Knowledge and practice of nursing mothers/caretakers in the prevention of malnutrition in Under Five Children at Mansa General Hospital

BY

Rebecca Gondwe (RN/RM)

UNZA 2012
The University of Zambia  
School of Medicine  
Department of Nursing Sciences

Knowledge and practice of nursing mothers/caretakers in the prevention of malnutrition in Under Five Children at Mansa General Hospital

BY

Rabecca Gondwe
RM 2006
RN 2003

A research submitted in partial fulfillment for the requirements for the Bachelor of Science in Nursing Degree at the University of Zambia.

UNZA  
March, 2012.
Acknowledgement

I wish to thank the following people without whom this study would not have been possible:-

I would like to thank the Management of Mansa General Hospital for allowing me to carry out my research from there.

My supervising Lecturer, Mrs. D. Chanda for her relentless effort in guiding me through and being there for me whenever I needed her assistance

My Lecturer Dr P. Mweemba for imparting the knowledge in me, on how to go about the research

My sincere thanks go to my dearest husband Moffat Mwansa Fumbeshi and my dearest daughter Kalumbi Fumbeshi for their support and patience.

My appreciation goes to my sponsors the Ministry of Health who made it easy for me to attain my goal in life.

My sincere appreciation goes to the Management and Staff of Mansa School of Nursing for their encouragement and support too numerous to mention.

Above all I thank the Almighty God for giving me guidance, protection and good health.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CONTENT</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgement</td>
<td>i</td>
</tr>
<tr>
<td>Table of content and appendices</td>
<td>ii</td>
</tr>
<tr>
<td>List of tables</td>
<td>iv</td>
</tr>
<tr>
<td>List of graphs</td>
<td>v</td>
</tr>
<tr>
<td>List of abbreviations</td>
<td>vii</td>
</tr>
<tr>
<td>Declaration</td>
<td>ix</td>
</tr>
<tr>
<td>Statement</td>
<td>x</td>
</tr>
<tr>
<td>Dedication</td>
<td>xi</td>
</tr>
<tr>
<td>Abstract</td>
<td>xii</td>
</tr>
</tbody>
</table>

# CHAPTER ONE

1.0 Introduction ................................................. 1

1.1 Background .................................................. 1

1.2 Statement of the problem ................................. 5

1.3 Factors contributing and/or influencing problem ....... 8

1.4 Diagram of Problem analysis .............................. 12

1.5 Conceptual framework ..................................... 13

1.6 Justification ............................................... 17

1.7 Research objectives ....................................... 18

1.8 Hypothesis .................................................. 18

1.9 Conceptual definitions ................................. 19

1.10 Variables and Cut-off Points ......................... 19
CHAPTER TWO
2.0 Literature review ...........................................22
2.1 Introduction .................................................22
2.2 Knowledge ..................................................22
2.3 Practice .....................................................26
2.4 Conclusion ..................................................30

CHAPTER THREE
3.0 Methodology ................................................31
3.1 Design .......................................................31
3.2 Research setting ............................................31
3.3 Study population ..........................................32
3.4 Sample selection ..........................................32
3.5 Sample size ................................................33
3.6 Operational definitions ..................................33
3.7 Data collection tool .......................................34
3.8 Data collection technique ...............................36
3.9 Pilot project ...............................................37
3.10 Ethical and legal issues ..................................37

CHAPTER FOUR
4.0 Data analysis and presentation of findings ...............38
4.1 Data analysis ...............................................38
4.2 Presentation of findings ...................................38
4.2.1 Demographic data .....................................39
4.2.2 Knowledge ..............................................44
4.2.3 Practice ................................................61
4.2.4 Relationship between knowledge and practice ....75
CHAPTER FIVE
5.0 Discussion of findings and implications for the health care system......76
5.1 Characteristics of the sample..............................................76
5.2 Discussion of each variable..............................................78
5.3 Significance to Nursing....................................................85
5.4 Conclusion.................................................................87
5.5 Recommendations.........................................................87
5.6 Dissemination of findings.................................................90
5.7 Limitations of the study.................................................90
5.8 References...............................................................91

APPENDICES
1. Questionnaire
2. Work Plan
3. Budget and justification
4. Request to undertake study
5. Authority to undertake study
6. Gantt chart

LIST OF TABLES
Table number ................................. Page
1. Malnutrition Cases.................................5
2. Variables and Cut off Points.........................20
3. Distribution of Respondents by age...............40
4. Distribution of Respondents by sex..................41
5. Distribution of Respondents by address...............41
6. Distribution of Respondents by marital status.........42
7. Distribution of Respondents by level of education.........42
LIST OF GRAPHS

1. Respondents Knowledge on definition of Malnutrition.......................... 45
2. Respondents Knowledge on malnutrition manifestations......................... 46
3. Respondents Knowledge on teachings at under five clinic.......................... 47
4. Respondents Knowledge on sources of information.................................. 48
5. Respondents Knowledge on balanced diet.................................................. 49
6. Respondents Knowledge on how a child becomes malnourished................... 50
7. Respondents Knowledge on exclusive breastfeeding ................................ 51
8. Respondents Knowledge on prevention of malnutrition.............................. 52
9. Respondents Practice on food preparation.................................................. 62
10. Respondents Practice on feeding the child............................................... 63
11. Respondents Practice on whether the child eats alone.............................. 64
12. Respondents Practice on when to start complementary feeds..................... 65
13. Respondents Practice on how often children under five years were fed.......... 66
14. Respondents Practice on having a backyard garden.................................. 67
15. Respondents Practice on the type of foods grown.................................... 68
16. Respondents Practice on preservation of food after harvesting................... 69
17. Respondents Practice on the methods of food preservation......................... 70
18. Respondents Practice in the participation in childcare activities.................. 71
**LIST OF ABBREVIATIONS**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
</tr>
<tr>
<td>CFR</td>
<td>Case Fatality Rate</td>
</tr>
<tr>
<td>CSO</td>
<td>Central Statistical Office</td>
</tr>
<tr>
<td>CTC</td>
<td>Community Therapeutic Centres</td>
</tr>
<tr>
<td>DHMT</td>
<td>District Health and Management Team</td>
</tr>
<tr>
<td>DRC</td>
<td>Democratic Republic of Congo</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organisation</td>
</tr>
<tr>
<td>GRZ</td>
<td>Government of Republic of Zambia</td>
</tr>
<tr>
<td>HBM</td>
<td>Health Belief Model</td>
</tr>
<tr>
<td>HDI</td>
<td>Human Development Index</td>
</tr>
<tr>
<td>HIV</td>
<td>Human Immuno-deficiency Virus</td>
</tr>
<tr>
<td>IEC</td>
<td>Information, Education and Communication</td>
</tr>
<tr>
<td>IMCI</td>
<td>Integrated Management of Childhood Illnesses</td>
</tr>
<tr>
<td>IYCN</td>
<td>Infant and Young Children Nutrition</td>
</tr>
<tr>
<td>MCH</td>
<td>Maternal and Child health</td>
</tr>
<tr>
<td>MDG</td>
<td>Millennium Development Goals</td>
</tr>
<tr>
<td>MNCH</td>
<td>Maternal, Neonatal and Child Health</td>
</tr>
<tr>
<td>MoH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>MUAC</td>
<td>Mid-Upper Arm Circumference</td>
</tr>
<tr>
<td>NFNC</td>
<td>National Food and Nutrition Commission</td>
</tr>
<tr>
<td>NNSS</td>
<td>National Nutrition Surveillance Survey</td>
</tr>
<tr>
<td>ORS</td>
<td>Oral Rehydration Salts</td>
</tr>
<tr>
<td>PEM</td>
<td>Protein Energy Malnutrition</td>
</tr>
</tbody>
</table>
SAM - Severe Acute Malnutrition
SD - Standard Deviation
SNUP - Sixth National Development Plan
UNICEF - United Nations International Children's Emergency Funds
USAID - United States Agency for International Development
VAD - Vitamin A Deficiency
WHO - World Health Organization
ZDHS - Zambia Demographic and Health Survey
DECLARATION

I, Rabieca Gondwe, hereby declare that the work presented in this study for a Bachelor of Science Degree in Nursing has not been presented either wholly or in part, for any other Degree and is not being currently submitted to any other Degree.

Signed: ........................................ Date: 01/06/2012

(Candidate)

Approved: ...................................... Date: 01/06/2012

(Supervising Lecturer)
I, Rebecca Gondwe, do hereby certify that this study is entirely the result of my own independent investigations. The various sources to which I am indebted are clearly indicated in the text and reference.

Signed: Gondwe.................................................... Date: 01.06.12............

x
DEDICATION

To

My lovely daughter Kalumbi whom I left at the time she needed me most

To

My husband Moffat for the love, support and encouragement that made it possible for me to pursue my ambition.

To

My cousin Baraka for having taken good care of my daughter whilst I was away.

To

My sister Daphine Matifeyo for her support and encouragement
CHAPTER 1

1.0 INTRODUCTION

1.1 Background Information

Zambia is a land-locked sub-Saharan country sharing the boundaries with the Democratic Republic of Congo (DRC) and Tanzania in the north; Malawi and Mozambique in the east; Zimbabwe and Botswana in the south; Namibia in the southwest and Angola in the west. Zambia covers a land area of 752,612 square kilometers, which is about 2.5 percent of Africa. Zambia being a landlocked country has led to influx of refugees from war torn neighboring countries. The country is divided into nine provinces, of which two are predominantly urban and the other seven are rural provinces (Central Statistical Office (CSO), 2009). North western province has a lot of refugees and this can lead to an increase in the number of malnourished children because the little food which is available has to be shared amongst the people in that community. Mansa is predominantly a rural community. CSO states that 60 percent of the total population lives in rural area while 40 percent abide in urban areas.

Zambia has a mixed economy consisting of a modern urban sector that, geographically, follows the rail line and a rural agricultural sector. Sixty-four percent (64%) of the population lives in poverty (less than US$1 per day). Zambia is ranked 166th out of 177 countries on the Human Development Index (HDI) (CSO, 2009).

Zambia has had economic problems for a long time. Therefore, Zambia’s long-term vision has been to become a prosperous middle income country. Zambia is besieged with poor economy which consequently, leads to malnutrition. According to the World Bank’s March 2011 strategy for Africa report, released this year, it was evident that Zambia would be able to beat the poverty trap even before the 2030 deadline. Zambia has been re-classified as a middle income country in the lower bracket. The re-classification of Zambia as a middle-income country would boost the investment climate thereby creating wealth and jobs for the people. If more jobs are created, it means that people will have more money to buy food for their children and the cases of malnutrition will be reduced or prevented (Muyanwa, 2011).
1.1.1 Health Care System in Zambia

Health services delivery requires a functional health system, which in turn needs key elements and essential inputs to make it work. At present, several challenges are affecting the effectiveness of Zambia’s health system, in particular, human resource crisis and inadequate number of health facilities. Health facilities should support people through health education to prevent malnutrition in the country as most of the health institutions in Zambia are besieged with malnutrition. Significant gap exists in the number and distribution of health facilities required to cover the population. In total, Zambia has 1,327 health facilities, including 97 hospitals, 1,210 health centres, and 20 health posts. The majority of the health facilities belong to the Government of Republic of Zambia (GRZ). The existing network of health facilities, especially at the lowest level, is not adequate to cater for the entire population. There is acute shortage of primary health care facilities. For example, the target is to have 3000 health posts but currently only 20 have been commissioned; the target for health centres is 1385 but currently only a total of 1210 health centres have been built (WHO, 2009).

1.1.2 Overview of the Health Status of the Zambian Child

A gain has been recorded in terms of child health and nutrition. Infant Mortality Rate (IMR) decreased from 95 deaths per 1000 live births in 2001/2 to 70 deaths per 1000 live births in 2007 while under-five mortality rate also decreased from 168 per 1000 live births in 2001 to 119 per 1000 live births in 2007. Neonatal Mortality Rate is currently 34 per 1000 live births. The major causes of child mortality are malaria, respiratory infections, diarrhoea, malnutrition and anaemia. Approximately 15 percent of children under five are underweight, 45 percent are stunted and 5 percent are considered wasted (WHO, 2009).

The major causes of child morbidity and mortality remain the same: malaria, respiratory infections, diarrhoea, malnutrition, and anaemia. The Integrated Management of Childhood Illnesses (IMCI) is a strategy that is being used to address management of these common childhood illnesses. Malnutrition, a serious public health problem, has worsened over the years. The latest figures indicate that 47 percent of Zambian children are stunted, 28 percent are underweight and 5 percent are wasted. Micro-nutrient deficiencies such as Vitamin A deficiency
continue to be a public health concern. Ministry of Health (MoH) records indicate that 5 percent of the children have severe Vitamin A deficiency (VAD), 49.1 percent have moderate VAD and 45.9 percent have normal VAD. There are problems associated with therapeutic feeding programmes for severe malnutrition. Recently, reports from the University Teaching Hospital (UTH) showed case fatality rate (CFR) of 30-50 percent for children admitted with severe and complicated malnutrition. Lower CFRs are reported from the pilot projects of the Community Therapeutic Centres (CTC), which deal with mild-moderate malnutrition in Lusaka, where CFR of < 5 percent is more typical. While treatment for severe malnutrition is receiving some attention, there is little on offer for those with moderate or mild malnutrition, apart from counseling. This gap needs to be addressed to prevent more children from slipping into severe malnutrition (WHO, 2009).

1.1.3 Overview of Malnutrition

The World Health Organization defines malnutrition as "the cellular imbalance between supply of nutrients and energy and the body's demand for them to ensure growth and maintenance of specific functions." Women and young children are the most adversely affected groups. One quarter to one half of women of child-bearing age in Africa and south Asia are underweight, which contributes to the number of low birth weight infants born annually (Shashidhar, 2009).

WHO and UNICEF recommend the use of a cut-off for weight-for height of below -3 standard deviations (SD) of the WHO standards to identify infants and children as having Severe Acute Malnutrition (SAM). Children below this cut-off have a highly elevated risk of death compared to those who are above. These children have a higher weight gain when receiving a therapeutic diet compared to other diets, which results in faster recovery. In a well-nourished population there are virtually no children below -3 SD (<1%). WHO standards for mid-upper arm circumference (MUAC)-for-age show that in a well nourished population there are very few children aged 6–60 months with a MUAC less than 115 mm. Children with a MUAC less than 115 mm have a highly elevated risk of death compared to those who are above. Thus it is recommended to increase the cut-off point from 110 to 115 mm to define SAM with MUAC (WHO, 2008).
Kwashiorkor and marasmus are two forms of Protein Energy Malnutrition (PEM) that have been described. The distinction between the two forms of PEM is based on the presence of edema (kwashiorkor) or absence of edema (marasmus). Marasmus involves inadequate intake of protein and calories, whereas a child with kwashiorkor has fair-to-normal calorie intake with inadequate protein intake. Although significant clinical differences between kwashiorkor and marasmus are noted, some studies suggest that marasmus represents an adaptation to starvation whereas kwashiorkor represents a dysadaptation to starvation.

In addition to PEM, children may be affected by micronutrient deficiencies, which also have a detrimental effect on growth and development. The most common and clinically significant micronutrient deficiencies in children and childbearing women throughout the world include deficiencies of iron, iodine, zinc, and vitamin A and are estimated to affect as many as two billion people. Although fortification programs have helped diminish deficiencies of iodine and vitamin A in individuals in the developed countries, these deficiencies remain a significant cause of morbidity in developing countries, whereas deficiencies of vitamin C, B, and D have improved in recent years. Micronutrient, protein and calorie deficiencies must be addressed for optimal growth and development to be attained in these individuals (Shashidhar, 2009).

1.1.4 Malnutrition in Zambia

Malnutrition is a serious public health concern in Zambia. It is estimated that 1.5 million children suffer from chronic malnutrition. Malnutrition is among the leading causes of morbidity and mortality in Zambia and poses a major burden on the health care system. The rates of malnutrition in Zambia are among the highest in the world with 45 percent of children under the age of five being stunted, while five percent are acutely malnourished (wasted) and 14 percent are underweight. This situation calls for urgent nutrition actions as Zambia has the highest malnutrition case fatality (40 percent) in the region. Micronutrient deficiencies are also prevalent, especially vitamin A and Iron deficiency (Masi, 2011).
1.2 STATEMENT OF THE PROBLEM

No children should suffer from malnutrition but what obtains at Mansa General Hospital is that there are a lot of children admitted with malnutrition as tabulated below.

