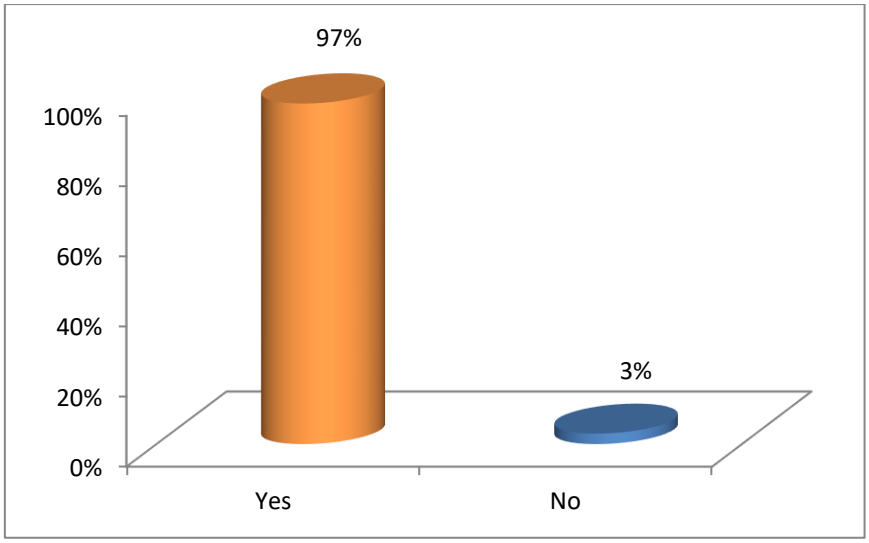


Figure 4.8: Respondents' knowledge about malnutrition complications (N=293)

4.3.5. Association between respondents' level of education and knowledge of malnutrition causes

Table 4.2 indicates a high number(116) of respondents with Secondary level of education reported a lack of nutrients in the body as the cause of malnutrition, while a low number(3) of respondents who have been to school reported HIV/AIDS as a cause of malnutrition. However, there is statistically significant relationship between level of education and knowledge on causes of malnutrition (p<0.001).

Table: 4.2 Association between respondents' level of education and knowledge of malnutrition causes

Variable	**Causes**				***n***	**χ2-statistic (df)**	***P*-value**
	HIV/AIDS (f)	lack of nutrients in the body (f)	Cholera (f)	Diarrhoea (f)			
Level of education							
Never been to school	3	4	6	0	13	41.234a (9)	0.000*

Primary	5	29	0	0	34
Secondary	53	116	29	7	205
Tertiary	0	35	3	10	41

4.4 malnutrition preventive practices

4.4.1Malnutrition prevention

4.4.1.1 How can malnutrition be prevented?

Table 4.3 shows that 259(88.4%) respondents reported that eating balanced diet food can prevent malnutrition. Moreover, 17(5.8%) respondents reported that malnutrition can be prevented by eating potatoes, followed by 12(4.1%) who reported eating meat as way of preventing malnutrition. However, only 5(1.7%) respondents reported eating samba as a way of preventing malnutrition.

Table 4.3: Malnutrition prevention (N=293)

Prevention	**(f)**	**(%)**
Eating balanced diet food	259	88.4
Eating simba	5	1.7
Eating meat every day	12	4.1
Eating much potatoes	17	5.8
Total	293	100

4.4.2 How often do you buy food for your child?

Figure 4.9 Indicates that 226(77.9%) respondents buy food on a monthly basis while 50(17.2%) reported buying food weekly. Only 14(4.8%) respondents buy food when is finished.

