

**FACTORS INFLUENCING PREVALENCE OF MALNUTRITION AMONG  
CHILDREN AGED FIVE YEARS AND BELOW ATTENDING ISHAKA  
ADVENTIST HOSPITAL IN BUSHENYI DISTRICT**

**A RESEARCH REPORT SUBMITTED TO  
UGANDA NURSES AND MIDWIVES EXAMINATION BOARD**

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**BY**

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## **ABSTRACT**

The study determined the factors influencing prevalence of malnutrition among children aged five and below at Ishaka Adventist Hospital. The objectives of the study were to determine immediate factors contributing to malnutrition among children aged five years and below, to determine the underlying factors contributing to malnutrition among children aged five years and below to determine the basic factors contributing to malnutrition among children aged five years and below attending Ishaka Adventist hospital (IAH) in Bushenyi district.

A cross sectional descriptive study was conducted employing quantitative methods of data analysis in which data has been presented using tables, bar graphs and pie charts. The study mainly targeted children aged five years and below brought for seeking health services at IAH by their mothers or care givers.

The study found out that poor breastfeeding techniques and childhood infections were majorly the immediate factors associated with malnutrition in children aged five and below, while failure to attend antenatal care services, low birth weight and failure to have child immunized were underlying factors contributing to malnutrition as well as poor seasons being a basic factor leading to malnutrition.

The study therefore concluded that unlike the perception that malnutrition means poor feeding, it is a broader hazard associated with a number of factors ranging from infections, child birth weight to immunization status of the child and therefore should be addressed in general without capitalizing on one factor. The study further recommends that a thorough health education and maternal child care education be emphasized if malnutrition is to be reduced because mothers are frontiers of nutrition in homes.

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### **DEDICATIONS.**

I dedicate this piece of work to the family of Mr. Kataryebwa James and Mrs. Rose Kataryebwa, my parents with profound love. This piece of work too, is dedicated to Asiimwe Dickens Katta, Tugume Cyrus Katta and Mutto Alice for their unusual commitment to my education.

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## **LIST OF ACRONYMS**

**ANC**

Antenatal Care

<b>BMI</b>	Body Mass Index
<b>CDC</b>	Centre for Disease Control
<b>IMCI</b>	Integrated Management of Childhood Illnesses
<b>LBW</b>	Low Birth Weight
<b>MAM</b>	Moderate Acute Malnutrition
<b>MDGS</b>	Millennium Development Goals
<b>MUAC</b>	Mid-Upper Arm Circumference
<b>PCM</b>	protein-caloric malnutrition
<b>PEM</b>	protein-energy malnutrition
<b>SAM</b>	Severe Acute Malnutrition
<b>SD</b>	Standard Deviation
<b>UBOS</b>	Uganda Bureau of Statistics
<b>UDHS</b>	Uganda Demographic Health Survey
<b>UMOH</b>	Uganda Ministry of Health
<b>USAID</b>	United States Agency for International Development
<b>WFA</b>	Weight for Age
<b>WFH</b>	Weight for Height
<b>WFP</b>	World Food Programme
<b>WHO</b>	World Health Organization
<b>KIU-WC</b>	Kampala International University-Western Campus

## OPERATIONAL DEFINITIONS

**Edema:** Bilateral pitting edema (swelling) involving at least the feet: presence of such edema means that the child has edematous severe acute malnutrition (kwashiorkor or marasmic kwashiorkor).

**Nutrition:** This is the process of providing or obtaining the food necessary for health and growth

**Malnutrition:** Lack of proper nutrition, caused by not having enough to eat, not eating enough of the right things, or being unable to use the food that one does eat.

**Severe acute malnutrition:** A weight for height below -3 standard deviations and/or presence of bilateral pedal pitting edema. The child's weight is expressed in standard deviations below the median weight of the NCHS/WHO reference population of children of the same height.

**Stunting:** A measure of protein-energy malnutrition, indicated by low height for age or failure to achieve expected stature.

**Underweight:** A composite measure of protein-energy malnutrition, indicated by low weight for age.

**Wasting:** A measure of protein-energy malnutrition that occurs when a child's weight for height falls significantly below what is expected in the reference population as an indicator.





## **CHAPTER ONE:**

### **1.0 INTRODUCTION**

This chapter contains the following sub-sections; background, statement of the problem, purpose of the study, specific objectives, research questions and justification of the study.

#### **1.1 Background**

Malnutrition is abnormal physiological condition caused by deficiencies, excesses or imbalances in energy, protein and/or other nutrients. Malnutrition is also defined as a state in which the physical function of an individual is impaired to the point where he/she can no longer maintain adequate bodily performance processes such as growth, pregnancy, lactation, physical work, and resisting and recovering from disease. (Collins, 2011; Shanka *et al.*, 2015).

Globally, it is estimated that there are nearly 60 million children with MAM and 20 million with SAM. About 9% of sub-Saharan African and 15% of south Asian children have moderate acute malnutrition and about 2% of children in developing countries have SAM (MOH, 2010; Yebyo *et al.*, 2013). The majority of those affected are found in South Asia and Sub Saharan Africa. Approximately 1-2 million children die every year from severe acute malnutrition. It is reported that SAM is the commonest reason for paediatric hospital admission in many poor countries. Twenty five to 30% of children

with severe malnutrition die during hospital admissions (WHO and UNICEF, 2007).

In sub-Saharan Africa, Malnutrition is still a serious public health problem and requires urgent attention. A study by medical journey in the refugee camps in central and East Africa between 2008 to 2012 shows an upward trend, suggesting deterioration over the years. Well thought out and targeted intervention programmes are long overdue. There is need to emphasize on the importance of having a well-established surveillance system which would ensure necessary and timely action (Ngure *et al.*, 2014).

These children are at high risk of mortality and morbidity, and may carry adverse health and mental consequences in their lives. Most of them live in poor societies, and with impaired physical and mental capacities. They are bound to enter a vicious cycle of poverty and malnutrition for generations to come (WHO, 2015).

In Uganda, malnutrition contributes to about 60 percent of child mortality. The 2011 Uganda Demographic and Health Survey found that 33 percent of children were stunted and that only 6 percent of children aged 6 to 23 months were fed appropriately, based on the recommended infant and young child feeding practices. Household food insecurity, poor nutrition, and inadequate access to health care all contribute to the problem. Malnourished children and their caregivers often trek long distances for assistance at health facilities,

which routinely lack supplies and trained staff. In addition, families frequently lack funds to support proper recovery. (USAID, 2010).

Malnutrition in Uganda can take many forms, including chronic malnutrition (stunting, or low height-for-age), underweight (low weight-for-age), acute malnutrition (wasting, or low weight-for-height), anaemia, vitamin A deficiency, iodine deficiency, and low birth weight (< 2.5 kg). (Uganda Demographic and Health Survey, 2011; Lancet Nutrition Series, 2013).

According to the research by Turyashemerwa *et al.*, (2009) in greater Bushenyi district western Uganda it was found out that stunting was by far the most prevalent under-nutrition problem in the study area, with almost half 41.6% of the children stunted. The overall prevalence of under-weight and wasting was 15.7% and 3.4% respectively

## **1.2 Statement of the problem**

At least 19 million preschool children are affected by severe acute malnutrition (SAM) globally (WHO, 2013; UNICEF, 2012). Malnutrition is a contributing factor to nearly 60 % of the over 10 million deaths that occur annually among children under five years old in developing countries (WHO, 2012), where 2 % of children (about 13 million children) suffer from severe acute malnutrition (Steve *et al.*, 2006).

In Uganda, malnutrition remains one of the major causes of child morbidity resulting into retarded growth and contributes to about 60 percent of child mortality (USAID 2010).

In a study conducted in Uganda in 2009 in Masaka and Rakai peri-urban centers on common causes of malnutrition and its management, out of 200 mothers involved in the study, 144 (72%) acknowledged for their children having had stunted growth and underweight of which only 26 mothers (13%) revealed it having been self-solving while the rest required medical health intervention either from a clinic or government health Centre. (Ngure, 2014).

The burden of malnutrition among under-five children in Ishaka Adventist hospital in Bushenyi district and also information regarding associated factors is lacking. A few studies determining the factors contributing to malnutrition among children aged five years and below have been conducted in the study area making little data available on the problem.

A number of interventions have been put forward to control malnutrition in the area for example giving supplemental nutrients such as vitamin A. However, with all this done malnutrition continues to be a problem in Bushenyi.

### **1.3 Purpose of the study**

To determine factors influencing prevalence of malnutrition among children aged five years and below attending Ishaka Adventist hospital in Bushenyi district. Specific objectives

1.4.1 To determine the immediate factors that influence the prevalence of malnutrition among children aged five years and below attending Ishaka Adventist hospital in Bushenyi district.