TABLE 1: MALNUTRITION CASES

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Admissions</th>
<th>Number of Malnutrition Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>2,902</td>
<td>197</td>
<td>6.8%</td>
</tr>
<tr>
<td>2009</td>
<td>3,186</td>
<td>200</td>
<td>6.3%</td>
</tr>
<tr>
<td>2010</td>
<td>3,776</td>
<td>205</td>
<td>5.4%</td>
</tr>
</tbody>
</table>


Malnutrition is a public health concern because malnourished children are incapable of achieving their intellectual potential. As such Zambia needs intellectuals who will be able to push the economy of our country forward. Although there has been a slight reduction in the cases at Mansa General Hospital, the figures are still high and something needs to be done.

Malnutrition is globally the most important risk factor for illness and death, contributing to more than half of deaths in children worldwide. Child malnutrition was associated with 54 percent of deaths in children in developing countries in 2001. The World Health Organization estimates that by the year 2015, the prevalence of malnutrition will have decreased to 17.6 percent globally, with 113.4 million children younger than 5 years affected as measured by low weight for age. The overwhelming majority of these children, 112.8 million, will live in developing countries with 70% of these children in Asia, particularly the south central region, and 26 percent in Africa. An additional 165 million (29.0 percent) children will have stunted length/height secondary to poor nutrition (Shashidhar, 2009).

The most recent estimate, released in October 2010 by Food and Agriculture Organization (FAO), says that 925 million people are undernourished. They are approximately 578 million in Asia and the Pacific, 239 million in Sub-Saharan Africa, 53 million in Latin America and the Caribbean, 37 million in the Near East and North Africa and 19 million in developed countries. In round numbers there are 7 billion people in the world. Thus, with an estimated 925 million
hungry people in the world, 13.1 percent, or almost 1 in 7 people are hungry (World Hunger Education Service, 2011).

Currently, more than half of young children in South Asia have Protein Energy Malnutrition (PEM), which is 6.5 times the prevalence in the western hemisphere. In sub-Saharan Africa, 30 percent of children have PEM. Despite marked improvements globally in the prevalence of malnutrition, rates of undernutrition and stunting have continued to rise in Africa, where rates of undernutrition and stunting have risen from 24 percent to 26.8 percent and 47.3 percent to 48 percent, respectively, since 1990, with the worst increases occurring in the eastern region of Africa.

Inadequate food intake is the most common cause of malnutrition worldwide. In developing countries, inadequate food intake is secondary to insufficient or inappropriate food supplies or early cessation of breastfeeding. Inadequate sanitation further endangers children by increasing the risk of infectious diseases that increase nutritional losses and alters metabolic demands. The effects of changing environmental conditions in increasing malnutrition are multifactorial. Poor environmental conditions may increase insect and protozoal infections and also contribute to environmental deficiencies in micronutrients. Overpopulation, more commonly seen in developing countries, can reduce food production, leading to inadequate food intake or intake of foods of poor nutritional quality. Conversely, the effects of malnutrition on individuals can create and maintain poverty, which can further hamper economic and social development (Shashidhar, 2009).

In most cases malnutrition are associated with poverty. In some areas, especially the developing countries, cultural and religious food customs may play a role. The religious customs is where people prefer to remain vegetarians and avoid eating foods reach in proteins like meat and chicken.

In Mansa district there is high consumption of alcohol and this is attributed to lack of social amenities such as sports and other forms of entertainment. This has led to some of the parents spending money on the purchase of beer at the expense of buying food for their children and the children may end up with malnutrition because there is not enough food. There are also some
cultural beliefs for example if the woman gets pregnant while she is still breastfeeding, she has to stop because the breast milk is considered to be contaminated which can make the baby sick. Other traditional practices are that, the male parents are given nutritious and big chunks of food at the expense of the young children. The practice contributes to the high incidence of malnutrition because the children will not be fed with adequate nutritious food items.

The effects of malnutrition are mostly seen in the first two years of life. Chronic malnutrition can lead to reduced cognitive development, poor school performance, lower economic productivity and income, and reduced learning potential during adulthood. So the under five children are the mostly affected.

The parents are affected because they will spend most of the time nursing their children. The parents will not be productive due to the opportunity costs of caring for the sick children and they will also be emotionally affected because of the condition of their children. Malnutrition affects the community because they will be deemed as not working in harmony to improve food security. The services are also affected because a lot of children will be admitted in the ward and the health centre staff will be overwhelmed.

There are measures that have been put in place in addressing the problem of malnutrition in Zambia. Staff training in the management of severe malnutrition was done but this did not reduce associated mortality. The Government of the Republic of Zambia is committed to addressing the problem of under-nutrition in the country, as evidenced by the continued existence of the National Food and Nutrition Commission (NFNC), which performs an advisory function to the government and partners on matters of food and nutrition. Further, we see a lot of commitment in the recently launched Sixth National Development Plan (SNDP) 2011-2015, which has recognized the negative impact of under-nutrition, especially on vulnerable populations.

Mansa General Hospital staff is giving health education to mothers on the prevention of malnutrition in their respective wards because Mansa General Hospital has no Maternal and Child Health (MCH) Department. The District Health Team also disseminates information on malnutrition from their respective health centres as the mothers take their children to under five clinics. The community health workers also give health education to community members by
encouraging people to make barns for storage of their farm produce to ensure food security. Despite all these efforts put at family, community, district and national levels, malnutrition still continues to rise. Hence, the need to conduct this study in order to redress the situation in Mansa.

In order to conduct this study, certain factors associated with the malnutrition needs to be articulated and they include the following:

1.3 FACTORS INFLUENCING KNOWLEDGE AND PRACTICE OF NURSING MOTHERS AND CARETAKERS AT MANSA GENERAL HOSPITAL IN THE PREVENTION OF MALNUTRITION.

There are several factors that may influence the knowledge and practice of nursing mothers/caretakers in the prevention of malnutrition. These include:-

SERVICE RELATED FACTORS

Attitude of staff

Attitude is a belief about a certain behavior. The bad attitude of staff towards the nursing mothers prevents them from seeking more clarification on child malnutrition because they are afraid of being shouted at. A self motivated mother will do everything in her capacity to prevent malnutrition.

Staff shortage

Shortage of staff makes staff pay little or no attention to giving health education. Shortage of staff at the health centre may prevent the mothers from accessing the necessary information needed on the prevention of malnutrition because there will be no staff to disseminate the information. This has impacted negatively in the prevention and control of malnutrition.

There has been inadequate care and monitoring of under five children because the people monitoring the children’s weight are lay people, hence they are unable to interpret the weight readings properly. Due to the shortage of staff the women are made to wait for long hours at the health centre and in the end they shun the under five growth monitoring sessions.
The sister incharge can orient the neighbourhood health committee on prevention of malnutrition and these will in turn teach the community on food preservation.

**Distance from the health centre**

The distances from the nearest health facility can sometimes promote or discourage health seeking behaviours. The acceptable distance from home to the health centre should be within 12 kilometers. Usually if the distance is long, people tend to shun seeking medical advice and in the end they miss out on the health education that is given at the health facility in the prevention of malnutrition.

**Source of information**

The other sources of information like the media (television, radio) may not be understood because the listeners will not have the opportunity to clarify the information which was not clear and some people have no access to the media and others are not just interested. Some people can misinterpret the information on bill boards and the media based on their cultural beliefs.

**SOCIO-ECONOMIC AND CULTURAL FACTORS AND TRADITIONAL BELIEFS**

**Type of food grown**

For the meals to be nutritious it should contain all types of nutrients. Therefore, the family should grow a variety of crops containing different nutrients because even if the children are given three meals a day which does not contain all the nutrients malnutrition cannot be prevented.

**Early weaning**

Cultural factors like early weaning affects the health of a growing child as discussed under cultural beliefs. The diet usually consists of a single staple food which is low in nutritional value depriving the baby of the major body nutritional needs.
Unequal distribution of adequate food

In some traditions, it is believed that the father must be given the best food in the home. For example if the mother has cooked meat or fish, the father will be given the meat and the children will only be given the soup predisposing them to malnutrition because they will be lacking proteins in their diet. The fathers are usually given the bigger portions than the children.

Food restriction

Restrictions of certain foods like caterpillars, inswa due to some cultural beliefs will deprive the child of the necessary nutrients needed in the body and this might lead to malnutrition.

Age

Age of the mother can be a hindering factor in the prevention of malnutrition. If the mother is very young it is difficult for them to take care of their babies, this is because they may lack information and they do not understand the importance of good nutrition.

Education level

The education level of the parents can help in the prevention of malnutrition because the parents who are educated are able to assimilate the information that is being taught and put it into practice for example how to prepare a balanced diet. Educated parents also are likely to have a higher income which the parents will use to buy food for their children.

Lack of Family planning

Knowledge and practice of family planning is important because the parents will be able to have a family which they will look after very well because it is small and they will be able to provide for them foods with the necessary nutrients needed by the body. Parents who have big families will be unable to look after their children properly and the children might end up with malnutrition.
Knowledge of appropriate technology for food preservation

The lack of food can be due to inability to preserve the food especially in the rural areas. Preservation of food helps to have the food available even if it is out of season. For example groundnuts, pumpkin leaves, sweet potatoes can be dried and used later when they are out of season. If the family does not preserve the food, they will run out of food because the food goes bad if it is not preserved and they will have nothing to give their children and their children will end up with malnutrition.

Caretaker

The people who take care of the baby when the mother is not around matter. Some children are left in the hands of the maids when the mother is not around or has gone for work and they may not be given enough food because the maid may be playful. The child can suffer from malnutrition if the person in charge is not responsible even if there is enough food in the house.

DISEASE RELATED

Chronic diseases

Emergence of chronic diseases like HIV/AIDS with tuberculosis co-morbidity reduce the immune system hence this child will be prone to diseases. Chronic diseases have claimed a lot of bread winners, thereby leaving the family especially the children at risk of developing malnutrition due to lack of food as a result of loss of the bread winner.
I.4 Problem Analysis Diagram

- Food restrictions
- Food grown
- Types of food
- Age
- Appropriate technology
- Adequate food distribution
- Unequal
- Education level
- Family planning
- Family meaning
- Early
- General Hospital
- Under-five children at Munas
- Prevention of malnutrition in children
- Late
- Health center
- Source of information
- Service related factors
- Share
- Shortage
- Start
- Attitude of health center
- Distance from the health center
- Disease related factors
- Chronic diseases
1.5 THEORETICAL/ CONCEPTUAL FRAMEWORK

A conceptual/theoretical framework engineered by the Health Belief Model (HBM) will be used in the study. The HBM is a psychological model that attempts to explain and predict health behaviors. The HBM was first developed in the 1950s by social psychologists Hochbaum, Rosenstock and Kegels working in the U.S. Public Health Services. This model was originally introduced to help explain why people would or would not use available preventive services, such as chest x-rays for tuberculosis screening and immunizations for influenza. These researchers assumed that people feared diseases and that the health actions of people were motivated by the degree of fear (perceived threat) and the expected fear reduction of actions, as long as that possible reduction outweighed practical and psychological barriers to taking action (net benefits) (Campbell, 2010).

I intend to use the HBM so that the mothers/caretakers can realize the need to use the available measures in the prevention of malnutrition.

1.5.1 Describe the predicted relationships

There is a relationship between the health belief model and knowledge and practices in the prevention of malnutrition in under five children.

The HBM can be outlined using four constructs which represent the perceived threat and net benefits

PERCEIVED SUSCEPTIBILITY

Perceived benefits are a person's opinion of the chances of getting a certain condition. It is important for the mothers/caretakers to understand the population which is at risk of becoming malnourished. In the case of malnutrition, the children are the most affected especially the under five children. The mothers need to be informed that their under five children are at risk of developing malnutrition if they are not eating a balanced diet. The working mothers should also realize that their under five children are susceptible to malnutrition especially if the person left with the children does not take good care of them.
PERCEIVED SEVERITY

This is a person's opinion of how serious this condition is. The mothers/caretakers will be informed about the presenting signs and symptoms like oedema, grey hair, hepatomegally, skin lesions etc. in order for them to understand how severe the condition is. The mother/care taker will be informed that chronic malnutrition can lead to reduced cognitive development, poor school performance and lower economic productivity and income, reduced learning potential during adulthood. The mothers/caretaker will not have more time to pursue other things in life which can make her develop and contribute to the economy of our country. This is to make the caretaker understand the consequences of the risk.

PERCEIVED BENEFITS

These are anticipated positive outcomes that will occur from health behavior or a person's opinion of the effectiveness of some advised action to reduce the risk or seriousness of the impact of malnutrition. The mothers/ caretakers will be informed that once malnutrition is prevented the child will develop well, be intelligent, and will also be interested in life. The mothers will also have time to pursue other things in life as they will not spend most of their time nursing a sick child.

PERCEIVED BARRIERS

This is a person's opinion of the concrete and psychological costs of this advice. The mothers/ caretakers will be asked to identify what they think would be barriers in the prevention of malnutrition. The barriers may include the distance to the health centre which might prevent them from seeking health services as well as advice. Sometimes it may be negative comments from peers who may discourage them from seeking health services because according to them they may not have seen the benefits. Some cultural beliefs may be a barrier, for example, restricting children from eating food stuffs like inswa, caterpillars which are so nutritious to the body. Some families might not afford to buy food for the children because they are out of employment or the bread winner is dead due to the advent of chronic diseases like HIV/AIDS.
CUES TO ACTION

These are events (internal or external) which can activate a person's "readiness to act" and stimulate an observable behavior. Some examples of external strategies to activate "readiness" can be delivered in print with educational materials, through any electronic mass media or in one-to-one counseling. The health centre staff can make an appointment with the mothers/caretakers to bring their children for growth monitoring so that any deviation from normal can be detected early and effective measures put in place. The women can be given health education in the prevention of malnutrition and be encouraged to implement the health education given.

SELF-EFFICACY

Self-efficacy is a person's confidence in her/his ability to successfully perform an action. This can be done through food demonstration at the under five children clinic. The women will be told that they can get more information on the prevention from the health centre.
1.5.2 Diagram of Framework

Individual perceptions  Modifying factors  Likelihood of Action

- Socio-economic status
- Knowledge

Perceived threat of malnutrition

- Perceived benefits of preventive action minus perceived barriers to preventive action

Likelihood of taking recommender preventive health action

Prevention of malnutrition

Cues to action
- Mass media campaigns
- Advice from others
- Illness of family member
- Health visitors/physicians explanation
1.6 JUSTIFICATION

Malnutrition has been identified as a public health problem. Literatures reviewed globally, regionally and nationally have shown that malnutrition is still on the rise. In Zambia, despite the locally available food stuffs as evidenced by the previous two years of bumper harvest malnutrition continues to affect the under five children. Malnutrition affects the child’s intellectual development which can lead to poor school performance. This can be attributed to some negative cultural beliefs where the women will be told to stop breastfeeding the child once she discovers that she is pregnant even when the child is still young because the breastmilk is considered to be contaminated.

Other studies done on malnutrition have looked at the factors contributing to high prevalence of malnutrition and this was done in Sinazongwe. A similar study was done in Chinsali on the prevalence of malnutrition. Another study to determine knowledge and practices of men towards prevention of malnutrition in under 5 years was done in Ndola. But no studies of this nature have been done at Mansa General Hospital, thus creating a knowledge gap which needs to be filled in by conducting this study.

Hence, as a researcher, I intend to ascertain the knowledge and practices of mothers/caretakers in the prevention of malnutrition in the under five children. It is hoped that the dissemination of the study findings to the health care consumers (mothers/caretakers) will contribute greatly in reducing the malnutrition in the under five child. Well nourished children will have good cognitive development and so contribute greatly to the socio-economic development of the country.