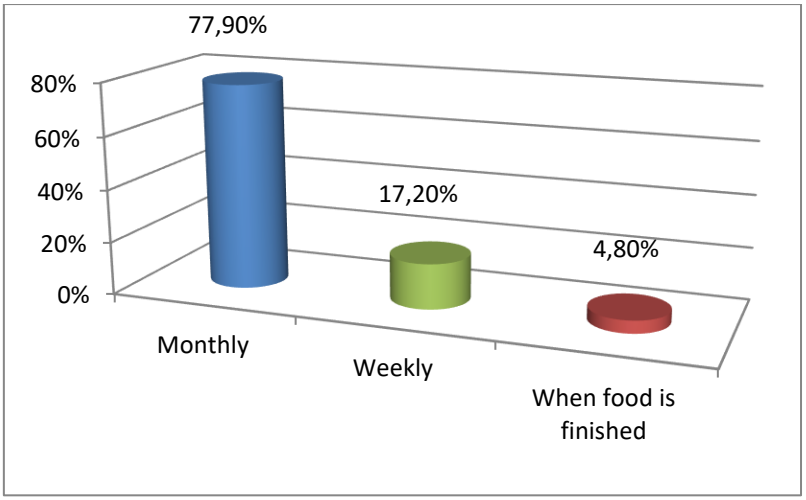


Figure 4.9: Respondents frequency of buying food for their child (N=290)

4.4.3 What type of food do you buy for your child?

Figure 4.10 indicates that 188(64.8%) respondents reported buying fruits and vegetables, and 96(33.1%) bought purity. Only 6(2.1%) respondents reported buying yoghurt.

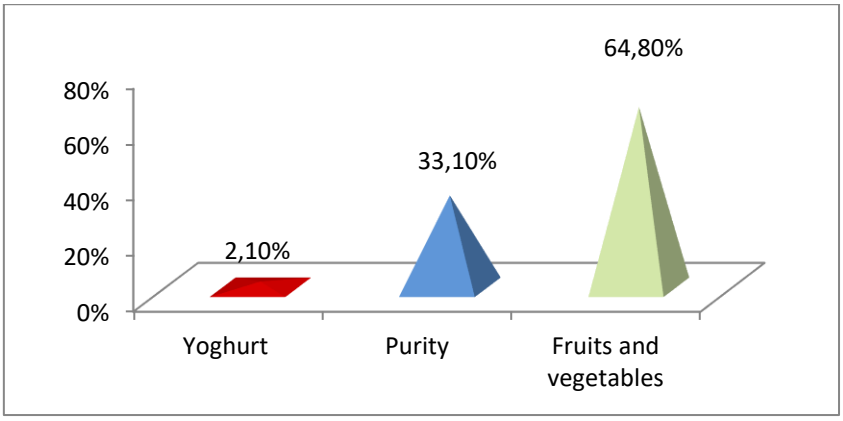


Figure 4.10: distribution on type of food respondents buy for their children (N=290)

4.4.4 Food preparation

How do you prepare your child's food?

Figure 4.11 shows that 263 (91.6%) respondents boil food during preparation for consumption. Moreover, the findings show that 14(4.9%) respondents fry the food while 10(3.5%) grill the food when preparing it.

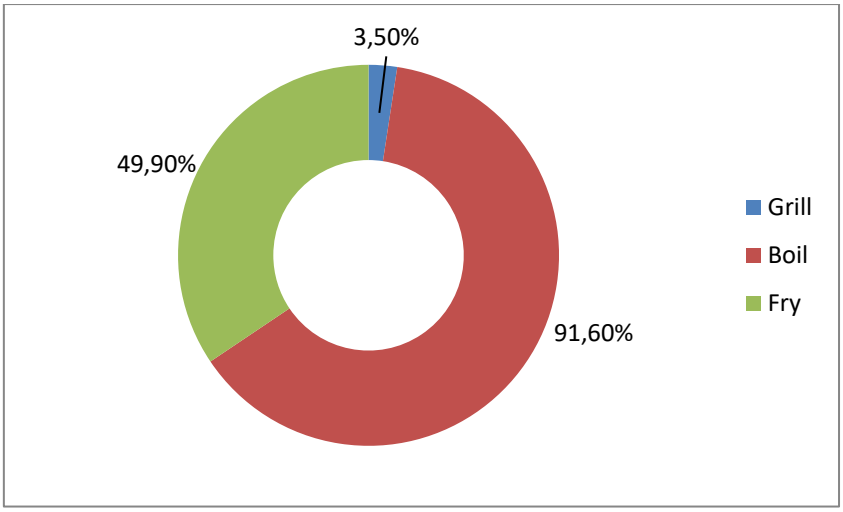


Figure 4.11: Distribution of respondents' food preparation methods (N=287)

4.4.5 How often do you feed your child in a day?

Figure 4.12 shows that 208(75.4%) respondents feed their children twice a day while 52(18.8%) reported feeding their children three times a day. Moreover, 9(3.3%) respondents reported feeding their children four times a day. However, only 7(2.5%) respondents reported feeding their children once a day.