1.4.2 To determine the underlying factors that influence the prevalence of malnutrition among children aged five years and below attending Ishaka Adventist hospital in Bushenyi district.

1.4.3 To determine the basic factors that influence the prevalence of malnutrition among children aged five years and below attending Ishaka Adventist hospital in Bushenyi district.

## **1.5 Research questions**

1. What are the immediate factors that influence the prevalence of malnutrition among children aged five years and below attending Ishaka Adventist hospital in Bushenyi district?

2. What are the underlying factors that influence the prevalence of malnutrition among children aged five years and below attending Ishaka Adventist hospital in Bushenyi district?

3. What are the basic factors that influence the prevalence of malnutrition among children aged five years and below attending Ishaka Adventist hospital in Bushenyi district?

### **1.6.0 Justification of the study**

#### **1.6.1 Nursing practice**

The findings of this study will help nurses to find it easier to advise and teach the community on factors that influence the prevalence of malnutrition among children aged five years and below depending on whether they are immediate, underlying or basic in nature.

#### **1.6.2 Nursing education**

The finding of the study will help tutors and students in nursing to come up with new approaches and knowledge that will strengthen health care service and its delivery and for study purposes for those who are to do further researches as in providing knowledge and skills in related studies.

#### **1.6.3 Nursing Research**

This research study is expected to provide information that will create a new knowledge to other related studies in related phenomena aimed at improving knowledge and practices on factors that influence the prevalence of malnutrition among children aged five years and below and determining health status of community and health care services provided to them by nurses.

#### **1.6.4 Nursing Management**

The findings from the current study will be used by the administration of school of nursing sciences and other relevant authorities to devise solutions

towards provision of necessary equipment and staffs to carry health care services that may otherwise improve on children's health status.

## **CHAPTER TWO:**

### **LITERATURE REVIEW**

#### **1.0 Introduction**

This chapter introduces overview of various studies done on factors that contribute to malnutrition among children aged five years and below. This review has been guided by the following headings.

#### **2.1 The immediate factors that influence the prevalence malnutrition among children aged five years and below.**

**Inadequate quantity of food:** A study by Kristin Huldah conducted in Wakiso District in 2013 on assessment of nutritional status of primary school children, indicated that food shortages may be acute (sudden/sharp) or chronic (long-lasting) and arise as a result of poverty, natural disaster (e.g. flood or drought) or conflicts, which may lead to the displacement of people from their homes and disruption of food supplies.

**Poor quality of food:** People may not have access to the variety of foods that will provide all the necessary vitamins and minerals in their diet. People may also lack the knowledge needed to make sound choices about the food they eat or provide to their children, this was indicated in a study done by Flax (2010) about caregivers' behaviors and attitudes towards use of lipid based



nutritional supplements for treating underweight children in Malawi at University of Tampere.

**Initiation of breastfeeding:** In Uganda, only 52 % of new-borns are breastfed in the first hour of life (Uganda Bureau of Statistics and Macro International, 2012), thus, a large proportion of new-borns miss out on the disease-protective benefits of colostrum. (UBOS, 2012).

**Exclusive breastfeeding:** According to the report by Uganda ministry of Health 2014 it is indicated that, 63% and 41% of children under the age of 6 months and aged 4-5 months respectively are exclusively breastfeed as recommended by Ministry of Health. The introduction of solid foods and liquids takes place much earlier than the recommended age of 6 months and which exposes infants to infections and poor digestion as their stomachs cannot take food other than maternal milk. Some 16% of new-borns are introduced to foods other than breast milk from the first day of life with the number doubling for those of 2 months age.

**Feeding during sickness:** In a similar report by UMOH (2014) it is also noted that when sick, children in Uganda receive less food and liquids which is against Ministry of Health's recommendations of feeding sick children more frequently while also practicing a more responsive and supportive feeding given the special feeding needs of sick children.

**Quality of solid food given after six months:** Not given quality solid foods after the age of 6 months: The foods provided complementarily (additionally) to breast milk mostly consist of cereals or vegetables (such as maize/posho or matooke) and are lacking in protein, fat and vitamins. Just one-quarter of Ugandan children aged 6-23 months are fed in accordance with the minimum WHO standard of feeding (continuous breastfeeding, 3+ meals per day composed of 3+ food groups each (Uganda Bureau of Statistics, 2007).

**Infections and diseases:** These may reduce appetite, increase energy and nutrient utilization (e.g. to fight infection) and limit the ability to absorb or retain nutrients (e.g. as a consequence of diarrhea and/or intestinal parasites). According to The United Nations Children's Fund (UNICEF) every fourth child suffers from malnutrition which jeopardizes the child's life and development. Malnutrition is the cause to 1/3 of the deaths of the children under five years of age. Adequate and versatile diet is a precondition for child's development and good health. The immunity of the child weakens and diseases like diarrheal can be fatal. Every year about three million children die of malnutrition and in the developing countries about 200 million children under five years of age suffer from dwarfism (UNICEF, 2013).

## **2.2 Underlying factors that influence the prevalence of malnutrition among children aged five years and below.**

### **2.2.1 Maternal factors:**

**Maternal Education:** Mother's education level affects child's nutrition through her choices and health seeking skills related to nutrition, hygiene, preventive care and disease treatment. Mother's responsibility to care for herself during pregnancy and her child through the most vulnerable stages of its life significantly affects under-five child malnutrition. Several studies have found out that mother's education is associated with good nutrition practices and particularly under-five child nutrition (Masinde *et al.*, 2013). These studies have pointed out the fact most women with low education spend more time in gardens and feed their children on less nutritious foods. Women who spend more time in gardening get limited time to attend to their children and prepare for them nutritious meals unlike their educated counterparts who normally focus on good child nutrition practices even when they are absent from home most of the time. Education helps mothers gain additional knowledge about the adequate intake of food for their children in terms of correct quantity, quality and frequency. It also determines her income and this helps her access proper nutrition for the child as well as health services.

In some countries, malnutrition levels are fairly similar among children whose mothers attended primary or secondary school while elsewhere there is a greater similarity with children whose mothers attended primary school or had no formal schooling. Median levels of malnutrition across all countries range from 36 percent for children whose mothers had some primary education to

16 percent for children of mothers with secondary or higher education. (Jean 2014).

**Marital Status:** On the study about mothers' marital status and under-five child nutrition, findings in Ethiopia reveal that child's malnutrition is significantly associated with marital status. It was found out that under-five child malnutrition is higher among unmarried rural and divorced/separated women compared to married ones (Puoane, 2009). Contrary to the above, a study in Tanzania revealed that mothers who are married were more likely to have undernourished children unlike those that were unmarried perhaps because of the cost of maintaining families hence sometimes these families fail to produce nutritious supplements to the under-five children (Irena *et al.*, 2011).

**Mother's occupation:** Previous studies have found out that mother's occupation is one of the determinants of under-five malnutrition in most developing countries. A study in Vietnam revealed that children from mothers who were labourers or farmers and housewives had a greater prevalence of stunting, underweight and wasting than those from mothers who worked in office or were housewives (Simon, 2011). This is because working mothers rarely get time to take care of their children. They also leave their children at home with other siblings who may neglect feeding them following the right frequency and this sometimes worsens the problem of malnutrition. It is also

common for mothers to fail to provide complementary feeds including protein foods since most of them cannot afford them (Karamaji *et al.*, 2007). Such findings are true especially among peasant farmers in Nakaseke and Nakasongola districts who spend most of their time in gardens leaving the under-five children under the care of other siblings or housemaids who are sometimes too young or illiterate on proper under-five nutrition practises.

Mother's occupation is one of the indicators for access to adequate food supplies, use of health services, availability of improved water sources, and sanitation facilities which are prime determinants of child nutritional status (UNICEF, 2010).

**Antenatal care:** Various studies found association between antenatal care and low birth weight compared to 5 or more Antenatal care visits, under visitors (1-5 times) and non-visitors(no ANC) had Odds Ratio (OR) of 9.18 (6.65-12.68) and 5.46 (3.90 – 7.65) respectively of having low birth weight baby (( BMC Public Health, 2007).

However, quality of ANC is also important than just number of visits. Study used to proxy measures for quality of ANC, tetanus toxoid injections and guidance on where to go for pregnancy related complications. Study found lower OR of having small sized babies in quality services group (Nguyen, 2008).

**Pre pregnancy weight:** Pre pregnancy weight represents overall nutritional status of mother. It is associated with higher level of low birth weight. Study in Maharashtra found that pre pregnancy weight < 45 kg was associated with high chance of Low Birth Weight (LBW)(OR= 4.41, 2.30-8.46) compared to pre pregnancy weight > 45 kg (Babatunde, 2011). Another prospective cohort study from Pune found relative risk for LBW 1.3 in pre pregnancy weight < 40 kg compared to reference group (40-45 kg) (Hirve, 2008).