The recommendations are going to be submitted to the relevant authorities so that malnutrition incidence is reduced at Mansa General Hospital. Findings of the study will also be used by Mansa General Hospital, Mansa District Health Management Team and other relevant authorities in the planning and implementation of programmes that prevent malnutrition in Mansa district and other places.
1.7 RESEARCH OBJECTIVES

The objectives of research summarise what is to be achieved by the study. There are two types of research objectives and these are general objective and specific objectives. General objective states what is expected to be achieved by the study in general terms. Specific objectives are the breakdown of a general objective into smaller and logically connected parts.

1.7.1 General Objective

To determine the knowledge and practice of nursing mothers/caretakers at Mansa General Hospital towards the prevention of malnutrition in under five children.

1.7.2 Specific Objectives

- To establish the level of knowledge that mothers have in relation to prevention of malnutrition.
- To determine the mother’s practices towards prevention of malnutrition in under five children.
- To establish the relationship between knowledge and practice of mothers/caretakers in the prevention of malnutrition in under five children.
- To determine the factors that influence knowledge and practice of mothers in Mansa towards the prevention of malnutrition.
- To make recommendations to the District Health Management Team and Mansa General Hospital management.

1.8 HYPOTHESIS

- Inadequate knowledge about malnutrition and its predisposing factors lead to an increase in the number of malnutrition cases.
- The lack of knowledge that mothers have towards prevention of malnutrition in under five children leads to poor practices in the prevention of malnutrition.
1.9 CONCEPTUAL DEFINITION OF TERMS

Malnutrition - According to WHO (2009), malnutrition is defined as "the cellular imbalance between supply of nutrients and energy and the body's demand for them to ensure growth, maintenance, and specific functions."

Morbidity rate - Number of nonfatal cases in the population at risk during a specified period of time

Kwashiorcor - Kwashiorcor is severe malnutrition in infants and children especially of impoverished regions caused by a diet low in protein (Merriam Webster Dictionary, 2009).

Marasmus- Marasmus is a condition primarily caused by a deficiency in calories and energy (Rabinowitz, 2010).

Knowledge - This is what someone knows about a particular subject (Mayor et al, 2006).

1.10 VARIABLES AND CUT-OFF POINTS

Variables
A variable is a characteristic of a person, object, or phenomena that can take on different values.

Dependent variable
A dependent variable is a variable, which is the effect of the action of the independent variable and cannot exist by itself. The dependent variable is practice in this study.

Independent variable
An independent variable is a variable, which measures factors assumed to cause or influence the problem. The independent variable in the study is knowledge.
## TABLE 2: VARIABLES AND CUT OFF POINTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Variable</th>
<th>Scale of measurement</th>
<th>Question number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Indicator</td>
<td>Cut-off point</td>
</tr>
<tr>
<td>(a)</td>
<td>Independent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Knowledge</td>
<td>High</td>
<td>Respondent able to state what malnutrition is, signs and symptoms, prevention of malnutrition, sources of information on malnutrition, exclusive breastfeeding and what a balanced diet is. Should be able to give 7-8 correct answers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>Respondent able to give 4-6 correct answers and at least state what malnutrition is, signs and symptoms and the prevention of malnutrition.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>Respondent not able to state what malnutrition is, signs and symptoms, prevention of malnutrition, sources of information on malnutrition, exclusive breastfeeding and what a balanced diet is. Should be able to answer 0-3 correct questions</td>
</tr>
<tr>
<td>Dependent</td>
<td>Indicator</td>
<td>Cut-off point</td>
<td>Question number</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Practice</td>
<td>Positive</td>
<td>Respondent should state when to start complementary feeds, how to preserve the food harvested, should participate in childcare activities, have a backyard garden and who prepares the food. Respondent able to answer 7-10 questions on practice.</td>
<td>17-26</td>
</tr>
<tr>
<td>Fair</td>
<td></td>
<td>Respondent able to give 4-6 correct answers and at least state when to start complementary feeds, should participate in childcare activities, and should have a backyard garden.</td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td></td>
<td>Respondent not able to state when to start complementary feeds, how to preserve the food harvested, should participate in childcare activities and who prepares the food. Respondent able to answer 0-3 of the questions.</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Introduction

Literature review is a broad, comprehensive in depth, systematic and critical review of scholarly publications, unpublished scholarly print materials, audiovisual materials and personal communications (Basavanthappa, 2007). Literature review is a process that involves finding, reading, understanding and forming conclusions about the published research and theory on a topic related to your study. Malnutrition is one of the serious results of poor socio-economic development. It has remained the highest cause of morbidity and mortality in Africa. It is one of the major public health concerns in many parts of the developing countries, Zambia inclusive.

A lot of measures have been put in place to reduce malnutrition in Zambia, some of which are educating mothers on good methods of food preparation using locally available foods and on child spacing by educating them on family planning.

There are several studies that have been done on the problem of malnutrition in Zambia and outside Zambia. However the role of mothers/ caretakers in prevention of malnutrition has not been done in Mansa where the prevalence of malnutrition is still high.

The literature will be reviewed and discussed under the relevant variables.

- Knowledge
- Practice
- Conclusion

2.2 KNOWLEDGE

Mudenda (2000) conducted a study on knowledge and practices of men towards prevention of malnutrition in children under five years in Ndola Urban District. She concluded that men did not have adequate knowledge on the actual disease although they were aware that it could be prevented through adequate feeding of children. The study also established that men did not participate in childcare activities due to among other issues belief in traditional gender roles.
Turyashemererwa, Kikafunda, and Agaba (2009) in Uganda conducted a study to assess mothers/caretakers' knowledge of the factors contributing to poor nutritional status among their children. The findings showed that the majority (59%) of the respondents identified poverty as the major cause of under-nutrition. The proportion of mothers who did not know of any cause of malnutrition was 28 percent, while inadequate food supply and lack of awareness about good nutrition was reported 12 percent and 1 percent, respectively. Lack of awareness was defined as someone who lacked knowledge about proper nutrition requirement for children.

The results also showed that more than half (53.6%) of the mothers/caretakers had never received any information on child feeding while 46.4% had received such information. The findings had shown that many of the caretakers of children under five years of age in the Kabarole District did not have access to information on child feeding and care. Much as there was no significant relationships between child stunting and the causes of malnutrition in either age categories, the data could imply that there were no extension services in the district in form of community out-reach programs to educate the mothers and caretakers' of children on matters pertaining to nutrition.

Consistent with other studies, lack of knowledge about proper nutrition could be attributed to the poor education level of women. Under-weight and stunting of children are significantly higher when parents have not had any education or when they cannot read or write. Quoting the words in the focus group discussion; "A woman may be having all the food in the home but would keep on preparing one type of food for the children. Most women do not know what to prepare for young children and when food is prepared, it is not served on time" As Latham observed, the problem in most African settings is not about lack of food but lack of knowledge about food.

Data were collected from focus group and key informant discussions to identify what communities perceived as major contributing factors to malnutrition in the area. The ratings of the various factors were identified. Most mothers attributed malnutrition to lack of awareness (five mothers out of seven) and poverty (four mothers out of seven), in the focus group discussion ratings. Only two mothers thought drunkenness by parents was a contributing factor. Some of the leaders in the focus group discussion attributed lack of formal education (two out of
five), large families (two out of five) and early marriages (one out of five) as the major cause of malnutrition in the community.

According to Wyness (2007), malnutrition is an underlying cause of 53 percent of deaths among children under five worldwide. He conducted a study to assess the behavior of mothers and other caregivers towards the prevention of malnutrition in children and out of 143 participants, 89.5 percent were female; 44.8 percent had no/poor literacy and 80.4 percent were unemployed. Regarding knowledge on malnutrition, 95.5 percent were well aware of it, 92 percent got information from health facility, majority had some knowledge on its possible causes, 91.6 percent identified minimum preventive measures, 79.8 percent were not knowledgeable about the appropriate weaning period with statistical significant (p<0.0005). The prevalence of malnutrition (moderate wasting) was 4 percent for children under five.

He concluded that poor knowledge about weaning and misconception on feeding newborn babies was the prominent findings in this study. Therefore, it is recommended that interventions should focus on addressing these issues.

According to Sanghvi (2000), in many parts of the world, breastfeeding problems often begin at birth. Lack of arrangements in health facilities and mistaken beliefs among health workers and family members prevent mothers from establishing successful breastfeeding soon after birth. Even when they understand the benefits and are committed to it, women may encounter difficulties in breastfeeding effectively, generally because they do not know enough about how breastfeeding works and because those around them do not know how to support it. Most health professionals are not trained in the specialized skills of breastfeeding counseling. The attitudes of mothers, fathers, other family members, health care providers, and traditional healers all can affect whether and for how long a woman breastfeeds.

Mothers frequently cite "infant crying" as a sign that their babies are not getting enough milk and then decide to supplement with other liquids or solids, or they give water because they think their baby is thirsty. These responses show misunderstanding of how breastmilk intake is regulated and that infants do not need extra water.
According to the study done by Hien and Hoa (2009), their findings indicated that malnutrition is still an important problem among children under three years of age in Nghean, Vietnam. Socioeconomic, environmental factors are significant risk factors for malnutrition among under-three. The current study also identified that a greater risk of malnutrition was associated with poor knowledge of mothers on child feeding practice. These findings are very important, suggesting the need for improving knowledge of mothers on child feeding practice.

Ganachari (2009) revealed that malnutrition is particularly problematic in India, contributing to almost 25 percent of nutritional deficiencies worldwide. Chronic malnutrition and anemia are common among Indian women, while moderate or severe malnutrition affect half of all children under five. He conducted a research study to explore the factors surrounding Adivasi women’s use of government services intended to reduce malnutrition. He examined women’s knowledge and views on causes, effects, prevention and treatment of malnutrition, as well as their views of government programs. He discovered that the main factors governing people’s actions regarding malnutrition were community knowledge and barriers they faced when attempting to take preventive steps.

Although women were aware of the effect of nutritional intake on health status, most relied on visual indicators to diagnose the disease. As malnutrition can exist without being manifested visually, women were unaware of its possible presence. Within the villages, the presence of children who were acknowledged to be malnourished and were receiving curative services, translated into a higher level of knowledge among women about the disease. In villages lacking evidence of malnutrition, women were less likely to believe that the disease was a threat to their health. Overall, women lacked a mature understanding of the disease’s causes and effects, especially long-term implications.

Moreover, women did not necessarily know about different modes of prevention, such as taking iron pills during pregnancy to prevent fetal malnourishment. They were also unfamiliar with the variety of services provided through the Anganwadi institutions and the primary health care centers. Without this knowledge, they were unable to take advantage of the services. Many women cited dissatisfaction with the services being provided. In many instances, services were either non-existent or insufficient to meet demand.
23 PRACTICE

In the 2008 July National Nutrition Surveillance Survey (NNSS) data was collected on infant feeding for all children born in the one year preceding the survey. About 59% of infants were put to the breast within one hour after delivery. The pilot scaling-up of the National Nutrition Surveillance System in 2008 was implemented in three provinces, namely Eastern, Lusaka and Southern provinces, with a plan for a national scale up to all the remaining 6 provinces. This practice was reported to be higher in Southern province (68%), followed by Eastern province (50%). The survey noted that most (93%) of infants in Eastern Province were put on to the breast within the first day of birth.

The survey revealed that Global Acute Malnutrition (<-2 SD) was 2.8% (0.6, 1.6 - 95% CI), while Severe Acute Malnutrition (<-3 SD) was 1.1% (2, 3.7 – 95% CI). These finding are on the lower side of the preliminary results of 2006 ZDHS. There were a higher proportion of older children (36 – 59 Months) who were wasted than the younger children (6 – 35months). Eastern province recorded a higher proportion (3.7%) of children who were wasted, while the lower proportion of wasted children was reported in Lusaka province (2.1%).

According to United States Agency for International Development’s (USAID) Infant and Young Child Nutrition (IYCN) Project (2011) Chronic malnutrition places nearly half of Zambian children less than 5 years of age at risk of assuming lifelong physical and cognitive disabilities that compromise academic performance, productivity, and health. Malnutrition and HIV transmission from mothers to their infants is partially tied to unsafe breastfeeding and early childhood feeding practices. These unsafe feeding practices place children at risk of becoming chronically malnourished, and when born to an HIV-infected mother, acquiring HIV. Although exclusive breastfeeding is recommended during the first six months of life, even among HIV infected mothers, in Zambia, just less than two-thirds of all infants younger than 6 months are exclusively breastfed. During the critical time of growth between 6 and 23 months of age, just one-third of children consume enough of the right foods.

Formative research conducted by IYCN shows that many mothers stray from exclusive breastfeeding, and instead give their infants water or watery porridge because they believe their babies are thirsty or that they will not be satisfied by their breastmilk. A child looking at its
mother while she is eating or drinking convinces some mothers that the baby wants what she has, that is, additional food or drink.

Ouma (2006) carried out a survey on child feeding practices from the 50 respondents in South Sudan. The objective of this survey was to assess knowledge, attitudes and practices of mothers (or caretakers) of children admitted in the feeding programme. Of the 50 respondents 94 percent had breastfed their babies within one hour of birth and 6 percent gave cow milk immediately. 82 percent breastfed on demand especially during daylight, and 69 percent breastfed 2-3 times at night. Based on a 24-hour recall all the children aged above 6 months had eaten some kind of food in the previous 24 hours of which 18 percent took food and milk once a day, 58 percent ate food and 24 percent drank milk twice a day, 24 percent ate food and 28 percent drank milk 3 to 4 times a day, 32 percent did not take milk at the time of the survey. No mother used infant formula/powdered milk; 13 were unaware of Oral Rehydration Salt solution (ORS). No child was taking ORS, supplements or medicines.

According to the study carried out in Uganda by Turyashemererwa, Kikafunda, and Agaba (2009), complementary feeding was started in two thirds (60.7%) of the children before they were 6 months old, while only 39.3% were started at 6 months. The majority of the children (71%) were fed three times a day, while only 29% were fed more than three times a day.

Ibrahim and Alshiek (2010) conducted a study on the impact of feeding practices on prevalence of under nutrition among 6-59 months aged children in Khartoum. Their findings revealed that poor children's feeding practices could lead to malnutrition which is a major public health problem in developing countries including Sudan. This study was conducted during July 2008 - July 2010 to understand the relationship between feeding practices and prevalence of stunting, wasting, and underweight among 6 -59 months aged children, in Khartoum state. The study revealed that out of 780 children who participated in the study the prevalence of acute malnutrition (wasting) was 19%; the prevalence of underweight was 35%, and chronic malnutrition (stunting) represents 51%. The most important factors that were reported to significantly affect nutritional status were improper washing of raw food (9%), not washing hands after coughing (65%), not washing hands after handling rubbish (11%), raw food coming in contact with/and ready-to-eat food (58%), family food exposed to insects and rodents (24%),
mothers/caregiver didn’t cover their mouth and nose after coughing (59%), purchasing pre-packed/processed children food without checking expiry date (63%), and usage of public toilets by caregivers (48%). The study revealed that poor feeding practices, may contribute to the higher risk of malnutrition in Khartoum.

A study done in Bangladesh by Nahar et al. (2010) revealed that inadequate or improper breastfeeding as a risk factor collaborates the findings of several other studies in Bangladesh, which reported that inadequate breastfeeding, early supplementation of infant formula or cow’s milk, and early introduction of semi-solid complementary foods were important risk factors for malnutrition. The hygienic and nutritional risks associated with bottle-feeding and artificial milks are well-known, and previous studies also found that breastfeeding had a significant and substantial impact on overall survival of undernourished children. It is also conceivable that the association with a shorter duration of predominant breastfeeding could be an example of reverse causality, whereby children who were ill and malnourished were provided with other foods.

UNICEF (2009) conducted a study on inappropriate infant and young child feeding practices in Sri Lanka and it was discovered that while exclusive breastfeeding levels have risen significantly, some babies are still being bottle fed during this period. Not only is the food inferior to breastmilk, babies miss out on colostrums, the first milk rich in proteins and antibodies that protect children from several infectious diseases. There are also risks of over-diluting the infant formula and of contaminating it through dirty water. The first priority therefore is to ensure that for the first six months children are exclusively breastfed.