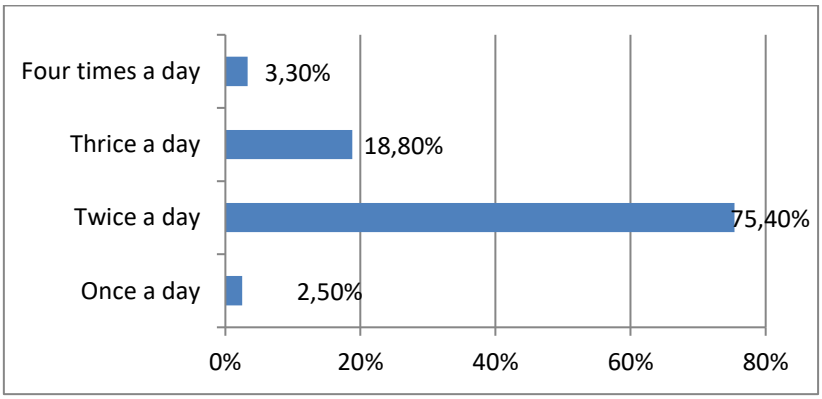


Figure 4.12: Respondents' frequency of child feeding (N=276)

4.4.6 What types of food do you feed your child?

Respondents were asked to indicate the type of food they give their children and they could give more than one answer. Overall, 286 respondents answered this question. Soft porridge was the most common food type given to children with 167 respondents. Cereals were the second (149) common food type, followed by bread with 133 respondents. Bread feeding was the less common with 100 respondents as indicated in table 4.4.

Table 4.4: Frequencies of food type given to children for feeding

N=286	Responses		Percent of Cases
	N	Percent	
Soft porridge	167	30.4%	58.4%
bread	133	24.2%	46.5%
cereals	149	27.1%	52.1%
Breast feed	100	18.2%	35.0%
Total	549	100.0 %	192.0%

4.4.6 Association between respondents' level of education and malnutrition prevention practices prevention

Table 4.5 shows that a high (178) number of respondents with secondary level education indicated that eating a balanced diet can prevent malnutrition, while a low (3) number of respondents who have never been to school reported that eating meat everyday prevents malnutrition. However, there is statistically a significant relationship between the level of education and the knowledge of malnutrition prevention (p<0.05).

Table 4.5: Association between respondents' level of education and malnutrition prevention

Variable	**Prevention methods**				***n***	**χ2-statistic (df)**	***P*-value**
	Eating balanced diet food (f)	Eating samba (f)	Eating meat everyday (f)	Eating much potatoes (f)			
Level of education							
Never been to school	10	0	3	0	13	26.210[a](9)	0.002

Primary	34	0	0	0	34
Secondary	178	3	9	17	205
tertiary	39	2	0	0	41

4.5 Attitude towards malnutrition

Table 4.6 indicates that 62 (21.6%) respondents agreed while 97 (33.8%) strongly agreed that they should feed their children at least 3-5 times in a day. Moreover, 122(42.5%) respondents disagreed while 6(2.1%) strongly disagreed that they should feed their children at least 3-5 times in a day. Furthermore, the findings also indicate that 96(33.4%) respondents agreed while another 96(33.4%) strongly agreed that it is their responsibility to ensure that they buy healthy food that contains all nutrients. Another view showed, the findings indicating that 87(30.3%) respondents disagreed while 8(2.8%) respondents strongly disagreed that it is their responsibility to ensure that they buy healthy food that contains all nutrients.