**Mother's age at birth:** Mothers age at birth has been associated with malnutrition among under-five year old children for example it was found out in Bangladesh that children whose mothers were less than 20 years at the time of birth were 1.22 times more likely to be stunted, wasted and underweight compared to children whose mothers were 20 years and above at birth (Nure. 2011). Bachou (2012), in the Ugandan settings identified some common risk factors for protein energy malnutrition, that is severely malnourished infants mostly from young mothers had low weight at birth with less access to breast feeding that is essential for the infants protein intake. Thirty four percent (34%) of children received supplementary food by three months and some mothers stopped breast feeding earlier.

**Older mothers especially 35 years and above :** This is attributed to the fact that giving birth at an older age is associated with a higher likelihood of giving birth to babies with a low birth weight (Shrimpton *et al.*, 2011). However, it is

important to note that children of the younger mothers are traditionally cared for by their grandmothers in Turkey and this was associated with low levels of malnutrition among children of younger mothers less than 24 years (Henry *et al.*, 2007).

**Water and sanitation:** In developing countries citizens suffer from lack of safe drinking water, this leads to consumption of impure and infected drinking water. Unsafe water along with inadequate sanitation and poor hygiene causes nearly 90 percent of the children's deaths to diarrhea. According to UNICEF, 2012 one of the key interventions is to improve access to safe drinking water. According to WHO In 2010, 72% of the population in Uganda was using improved drinking water sources (UNICEF, 2012).

Studies show that hand washing with water and soap is the most effective, affordable, way to reduce on illnesses among the under-fives such as diarrhea and pneumonia. Sanitation and improvement of overall household hygiene and open disinfections are vitally important (UNICEF, 2012.) According to (WHO, 2010) 34 per cent of the population in Uganda was using improved sanitation facility.

### **2.2.2 Child factors:**

**Low birth weight:** Low birth weight is under nutrition (underweight) at birth. In their paper on factors that influence the prevalence of malnutrition in children aged five and below, Mworosi et al(2008) have identified three major

factors responsible for higher level of under nutrition in Ugandan population compared to other regions in the world namely, low birth weight, women empowerment and hygiene & sanitation. Higher incidence of Low birth weight in Uganda (28%) compared to 16% in Indian setup makes nearly one third children begin their lives with disadvantage as such.

**Immunization status:** Immunization or vaccination is known to significantly protect a child from many childhood killer diseases such as measles, respiratory tract infections, whooping cough, poliomyelitis, and cholera among others (Rukundo, 2008).

According Appoh (2010), childhood vaccination may protect children's nutritional status and lead to improved child growth in developing countries where most child killer diseases are preventable with vaccination. In India a study found out that a significantly higher prevalence of malnutrition children amongst partially immunized and non-immunized children (81.3% and 88.2%) in comparison to fully immunized children (62.1%). This implies that partially and non-immunized children were at higher risk of malnutrition as they were not protected against the vaccine preventable diseases (Santosh, *et al.*, 2013).

Accordingly, prevalence of malnutrition was significantly higher in children who were partially immunized compared to fully immunized ones. With high prevalence of underweight (119; 53.6%), stunting (120; 54.1%) and wasting



(38; 17.1%), (Nure, 2011) revealed that stunting, wasting and acute respiratory infections were significantly lower in fully vaccinated children than in partially vaccinated ones. Thus, frequent vaccination protects the child against infections. Incomplete vaccination leads to worm infestation, an important predisposing factor for childhood malnutrition (Rayhan *et al.*, 2012).

**Birth Order:** Research findings indicate that malnutrition is rare among under-five children of birth order 2-3 and that higher birth order (5+) is positively associated with child malnutrition (Olwedo *et al.*, 2010). In a study carried out among 6939 children under five years in Bangladesh, the prevalence of stunting increased with birth order hence most of the children who were of birth order more than two had greater chances of stunting and wasting (Rayhan and Hayat, 2016).

Worthy to note is that few studies according to the literature search have been conducted on the subject of child birth order and malnutrition among under-five children. During the study in Nakaseke and Nakasongola districts of Uganda, it was found quite easy to get actual information concerning birth order because the respondents found it easy to recall after all, they could easily tell by looking at their children.

**Birth Interval:** In another study conducted in Bangladesh, children within the first birth interval were 1.66 times more likely to be stunted and children whose preceding birth interval was less than two years were 1.32 times

significantly more likely to be stunted as compared to children of a preceding birth interval 24 months or above. Similar results were observed for underweight children (Nure, *et al.*, 2011). The study indicated that preceding birth intervals and child stunting were statistically significant ( $p < 0.05$ ). Preceding birth intervals of 18-35 months had a marginally positive significance on stunting whereas the interval of more than 48 months shows a negative relationship on stunting.

According to UBOS and Macro International Inc (2014), malnutrition is highest if the birth interval is less than 24 months (41 percent) since it is an important indicator of the nutritional status of children. Child birth intervals were statistically insignificant in the study conducted in Nakaseke and Nakasongola districts.

### **2.3 Basic factors contributing to malnutrition among children under five years**

#### **Political factors:**

Countries that experience political instability face higher cases of malnutrition in comparison to political stable countries. The political conflicts results to war thus no room for production input, this calls for support and interventions in order to reduce on malnutrition. Political strategies have to be amended to curb issues like corruption in order to improve on safety and development of positive democracy (World Vision Finland, 2013). Globally the food prices are increasing which has an effect in both developing and developed countries

effecting on daily nutrition intake. In developing countries up to 70 % of the income is used on food. In the western world the number is 10 to 20 per cent (UNICEF, 2013).

**Climatic factors:**

Climate change is one of the unfavorable factors as it results to hunger and malnutrition as a result of floods and drought (Nelson *et al.*, 2009). It was further stated that that not only the increase in food stuffs and socio economic conditions were the solutions but also the benefits of managing environmental friendly atmosphere by reduction of carbon dioxide emissions. As a result this will cut down on the negative factors caused by emissions thus room for production leading to reduction of food shortage (Lloyd *et al.*, 2011). The global change of climate and the global warming is forecasted to reduce future cereal yields and threaten food security. It is affecting the countries and regions that already suffer from under-nutrition. In 2013 UN secretary Ban Ki-moon stated that there cannot be food security without climate security. He also stated that food crises and global warming walk hand in hand.

## **CHAPTER THREE:**

### **METHODOLOGY.**

#### **3.0 Introduction.**

This chapter describes the study area focusing on Geographical location, population structure and many other aspects including Study design, sample size determination, sampling method, selection criteria, data Collection, data analysis, data presentation, data quality control, study .limitation and Ethical consideration and dissemination of results.

#### **3.2 Study Design and Rationale**

A descriptive cross sectional study was used for children aged five years and below brought to Ishaka Adventist Hospital. A cross sectional study was used because it will involve interacting with parents or care givers directly whose children are affected by malnutrition such that data collected correlates with the factors that influence the prevalence of malnutrition among children aged five years and below. This will help so that suitable solutions can be generated to help the people in prevention of malnutrition in children aged five years and below.

#### **3.1 Study Area and rationale**

The study was carried out in Ishaka Adventist hospital located in the town of Ishaka, Bushenyi District, Western Uganda. It is located immediately north of the junction of the Ishaka-Rukugiri Road with the Mbarara-kasese Road. Its

location is approximately 77 kilometers (48 m), by road, west of Mbarara, the largest city in the sub-region. (Road distance between Mbarara and Ishaka with map) This location lies approximately 360 kilometers (224 miles), by road, southwest of Kampala

The area has wet and dry climate (seasons) there are two wet seasons running from February to June and from July to November, The population here is composed of different tribes but the most common is Banyankole by tribe, The economic activities done here are small scale retail shops, small scale mini supermarkets small scale marketing and small scale farming. However there are other activities like trade in addition to agriculture (plantation, animal husbandry, and fishing).

Ishaka Adventist Hospital is a 110-bed community hospital that is owned and administered by the Seventh Day Adventist Church in Uganda. It primarily caters to the health needs of the rural subsistence that live in the community where the hospital is located. As of 2010 the hospital's professional staff included 3 doctors, 6 clinical assistants and about 60 nurses, midwives and nurse's aides. The hospital also has a nursing training school on the hospital premises.

Ishaka Adventist Hospital has been selected because the local people in Ishaka Bushenyi have a variety of food stuffs but there has been a consistent level of malnutrition of children under five years in the area and therefore there is a need to identify factors contributing to this problem and Ishaka

Adventist Hospital being in the Centre of Bushenyi district and neighboring districts is a good focal point for the study.

### **3.3 Study Population.**

The study was done among children aged five years and below brought to Ishaka Adventist Hospital .This group of children was chosen just because they susceptible to malnutrition when not attended to. A total of 50 children were considered during the study.