As children move into complementary feeding, the growth of children might be hampered by a shortage of food. But a more common problem is that children are being given the wrong kind of food. Children are often fed little more than a mixture of cereal and water. The immediate and underlying causes of childhood malnutrition in Sri Lanka range from disease factors and inadequate dietary intake to knowledge and cultural factors that influence the utilization of health services and available food.

According to Sanghvi (2000), malnutrition, a widespread problem with devastating consequences, weakens immune systems and worsens illnesses. It is a factor in about half the
deaths for children under 5 and malnourished children who survive have diminished learning capacity and lower productivity in adulthood. Malnutrition reduces the quality of life and financially drains families, communities, and countries.

Families and communities give inadequate time and resources to taking care of the health, dietary, emotional, and cognitive needs of women and children. Poor caring practices include not feeding sick children appropriately, not using health care facilities for the special needs of pregnant women or adolescent girls, poor hygiene, not supporting mothers to breastfeed adequately, not providing adequate complementary feeding, inadequate diets for women, including food taboos during and after pregnancy, and excessive workloads for women.

Mothers may introduce fluids and foods too early because they need to work—either in formal work settings or during harvesting and sowing seasons. But, recent studies show that women employed in the formal work force generally do not leave their infants for long periods of time during the first few months after delivery. Exclusive breastfeeding can continue to provide vital protection in the most critical early months if mothers who must leave learn how to express breastmilk for use during separations that last more than a few hours. Bottles should not be used to feed infants; they can introduce dangerous bacteria and interfere with successful breastfeeding.

According to a research study done by Ganachari (2009) in India, most villagers did not take actions to prevent malnutrition, although most were aware of at least one of the symptoms of the disease. The main factor governing their decision not to practice preventive behaviors was a lack of empowerment. He identified four related constructs that posed barriers to their feeling empowered to take actions to prevent malnutrition. These were lack of information about preventive services, cultural ideologies, absence of services and infrastructure and geographical isolation.

Even when women were aware of the necessity of preventive practices, such as consuming a balanced diet and obtaining services provided through the Anganwadi School, they were confronted with additional challenges while attempting to practice prevention. Pervasiveness of negative cultural eating practices also affected women’s ability to practice healthy eating habits. The strength of their beliefs outweighed that of their knowledge.
2.4 CONCLUSION

Malnutrition is one of the serious conditions affecting the under five children and this has resulted in poor socio-economic development. There are several studies that have been done on the practices of caretakers in the prevention of malnutrition in under five children. Most of the studies that have been done have revealed that inadequate and improper feeding practices have led to an increase in malnutrition cases. Most of the mothers were reported to have breastfed the newborn babies within one hour of birth. The studies also revealed that complementary feeds were introduced at an early stage that is before 6 months. It is therefore important to educate the mothers to breastfeed their babies exclusively and also to give their children the balanced diet in order to prevent malnutrition.

Data reviewed have shown that a lot has been written on the problem of malnutrition especially outside Zambia but the aspect of the role of mothers/caretakers in the prevention of malnutrition in Zambia has been left out.

Therefore, this research study focuses on the mothers/caretakers so that the findings are submitted to the relevant authorities for their action.
CHAPTER 3

3.0 METHODOLOGY

Introduction
Research methodology is a way to systematically solve the research problem. Research methodology describes the way that pertinent information will be gathered to answer the research question or describe the phenomena related to the research problem (Dempsey and Dempsey, 2005).

The study is aimed at establishing the knowledge and practices of mothers/caretakers in the prevention of malnutrition in under five children at Mansa General hospital.

3.1 Design

Research design is the plan, structure, and strategy of investigations of answering the research questions, and is the overall plan or blue-print the researcher selects to carry out their study (Basavanthappa, 2007). For this study, a descriptive cross sectional design was used. Cross-sectional studies aim at quantifying the distribution of certain variables in a study population at one point of time. They cover physical characteristics of people, materials or environments. This design helped the researcher to systematically collect and analyze the data to give a clear picture of the problem at hand. The research used quantitative research design. The study was quantitative research design because data was collected and quantified in numerical values and percentages to measure the statistical influence using a structured questionnaire (Burns and Grove, 2009).

3.2 Research setting

Research setting is the physical location and conditions in which data collection takes place in a study. The research setting, the environment within which studies are run has important consequences for experimental design, the type of data that can be collected and the interpretation of results.
This study was conducted at Mansa General Hospital in Mansa District of Luapula Province in Zambia. It is the only level II hospital in Luapula Province that provides level I services to Mansa, Milenge, Samfya and Mwense Districts. It has a bed capacity of 404, (101 cots and 303 beds) and offers Medical, Surgical, Gynecological/Obstetrics and Pediatrics services. The hospital receives referrals from all districts in the province and also receives cases from Kaputa and Luwingu districts in Northern Province (Mansa General Hospital Action Plan 2011-2013).

Mansa General Hospital comprises of three medical wards, three surgical wards, two chest wards, two psychiatric wards, one isolation ward, the out-patient department, one high cost ward, one maternity ward and one gynaecological ward. It also provides laboratory, radiological, ultrasound, orthopedics, physiotherapy and dental services. Other services include Ophthalmologic services and Psychiatric services.

The study was conducted in children’s ward because that is where children with malnutrition are found. The study used the convenience type of sampling because the participants were chosen from those that were found in the ward at that particular time.

3.3 Study Population

A study population is the total population of individuals, or objects that meets the designated criteria of study interest to the investigator. The population includes all the elements that meet certain criteria for inclusion in a given universe (Burns and Groove, 2009). The study population for this study was 50 nursing mothers/caretakers aged 15-45 years whose children were admitted to Children’s medical ward, at Mansa General Hospital.

3.4 Sample Selection

Sample selection is the selecting of a portion of the population to represent the entire population (Polit and Hungler, 2006). It also provides Laboratory, Radiological, Ultra sound, Orthopaedics, Physiotherapy and Dental services. Other services include Ophthalmology and Psychiatry. The mothers/caretakers were selected from all mothers, fathers and guardians admitted in Children Medical ward at Mansa General Hospital. The sampling method that was used was convenience sampling because the mothers/ caretakers who were found in the wards are the ones that were
interviewed until the sample reached 50. Convenience samplings are study units available at the time of data collection are selected in the sample

**Inclusion criteria**

All the nursing mothers/caretakers in Children’s ward with children under five years were included in the study and priority was given to those with malnourished children. This was the case because the under five children are the ones mainly affected by malnutrition.

**Exclusion criteria**

All the nursing mothers/caretakers with children older than five years were not included in the study. These mothers were left out because malnutrition rarely affect those children above five years.

**3.5 Sample size**

A sample size is a smaller representative part of the population comprising of units with characteristics which represent, as close as possible, the larger population, such that the findings can meaningfully be generalized (Lobiondo and Wood, 2006). The sample size comprised of 50 respondents all from Mansa General Hospital and the respondents were drawn from the Children’s Medical ward.

**3.6 Operational Definitions as used in the study**

Malnutrition- Malnutrition is a state of poor health or ill health due to poor nutrition or nourishment.

Under five children- These are children who are below the age of five years.

Morbidity rate- The number of cases of a disease found to occur in a stated number of the population
Kwashiorkor - A form of malnutrition due to a diet deficient in protein and energy producing foods common among young children. The symptoms are oedema, loss of appetite, diarrhea, and general discomfort. The child also fails to thrive.

Marasmus- Form of malnutrition due to a diet deficient of energy producing foods

Knowledge - Level of understanding or awareness of malnutrition.
Practice - Actual use or performance or what the mothers do to prevent malnutrition
Prevention - The precautionary measures that mothers take to avoid malnutrition in their under five children.

3.7 Data collection tool

A data collection tool is “An instrument in research refers to the tool or equipment used to collect data. It may take the form of a questionnaire, an interview schedule, a projective device, or some other type of tool for eliciting information” (Polit and Hungler, 2006). Collection of data was carried out between October and November 2011 from Mansa General Hospital.

The instrument that was used in this study was a structural interview questionnaire which contained questions for nursing mothers/caretakers. Collecting data using structured questionnaire ensures that issues indicated in the study are addressed. The questionnaire had closed type of questions because the majority of the respondents were illiterate. The questionnaire was fixed and identical for every respondent. This helped to ensure that variations which would appear between respondents were attributed to the actual differences among respondents and not to the variations in the structured questionnaire. This tool was chosen because of the following advantages;

Advantages

1. Questionnaires are a relatively simple method of obtaining data.
2. They are a rapid and efficient method of gathering information.
3. The researcher is able to gather data from a widely scattered sample.
4. They are inexpensive to distribute.
5. Data from close-ended items are relatively easy to tabulate, especially if there are check-of responses.
6. Respondents can remain anonymous.
7. The questionnaire is one of the easiest tools to test for reliability and validity.
8. The subject has time to contemplate his/ her response to the same questions.
9. Measurement is enhanced because all subjects respond to the same questions.
10. Analysis and interpretation of data can be easily accomplished.

However, the tool has the following limitations;

1. The instrument is unable to probe a topic in depth without becoming unduly lengthy.
2. The respondent may omit or disregard any item he chooses, without giving an explanation.
3. Some items may force the subject to select responses that are not his actual choice (forced choice items).
4. Printing may be costly if the questionnaire is lengthy and is printed on high quality paper.
5. Data are limited to the information voluntarily supplied by the respondents to the asked questions.
6. Some items may be misunderstood.

3.7.1 Validity

Validity refers to whether a measurement instrument accurately measures what it is supposed to measure. When the instrument is valid, it truly reflects the concept, it is supposed to measure (Basavanthappa, 2007).

Validity can be classified as Internal and External validity.

Internal validity is the extent to which the effects detected in the study are a true reflection of the reality rather than being the result of the effects of extraneous variables (Burns and Grove, 2009).

External validity is the extent to which the results of an experiment can be generalized to other settings (Basavanthappa, 2007).
Validity was upheld by conducting a pilot study in which the instrument measured what it was intended to measure. In order to maintain validity, the questionnaire covered variables in the study topic that addressed the set objectives. The questions were phrased in English and the respondents were drawn from every mother/caretaker whose child under the age of five years was admitted to children’s medical ward at Mansa General Hospital.

3.7.2 Reliability

Reliability is the extent to which an instrument yields the same results on repeated measures (Basavanthappa, 2007).

Reliability will be upheld by ensuring that questions are simple and easy to understand, without including ambiguous terms, but sufficient enough to elicit the desired information consistently.

3.8 Data collection techniques

Data collection techniques are the use of data collection tools to gather information needed to address a research problem (Polit and Hungler, 2006).

An interview is a method of data collection in which an interviewer collects information/data from a respondent. This allows face to face interview. The questionnaire comprised of closed questions. Before collecting data all ethical and cultural issues were considered like freedom from harm and respect for human dignity. Firstly, permission to conduct the study was sought from the Head of the institution. Thereafter, permission was also sought from the In-charge of the ward. Before conducting the interview, the interviewer introduced herself and explained the purpose of the study to the respondents. The respondents were interviewed in a private room that was provided by the sister in charge of the ward. Each respondent was interviewed for about 25-30 minutes. The mothers were asked questions following the structured interview schedule to avoid being biased, in questioning. After the interview each respondent was thanked for participating in the study.
3.9 Pilot Study

A small scale study conducted before the main study on a limited number of subjects from the same population as intended for the study to test methodology (Burns and Groove, 2005).

The pilot study was done in order to evaluate clarity of the questionnaire after which necessary amendments were made to the final questionnaire. The pilot study was done to find out how feasible the study would be, validity of the data collection tool and how possible it would be to process and analyze the data to be collected. Permission was sought from the Senior Medical superintendent as well as the in-charge before conducting a pilot study. The pilot study was conducted at the University Teaching Hospital ward AO7 and it was done in 2 days. The study sample consisted of 10% of the actual study population which was drawn from the area of data collection, but they were not part of the major sample. The purpose of the study was explained to the mothers and 5 respondents were selected randomly and interviewed. Data was then analyzed manually.

A few changes were made to the questionnaire after discovering that some questions were almost asking the same things.

3.10 Ethical and Cultural Consideration

The ethical consideration involves an understanding of the ethical code and guidelines for protecting the right of the research subjects (Dempsey and Dempsey, 2005).

Before the collection of data for the study, written permission was obtained from the Medical Superintendent of Mansa General Hospital, the Nursing Officer and the ward in charge for pediatric ward. An introductory letter was written by the supervisor and that which was written by the Medical Superintendent were shown to the nursing administrators. A verbal consent was obtained from the study participants after explaining the purpose of the study. The respondents were assured of anonymity and confidentiality as no name appeared on the questionnaire except serial numbers. Privacy was also maintained during the interview process. No participants were forced to participate in the study. All the study materials used during the interviews were safely kept under lock and key.
CHAPTER 4

4.0 DATA ANALYSIS AND PRESENTATION OF FINDINGS

In this chapter, the researcher discusses the analysis and presentation of the findings of the study. The purpose of the study was to determine the knowledge and practices of nursing mothers/caretakers in the prevention of malnutrition in under five children at Mansa General Hospital. The total number of respondents was 50 and those available at the time of data collection are the ones that were interviewed.

4.1 DATA ANALYSIS

Data analysis is a systematic organization and synthesis of research data, and the testing of the research hypothesis using those data (Polit and Hungler, 2006).

The main purpose of data analysis is to derive meaning and interpretation from the research findings which comes through the investigator’s knowledge and expertise in the area of study. After collecting data from the respondents, the questionnaires were counted to ensure that they were 50 of them. Thereafter, all the questionnaires were checked one by one for completeness then coded, categorized and entered on the data master sheet for analysis.

Quantitative data was collected using a structured questionnaire. The data which was collected was manually analyzed with the aid of a calculator. For the continuous variables the mean was calculated, and for categorical variables the percentage was also calculated. Comparisons were made between variables by use of cross tabulation tables.

4.2 PRESENTATION OF FINDINGS

The data has been presented using tables, bar charts, pie charts and cross tabulations. There are 29 tables and 18 graphs of which 10 are frequency tables, 8 pie charts, 10 bar charts and 16 cross tabulations. Tables and graphs are used because they are easy to interpret and to facilitate a better and easy understanding of the research findings. Cross tabulations were also used to combine information on more than one variable to arrive at the explanation of the relationships between
variables in relation to the problem under study. The findings of the study have been put under sections

SECTION A

Demographic data of our respondents will be presented in tables

SECTION B

The tables in section B will be used to demonstrate the respondents knowledge on prevention of malnutrition.

SECTION C

The tables in section C will show the respondents practice in prevention of malnutrition.

SECTION A

4.2.1 DEMOGRAPHIC DATA

TABLE 3: DISTRIBUTION OF RESPONDENTS BY AGE n = 50

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 21 years</td>
<td>4</td>
<td>8.0%</td>
</tr>
<tr>
<td>21-30 years</td>
<td>25</td>
<td>50.0%</td>
</tr>
<tr>
<td>31-40 years</td>
<td>12</td>
<td>24.0%</td>
</tr>
<tr>
<td>Above 40 years</td>
<td>9</td>
<td>18.0%</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Only 8% (4) of the respondents were aged less than 21 years, half of the respondents 50% (25) out of 50 respondents were aged between 21-30 years, 24% (12) of the respondents were aged between 31-40 years, while 18% (9) of the respondents were above 40 years.
TABLE 4: DISTRIBUTION OF RESPONDENTS BY SEX

<table>
<thead>
<tr>
<th>Sex</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>3</td>
<td>6.0%</td>
</tr>
<tr>
<td>Female</td>
<td>47</td>
<td>94.0%</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

More than half of the respondents 94% (47) were females, while 6% (3) were males.