Furthermore, the findings indicate that 61(21%) respondents agreed whilst 128(44%) strongly agreed that they should always feed their children with a balanced diet. Moreover, 96(33%) respondents disagreed while 6(2.1%) strongly disagreed that their children must always be fed balanced diet. The findings also indicate that 170(58.4%) agreed while 36(12.4%) strongly agreed that it is their responsibility as parents to ensure that they do not buy junk food for their children. Furthermore, 71(24.4%) disagreed while 14(4.8%) strongly disagreed that it is their responsibility as parents to ensure that they do not buy junk food for their children. The findings further indicate that 19(6.5%) respondents agreed while 61(21%) strongly agreed that if they do not feed their children with a balanced diet, their children can get malnourished. Moreover, 83(28.5%) respondents disagreed while 128(44%) strongly disagreed that if they do not feed their children with a balanced diet, their children can get malnourished.

Table 4.6 Respondents' attitudes malnutrition

Item	Agree		Strongly agree		Disagree		Strongly disagree		TOTAL *(N)*
	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)	
I should feed my child at least 3-5 times in a day	62	21.6	97	33.8	122	42.5	6	2.1	287
It is my responsibility to ensure that i buy healthy food that contains all nutrients	96	33.4	96	33.4	87	30.3	8	2.8	287
I must always feed my child with a balanced diet food	61	21	128	44	96	33	6	2.1	291
It is my responsibility to ensure that i do not buy my child junk food,eg. simba, biscuits, sweets	170	58.4	36	12.4	71	24.4	14	4.8	291
If i do not feed my child with a balanced diet food, my child can get malnourished	19	6.5	61	21	83	28.5	128	44	291

4.6 The impact of knowledge and attitude on mothers' malnutrition preventative practices using multiple regression test.

A multiple regression was used to access the impact of knowledge and Attitude on malnutrition preventive practices. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. The following tables 4.7, 4.8 and 4.9 provides the results.

Table 4.7 Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.114[a]	0.013	0.002	0.34011	
Predictors: (Constant), Attitude, Knowledge					

The model summary shown in table 1 shows that the multiple correlation coefficient, R = 0.114 indicates that there is a weak correlation between malnutrition, and Attitude and knowledge. In terms of variability in observed Malnutrition accounted for by the fitted model, this amounts to 0.013 or 1.3%.

Table 4.8 ANOVA for models

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.263	2	0.132	1.138	.323[b]
Residual	20.127	174	0.116		
Total	20.391	176			
Dependent Variable: Malnutrition Predictors: (Constant), Attitude, Knowledge					

According to the table 2 (ANOVA) there is no enough evidence to support that there is a statistically significant relationship between Malnutrition and, Attitude and Knowledge. Since F-test for the hypothesis is given by (F(2,174))=1.138, p>0.05.

Table 4.9: Coefficient for the knowledge variables

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.680	0.307		5.472	0.000
Knowledge	0.203	0.172	0.092	1.184	0.238
Attitude	0.065	0.054	0.094	1.206	0.229
a. Dependent Variable: Malnutrition					

4.7Conclusion

In this chapter the data which was collected from mothers of children under five-years from Thulamela Municipality, Limpopo province, South Africa were presented and analysed. Knowledge on malnutrition, preventive practices and attitudes towards malnutrition preventive practices were presented. Multiple regression was used to access the impact of knowledge and Attitude on malnutrition preventive practices. In the next chapter the findings presented and analysed in this chapter.

CHAPTER FIVE
DISCUSSION OF FINDINGS

5.1 Introduction

The present study sought to explore the impact of mothers' knowledge and attitudes on malnutrition preventive practices amongst children under five within the Thulamela municipality, South Africa. In this chapter the findings of the research are discussed together with a summary of the findings. Conclusions are drawn from the findings and the recommendations are then made.

5.2 Discussion

5.2.1 Demographic information

The results of the study show that most of the respondents were mothers aged between 31 and 40 years with 42.6%. Moreover, most (45.4%) respondents were married mothers. The study discovered that majority (70%) of the respondents had secondary level education. Thus, it can be concluded that most respondents were able to read and write as they attended school up to secondary level.