#### **3.3.1 Sample Size Determination.**

The sample size was determined using Fishers *et al*, 2003 formula given by the method below,

$$n= z^2pq/d^2$$

Where

n= minimum sample size

d = margin of error

z=standard normal deviation corresponding to 1.96

p= prevalence (3.4, Turyashemererwa et al 2009)

q=1-p

Therefore taking

$$p = 3.4/100= 0.034$$

$$z = 1.96$$

$$q=1-p = 0.826$$

$d = 5\%$  or 0.05

$n = \frac{1.96^2 \times 0.034 \times 0.966}{0.05^2}$

$n = 50$  children

Therefore sample sizes of 50 respondents were considered during the study.

### **3.3.2 The sampling method.**

The study was carried out among children aged five years and below brought to Ishaka Adventist Hospital, a total of 50 children were considered, using a random sampling method where all those who came within the time of the study were considered for an interview and caretakers or any elder participating in the study were considered to provide relevant information on behalf of the children.

## **3.4 Selection criteria**

### **3.4.1 Inclusion criteria**

The study included all parents with children aged five year and below. All children aged five year and below of intended population whose caretakers accepted to give consent, parents and caretakers of children under five year age attending Ishaka Adventist Hospital.

### **3.4.2 Exclusion Criteria.**

Children above five years of age, those who were very sick, parents and caretakers of children who did not give consent were excluded.

## **3. 5 Definition of variables**

### **3.5.1 Dependent variables**

Prevalence of malnutrition among children aged five years and below is the depended variable.

### **3.5.2 Independent variable**

Factors that influence the prevalence Of malnutrition are the independent variable in this study which include; immediate, underlying and basic factors.

## **3.6 Study Tools/ Instruments**

A semi-structured questionnaire containing bio data of the respondents both the caretaker and the child and also questions on factors that influence the prevalence of malnutrition in children aged five years and below. Measuring equipments like MUAC tapes, weighing scales, and height boards were used. Writing materials including pencils & pens were also used.



### **3.7 Data Management**

**Reliability;** is a measure of the degree to which a research instrument yields consistent results or data after repeated trial.

The pilot study enabled the researcher to assess the clarity of the questionnaire items so that those items found to be inadequate or vague were modified to improve the quality of the research instrument thus increasing its reliability. The reliability of data was confirmed by the approval of data collection methods and tools by the university through the research supervisor, pre-testing the tools and careful choice of relevant questions and words that were used in the study.

**Validity;** The pilot study helped to improve face validity of the instruments and the researcher sought assistance from her supervisor, who is an expert in research helped improve content validity of the data. Data was collected confirming to the tests of validity. The validity of the data was guaranteed because the research tools that were used in the study were designed to capture all the relevant information required to fulfill the objectives of the study. Where questionnaires were not applied, interviews were used to get into deep analysis of the matter.

### **3.8 Data Analysis and presentation**

Data was collected manually and analyzed by Microsoft office Excel and calculator. Then eventually presented using tables, bar graphs and pie charts.

### **3.9 Ethical consideration**

An introductory letter was obtained by the researcher from Administrator school of Nursing Sciences Kampala international university Western Campus which was presented to the hospital director of Ishaka Adventist Hospital to be allowed to collect data.

The participants' consent was obtained by informing them that the information obtained from them was to be treated with confidentiality and their consent would be valued and given utmost respect

### **3.10 Quality control techniques.**

For reliability and validity, questionnaire was pretested with a tenth of the sample size outside the study area. The questionnaire was then revised and content adjustments made accordingly. After data collection, questionnaires were checked daily, for completeness, clarity, consistency and uniformity by the researcher.

### **3.11 Study limitations**

During the study the following challenges were met; limited time frame to collect and analyze the data. However, this was overcome by proper allocation and utilization of time that was available. Financial constraints to meet the expenses of the study were solved by drawing up a budget which was strictly followed to utilize the available means.

### **3.12 Dissemination of results**

Copies of results were disseminated to; Kampala International university School of Nursing- western campus library, Uganda Nurses and Midwives Board for marking and the researcher remained with a copy.

## **CHAPTER FOUR:**

### **DATA ANALYSIS AND PRESENTATION**

#### **4.0 Introduction**

This chapter is concerned with analysis, interpretation and presentation of data collected. Out of 50 respondents interviewed 50 questionnaires were returned completely filled thus a response rate of 100%.

#### **4.1 Socio-demographic factors that influence the prevalence of malnutrition among children aged five years and below (n=50)**

**Table 1.1 Showing comparisons of socio-demographic factors that influence the prevalence of malnutrition among children aged five years and below.**

<b>FACTOR</b>	<b>WASTING N= 24</b>	<b>UNDERWEIGHT N=26</b>
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	<b>Frequenc y</b>	<b>Percenta ge</b>	<b>Frequenc y</b>	<b>Percentage</b>
<b>1.Child's age</b>				
< 6months	2	8.3	5	19.2
6-12months	4	16.7	3	11.5
1-2years	8	33.3	11	42.4
2-5years	10	41.7	7	26.9
<b>2.birth order</b>				
First born	4	16.7	6	23
Second born	7	29.2	6	23
Third born	5	20.8	4	15.5
More than third born	8	33.3	10	38.5
<b>2.Mothers occupation</b>				
House wife	5	20.8	8	30.8
Student	3	12.5	2	7.7
Business woman	9	37.5	10	38.4
Employed	7	29.2	6	23.1

<b>3.Marital status of the mother</b>				
Married	15	62.5	17	65.4
Divorced	6	25	5	19.2
Widowed	3	12.5	4	15.4
<b>4.Education level of the mother</b>				
Non-educated	11	45.8	11	42.3
Primary level	8	33.3	10	38.5
Post primary level	5	20.9	5	19.2

The socio-demographic factors associated with malnutrition that were studied included child's age, child's birth order, mother's occupation, marital status and education level.

Out of 24 children who were wasted, the majority, (41.7%) were aged 2-5 years and the least being those ones below 6months with (8.3%).

Out of 26 children who had underweight, those aged 1-2years were the most affected with (42.4%), and (11.5) aged 6-12months being least.

Out of 24 children that were wasted, (20.8%) were third born, (33.3%) who were more than third born and then (29.2%) were second born and then (16.7%) who were first born.

On the other hand out of 26 children, most of them that had low weight for age (38.5%) were more than third born, followed by (15.5%) who were third born, (23%) were first born and only (23%) were second born.

Regarding mother's occupation, out of 24 children that were wasted, majority (37.5%) of them their mothers were business women followed by (29.2%) whose mothers were employed, (12.5%) of the children's mothers were students and (20.8%) were housewives.

Also of 26 children that had low weight, most of them (30.8%) their mothers were business women, followed by (30.8%) whose mothers were housewives, followed (23.1) by those whose mothers were employed and students were (7.7%).

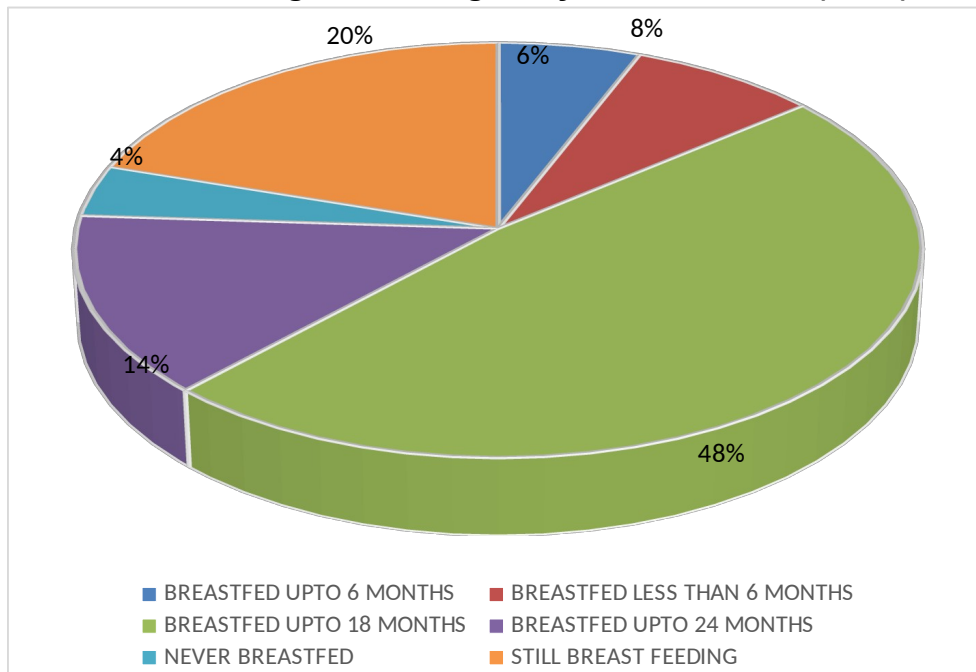
Surprisingly, majority of the children that were wasted (62.5%) belonged to married women and (65.4%) of them who had low weight also belonged to married women.