TABLE 5: DISTRIBUTION OF RESPONDENTS BY ADDRESS

<table>
<thead>
<tr>
<th>Address</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High density area</td>
<td>48</td>
<td>96.0%</td>
</tr>
<tr>
<td>Medium density area</td>
<td>1</td>
<td>2.0%</td>
</tr>
<tr>
<td>Low density area</td>
<td>1</td>
<td>2.0%</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

More than half of the respondents 48 (96%) came from high density areas, 1 (2%) of the respondents came from Medium density area and the other 1 (2%) of respondents came from Low density area.
### TABLE 6: DISTRIBUTION OF RESPONDENTS BY MARITAL STATUS

<table>
<thead>
<tr>
<th>Marital status</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>4</td>
<td>8.0%</td>
</tr>
<tr>
<td>Married</td>
<td>42</td>
<td>84.0%</td>
</tr>
<tr>
<td>Divorced</td>
<td>2</td>
<td>4.0%</td>
</tr>
<tr>
<td>Widow</td>
<td>2</td>
<td>4.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

About 8% (4) of the respondents were single, 84% (42) were married, 4% (2) were divorced and 4% (2) were widowed.

### TABLE 7: DISTRIBUTION OF RESPONDENTS BY LEVEL OF EDUCATION

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No education</td>
<td>10</td>
<td>20.0%</td>
</tr>
<tr>
<td>Primary</td>
<td>31</td>
<td>62.0%</td>
</tr>
<tr>
<td>Secondary</td>
<td>7</td>
<td>14.0%</td>
</tr>
<tr>
<td>College/University</td>
<td>2</td>
<td>4.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

More than half 62% (31) of the respondents had primary education, 14% (7) had secondary education, 20% (10) had no education and 4% (2) had college/university education.
TABLE 8: DISTRIBUTION OF RESPONDENTS BY OCCUPATION

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed</td>
<td>4</td>
<td>8.0%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>13</td>
<td>26.0%</td>
</tr>
<tr>
<td>Self employed</td>
<td>11</td>
<td>22.0%</td>
</tr>
<tr>
<td>Peasant farmer</td>
<td>22</td>
<td>44.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

8% (4) of the respondents were employed, 26% (13) were unemployed, 22% (11) were self employed while 44% (22) of the respondents were peasant farmers.

TABLE 9: DISTRIBUTION OF RESPONDENTS BY FAMILY INCOME

<table>
<thead>
<tr>
<th>Income</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than K100,000</td>
<td>15</td>
<td>30.0%</td>
</tr>
<tr>
<td>K100,000-K500,000</td>
<td>23</td>
<td>46.0%</td>
</tr>
<tr>
<td>Above K500,000</td>
<td>11</td>
<td>22.0%</td>
</tr>
<tr>
<td>Not applicable</td>
<td>1</td>
<td>2.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

About 30% (15) of the respondents had a family income of less than K100,000, 46% (23) of the respondents had monthly income of K100,000 to K500,000, 22% (11) had above K500,000, while 2% (1) of the respondents reported not to have had any money.
### TABLE 10: DISTRIBUTION OF RESPONDENTS BY NUMBER OF CHILDREN

<table>
<thead>
<tr>
<th>Number of children</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>24</td>
<td>48.0%</td>
</tr>
<tr>
<td>4-6</td>
<td>21</td>
<td>42.0%</td>
</tr>
<tr>
<td>7 and above</td>
<td>5</td>
<td>10.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

About 48% (24) of the respondents had 1-3 children, 42% (21) had 4-6 children and 10% (5) had 7 and above children.
4.2.2 KNOWLEDGE OF NURSING MOTHERS/ CARETAKERS IN PREVENTION OF MALNUTRITION

FIGURE 1: RESPONDENTS KNOWLEDGE ON DEFINITION OF MALNUTRITION

More than half of the respondents 29 (58%) correctly defined malnutrition as a disease caused by lack of essential nutrients in the diet, 4 (8%) wrongly stated that it was a disease caused by germs while 17 (34%) stated that they do not know.
More than half of the respondents 33 (66%) out of 50 said a malnourished child will present with swollen body, 19 (38%) out of 50 respondents said a child will present with a thin body and only 13 (26%) out of 50 respondents said there will be change in hair colour. Other respondents wrongly stated that a malnourished child will present healthy skin 14 (28%) and will be well hydrated 23 (46%).
More than half of the respondents 28 (56%) out of 50 respondents stated that they were taught on nutrition, 16 (32%) out of 50 respondents said they were taught on immunization, 29 (58%) out of 50 respondents said they were taught about growth monitoring, while 1 (2%) out of 50 respondents said they did not know.
More than half of the respondents 33 (66%) said they got the information on malnutrition from the health centre, 6 (12%) from friends, 5 (10%) from mass media e.g. radio, 2 (4%) from relatives while 4 (8%) of the respondents had no information on malnutrition.
25 (50%) out of 50 respondents correctly stated that a balanced diet was nshima, vegetables mixed with groundnuts (fisashi) and beans, 20 (40%) out of 50 respondents stated that a balanced diet was cassava meal, cassava leaves and Kapenta, while 14 (28%) out of 50 respondents said that they did not know. 18 (36%) and 20 (40%) of the respondents wrongly stated that a balanced diet is nshima with chicken only or any other expensive food and rice, meat and potatoes respectively.
More than half of the respondents 37 (74%) out of 50 respondents said a child can become malnourished by not eating a balanced diet, 22 (44%) out of 50 respondents said that malnutrition can be caused by abrupt weaning, 10 (20%) out of 50 respondents said by eating vegetables only, while 19 (38%) out of 50 respondents said by presence of other diseases.
Figure 18: How were the meals in High Cost Ward?

Less than half of the respondents, 34% of the respondents stated that the meals were good and fair, while 20% stated that the meals were poorly prepared, while 12% stated that the meals were excellent.
FIGURE 8: RESPONDENTS KNOWLEDGE ON PREVENTION OF MALNUTRITION

- By eating a balanced diet with locally available foods
- By eating good food like chicken and meat only
- Do not know

Less than half 22 (44%) of the respondents stated that malnutrition can be prevented by eating a balanced diet, 4 (8%) said by eating good food like chicken and meat only and 24 (48%) of the respondents did not know how malnutrition can be prevented.
TABLE 11: LEVELS OF KNOWLEDGE

<table>
<thead>
<tr>
<th>Levels</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low (1-8)</td>
<td>18</td>
<td>36.0%</td>
</tr>
<tr>
<td>Medium (9-16)</td>
<td>27</td>
<td>54.0%</td>
</tr>
<tr>
<td>High (17-24)</td>
<td>5</td>
<td>10.0%</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

More than half 27 (54%) of the respondents had medium (9-16) levels of knowledge while 18 (36%) of respondents had low levels of knowledge and only 5 (10%) had high levels of knowledge on prevention of malnutrition.
12 (48%) out of 25 of the respondents aged between 21-30 years, 7 (58.3%) out of 12 respondents aged 31-40 years, 5 (55.5%) out of 9 respondents aged above 40 years and 3 (75%) out of 4 aged less than 21 years had medium levels of knowledge. The respondents with low levels of knowledge were 12 (48%) out of 25 aged 21-30 years, 3 (25%) out of 12 were aged 31-40 years while 3 (33.3%) out of 9 were above 40 years of age. In total, 27 (54%) of the respondents had medium levels of knowledge.
### TABLE 13: KNOWLEDGE IN RELATION TO GENDER

<table>
<thead>
<tr>
<th>Levels of Knowledge</th>
<th>What is your gender</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Low (1-8)</td>
<td>1 (33.3%)</td>
<td>17 (36.2%)</td>
</tr>
<tr>
<td>Medium (9-16)</td>
<td>2 (66.7%)</td>
<td>25 (53.1%)</td>
</tr>
<tr>
<td>High (17-24)</td>
<td>0 (0%)</td>
<td>5 (10.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>3 (100%)</td>
<td>47 (100%)</td>
</tr>
</tbody>
</table>

More than half 25 (53.1%) out of 47 respondents who had medium levels of knowledge were females compared to 2 (66.7%) out of 3 who were males. 17 (36.2%) out of 47 female respondents had low levels compared to 1 (33.3%) out of 3 males who had low levels of knowledge.
<table>
<thead>
<tr>
<th>Levels of Knowledge</th>
<th>Where do you stay</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High density area</td>
<td>Medium density area</td>
</tr>
<tr>
<td>Low (1-8)</td>
<td>18 (37.5%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Medium (9-16)</td>
<td>26 (54.2%)</td>
<td>1 (100%)</td>
</tr>
<tr>
<td>High (17-24)</td>
<td>4 (8.3%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Total</td>
<td>48 (100%)</td>
<td>1 (100%)</td>
</tr>
</tbody>
</table>

More than half of the respondents 26 (54.2%) out of 48 respondents who were coming from high density area had medium (9-16) levels of knowledge and 18 (37.5%) out of 48 respondents had low levels of knowledge.
**TABLE 15: KNOWLEDGE IN RELATION TO MARITAL STATUS**

<table>
<thead>
<tr>
<th>Levels of Knowledge</th>
<th>What is your marital status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Single</td>
<td>Married</td>
</tr>
<tr>
<td>Low (1-8)</td>
<td>1 (25%)</td>
<td>16 (38.1%)</td>
</tr>
<tr>
<td>Medium (9-16)</td>
<td>2 (50%)</td>
<td>22 (52.4%)</td>
</tr>
<tr>
<td>High (17-24)</td>
<td>1 (25%)</td>
<td>4 (9.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>4 (100%)</td>
<td>42 (100%)</td>
</tr>
</tbody>
</table>

More than half of the respondents 22 (52.4%) out of 42 respondents who were married had medium levels of knowledge while 16 (38.1%) had low levels of knowledge.
**TABLE 16: KNOWLEDGE IN RELATION TO EDUCATION LEVEL**

<table>
<thead>
<tr>
<th>Levels of Knowledge</th>
<th>What is your highest level of education attained</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No education</td>
<td>Primary</td>
</tr>
<tr>
<td>Low (1-8)</td>
<td>7 (70%)</td>
<td>11 (34.4%)</td>
</tr>
<tr>
<td>Medium (9-16)</td>
<td>3 (30%)</td>
<td>18 (58.1%)</td>
</tr>
<tr>
<td>High (17-24)</td>
<td>0 (0%)</td>
<td>2 (6.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>10 (100%)</td>
<td>31 (100%)</td>
</tr>
</tbody>
</table>

18 (58.1%) out of 31 who had medium levels of knowledge had attained primary level of education while 5 (71.4%) out of 7 who had medium level had attained secondary education. The respondents 7 (70%) out of 10 who had no education had low levels of knowledge.
### TABLE 17: KNOWLEDGE IN RELATION TO OCCUPATION STATUS

<table>
<thead>
<tr>
<th>Levels of Knowledge</th>
<th>What is your occupation status</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Employed</td>
<td>Unemployed</td>
</tr>
<tr>
<td>Low (1-8)</td>
<td>1 (25%)</td>
<td>6 (46.2%)</td>
</tr>
<tr>
<td>Medium (9-6)</td>
<td>2 (50%)</td>
<td>6 (46.2%)</td>
</tr>
<tr>
<td>High (17-24)</td>
<td>1 (25%)</td>
<td>1 (7.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>4 (100%)</td>
<td>13 (100%)</td>
</tr>
</tbody>
</table>

More than half of the respondents 14 (63.6%) out of 22 respondents who had medium levels of knowledge were peasant farmers as compared to 6 (46.2%) of the unemployed respondents who had low levels of knowledge.
TABLE 18: KNOWLEDGE IN RELATION TO FAMILY INCOME

<table>
<thead>
<tr>
<th>Levels of Knowledge</th>
<th>What is your family income</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less than K100,000</td>
<td>K100,000-K500,000</td>
</tr>
<tr>
<td>Low (1-8)</td>
<td>5 (33.3%)</td>
<td>9 (39.1%)</td>
</tr>
<tr>
<td>Medium (9-16)</td>
<td>9 (60%)</td>
<td>13 (56.5%)</td>
</tr>
<tr>
<td>High (17-24)</td>
<td>1 (6.7%)</td>
<td>1 (4.3%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15 (100%)</td>
<td>23 (100%)</td>
</tr>
</tbody>
</table>

3 (56.5%) out of 23 respondents with a family income of K100,000 to K500,000 and 9 (60%) out of 15 who had family income of less than K100,000 had medium levels of knowledge.
### TABLE 19: KNOWLEDGE IN RELATION TO NUMBER OF CHILDREN

<table>
<thead>
<tr>
<th>Levels of Knowledge</th>
<th>How many children do you have</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-3 (33.3%)</td>
<td>4-6 (33.3%)</td>
</tr>
<tr>
<td>Low (1-8)</td>
<td>8 (33.3%)</td>
<td>7 (33.3%)</td>
</tr>
<tr>
<td>Medium (9-16)</td>
<td>13 (54.2%)</td>
<td>12 (57.1%)</td>
</tr>
<tr>
<td>High (17-24)</td>
<td>3 (12.5%)</td>
<td>2 (9.5%)</td>
</tr>
<tr>
<td>Total</td>
<td>24 (100%)</td>
<td>21 (100%)</td>
</tr>
</tbody>
</table>

13 (54.2%) out of 24 respondents who had medium levels of knowledge had 1-3 children as compared to 2 (40%) out of 5 who had 7 and above children. 8 (33.3%) out of 24 who had low levels of knowledge had 1-3 children as compared to 3 (60%) out of 5 who had 7 and above children.
More than half 27 (54%) of the respondents said food was prepared by mothers, 7 (14%) by grandmothers, while 16 (32%) of the respondents stated that food was prepared by the siblings.
Less than half 18 (36%) of the respondents said the children were fed by their mother, 6 (12%) were fed by their grandmothers, 9 (18%) were fed by their siblings and 17 (34%) of the children fed themselves.
More than half 29 (58%) of the respondents said their children eat alone while 21 (42%) of the respondents stated that they eat food together with their children.
More than half of the respondents 32 (64%) stated that they started the complementary feeds before 6 months of age while 18 (36%) of the respondents started the complementary feeds after 6 months.
Less than a quarter 2 (4%) of the respondents fed their children once in a day, 13 (26%) said they fed their children 2 times a day, 24 (48%) stated that they fed their children 3 times a day and 11 (22%) said that they fed their children 4 or more times a day.
More than half 34 (68%) of the respondents had no backyard gardens and only 16 (32%) of the respondents had backyard gardens.
Less than a quarter 10 (20%) of the respondents grew vegetables. 5 (10%) grew tomatoes, 1 (2%) grew onions while more than half of the respondents 34 (68%) did not grow anything since they had no backyard gardens.
More than half of the respondents 27 (54%) said they preserved the food after harvesting while 23 (46%) of the respondents said they did not preserve food.
FIGURE 17: RESPONDENTS PRACTICE ON THE METHODS OF FOOD PRESERVATION

More than half 26 (52%) of the respondents used drying method when preserving and only 1 (2%) added salt.
Almost all the respondents 48 (96%) participated in childcare activities.

**TABLE 20: LEVELS OF PRACTICE**

<table>
<thead>
<tr>
<th>Level of practice</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>5</td>
<td>10.0%</td>
</tr>
<tr>
<td>Fair</td>
<td>23</td>
<td>46.0%</td>
</tr>
<tr>
<td>Positive</td>
<td>22</td>
<td>44.0%</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Less than half 23 (46%) of the respondents had fair practice, 22 (44%) had positive practice and only 5 (10%) had negative practice.
### TABLE 21: PRACTICE IN RELATION TO AGE

<table>
<thead>
<tr>
<th>Level of practice</th>
<th>How old were you on your last birthday</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less than 21 years</td>
<td>21-30 years</td>
</tr>
<tr>
<td>Negative</td>
<td>0 (0%)</td>
<td>2 (8%)</td>
</tr>
<tr>
<td>Fair</td>
<td>2 (50%)</td>
<td>10 (40%)</td>
</tr>
<tr>
<td>Positive</td>
<td>2 (50%)</td>
<td>13 (52%)</td>
</tr>
<tr>
<td>Total</td>
<td>4 (100%)</td>
<td>25 (100%)</td>
</tr>
</tbody>
</table>

13 (52%) out of 25 of the respondents who had positive practice were aged between 21-30 years of age compared to 3 (33.3%) out of 9 who were above 40 years.
TABLE 22: PRACTICE IN RELATION TO GENDER

<table>
<thead>
<tr>
<th>Level of practice</th>
<th>What is your gender</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Negative</td>
<td>0 (0%)</td>
<td>5 (10.6%)</td>
</tr>
<tr>
<td>Fair</td>
<td>3 (100%)</td>
<td>20 (42.6%)</td>
</tr>
<tr>
<td>Positive</td>
<td>0 (0%)</td>
<td>22 (46.8%)</td>
</tr>
<tr>
<td>Total</td>
<td>3 (100%)</td>
<td>47 (100%)</td>
</tr>
</tbody>
</table>

22 (46.8%) out of 47 female respondents had positive practice as compared to the male respondents 3 (100%) who had fair practice.