5.2.2 Knowledge on malnutrition

The study discovered that majority (92%) of the respondents heard about malnutrition, and most (54%) of the respondents heard about malnutrition from the clinic. Based on the findings it can be concluded that health practitioners in health facilities such as clinic disseminate information about malnutrition to mothers and primary care givers of children. Majority (85%) of the respondents knew that malnutrition involves a dietary deficiency. These findings concur with findings of the study conducted by Bodzewan (2015) to assess mothers' knowledge on malnutrition and he discovered that 72 (60%) mothers who were respondents in his study had good knowledge on what malnutrition is. These mothers reported that malnutrition results from inadequate intake of nutrients that the body needs to maintain healthy tissues and organ functions.

Furthermore, the study discovered that most (73%) respondents knew that underweight, swelling of face and legs are symptoms of malnutrition. Based on these findings, it can be inferred that most mothers know about symptoms of malnutrition. These findings are supported by Cumber, Ankraleh, and Monju, (2016) who found that majority of (22) mothers with a percentage of 73% said when the child has large head, swollen stomach, and having weight loss these are symptoms of malnutrition. Mothers who were respondents in the study were asked about causes of malnutrition, and the study discovered that most (62.8%)

respondents knew that the lack of nutrients in the body causes malnutrition. These findings are supported by Bodzewan (2015) who found that mothers who were respondents in his study reported that malnutrition results from inadequate intake of nutrients that the body needs to maintain healthy tissues and organ functions. The study also discovered statistically significant relationship between mothers' level of education and knowledge on causes of malnutrition ($p<0.001$). Moreover, the study also discovered that majority (97%) of the respondents knew that breathing difficulties and increased risk of chest infection and death are complications of malnutrition.

5.2.3 Malnutrition preventive practices

Furthermore, the study found that majority (88.4%) of the respondents knew that eating a balanced diet prevents malnutrition. These findings concur with findings of Bodzewan (2015) who discovered that most mothers [56 (48.28%)] prevented malnutrition by feeding the child with a balanced diet. The study discovered a statistically significant relationship between respondents' level of education and knowledge on malnutrition prevention ($p<0.05$). The study discovered that majority (77.9%) buy food for their children monthly. Buying food regularly ensures that fresh food eaten and not food is stored for long as some types of food expire before it could be finished. The study also found that most (64.8%) respondents bought fruits and vegetables for their children. Giving a child fruits and vegetables helps to build the body up and keep the body functioning well as they provide the body with nutrients. Furthermore, the study discovered that majority (91.6%) of the respondents boiled food before they could give their children. Boiled food is easy for children to consume compared to fried and grilled food. The study also discovered that majority (75.4%) of the mothers who were respondents fed their children twice a day. Furthermore, the study discovered most respondents (167) gave their children soft porridge than other food types.

5.2.4 Attitude towards malnutrition

The study discovered that mothers who were respondents that held a positive attitude towards feeding their child frequently commensurate to the need for food. This can be interpreted from the response mothers gave where most (159) agreed that they should feed their children at least 3-5 times a day. The study also discovered that the respondents held a positive attitude towards providing their children with healthy food. This is supported by responses that respondents gave wherein most (192) accepted responsibility to ensure that they buy healthy food that contains all nutrients. The study also discovered that most (189) respondents agreed that they must always feed their children with a balanced diet. Based on the findings, it can be inferred that respondents hold positive attitudes towards feeding their children with a balanced diet to prevent malnutrition. Moreover, the study also discovered that respondents held

positive attitudes towards fighting and preventing malnutrition among their children. This can be interpreted from the responses that respondents gave wherein most (206) respondents agreed that it is their responsibility to ensure that they do not buy their children junk food, e.g. Potato chips, biscuits, sweets. The findings also found that most (211) respondents disagreed that if they do not feed their child with a balanced diet, their child can get malnourished. Based on the overall findings on attitudes towards malnutrition preventive practices, mothers who were respondents in the study held moderate positive attitude towards malnutrition preventive practices.