Out of 24 children who were wasted, (45.8%) were for the non-educated mothers, (33.3%) belonged to mothers who had attended primary level and (20.9%) were for mothers of post primary level.

On the other hand, out of 26 children who had underweight, (42.3%) were for the non-educated mothers, (38.5%) belonged to mothers who had attended primary level and (19.2%) were for mothers of post primary level.

#### 4.2 IMMEDIATE FACTORS INFLUENCING THE PREVERANCE OF MALNUTRITION AMONG CHILDREN AGED 5 YEARS AND BELOW.

**Figure 2 .1 Showing whether breastfeeding influences the prevalence of malnutrition among children aged 5 years and below (n=50)**



Findings from figure 2.1 shows that majority of children (48%) who had been breastfed for up to 18months were malnourished compared to the least (4%) who never breastfed.

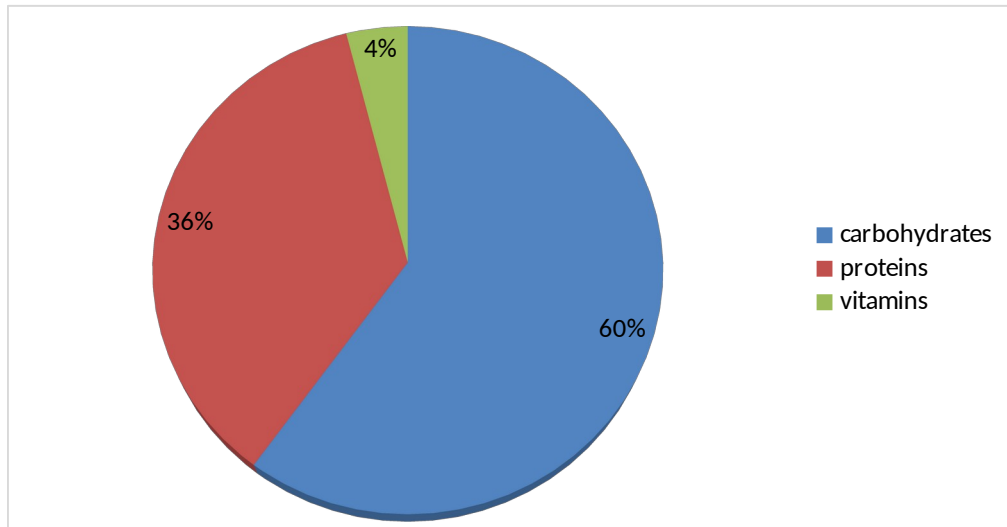
**Table 2.1 showing whether infection and disease influence the prevalence of malnutrition among children aged 5 years and below (n=50)**

<b>CATEGORY</b>	<b>FREQUENCY</b>	<b>PERCENTAGE</b>
<b>Recent or current disease or infection</b>	<b>33</b>	<b>66%</b>
<b>No recent or current disease or infection</b>	<b>17</b>	<b>34%</b>

From the study conducted out of the 50 children who were malnourished, a large proportion (66%) had a recent or were currently having an infection while (34%) were without any recent infection

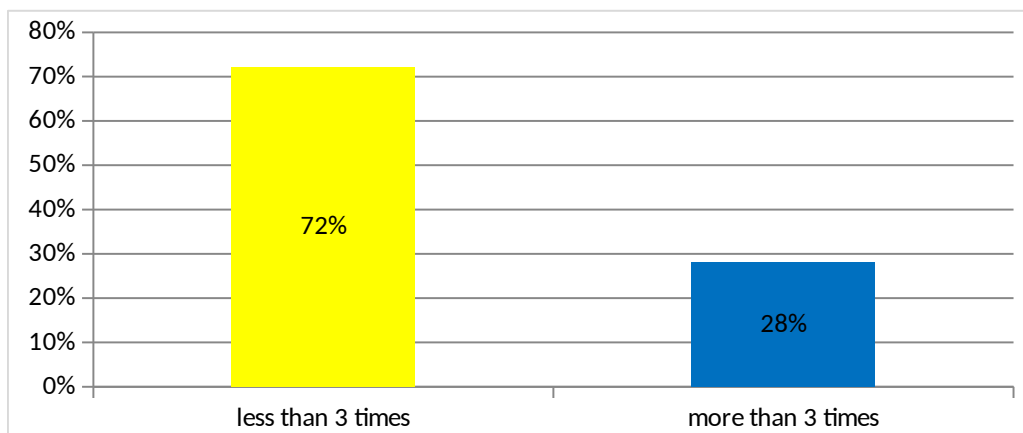


**Figure 2.2 showing whether types of food eaten influence the prevalence of malnutrition among children aged 5years and below (n=50)**



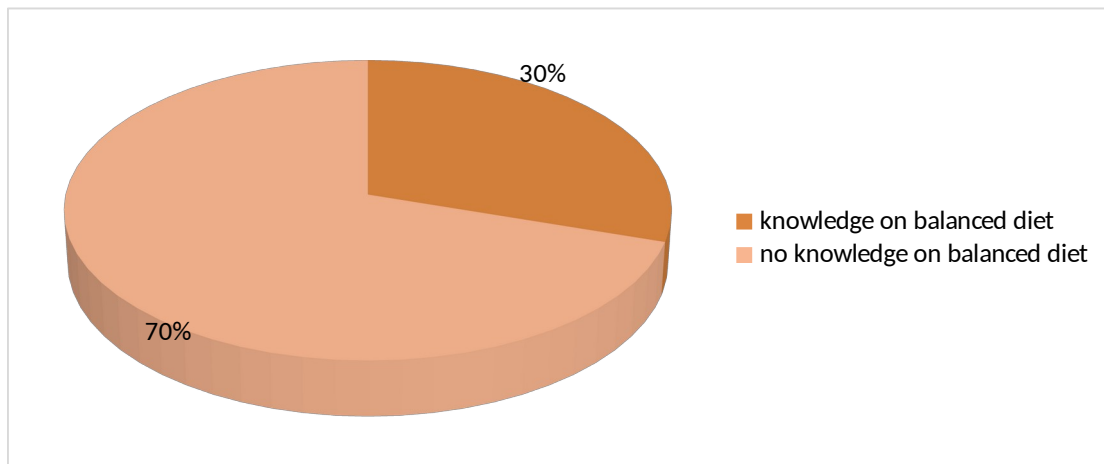
Most of the respondents (60%) feed their children on carbohydrates while only (4%) feed their children on vitamins.

**Figure 2.3 showing whether number of times a child is fed influences the prevalence of malnutrition among children aged 5 years and below (n=50)**



Majority of the respondents (72%) feed their children less than 3 times while (28%) feed their children more than 3 times.

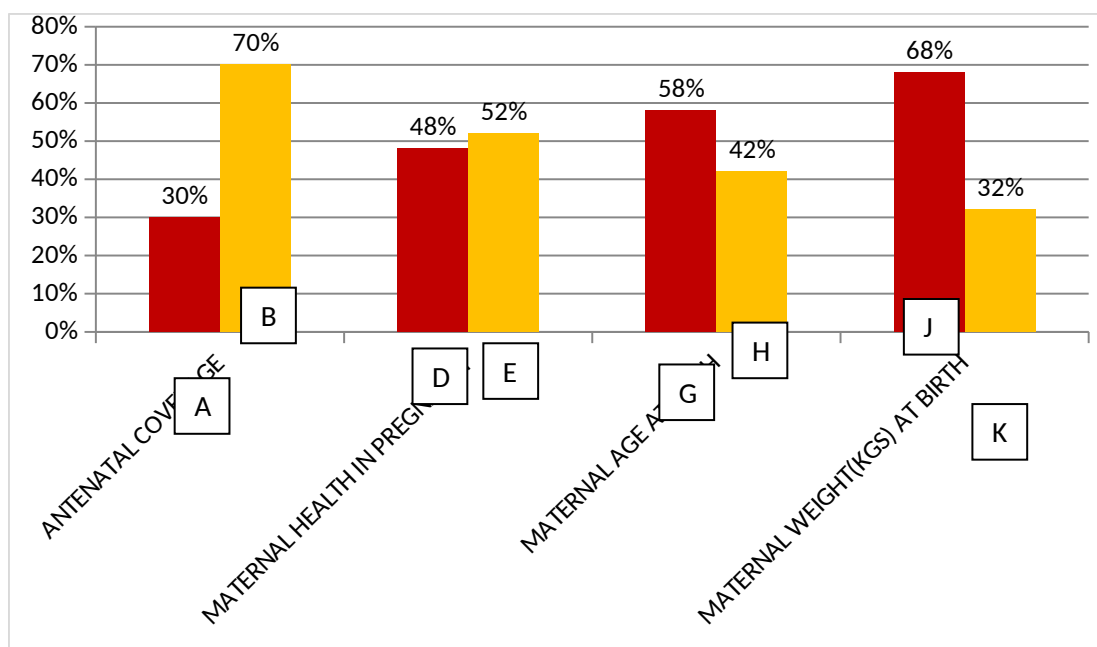
**Figure 2.4 showing whether care taker's knowledge on balanced diet influences the prevalence of malnutrition among children aged 5 years and below (n=50)**



Most of the respondents (70%) had no knowledge on balanced diet while (30%) had knowledge on balanced diet.