TABLE 23: PRACTICE IN RELATION TO RESIDENTIAL AREA

<table>
<thead>
<tr>
<th>Level of practice</th>
<th>Where do you stay</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High density area</td>
<td>Medium density area</td>
</tr>
<tr>
<td>Negative</td>
<td>5 (10.4%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Fair</td>
<td>23 (47.9%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Positive</td>
<td>20 (41.7%)</td>
<td>1 (100%)</td>
</tr>
<tr>
<td>Total</td>
<td>48 (100%)</td>
<td>1 (100%)</td>
</tr>
</tbody>
</table>

Less than half of the respondents 23 (47.9%) who had fair knowledge were coming from high density area as compared to 1 (100%) of the respondents who were coming from Low density and Medium density area.
TABLE 24: PRACTICE IN RELATION TO MARITAL STATUS

<table>
<thead>
<tr>
<th>Level of practice</th>
<th>Single</th>
<th>Married</th>
<th>Divorced</th>
<th>Widow</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>0 (0%)</td>
<td>5 (11.9%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>5 (10%)</td>
</tr>
<tr>
<td>Fair</td>
<td>2 (50%)</td>
<td>20 (47.6%)</td>
<td>0 (0%)</td>
<td>1 (50%)</td>
<td>23 (46%)</td>
</tr>
<tr>
<td>Positive</td>
<td>2 (50%)</td>
<td>17 (40.5%)</td>
<td>2 (100%)</td>
<td>1 (50%)</td>
<td>22 (44%)</td>
</tr>
<tr>
<td>Total</td>
<td>4 (100%)</td>
<td>42 (100%)</td>
<td>2 (100%)</td>
<td>2 (100%)</td>
<td>50 (100%)</td>
</tr>
</tbody>
</table>

20 (47.6%) out of 42 respondents who were married had fair practice as compared to 2 (100%) of the divorced respondents who had a positive practice.

TABLE 25: PRACTICE IN RELATION TO LEVEL OF EDUCATION

<table>
<thead>
<tr>
<th>Level of practice</th>
<th>What is your highest level of education attained</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No education</td>
<td>Primary</td>
</tr>
<tr>
<td>Negative</td>
<td>3 (30%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Fair</td>
<td>2 (20%)</td>
<td>18 (58.1%)</td>
</tr>
<tr>
<td>Positive</td>
<td>5 (50%)</td>
<td>13 (41.9%)</td>
</tr>
<tr>
<td>Total</td>
<td>10 (100%)</td>
<td>31 (100%)</td>
</tr>
</tbody>
</table>

More than half of the respondents 18 (58.1%) out of 31 who attained primary level of education had fair levels of practice as compared to 2 (20%) out of 10 respondents who had no education.
### TABLE 26: PRACTICE IN RELATION TO OCCUPATION

<table>
<thead>
<tr>
<th>Level of practice</th>
<th>Employed</th>
<th>Unemployed</th>
<th>Self employed</th>
<th>Peasant farmer</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>0 (0%)</td>
<td>1 (7.7%)</td>
<td>1 (9.1%)</td>
<td>3 (13.6%)</td>
<td>5 (10%)</td>
</tr>
<tr>
<td>Fair</td>
<td>2 (50%)</td>
<td>4 (30.8%)</td>
<td>7 (63.6%)</td>
<td>10 (45.5%)</td>
<td>23 (46%)</td>
</tr>
<tr>
<td>Positive</td>
<td>2 (50%)</td>
<td>8 (61.5%)</td>
<td>3 (27.3%)</td>
<td>9 (40.9%)</td>
<td>22 (44%)</td>
</tr>
<tr>
<td>Total</td>
<td>4 (100%)</td>
<td>13 (100%)</td>
<td>11 (100%)</td>
<td>22 (100%)</td>
<td>50 (100%)</td>
</tr>
</tbody>
</table>

8 (61.5%) out of 13 respondents who had positive practice were unemployed compared to 3 (27.3%) out of 11 who were self employed.

### TABLE 27: PRACTICE IN RELATION TO FAMILY INCOME

<table>
<thead>
<tr>
<th>Level of practice</th>
<th>Less than K100,000</th>
<th>K100,000-K500,000</th>
<th>Above K500,000</th>
<th>Not applicable</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative</td>
<td>3 (20%)</td>
<td>2 (8.7%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>5 (10%)</td>
</tr>
<tr>
<td>Fair</td>
<td>7 (46.7%)</td>
<td>12 (52.2%)</td>
<td>4 (36.4%)</td>
<td>0 (0%)</td>
<td>23 (46%)</td>
</tr>
<tr>
<td>Positive</td>
<td>5 (33.3%)</td>
<td>9 (39.1%)</td>
<td>7 (63.6%)</td>
<td>1 (100%)</td>
<td>22 (44%)</td>
</tr>
<tr>
<td>Total</td>
<td>15 (100%)</td>
<td>23 (100%)</td>
<td>11 (100%)</td>
<td>1 (100%)</td>
<td>50 (100%)</td>
</tr>
</tbody>
</table>

7 (63.6%) out of 11 who had family income of above K500,000 had positive practice as compared to 5 (33.3%) who had less than K100,000 as family income.
TABLE 28: PRACTICE IN RELATION TO NUMBER OF CHILDREN

<table>
<thead>
<tr>
<th>Level of practice</th>
<th>How many children do you have</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-3</td>
<td>4-6</td>
</tr>
<tr>
<td>Negative</td>
<td>2 (8.3%)</td>
<td>3 (14.3%)</td>
</tr>
<tr>
<td>Fair</td>
<td>12 (50%)</td>
<td>7 (33.3%)</td>
</tr>
<tr>
<td>Positive</td>
<td>10 (41.7%)</td>
<td>11 (52.4%)</td>
</tr>
<tr>
<td>Total</td>
<td>24 (100%)</td>
<td>21 (100%)</td>
</tr>
</tbody>
</table>

1 (52.4%) out of 21 respondents who had 4-6 children had positive practice as compared to 1 (20%) out of 5 respondents who had 7 and above children. More than half 4 (80%) of the respondents who had 7 ad above children had fair practice in the prevention of malnutrition.

1.2.4 RELATIONSHIPS BETWEEN KNOWLEDGE AND PRACTICE

TABLE 29: RESPONDENT’S KNOWLEDGE IN RELATION TO PRACTICE

<table>
<thead>
<tr>
<th>Levels of Knowledge</th>
<th>Level of practice</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
<td>Fair</td>
</tr>
<tr>
<td>Low (1-8)</td>
<td>3 (60%)</td>
<td>8 (34.8%)</td>
</tr>
<tr>
<td>Medium (9-16)</td>
<td>2 (40%)</td>
<td>14 (60.9%)</td>
</tr>
<tr>
<td>High (17-24)</td>
<td>0 (0%)</td>
<td>1 (4.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>5 (100%)</td>
<td>23 (100%)</td>
</tr>
</tbody>
</table>

4 (60.9%) of the respondents who had fair practice had medium levels of knowledge as compared to 2 (40%) who had negative practice with medium levels of knowledge. 3 (60%) of the respondents who had negative practice also had low levels of knowledge compared to 8 (34.8%) who had fair practice with low knowledge. 4 (18.2%) of the respondents who had positive practice had high levels of knowledge.
CHAPTER 5

5.0 DISCUSSION OF FINDINGS AND IMPLICATIONS FOR THE HEALTH CARE SYSTEM

INTRODUCTION

The discussion of findings is based on the information which was collected during data collection. The respondents were 50 in number and a structured questionnaire was used to collect data. The study was aimed at establishing the knowledge and practices of nursing mother/caretakers in the prevention of malnutrition in under five children at Mansa General Hospital. The study generally revealed that very few of the respondents had high levels of knowledge in the prevention of malnutrition and almost half of the respondents had a fair practice towards the prevention of malnutrition.

5.1 CHARACTERISTICS OF THE SAMPLE

The study was carried out in Children's Medical Ward at Mansa General Hospital. The respondents were 3 males and 47 females. The females were many because they are the natural custodians of the health of the family and the community at large, hence they were responsible for the care of sick children. The other reason is that in many African cultures, the task of looking after the children is the responsibility of women and it can be considered as a weakness on the part of a man.

The findings showed that 8% of the respondents were aged less than 21 years, half of the respondents (50%) were aged between 21-30 years, 24% of the respondents were aged 31-40 years and 18% were aged above 40 years (see table 3). This shows that there were more respondents aged between 21-30 years. The explanation for this scenario is that, there were many young people admitted to the hospital because in the rural areas women get married at a tender age and that's the time when most of the women bear children.

The results revealed that 96% of the respondents came from high density areas, 2% of the respondents came from medium density area, and 2% of the respondents came from low density area. This shows that the majority 96% of the respondents were coming from high density areas.
This can be attributed to Mansa being a rural town and there are a lot of villages around as compared to urban areas.

The results also revealed that the majority of the respondents 84% were married, 8% of the respondents were single, 4% of the respondents were divorced and 4% of the respondents were widows (See table 6). This shows that the majority of the respondents were married. The explanation to this scenario is that marriage is important in the prevention of malnutrition as others will impart the knowledge gained at the under five clinic to their spouses on the importance of eating a balanced meal using the locally available foods as in many cases spouses are the bread winners. The other reason could be that in Zambia it is culturally acceptable for women to be married and it is a source of pride for many women.

Achieving Universal Primary Education is the Millennium Development Goal (MDG) number. It states that education is a major factor in enhancing a country’s social and economic development as it aids in fighting against poverty and hunger. The primary education target of 100% has already been attained but the main challenge are adult literacy, which declined from 795 in 1990 to 70% in 2004, and the low completion rate in secondary school despite the increase from 4.4% in 2002 to 19.4% in 2009.

Regarding the levels of education, 20% of the respondents had no education, 62% of the respondents had primary education, 14% of the respondents had secondary education, and 4% of the respondents had college / university education. The results reveal that more than half of the respondents had primary education and this can be attributed to few secondary schools and early marriages by the majority of school going children in rural parts of Zambia. The other reasons could be lack of sponsorship for them to attain higher education. The results show that health care providers need to conduct targeted health education in simple, clear language during antenatal clinics on the dangers and prevention of malnutrition for them to understand. The nurses should ensure that the children are health through activities like immunization so that they can attend school. The nurse should also teach the community on the disadvantages of early marriages such as failing to complete school, poverty and hunger.

The Millennium Development Goal number 1 aims at eradicating hunger and poverty. It states that poverty is much higher in rural areas at 67% compared to 20% in urban areas. This is the
reason why there are more malnourished children in rural areas like Mansa than the urban areas. Sustained and robust economic growth is essential but not sufficient on its own for the achievement of this goal. Macroeconomic and structural policies that promote job creation, economic inclusion, social empowerment and significant levels of investment in health and education are essential. The results revealed that 8% of the respondents were employed, 26% of the respondents were unemployed, 22% of the respondents were self-employed, and 44% of the respondents were peasant farmers. The explanation for this might be that due to high school drop out among the respondents, they are unable to find formal employment because they have no qualifications. The nurse should encourage the individuals, families and the community on the income generating activities such as small businesses, gardening, forming cooperatives and coming up with project proposals.

Regarding the family monthly income, the results revealed that 30% of the respondents had less than K100, 000, 46% of the respondents had K100, 000 to K500, 000, 22% of the respondents had above K500, 000, 2% of the respondents reported not to have had any money (See table 7). This is because the majority of the respondents are not in meaningful employment; hence they are failing to get enough money to buy required foods for their families. This can also be attributed to structural adjustment policies which have lead to a lot of industries being closed.

The results revealed that almost half 48% of the respondents had 1-3 children, 42% of the respondents had 4-6 children, and 10% of the respondents had 7 and above children. The reason for this could be that women in rural areas get married at a tender age and they end up having a lot of children.

5.2 DISCUSSION OF EACH VARIABLE

5.2.1 KNOWLEDGE OF NURSING MOTHERS/CARETAKERS IN THE PREVENTION OF MALNUTRITION IN UNDER FIVE CHILDREN.

Knowledge is what someone knows about a particular subject (Mayor et al. 2006). Knowledge on the prevention of malnutrition is important for the caretakers because once the caretakers have the necessary knowledge they will be able to know what malnutrition is, how it comes about, its
prevention and they will also be able to put what they have learnt into practice. The study measured respondent’s level of knowledge by considering the following: defining malnutrition, how the child with malnutrition presents, what mothers are taught at under five clinic, where they got information on malnutrition from, what a balanced diet is, how does a child become malnourished, how long a child should be exclusively breastfed and how malnutrition can be prevented. The objective was to establish the level of knowledge that mothers have in relation to prevention of malnutrition.

In this study, 54% of the respondents had medium level of knowledge on the prevention of malnutrition in under five children, 36% of the respondents had low level of knowledge and only 10% had high level of knowledge on prevention of malnutrition (See table 11). This finding disagrees with Devi (2011) findings whose study found that, 98.33% of the mothers had inadequate knowledge on nutrition of under five children, 1.67% of the mothers had adequate knowledge. This means that a lot still needs to be done by the health care providers in order for them to impart knowledge to the caretakers on malnutrition prevention.

According to World Health Organization malnutrition is defined as "the cellular imbalance between supply of nutrients and energy and the body's demand for them to ensure growth and maintenance of specific functions." The study findings revealed that more than half of the respondents 58% defined malnutrition as a disease caused by lack of essential nutrients in the diet, and 8% of the respondents wrongly defined malnutrition as a disease caused by germs, while 34% of the respondents stated that they did not know what malnutrition is (See figure 1).

Regarding the signs and symptoms of malnutrition, 66% of the respondents stated that a child presents with a swollen body, 38% of the respondents said a thin body (muscle wasting), and 26% of the respondents stated that there would be change in hair colour (See figure 2). Other respondents wrongly stated that a malnourished child presents with healthy skin 28% and they will be well hydrated 46%. The explanation to this scenario is that a lot of people knew about the swollen body and only a few knew about the other signs a malnourished child presents with. The caretakers need to be given targeted health education on how the signs and symptoms of malnutrition presents in order for them to take their children to the health centre immediately they notice any of the signs and symptoms of malnutrition.
Regarding what the mothers/caretakers are taught at the under five clinic, more than half of the respondents (56%) said they were taught on nutrition, 32% of the respondents stated that they were taught on immunization, 58% of the respondents were taught about growth monitoring, while 2% of the respondents stated that they did not know (See figure 3).

The study findings revealed that 50% of the study respondents stated that a balanced diet is nshima, vegetables mixed with groundnuts (fisashi) and beans, 40% of the respondents stated that a balanced diet is cassava meal, cassava and Kapenta, while 28% stated that they did not know. 36% and 40% of the respondents wrongly stated that a balanced diet is nshima with chicken only or any other expensive food and rice, meat and potatoes respectively (See figure5). This is similar to Turyashemeurwa et al (2009) study, which found that most women do not know what to prepare for young children. As Latham, observed, the problem of malnutrition in most African settings was not due to lack of food but lack of knowledge about food.