5.2.5 The impact of knowledge and attitude on the mothers' malnutrition preventative practices using multiple regression test

As indicated in Chapter 4 section 4.6, the impact of knowledge and attitude on malnutrition was assessed to determine if the knowledge and attitude of mother's influence malnutrition preventive practices. The results revealed that both knowledge and attitude of the participants slightly influence malnutrition preventive practices. Furthermore, the attitude (0.094) sharped malnutrition preventive practice of mothers more than knowledge (0.092). It was, however, not statistically significant (0.238 and 0.229 respectively), this implies that though knowledge and attitude influence malnutrition preventive practise, the result of the respondents demonstrated otherwise. The results gave an impression that the respondents knowledge is not sufficient enough to influence or impact malnutrition preventive practise. An analysis using multiple linear regression indicated that there is a linear relationship between knowledge, attitude and malnutrition preventative practise but the relationship is not statistically significant (p-value=0.323). The further unveil that both knowledge and attitude do not contribute much in terms of malnutrition preventive practices, hence there is need to enforce ways of disseminating information to increase knowledge and eventually improve attitude towards malnutrition preventive practise.

CHAPTER 6
CONCLUSION, RECOMMENDATIONS AND LIMITATIONS

6.1 Introduction

This chapter presents the recommendations, limitations and conclusions based on the findings, and this section has been arranged into recommendations, limitations and conclusion. The purpose of the study was to explore the impact of mothers' knowledge and attitudes on malnutrition preventive practices among under five-year old children in Thulamela municipality, South Africa. A self-administered questionnaire was used to collect data in order to:

- Assess the knowledge of mothers regarding malnutrition
- Describe mothers' malnutrition preventive practices amongst children under-five years old.
- Describe the attitudes of mothers towards malnutrition and its preventive practices amongst under-five year old children.
- Determine the association between mothers' knowledge and their malnutrition preventive practices
- Determine the association between mothers' attitudes and their malnutrition preventive practices

6.2 Conclusions

The study is envisaged to assist in improving malnutrition preventative practices of mothers in Thulamela municipality. The distribution of the information provided in this study to policy makers, mothers, nurse, public healthcare givers, charity organization, business owners, government departments and agencies and interested stakeholders should enhance decision-making and lead to improved planning better education programs for mothers.

6.2.1 Knowledge of mothers regarding malnutrition

Participants demonstrated the knowledge on the subject of malnutrition but there was little evidence on the association of knowledge and malnutrition preventative practices. Seemingly, mothers do have knowledge about malnutrition but do not exercise or apply their knowledge to prevent malnutrition on their children.

6.2.2 Mothers' malnutrition preventive practices amongst children under-five years old

Though mothers are aware of the causes of malnutrition, it is illustrated that they do not apply the measures to prevent it. The study also revealed that mothers have the adequate knowledge prevent malnutrition but the issue may be applying their knowledge.

6.2.3 Attitudes of mothers towards malnutrition and its preventive practices amongst under-five year old children.

Through regression, it is established that mothers have positive slightly moderately favorable attitude towards malnutrition preventative practice. The attitude of the mothers is positive towards malnutrition and preventive practices among under-five year old children.

6.2.4 Impact between of mothers' knowledge and attitude on malnutrition preventive practices.

From the study it is established that there is a positive slightly favorable knowledge and attitude towards malnutrition preventive practice. This could be as a result that mothers have little knowledge concerning malnutrition preventative practices. The results shows that the participants needs more educational programs concerning malnutrition preventative practices.

6.3 Recommendations

Based on the findings of the study, the following recommendations were made on the impact of mothers' knowledge and attitudes on malnutrition preventive practices among under five-year old children in Thulamela municipality, South Africa

- By assessing the knowledge of mothers regarding malnutrition, the department of health should continue with educational campaigns to address malnutrition amongst under five-year-old children and the use of social media should be introduced in order to ensure that every mother including young mothers have access to information about malnutrition.
- On malnutrition preventative practices, communities should be educated about the significance of a balanced diet that contain nutrients that children's bodies need.
- The department of social development should intervene by identifying households with less an income of less than R1000 and subsidize them on nutritious food that they cannot afford as a ways of fighting against malnutrition.
- The Department of Education should continue with school feeding and monitor if food distributed are not expired.
- Further research should explore contributory factors to child malnutrition regardless of mothers being knowledgeable about malnutrition and preventive strategies.