#### **4.3 UNDERLYING FACTORS THAT INFLUENCE THE PREVALENCE OF MALNUTRITION AMONG CHILDREN AGED FIVE YEARS AND BELOW.**

**Figure 3.1 showing some of the maternal factors that influence the prevalence of malnutrition among children aged 5 years and below (n=50)**



**KEY;**

<b>A</b>	= fully attended.	<b>B</b>	= Never Attended.
<b>D</b>	= Good Health.	<b>E</b>	= Not Good Health.
<b>G</b>	= Below 20 years.	<b>H</b>	= Above 20 years.
<b>J</b>	= Above 45 Kilograms.	<b>K</b>	= Below 45 Kilograms.

Maternal factors associated with malnutrition that were studied included ANC coverage, maternal health condition during pregnancy, maternal age at birth and maternal weight at birth.

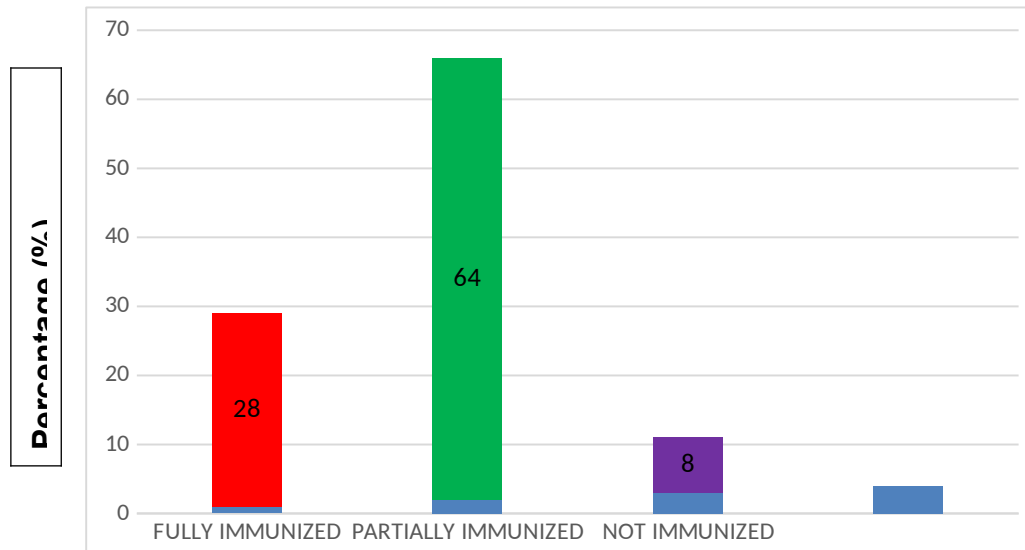
Out of 50 children that were found to be either having wasting or low weight for age, majority of them (30%), their mothers fully attended ANC services and a large proportion (70%) of them had not attended ANC services. Also, (48%) mothers of children who were either wasted or had low weight for age had good maternal health throughout the course of pregnancy whereas (52%) of them report to have had generally bad maternal condition associated with sickness of infections. Regarding maternal age, (58%) of the mothers of malnourished children reported to have had above 20 years at birth and (42%) reported to have had below 20 years at birth. Regarding maternal weight at birth, (68%) of the mothers of children reported to have had above 45kg at birth and (32%) of them reported to have had below 45kg of weight at birth

**Table 3.1 Showing whether birth weight influences the prevalence of malnutrition in children aged five years and below (n=50)**

<b>Response</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<2.5kgs	8	16
2.5-3.5kgs	32	64
>3.5kgs	10	20

From the study conducted out of the 50 children who were malnourished, more than a half (64%) of children had been born with a 2.5 to 3.5kg weight, (16%) of children had been born with weight less than 2.5 kg while (20%) of children were born with weight above 3.5 kg.

**Figure 3.2 showing whether immunization status influences the prevalence of malnutrition among children under five (n=50).**



Out of 50 children of which some were either wasted or had low weight for age, majority (64%) of them were partially immunized and least being (8%) had not been immunized.

#### **4.3 BASIC FACTORS THAT INFLUENCE THE PREVALENCE OF MALNUTRITION AMONG CHILDREN AGED FIVE YEARS AND BELOW.**

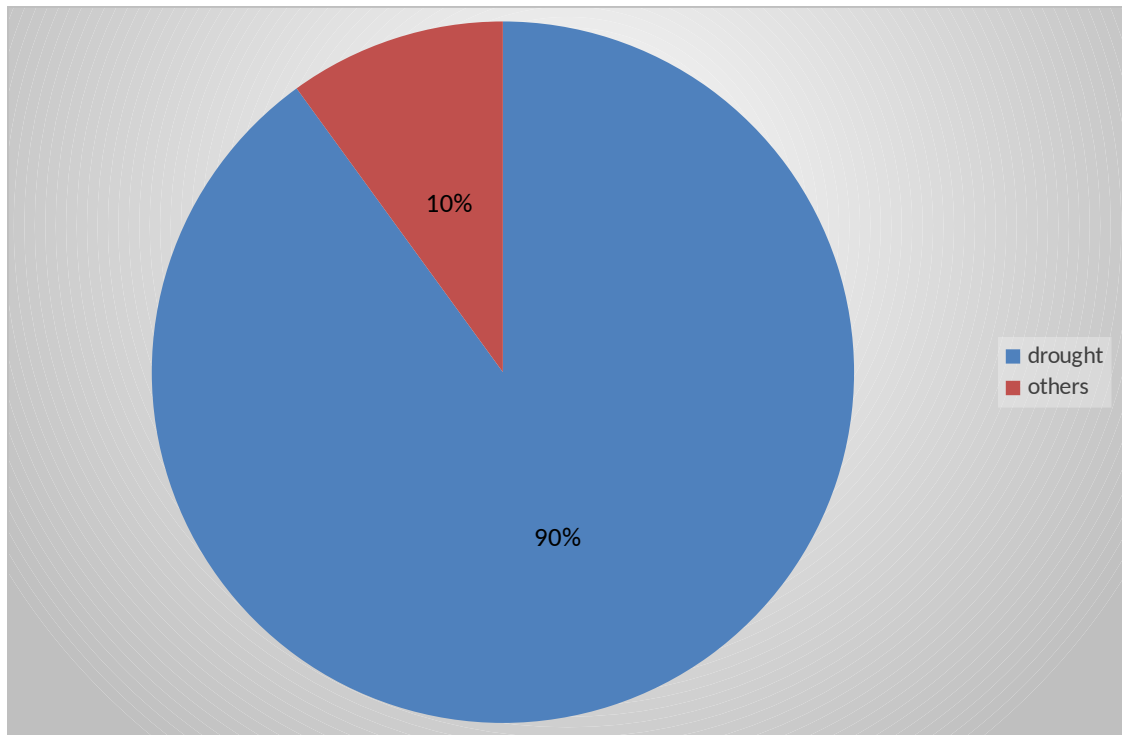
**Table 4.1 showing whether political factors influence the prevalence of malnutrition among children aged five years and below (n=50).**

Response	Frequency	Percentage (%)
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<b>No of migrants who have stayed for &gt; 1year</b>	<b>50</b>	<b>100</b>
<b>No of migrants who have stayed for &lt; 1 year</b>	<b>-</b>	<b>-</b>

From the study conducted, out of the 50 respondents who were interviewed, (100%) had spent more than a year.

**Figure 4.1 showing whether climatic factors influence the prevalence of malnutrition among children under five years (n=50)**



Ninety(90%) of the respondents attributed to lack of food to drought while (10%) attributed malnutrition of their children to other factors including pests and diseases, poor care by house maids among others

## **CHAPTER FIVE:**

### **DISCUSSION, CONCLUSION, RECOMMENDATIONS AND IMPLICATIONS IN NURSING PRACTICE.**

#### **5.0 Introduction**

This chapter presents the summary of the findings, discussions, conclusion and recommendations of the study findings that were presented in the

previous chapter. These were basically presented according to the specific objectives.