Regarding knowledge on how a child becomes malnourished, the study findings revealed that more than half of the respondents 74% said a child can become malnourished by not eating a balanced diet, 44% of the study respondents said that malnutrition can be caused by abrupt weaning, 20% of the study participants said by eating vegetables only, while 38% of the study participants said by presence of other diseases (See figure 6). According to a study done by Ouma, (2006) when mothers were asked what causes malnutrition, 58% said diseases, 62% said lack of food, 16% did not know and 2% said 'evil eye'. The explanation for the above statement could be that the caretakers are not given enough information on the causes of malnutrition, therefore health education should be intensified at the under five clinic. The findings are similar to a study which was carried out in Uganda by Turyashemeurwa et al (2009), where the majority (59%) identified poverty as the major cause of undernutrition, the proportion of mothers who did not know any of the causes of malnutrition was 28%, while inadequate food supply and lack of awareness about good nutrition was reported 12% and 1% respectively. This answers the hypothesis that states that inadequate knowledge about malnutrition and its predisposing factors lead to an increase in the number of malnutrition cases.

On the responses regarding how long the women should exclusively breastfeed their children, the study findings revealed that less than half (38%) of the respondents said until 6 months and 10%
stated that it should be less than 6 months, the above scenario can be attributed to the women being busy with other chores and would want to introduce other foods early so that their babies do not trouble them (See figure 7). This is similar to Sanghvi’s (2000) findings, which revealed that even when women understand the benefits of breastfeeding and are committed to it, they may encounter difficulties in breastfeeding effectively, generally because they do not know enough about how breastfeeding works and because those around them do not know how to support it. Most health professionals are not trained in the specialized skills of breastfeeding counseling. The study revealed that 20% of the respondents stated that it should be more than 6 months, and 6% said until baby shows signs of wanting other liquid or food. This agrees with USAID, Infant and Young Child Nutrition (IYCN) project in Zambia, (2011), which stated that less than two thirds of all infants younger than 6 months are exclusively breastfed. Mothers give their infants water or watery porridge because they believe their babies are thirsty and that they would not be satisfied by their breastmilk. Only a child looking at his mother while she is eating or drinking convinces some mothers that the child wants what she has, that is, additional food or drink.

The study findings are similar to Ouma, (2006) who carried out a study to assess knowledge, attitudes and practices of caretakers of malnourished children in Aweil East and North countries, South Sudan. The objective of the study was to assess the knowledge on when is the best time to give food other than breastmilk to the children. The study findings revealed that 58% of the respondents stated that they gave cow milk before 6 months of age, 40% started at or before the age of 3 months and 24% started complementary feeding after the age of 6 months. The child is supposed to be exclusively breastfed until 6 months. This means there was inadequate knowledge on complementary feeds, hence the need for the nurses to give targeted health education so that the mothers can go with the correct knowledge.

Regarding knowledge on how malnutrition can be prevented, less than half (44%) of the respondents stated that malnutrition can be prevented by eating a balanced diet, 8% said by eating good food like chicken and meat only and 48% of the respondents did not know how malnutrition can be prevented (See figure 8). According to Ganacharia (2009), women fail to practise preventive measures due to lack of empowerment. These include lack of information about preventive services, cultural ideologies, absence of services and infrastructure and
geographical isolation. Therefore there is need for the health care staff to use any opportunity where caretakers are gathered like antenatal clinics, family planning clinics, children’s clinic and post natal clinic to give adequate information on malnutrition to the caretakers.

More than half 58.1% of the study participants who had medium levels of knowledge had attained primary level of education while 71.4% who had medium level had attained secondary education and 70% of the respondents who had no education had low levels of knowledge (See table 16). These findings reveal that formal education attainment does directly determine the level of knowledge on malnutrition. This can also be attributed to the fact that the higher the education level, the more knowledgeable one becomes because they are able to understand issues affecting the health of their children easily. The findings were consistent with study carried out by Turyashemurwa et al (2009) which states that lack of knowledge about proper nutrition could be attributed to the poor education level. He states that malnutrition is significantly higher when parents have not had any education or when they cannot read or write.

More than half of the respondents 63.6% who had medium level of knowledge were peasant farmers as compared to 46.2% of the unemployed respondents who had low levels of knowledge (See table 17). This can be attributed to the fact that most of the people who are unemployed have no basic education which makes it difficult for them to understand issues on the prevention of malnutrition in the under five children.

The study findings revealed that 54.2% of the participants who had medium levels of knowledge had 1-3 children as compared to 40% who had 7 and above children and 33.3% of the respondents who had low levels of knowledge had 1-3 children as compared to 60% of those who had 7 and above children (See table 19). This means that those who had many children had lower knowledge than those who had few children, because those with a lot of children spend most of the time attending to their children at the expense of attending under five clinics where they can get more information on malnutrition.

The above information answers the objective of establishing the level of knowledge that mothers have in relation to prevention of malnutrition.
5.2.2 PRACTICE OF NURSING MOTHERS/ CARETAKERS IN THE PREVENTION OF MALNUTRITION

Practice is the application or use of an idea, belief or method (Dictionary.comAnswers.com. 2008). The questions to determine practice in this study consisted of who prepares the food for the children, who feeds the child, does the child eat alone, when they started complementary feeds, how often under five children are fed in their homes, if they have a backyard garden, foods grown, preservation and how they do it and their participation in childcare activities.

The study revealed that less than half 46% of the study respondents had fair practice, 44% had positive practice and only 10% of the study participants had negative practice (See table 20).

When asked to state who feeds the children, less than half 36% of the respondents said the children were fed by their mothers, 12% were fed by their grandmothers, 18% were fed by their siblings and 34% of the children fed themselves (See figure 10). It can be seen that those children who feed themselves are likely to have malnutrition because they may not feed adequately as there is no one to supervise them. Therefore, it is necessary for the caretakers to feed the children or supervise them to ensure that they have eaten enough.

According to Rao (2011), complementary feeding is defined as the process which starts when breast milk alone is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods and liquids are needed, along with breast milk. The transition from exclusive breastfeeding to family foods, referred to as complementary feeding, typically covers the period from 6 to 18-24 months of age, and is a very vulnerable period. But the study findings revealed that more than half of the respondents (64%) started the complementary feeds before 6 months of age and only 36% of the respondents stated correctly that they started complementary feeds at 6 months. This disagrees with Rao (2011) who carried out a study of complementary feeding practices among mothers of children aged six months to two years done in coastal south India and the study revealed that 77.5% of mothers had started complementary feeding at the recommended time of six months and 32% of mothers were giving an adequate quantity of complementary feeds and this was related to high female literacy rates and high institutional deliveries in the study population. There is need to health educate the mothers to start
complementary feeds at 6 months because breastmilk contains all the nutrients needed for the baby to grow well and the foods which are introduced may not be adequate for the child.

WHO recommends that infants start receiving complementary foods at 6 months of age in addition to breast milk, initially 2-3 times a day between 6-8 months, increasing to 3-4 times daily between 9-11 months and 12-24 months with additional nutritious snacks offered 1-2 times per day, as desired. But in this study it was found that less than a quarter (4%) of the respondents fed their children once in a day, 26% said they fed their children 2 times a day, 48% stated that they fed their children 3 times a day and 22% said that they fed their children 4 or more times a day (See figure 13). This does not agree with Turyashemeurwa et al (2009), where the majority of the children 71% were fed three times a day, while only 29% were fed more than three times a day.

More than half of the respondents (58.1%) who attained primary level of education had fair levels of practice as compared to 20% of the study participants who had no education (See table 25). The explanation to the above statement is that education level has an impact on how someone practices the preventive measures. According to Nahar et al (2010), illiterate or less-educated and younger mothers usually have less knowledge of appropriate childrearing practices and optimal environmental and personal hygiene, and they generally have less status in the family, thereby rendering them less capable of providing adequate childcare.

The study findings revealed that 63.6% of the respondents who had family income of above K500, 000 had positive practice as compared to 33.3% who had less than K100, 000 as family income (See table 27). The reason could be that people with high family income can have positive practice because they might have attained higher education and are in formal employment.

The study revealed that 52.4% of respondents who had 4-6 children had positive practice as compared to 20% of the respondents who had 7 and above children (See table 28). More than half 80% of the respondents who had 7 and above children had fair practice in the prevention of malnutrition. This is similar to Hien and Hoa (2007) who carried out a study to assess the nutritional status and to determine potential risk factors of malnutrition in children and the study
revealed that a mother who had many children will devote less time to child care than mother who had two children or less and a large number of children in family suggest that there is more competition for available food. This study disagrees with Raghav and Vefna, (2005) and Ramoteme et al (2005) studies which found large household size as a protective factors against malnutrition in children because of the extended family where children were well cared for.

The above findings answer the objective to determine the mother’s practices towards prevention of malnutrition in under five children.

5.3 SIGNIFICANCE TO NURSING

The significance to nursing of this study will be discussed under the four main headings related to the problem under study, its objectives and hypothesis. The study revealed that 60% of the respondents who had negative practice also had low levels of knowledge compared to 34.8% who had fair practice with low knowledge in the prevention of malnutrition in under five children. This indicates that the majority of the respondents were not very knowledgeable regarding malnutrition prevention. The observation made shows that the majority of the respondents had medium level of knowledge hence, the above findings are of significance to the practice, research, education and administration of nursing.

5.3.1 NURSING PRACTICE

The findings have shown that less than half 46% of the respondents had fair practice, 44% had positive practice and only 10% had negative practice. This means that the practice is not so good and the nursing mothers/caretakers need to be educated by the health workers on the good practices in the prevention of malnutrition and they should also adhere to the information given to them. In the district, there are a lot of health posts and the nursing officer should, therefore, be alert in order for her to find out the prevalence of malnutrition. The nurses should get involved with the community and find out the food stuffs available and how the food is prepared. The nurses should visit the mothers in their homes and see what mothers actually do in their homes. This will help the nurse give the health education which is appropriate to that situation.

This is a challenge to the health care providers to continue giving targeted health education messages to the mothers/caretakers on malnutrition prevention. If this is not done, there will be a
lot of admissions in the wards which will lead to health care staff being overworked. The health care system should identify best practices at the level of the mother through cooking classes, return demonstrations and also encourage backyard gardens. The nursing practice has an effect on malnutrition especially in situations where nurses are too busy or not interested because they will not be able to give the information to mothers on malnutrition prevention.

5.3.2 ADMINISTRATION

Concerning the level of knowledge on malnutrition, the results revealed that only 10% had high levels of knowledge and there is a significant association between knowledge and practice in prevention of malnutrition and lack of information. There is need for management to identify priority areas for research. The DHMT should identify Global or intersectoral partnership to sponsor the nutrition projects. The people should also be informed on the availability of global funds for them to carry out researches. The DHMT should arrange with in-service education department to conduct orientation workshops on childhood nutrition for the nurses in the clinics. They in turn will pass on this knowledge to mothers during under five children’s clinics. This will improve the knowledge and practices of nursing mothers/ caretakers in the prevention of malnutrition.

5.3.3 NURSING EDUCATION

The study revealed that 66% got the information on malnutrition from the health centre and others got information from friends, radio and relatives, while other respondents said they had no information on malnutrition. This, therefore, means that the nursing curriculum should include malnutrition component to be taught to students so that as they go in the field they will have adequate knowledge to inform caretakers. There is also need for continued in service training for the practising nurses so that they can learn new trends on malnutrition prevention.

5.3.4 NURSING RESEARCH

According to the study findings, 60% of the respondents who had negative practice also had low levels of knowledge therefore, with the findings of this research; much attention should be given to mothers/caretaker to ensure that they have enough knowledge on malnutrition prevention. The DHMT should identify the people who will be involved and initiate the programme. The management/nurses should have discussions with village headmen and find out the foods
available. The nurses should go round with headmen to identify malnutrition cases. Therefore, more researches should be carried out in order to improve the quality of children under five. The DHMT should create cost centres for research into malnutrition at the District level. The DHMT should write proposals to global initiatives for research studies. Global partnership should be created at the district level which should focus on research initiatives by the nurses and other health workers.

5.4 CONCLUSION

The steps that were undertaken in the study included identification of the problem, writing the proposal, data collection, data analysis and interpretation and finally inferences were made. The study was carried out at Mansa General Hospital where 50 nursing mothers/caretakers were interviewed using a structured questionnaire. The study was to determine the knowledge and practice of nursing mothers/caretakers in the prevention of malnutrition in under five children. The objectives of the study were to establish the level of knowledge that mothers have in relation to prevention of malnutrition, to determine the mother's practices towards prevention of malnutrition in under five children, to establish the relationship between knowledge and practice of mothers/caretakers in the prevention of malnutrition in under five children and to determine the factors that influence knowledge and practice of mothers in Mansa towards the prevention of malnutrition.

The study revealed that majority of the respondents had medium levels of knowledge and only 10% of the respondents had high levels of knowledge. The levels of knowledge were ranging from low to high which means a lot still needs to be done in the prevention of malnutrition. However, almost half of the respondents had positive practice and there is need to reinforce the health education given.

5.5 RECOMMENDATIONS

The study recommends that there should be calls for consented efforts by all stakeholders to come up with strategies to prevent malnutrition because the fight against malnutrition is one of biggest challenges of public health today. The health care providers should have adequate
knowledge on malnutrition so that they are able to disseminate the information. Based on the research findings, the researcher is therefore making the following recommendations;

5.5.1 TO THE MINISTRY OF HEALTH

- MoH should also consider employing more nurses and midwives to increase information dissemination on malnutrition especially at Community level. This is a case, because the study revealed that majority of respondents received health education from the health centre. The increase in nurses and midwives will increase their contact with community members especially if they go for Outreach activities. The use of community health workers, neighbourhood health committee membership can also help in the dissemination of information on malnutrition.

- There is need for the government to increase on the establishment of nutritionists so that some may be stationed at Rural Health Centres in order to promote good nutrition.

- MoH through the Health Education Unit should increase the dissemination of information through the media like Radio and Television to sensitize people on malnutrition prevention. The Health Education Unit should also consider using community radio stations since majority of the community members are able to access these radio stations in most of our rural communities where the malnutrition burden is high.

- MoH need to extend the exclusive breastfeeding campaign even to the most remote areas and also emphasize on proper weaning methods to mothers to prevent malnutrition.

- It was observed that most of the printed materials on malnutrition from Ministry of Health were in English language; it is therefore recommended that the materials be printed in local languages for the local people to read and understand especially those who do not understand English.

- There is need to increase the funding of research programme to allow more researches to be done on malnutrition prevention as this will help to improve the quality of care provided to the clients.
5.5.2 TO THE HOSPITAL MANAGEMENT

- The Hospital management should increase the supply of health education materials to necessitate the programme of educating the community on preventing malnutrition in under five children.
- The Hospital management should create the Maternal and Child Health Department in order for the services to be provided at the hospital as well.
- There is need to increase the grants to the institution in order for them to hold workshops or in-house training to disseminate information on malnutrition prevention to the staff.

5.5.3 TO THE DISTRICT HEALTH OFFICE

- Technical support visits to the Neighborhood Health Committees to monitor malnutrition prevention strategies in the village.
- Collaborate with the newly created ministry of Mother and Child Health and Agriculture.
- District Health Office should train more Community Agents to enhance the dissemination of information on malnutrition prevention in the community.
- District Health Office should increase the supply of IEC materials to health institutions to necessitate the programme of educating the community on preventing malnutrition in under five children.

5.5.4 HEALTH CENTRE

- The health centre staff should consider allocating more than two Nurse/Midwives to the MNCH department in order to improve and increase IEC to caretakers with under five children on malnutrition prevention.
- The health centre staff should be able to carry out the cooking demonstrations and ask the caretakers to do return demonstrations.

5.5.5 COMMUNITY LEVEL

- The nurses should get involved with the community and find out the food stuffs available and how the food is prepared.
• The community health workers should be taught how to weigh the under five children so that they are able to identify the children who are not gaining weight on time and refer them to the health centre for further management.

• The community leaders like headmen should be involved in the programme of preventing malnutrition because these people are considered to be influential and once they disseminate the information of malnutrition the people in the community will follow.

5.6 DISSEMINATION OF FINDINGS

Dissemination is to spread information and knowledge so that it reaches many people (Mayor et. al., 2006). The researcher will have a meeting with the Medical Superintendent for Mansa General as well as the in charge for children’s ward so that they are aware of the study findings. Four copies of the final report will be printed, bound and submitted to the Department of Nursing Sciences, the Medical library, the Medical Superintendent, Mansa General Hospital and a copy to the investigator. The researcher will present the findings at any forum should an opportunity arise.