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APPENDIX A: QUESTIONNAIRE

THE IMPACT OF MOTHER'S KNOWLEDGE AND ATTITUDES ON MALNUTRITION PREVENTATIVE PRACTICES AMONG UNDER FIVE YEARS CHILDREN IN THULAMELA MUNICIPALITY, LIMPOPO PROVINCE

Instructions

1. Do not write you name
2. Read thoroughly and understand before you answer.
3. Answer all questions
4. The questionnaire should be completed and returned back by the researcher immediately
5. Only tick one appropriate answer from each item
6. For any clarity do not hesitate to contact the researcher immediately

SECTION A: DEMOGRAPHIC INFORMATION

	Questions	Answers
1	How old are you?	1 < 20 ( ) 2 21-30 ( ) 3 31-40 ( ) 4 41-50 ( ) 5 51> ( )
2	What is your marital Status?	1 single ( ) 2 Married ( ) 3 Divorced ( ) 4 Widowed ( )
3	What is your level of education?	1 None ( ) 2 Primary ( ) 3 Secondary ( ) 4 Tertiary ( )
4	If yes, where?	1 Radio 2 TV 3 Clinic 4 Hospital 5 Other:specify…… .

SECTION B: KNOWLEDGE OF MALNUTRITION

5 Have you ever heard of Malnutrition?

1 Yes ( )

2 No ( )

6 If yes, where did you hear about malnutrition?

1 Clinic ( )
2 Hospital ( )
3 Radio ( )
4 TV ( )
5 Friend ( )
6 Other: Specify……

7 Malnutrition involves a dietary deficiency?

1 Yes ( )
2 No ( )

8 Under weight, swelling of face and legs are symptoms of Malnutrition?

1 Yes ( )
2 No ( )

9 What causes malnutrition?

1 HIV/AIDS ( )
2 Lack of nutrients in the body ( )
3 Cholera ( )
4 Diarrhoea ( )
5 Other: specify…… ( )

10 Breathing difficulties and increased risk of chest infection and death are complications of malnutrition?

1 Yes ( )
2 No ( )

11 The best way to prevent malnutrition is to eat a healthy, balanced diet, food that contains all nutrients?

1 Yes ( )
2 No ( )

12 How to prevent malnutrition?

1 Eating balanced diet ( )

2 Eating simba ( )

3 Eating meat ( )

4 eating much Potatoes ( )

SECTION C: MALNUTRITION PREVENTIVE PRACTICES

13 How often do you buy your children's food?

1 Monthly ( )

2 Weekly ( )

3 Other: Specify……..

14 What type of food do you buy?

1 Yoghurt ( )

2 Purity ( )

3 Fruits and Vegetables ( )

4 Other: specify……..

15 How do you prepare your child's food?

1 Grilled ( )

2 Boiled ( )

3 Fried ( )

4 Other: specify……..( )

16 How often do you feed your child?

1 Once a day ( )

2 Twice a day ( )

3 Wait for him to cry ( )

4 Other: specify……

17 What types of food do you feed your child?

1 Breakfast= Soft porridge ( ) Bread ( ) Cereals ( )

2 Lunch= Soft porridge ( ) Fish ( ) Cereals ( )

3 Supper= Soft porridge ( ) Pasta ( ) Fish ( )

4 other: specify…….