### **5.1 socio-demographic factors associated with malnutrition among children aged five years and below.**

Out of 24 children who were wasted, (8.3%) were below 6months, (16.7%) were aged 6-12months, (33.3%) were aged 1-2years and (41.7%) aged 2-5years. Out of 26children who had underweight, (19.2%) were below 6months, (11.5%) aged 6-12months, (42.4%) aged 1-2 years, and (26.9%) aged 2-5years. This implies that malnutrition was common after weaning had been done. Out of 24 children that were wasted, (20.8%) were third born, (33.3%) who were more than third born and then (29.2%) were second born and then (16.7%) who were first born. This implies that the children who are of third order and above have high prevalence of malnutrition. This study finding concur with the study which was done in Uganda and Health Survey,2011 found out that 33 percent of children were stunted and that only 6 percent of children aged 6 to 23 months were fed appropriately, based on the recommended infant and young child feeding practices. Similar findings are also in line with the research done by Olwedo *et al.*,(2010) who found out that malnutrition is rare among children aged five years and below of birth order 2-3 and higher in those of birth order (5+)

Regarding mother's occupation, out of 24 children that were wasted, majority (37.5%) of them their mothers were business women followed, by (29.2%)



whose mothers who were employed, (12.5%) of the children's mothers were students and (20.8%) were housewives. Also of 26 children that had low weight, most (30.8%) their mothers were business women, followed by (30.8%) whose mothers were house wives, followed (23.1) by those whose mothers were employed and students were (7.7%). These findings show that occupation can also affect child's nutrition and hence this study findings concur with study done by Simon, 2011 in Vietnam that revealed that children from mothers who were labourers or farmers and housewives had a greater prevalence of stunting, underweight and wasting than those from mothers who worked in office and mother's occupation is one of the indicators for access to adequate food supplies, use of health services, availability of improved water sources, and sanitation facilities which are prime determinants of child nutritional status (UNICEF, 2010).

Majority of the children that were wasted (62.5%) belonged to married women and (65.4%) of them who had low weight also belonged to married women. This is an indication that malnutrition is common among the married women, possibly as the result of poor family decision making. This study findings concur with a study done by Irena *et al.*, 2011 in Tanzania, revealed that mothers who are married were more likely to have undernourished children unlike those that were unmarried perhaps because of the cost of maintaining families hence sometimes these families fail to produce nutritious supplements to the under-five children

Out of 24 children who were wasted, (45.8%) were for the non-educated mothers, (33.3%) belonged to mothers who had attended primary level and (20.9%) were for mothers of post primary level. On the other hand, out of 26 children who had underweight, (42.3%) were for the non-educated mothers, (38.5%) belonged to mothers who had attended primary level and (19.2%) were for mothers of post primary level these results suggest that educated mothers are more knowledgeable on how to feed their children compared to others. The above study findings are in line with several studies done and have found out that mother's education is associated with good nutrition practices and particularly under-five child nutrition (Masinde *et al.*, 2013).

#### **5.1 Immediate factors associated with malnutrition among children aged five years and below.**

From the study conducted, out of 50 children who were malnourished, (8%) children had been breastfed for less than 6 months, (48%) the majority had been breast fed up to 18 months, (6%) children had been breast fed up to 6 months, (14%) children had been breastfed up to 24 months, only (4%) had never been breast fed, This shows that early weaning of children predisposes them to malnutrition. However this study slightly differs from a recommendation by UMOH ,(2014) which advised that children breast feed up to 18 months had low chances of being malnourished and yet from the study the highest number of children here had been breast fed up to 18 months.

More so from the study, (68.3%) had had a recent or were currently having an infection while (31.7%) were without any recent infection, this is an indicator that infections contribute to malnourished because they make a child fail to have appetite thus poor feeding practices. Some other infections like worm infestations directly suck digested food directly and deprive children of nutrients from the body in related studies UNICEF (2013) noted that infections especially diarrheal infections are fatal to child's health as it makes the child very weak with lowered immunity.

Most of the respondents (60%) feed their children on carbohydrates while only (4%) feed their children on vitamins. Majority of the respondents (72%) feed their children less than 3 times while (28%) feed their children more than 3 times. Children who are not fed according to dietary guideline are at risk of developing malnutrition. This study findings are in line with UMOH and Uganda Bureau of Statistics that found out that foods provided complementarily to breast milk mostly consist of cereals or vegetables (such as maize/posho or matooke) and are lacking in protein, fat and vitamins. Just one-quarter of Ugandan children aged 6-23 months are fed in accordance with the minimum WHO standard of feeding (continuous breastfeeding, 3+ meals per day composed of 3+ food groups each).

Most of the respondents (70%) had no knowledge on balanced diet while (30%) had knowledge on balanced diet. This implies that, people may also

lack the knowledge needed to make sound choices about the food they eat or provide to their children, this study findings concur with a study done by Flax (2010) about caregivers' behaviors and attitudes towards use of lipid based nutritional supplements for treating underweight children in Malawi at University of Tampere.

## **5.2 Underlying factors contributing to malnutrition.**

Out of 50 children that were found to be either having wasting or low weight for age, majority of them (30%), their mothers fully attended ANC services and (70%) of them had not attended ANC services. During ANC services, mothers are health educated on good child feeding. Also mothers are injected tetanus toxoid injections during antenatal visits, this helps a mother not to give birth to under weight babies. This findings however contradict other existing because given a large number of mothers who then there would be low malnutrition. However, according to Nguyen (2008), mothers who don't attend ANC services produce small sized babies that can easily be malnourished.

Furthermore regarding maternal age, (42%) of the mothers of malnourished children reported to have been above 20 years before conception and (42%) reported to have had below 20 years before conception. A fifty two percent figure of girls who gave birth before age of 20 years is a relatively big number, and it shows that mothers have not gotten the experience of child feeding

since most of them it's the first time. In related studies, a study by Nuure in Bangladesh in 2011, it indicated that children born of mothers who were below 20 years were 1.22 times likely to get malnourished than those born of mothers who are above 20 years.

Also to note is that from the study conducted, out of the 50 children who were malnourished, 32 children had been born with a 2.5 to 3.5kg weight, 8 children had been born with weight less than 2.5 kg while 10 children were born with weight above 3.5 kg, LBW is under nutrition at birth, the findings indicate that 16% of the babies were born with underweight, and this is a contributing factor to malnutrition, according to Mworosi *et al* (2008) in their study conducted in Uganda indicated that a baby born with LBW has 28% chances of developing malnutrition.

Concerning immunization of children, Out of 50 children of which some were either wasted or had low weight for age, (28%) of them were reported to be fully immunized whereas (64%) of them were partially immunized and (8%) had never been immunized, immunization helps to protect the child from childhood killer diseases, un immunized child is predisposed to low immunity, infections and malnutrition. A total of (72%) children who were partially or not immunized is relatively a big number and can associate with the malnourished children. In related studies a study by Sam tosh *et al.*, (2013) in

India, indicated that prevalence of malnutrition was higher in unimmunized children than those immunized at 81.3% and 62.1% respectively.

### **5.3 Basic factors contributing to malnutrition**

From the study conducted, out of the 50 respondents who were interviewed, (100%) had spent more than a year since they migrated into Bushenyi and had lived for at least more than a year. Countries that experience political instability face higher cases of malnutrition in comparison to political stable countries. The political conflicts result to war thus no room for production input, these calls for support and interventions in order to reduce on malnutrition. Political strategies have to be amended to curb issues like previous drought in the area. The majority (90%) of the respondents attributed to lack of food to drought in the area while (10%) attributed to malnutrition of their children to other factors including pests, diseases and poor care by house maids among others. This study finding concurs with a study done by Nelson *et al.*, (2009) that found out that Climatic change is one of the unfavorable factors that leads to hunger and malnutrition as a result of floods and drought.

### **5.4 Conclusions.**

The study concludes that malnutrition is associated with a number of factors including child infections, poor breast feeding practices, lack of immunization,

and failure to attend antenatal care by the mother during pregnancy. And other associated factors like mothers' educational level, mothers' occupation among others. This indicates that malnutrition is not only associated with feeding practices of the child but a lot of associated factors as indicated above.

Also the study concludes that on basic factors, such as birth of the child, don't immediately contribute to malnutrition like those immediate factors and therefore if immediate interventions are done the child will not progress to malnutrition..

The study concludes that in Bushenyi the basic factors such as political and climatic factors are least associated with malnutrition and have less impact on leading to malnutrition.

### **5.5 Recommendations**

Mothers should be encouraged to breast feed their babies exclusively up to 6 months and breast feeding should go on up to at least 18 months.

Mothers should be encouraged to take their children for immunization, since unimmunized children are susceptible to diseases which contributing factors for malnutrition.

Mothers should be taught on how to monitor their babies' growth using a growth monitoring chart, such that incase the child starts to lose weight, and the mother can seek health advice in time.