5.7 LIMITATIONS OF THE STUDY

• The convenient sampling method used was a limitation of the study as the respondents were not well represented and there was a degree of biasness because the people who were available during the time of interviews were the ones interviewed. In this case the results cannot be generalized.

• The funding from Ministry of Health was not adequate so the researcher had to top up.

• The time given to carry out the study was not adequate.
REFERENCES


Dictionary.com Answers.com 2008


Ouma, C.(2006). Knowledge, attitudes and practices of caretakers of malnourished children in Aweil East and North counties, South Sudan


APPENDIX 1

THE UNIVERSITY OF ZAMBIA

SCHOOL OF MEDICINE

DEPARTMENT OF NURSING

STRUCTURED INTERVIEW SCHEDULE FOR DATA COLLECTION ON THE
KNOWLEDGE AND PRACTICES OF NURSING MOTHERS/ CARETAKERS IN THE
PREVENTION OF MALNUTRITION IN CHILDREN UNDER FIVE OF AGE

Questionnaire Number..............................................................

Place of interview........................................................................

Name of interviewer.................................................................

Date of interview.........................................................................

INSTRUCTIONS FOR THE INTERVIEWER

1. Introduce yourself to the respondent and explain the purpose of the interview
2. Do not write the name of the respondents on the questionnaire
3. Tick [ √ ] in the bracket corresponding to the correct answer
4. For questions without responses, write the responses clearly on the space provided.
5. For questions with responses, tick in the boxes provided the most appropriate answer
6. All information provided by the respondents should be held in strict confidence.
7. The respondents should be free to ask questions during the course of the interview.
8. Thank the respondents at the end of interview
DEMOGRAPHIC DATA

1. How old were you on your last birthday?
   a) Less than 21 years [ ]
   b) 21 -30 years [ ]
   c) 31 -40 years [ ]
   d) Above 40 years [ ]

2. What is your gender?
   a) Male [ ]
   b) Female [ ]

3. Where do you stay?
   a) High-density area [ ]
   b) Medium density area [ ]
   c) Low density area [ ]

4. What is your marital status?
   a) Single [ ]
   b) Married [ ]
   c) Divorced [ ]
   d) Widowed [ ]
   e) Widower [ ]
5. What is your highest level of education attained?
   a) No education [   ]
   b) Primary [   ]
   c) Secondary [   ]
   d) College/ University [   ]

6. What is your occupation status?
   a) Employed [   ]
   b) Unemployed [   ]
   c) Self employed [   ]
   d) Peasant farmer [   ]

7. What is your family income?
   a) Less than K100,000 [   ]
   b) Between K100,000- K500,000 [   ]
   c) Above K500,000 [   ]
   d) Not applicable [   ]

8. How many children do you have?
   a) 1 – 3 [   ]
   b) 4 – 6 [   ]
   c) 7 and above [   ]
SECTION B: KNOWLEDGE

9. What do you understand by malnutrition?

a) A disease caused by lack of essential nutrients in the diet [  ]

b) A disease caused by germs [  ]

c) I do not know [  ]

10. How do you know a child has malnutrition?

a) Swollen body [  ]

b) Thin body (muscle wasting) [  ]

c) Well hydrated [  ]

d) Change in hair colour [  ]

e) Healthy skin [  ]

f) Do not know [  ]

11. What do they teach you at under five clinic?

a) Nutrition [  ]

b) Immunisation [  ]

c) Growth monitoring [  ]

d) Do not know [  ]
12. Where do you get information on malnutrition?

a) Health Centre  

b) Friends  

c) Mass media e.g. radio  

d) Relatives  

e) No information  

13. What is a balanced meal?

a) Nshima and chicken only or any other expensive food  

b) Nshima, vegetables mixed with groundnuts (fisashi) and beans  

c) Rice, meat and potatoes  

d) Cassava meal, cassava leaves and kapenta  

e) Do not know  

14. How does a child become malnourished?

a) By not eating expensive foods like chicken  

b) By eating vegetables only  

c) Abrupt weaning  

d) By not eating a balanced diet  

e) Presence of other diseases
15. How long should a woman exclusively breastfeed her baby?
   a) Until 6 months
   b) Less than 6 months
   c) More than 6 months
   d) Until the baby shows signs of wanting other liquid or food.
   e) Do not know

16. How can you prevent malnutrition?
   a) By eating a balanced diet with locally available foods
   b) By eating good food like chicken and meat
   c) Do not know

SECTION C: PRACTICE

17. Who prepares the food?
   a) Mother
   b) Grandmother
   c) Father
   d) Siblings
   e) Maid/ Own
18. Who feeds the child?
   a) Mother [ ]
   b) Grandmother [ ]
   c) Father [ ]
   d) Siblings [ ]
   e) Maid/ Own [ ]

19. Does the child eat alone?
   a) Yes [ ]
   b) No [ ]

20. When did you start complementary feeds?
   a) Before 6 months [ ]
   b) At 6 months [ ]

21. How often are the children under five years fed in your home?
   a) Once [ ]
   b) 2 times [ ]
   c) 3 times [ ]
   d) 4 times and above [ ]

22. Do you have a backyard garden?
   a) Yes [ ]
   b) No [ ]
23. If “Yes” what kind of foods do you grow?
   a) Vegetables [ ]
   b) Tomatoes [ ]
   c) Onion [ ]
   d) None of the above [ ]

24. Do you preserve the food after harvesting?
   a) Yes [ ]
   b) No [ ]

25. How do you preserve the food after harvesting?
   a) Drying [ ]
   b) Freezing [ ]
   c) By adding salt [ ]
   d) Not applicable [ ]

26. Do you participate in childcare activities?
   a) Yes [ ]
   b) No [ ]

THANK YOU FOR PARTICIPATING
<table>
<thead>
<tr>
<th>TASK TO BE PERFORMED</th>
<th>RESPONSIBLE PERSON</th>
<th>DATES</th>
<th>TIME REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature Review</td>
<td>Researcher and supervisor</td>
<td>Continuous</td>
<td>Continuous</td>
</tr>
<tr>
<td>Compiling Research Proposal</td>
<td>Researcher</td>
<td>6th June, 2011 to 11th September, 2011</td>
<td>13weeks</td>
</tr>
<tr>
<td>Clearance</td>
<td>Researcher</td>
<td>12th September, 2011 to 2nd October, 2011</td>
<td>3weeks</td>
</tr>
<tr>
<td>Pilot Study</td>
<td>Researcher</td>
<td>11th October, 2011 to 13th October, 2011</td>
<td>3days</td>
</tr>
<tr>
<td>Data collection</td>
<td>Researcher</td>
<td>25th October, 2011 to 21st November, 2011</td>
<td>4weeks</td>
</tr>
<tr>
<td>Data analysis</td>
<td>Researcher</td>
<td>22nd November, 2011 to 26th December, 2011</td>
<td>4weeks</td>
</tr>
<tr>
<td>Report writing</td>
<td>Researcher</td>
<td>27th December, 2011 to 6th February, 2012</td>
<td>6weeks</td>
</tr>
<tr>
<td>Draft report</td>
<td>Researcher</td>
<td>7th February, 2012 to 20th February, 2012</td>
<td>2weeks</td>
</tr>
<tr>
<td>Finalization of report</td>
<td>Researcher</td>
<td>21st February, 2012 to 26th March, 2012</td>
<td>5weeks</td>
</tr>
<tr>
<td>Monitoring and evaluation</td>
<td>Researcher and supervisor</td>
<td>Continuous</td>
<td>Continuous</td>
</tr>
<tr>
<td>Dissemination of results</td>
<td>Researcher</td>
<td>2nd April, 2012</td>
<td>1st April, 2012</td>
</tr>
</tbody>
</table>
## APPENDIX 3

### RESEARCH BUDGET

<table>
<thead>
<tr>
<th>BUDGET CATEGORY</th>
<th>UNIT</th>
<th>UNIT COST “K”</th>
<th>QUANTITY</th>
<th>TOTAL “K”</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. STATIONERY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duplication paper</td>
<td>Ream</td>
<td>35,000</td>
<td>5</td>
<td>175,000</td>
</tr>
<tr>
<td>Pens</td>
<td>Each</td>
<td>1,500</td>
<td>5</td>
<td>7,500</td>
</tr>
<tr>
<td>Pencils</td>
<td>Each</td>
<td>500</td>
<td>5</td>
<td>2,500</td>
</tr>
<tr>
<td>Note books</td>
<td>Each</td>
<td>2,000</td>
<td>4</td>
<td>8,000</td>
</tr>
<tr>
<td>Tipex</td>
<td>Each</td>
<td>12,000</td>
<td>2</td>
<td>24,000</td>
</tr>
<tr>
<td>Staples</td>
<td>Box</td>
<td>5,000</td>
<td>1</td>
<td>5,000</td>
</tr>
<tr>
<td>Stapler</td>
<td>Box</td>
<td>25,000</td>
<td>1</td>
<td>25,000</td>
</tr>
<tr>
<td>Scientific calculator</td>
<td>Each</td>
<td>90,000</td>
<td>1</td>
<td>90,000</td>
</tr>
<tr>
<td>Folders</td>
<td>Each</td>
<td>5,000</td>
<td>2</td>
<td>10,000</td>
</tr>
<tr>
<td>Pencil sharpeners</td>
<td>Each</td>
<td>5,000</td>
<td>2</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>357,000</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. SECRETARIAL SERVICES</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Diskettes</td>
<td>Each</td>
<td>10,000</td>
<td>5</td>
<td>50,000</td>
</tr>
<tr>
<td>Questionnaire typing</td>
<td>Pages</td>
<td>3,000</td>
<td>10</td>
<td>30,000</td>
</tr>
<tr>
<td>Questionnaire</td>
<td>Pages</td>
<td>250</td>
<td>500</td>
<td>125,000</td>
</tr>
<tr>
<td>Service</td>
<td>Unit</td>
<td>Quantity</td>
<td>Rate</td>
<td>Amount</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>-------</td>
<td>----------</td>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td><strong>Research report typing</strong></td>
<td>Pages</td>
<td>3,000</td>
<td>100</td>
<td>300,000</td>
</tr>
<tr>
<td><strong>Research report photocopying</strong></td>
<td>Pages</td>
<td>300</td>
<td>500</td>
<td>150,000</td>
</tr>
<tr>
<td><strong>Typing and binding proposal</strong></td>
<td>Each</td>
<td>450,000</td>
<td>1</td>
<td>450,000</td>
</tr>
<tr>
<td><strong>Binding report</strong></td>
<td>Each</td>
<td>130,000</td>
<td>5</td>
<td>650,000</td>
</tr>
<tr>
<td><strong>Sub total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>1,755,000</strong></td>
</tr>
<tr>
<td><strong>3. PERSONNEL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Researcher’s lunch</strong></td>
<td>Days</td>
<td>50,000</td>
<td>30</td>
<td>1,500,000</td>
</tr>
<tr>
<td><strong>Researcher’s transport</strong></td>
<td>Days</td>
<td>50,000</td>
<td>30</td>
<td>1,500,000</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>3,000,000</strong></td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Refreshments</strong></td>
<td>Each</td>
<td>20,000</td>
<td>50</td>
<td>1,000,000</td>
</tr>
<tr>
<td><strong>Research bag</strong></td>
<td>Each</td>
<td>150,000</td>
<td>1</td>
<td>150,000</td>
</tr>
<tr>
<td><strong>Allowances</strong></td>
<td>Each</td>
<td>20,000</td>
<td>20</td>
<td>400,000</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>1,550,000</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>6,662,000</strong></td>
</tr>
<tr>
<td><strong>Contingency 10%</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>666,200</strong></td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>7,328,100</strong></td>
</tr>
</tbody>
</table>
APPENDIX 4

Budget justification

1. Stationery

Stationery will be required by the researcher for typing the research proposal, writing the final research report as well as typing and printing the report. The note books will be needed for record keeping during data collection and analysis. A scientific calculator will be required for data analysis. The researcher will also require staples and stapler to put questionnaire together.

2. Secretarial services

The researcher will need funds to cater for the photocopying and typing services. Money will be required for binding the research proposal and report. The researcher will need the research bag for carrying the interview schedules. The diskettes will be required for storage of data.

3. Personnel

The researcher will need transport money to go to the institution to collect data. The researcher will also need lunch allowance during data collection period.

4. Contingency

This is the 10% of the total amount of the budget. It caters for the unseen expenses during the research.

5. Dissemination workshop

The dissemination workshop will be required to communicate the research findings.
### APPENDIX 6

#### GANTT CHART

<table>
<thead>
<tr>
<th>TASK TO BE PERFORMED</th>
<th>RESPONSIBLE OFFICER</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>April</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature Review</td>
<td>Researcher and Supervisor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compiling Research Proposal</td>
<td>Researcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clearance</td>
<td>Researcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pilot study</td>
<td>Researcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Collection</td>
<td>Researcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Analysis</td>
<td>Researcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Report writing</td>
<td>Researcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Draft report</td>
<td>Researcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finalization of Report</td>
<td>Researcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monitoring and Evaluation</td>
<td>Researcher and Supervisor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissemination of results</td>
<td>Researcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13th October, 2011

The Executive Director, Mansa general Hospital, Mansa.

u.s.f: The Head- Department of Nursing Sciences.

Dear Sir,

RE: PERMISSION TO CONDUCT A RESEARCH

I am a fourth year student at the above named institution pursuing a Bachelor of Science Degree in Nursing. In partial fulfillment of the requirements of this program, I am required to carry out a research project.

I am therefore, requesting for permission to carry out the study at Mansa General Hospital. The topic of my study is “Knowledge and Practices of nursing Mothers/ Caretakers in the Prevention of Malnutrition in under five Children”. Intend to interview the mothers/caretakers in Children’s ward and Out-Patient Department at Mansa General Hospital from 25th October to 18th November, 2011. It is hoped that the results of this study will help the Hospital management and other relevant authorities in the continued fight against malnutrition in under five children.

Your favourable response will be highly appreciated

Yours faithfully,

Gondwe Rabecca
APPENDIX V: LETTERS OF AUTHORITY

THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF NURSING SCIENCES

Telephone : 252641                P.O Box 50110
Telegrams: UNZA, Lusaka            Lusaka
Telex: UNZALUZA 44370             Zambia
Fax: +260-250753                   
E-mail: pbn@coppernet.zm

13th October, 2011

The Executive Director,
University Teaching Hospital,
Lusalka.

u.s.f: The Head- Department of Nursing Sciences.

Dear Sir,

RE: PERMISSION TO CARRY OUT A PILOT STUDY

I am a fourth year student at the above named institution pursuing a Bachelor of Science Degree in Nursing. In partial fulfillment of the requirements of this program, I am required to carry out a research project.

I am therefore, requesting for permission to carry out the study at University Teaching Hospital. The topic of my study is “Knowledge and Practices of nursing Mothers/ Caretakers in the Prevention of Malnutrition in under five Children”. Intend to interview the mothers/caretakers in AO7 at the University Teaching Hospital from 17th to 19th October, 2011.

Your favourable response will be highly appreciated

Yours faithfully,

Gondwe Rebecca
THE EXECUTIVE DIRECTOR
MANS A GENERAL HOSPITAL
P.O. BOX 710156
MANS A

Date: 13TH OCTOBER, 2011

Dear Sir/Madam,

The bearer RABECCA GONOWE is a Bachelor of Science in Nursing at the Department of Nursing Sciences, School of Medicine, University of Zambia. She/he is pursuing a Bachelor of Science in Nursing Degree. She/he is expected to carry out a Research study in partial fulfillment of the requirements of the programme. Her/his research topic is KNOWLEDGE AND PRACTICE OF MOTHERS/CARETAKERS IN PREVENTION OF MALNUTRITION IN UNDER FIVE CHILDREN AT MANS A GENERAL HOSPITAL.

I am requesting your good Office to avail her/him with the statistics she/he needs to support her/him Research Project Proposal. For any further clarifications you could contact the undersigned.

Your continued support is highly appreciated.

Thank you.

Mrs. Dorothy Chanda
SUPERVISOR