SECTION D: ATTITUDE TOWARDS MALNUTRITION

Tick only one (1) response per statement by putting an X in the box of your chosen response

1=Agree, 2= strongly agree, 3=Disagree and 4=strongly disagree

	Statements	Response			
		1	2	3	4
18	**I should feed my child at least 3-5 per day**				
19	**It is my responsibility to ensure that I buy healthy food that contains all nutrients**				
20	**I must always prepare my child a well-balanced diet**				
21	**I must make sure that I do not buy my children junk food, eg simba, sweets, biscuits**				
22	**If I do not give a well-balanced diet, my child can get malnutrition**				

APPENDIX B: ETHICAL CLEARANCE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:

Ms AA Ratshibvumo

Student No:
11610021

PROJECT TITLE: **Impact of mothers' knowledge and attitude on malnutrition preventive practices among under-five years children in Thulamela Local Municipality, South Africa.**

PROJECT NO: **SHS/19/PH/08/1604**

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr TR Luhalima	University of Venda	Supervisor
Dr TG Tshitangano	University of Venda	Co -Supervisor
Ms AA Ratshibvumo	University of Venda	Investigator – Student

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: April 2019
Decision by Ethical Clearance Committee Granted
Signature of Chairperson of the Committee: .....
Name of the Chairperson of the Committee: Senior Prof. G.E. Ekosse

UNIVERSITY OF VENDA
DIRECTOR
RESEARCH AND INNOVATION
2019 -04- 17
Private Bag X5050
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"A quality driven financially sustainable, rural-based Comprehensive University"

APPENDIX C: PERMISSION LETTER

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

Ref : LP- 201908 - 012
Enquires : Ms PF Mahlokwane
Tel : 015-293 6028
Email : Kurhula.Hlomane@dhsd.limpopo.gov.za

Ratshibvumo Annah

PERMISSION TO CONDUCT RESEARCH IN DEPARTMENTAL FACILITIES

Your Study Topic as indicated below;

The impact of mother's knowledge on malnutrition preventive practices among under five years children in Thulamela local municipality, South Africa.

1. Permission to conduct research study as per your research proposal is hereby Granted.
2. Kindly note the following:
   a. Present this letter of permission to the institution supervisor/s a week before the study is conducted.
   b. In the course of your study, there should be no action that disrupts the routine services, or incur any cost on the Department.
   c. After completion of study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
   d. The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible.
   e. The approval is only valid for a 1-year period.
   f. If the proposal has been amended, a new approval should be sought from the Department of Health
   g. Kindly note that, the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated

Head of Department

25/11/19
Date

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Website: http/www.limpopo.gov.za

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APPENDIX D: CONSENF FORM

University of Venda

Consent form for respondent

My name is Ratshibvumo Azwinndin Annah, a Master's student at the University of Venda, School of Health Sciences in the Department of Public Health. I am conducting a study entitled: **The impact of mothers' knowledge and attitude on malnutrition preventive practices among under- five years children in Thulamela local municipality, Vhembe district, south Africa** '**.** I would like to invite you to participate in this study. Information obtained from you will be treated as confidential. Your participation in this study will be voluntary and your decision will not negatively affect your life or health.

INFORMED CONSENT DECLARATION FORM

In terms of the ethical requirements of the University of Venda, I now invite you to complete this form as an indication of your permission to voluntarily participate in this study.

I _____ hereby confirm that I have been fully informed about the purpose, procedures and activities of the study. The rights and risks of respondent have also been fully explained to me. I was given the opportunity to ask questions and I understand that participants can withdraw from the study at any stage, without giving any reasons.

I therefore hereby freely **Give/Do not give (**Delete the inapplicable**)** my consent for my child to take part in the study, as outlined above.

Parent's signature: _____ Date: _____

Researcher's signature: _____ **Date:** _____

APPENDIX E: PROOF READING LETTER

We provide proof reading and editing services to students, researchers, authors, businesses and government agencies/ departments

Enquiries to: Ms M.N Mashamba
Email: Mudzunga@tppgroup.co.za
Cell: 0722541466

STATEMENT OF COMPLETED WORK DONE: RESEARCH DOCUMENT

This confirms that the mini dissertation submitted for the Masters degree of Ms A.A Ratshibvumo on *'The impact of mothers' knowledge and attitude on malnutrition preventive practices among under five-year-old children in Thulamela local municipality, Vhembe district, South Africa'.*

CLIENT CONTACT DETAILS:
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