The health workers should guide mothers who deliver from health centers and hospitals on different ways of good child feeding

Mothers should be encouraged to always pick nutritional supplements from health Centre for their children for example vitamin A, zinc among others.

The government should organize workshops together with community leaders to teach people not to sell all their agricultural produce for money leaving their children malnourished.

## **5.6 IMPLICATIONS IN NURSING PRACTICE**

The findings of this study will help nurses to find it easier to advise and teach the community on factors contributing to malnutrition among children aged five years and below depending on whether they are immediate, basic or underlying in nature.



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#### **APPENDIX I: Consent form**

I am **Mujuni Mary Kataryebwa**, a second year student doing a diploma in nursing sciences at Kampala International University –Western Campus doing a study of “Factors influencing prevalence of malnutrition among children aged five years and below attending Ishaka Adventist hospital in Bushenyi district.”

Your participation in this study is completely free and voluntary. You have a right to say no or change your mind and withdraw at any time. Whether you choose to participate or not it will have no effect on the services to be given to

you .All information that is to be obtained from you in this study will remain confidential and will only be disclosed with your permission.

I hope that this information will be used to draw intervention on prevalence of malnutrition among under five year children.

The information obtained will be treated with confidentiality and will not be shared with any other unauthorized people. In addition, participant's names will not be taken.

Proceed with the interview .....Don't proceed with the interview.....

Signature of the participant.....Date.....

Signature of the interviewer..... Date.....

**THANK YOU.**

## **APPENDIX II: QUESTIONNAIRE.**

### **SECTION A: SOCIAL-DEMOGRAPHIC CHERACTERISTICS.**

#### **1. Education level:**

- |                        |                      |                                     |
|------------------------|----------------------|-------------------------------------|
| ❖ Primary level        | <input type="text"/> |                                     |
| ❖ Secondary level      | <input type="text"/> | Post-secondary <input type="text"/> |
| ❖ Never went to school | <input type="text"/> | others (specify).....               |

#### **2. Occupation**

- |           |                      |
|-----------|----------------------|
| ❖ Student | <input type="text"/> |
|-----------|----------------------|

- ❖ Businesswoman
- ❖ Peasant
- ❖ Others (specify).....

House wife   
Civil servant

### 3. Marital status

- ❖ Single
- ❖ Widow
- ❖ Others.....

Married

### 4. Age of the child

- ❖ <6 months
- ❖ 6months -12months
- ❖ 1-2years
- ❖ 2-5years

### 5. Birth order

- ❖ First borne
- ❖ Third borne

Second born   
Forth borne

## **SECTION B: IMMEDIATE FACTORS THAT INFLUENCE THE PREVALENCE OF MALNUTRITION AMONG CHILDREN AGED FIVE YEARS AND BELOW:**

### 1. Is your child breast feeding?

- ❖ YES
- ❖ NO

### 2. For how long did you breastfeed the child?

- ❖ Never breast fed
- ❖ <6 months
- ❖ Up to 6months
- ❖ Up to 18 months

❖ Up to 24months

❖ Still breastfeeding

**3. Type of food child fed on**

❖ carbohydrates

❖ vitamins

❖ Proteins

**4. Has the child suffered from infection of recent?**

❖ YES

❖ NO

**5. Do you have any knowledge on balanced diet?**

❖ YES

❖ NO

**6. How many times do you feed a child in a day?**

❖ >3

❖ <3

**SECTION C: UNDERLYING FACTORS THAT INFLUENCE THE PREVALENCE OF MALNUTRITION AMONG CHILDREN AGED FIVE YEARS AND BELOW**

**1. Birth weight**

❖ <2.5

❖ 2.5-3.5

❖ >3.5

**2. Immunization status**

❖ Fully immunized

❖ Partially immunized



- ❖ Not immunized
- 3. Antenatal coverage**
- ❖ Fully attended
- ❖ Not attended
- 4. Maternal health during pregnancy?**
- ❖ Good
- ❖ Not good
- 5. Maternal age at birth**
- ❖ >20 years
- ❖ <20 years
- 6. Maternal weight at birth**
- ❖ <45kgs
- ❖ >45kgs

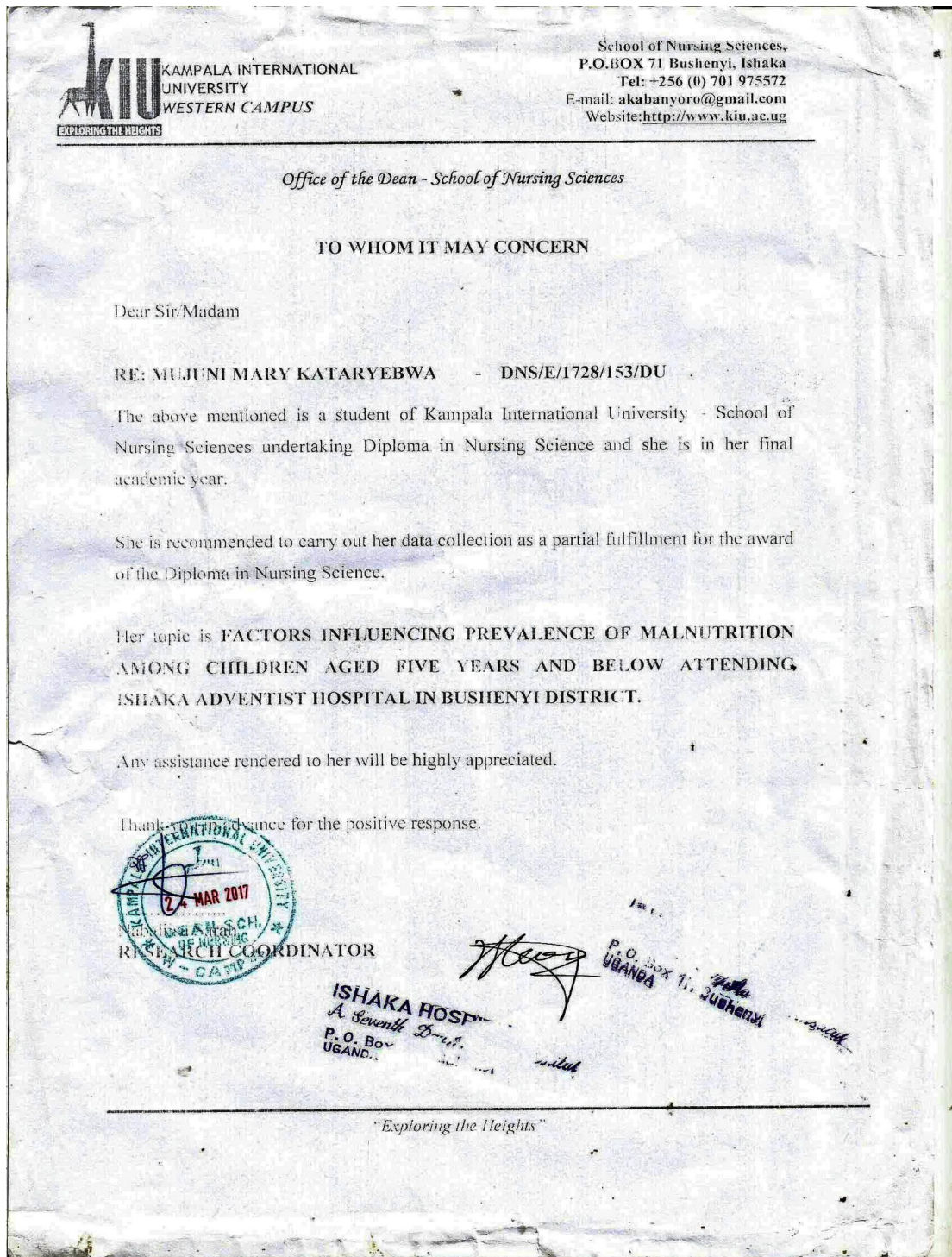
**SECTION D: BASIC FACTORS THAT INFLUENCE THE PREVALENCE OF MALNUTRITION AMONG CHILDREN AGED FIVE YEARS AND BELOW:**

- 1. Have you experienced drought recently in your locality?**
- ❖ YES
- ❖ NO
- 2. Are you migrants in this community?**
- ❖ Yes
- ❖ No
- 3. If yes, for how long?**
- ❖ More than one year
- ❖ Less than one year

**4. Are there other factors other than drought that have contributed to malnutrition?**

- ❖ Yes ☐
- ❖ No ☐
- ❖ If yes, specify.....

## APPENDIX 111: INTRODUCTORY LETTER



#### APPENDIX IV: A MAP OF UGANDA SHOWING BUSHENYI DISTRICT



## LOCATION OF BUSHENYI



**APPENDIX VI: MAP OF BUSHENYI DISTRICT SHOWING LOCATION OF ISHAKA ADVENTIST HOSPITAL.**



