UNDERNUTRITION AMONG HIV POSITIVE CHILDREN OF AGE 1-5 YEARS ATTENDING THE ART CLINIC IN BUSHENYI HEALTH CENTRE IV ISHAKA-BUSHENYI MUNICIPALITY, BUSHENYI DISTRICT

BY

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A RESEARCH DISSERTATION SUBMITTED TO THE SCHOOL OF ALLIED HEALTH SCIENCES AS A REQUIREMENT IN PARTIAL FULFILMENT FOR THE AWARD OF A DIPLOMA IN CLINICAL MEDICINE AND COMMUNITY HEALTH AT KAMPALA INTERNATIONAL UNIVERSITY WESTERN CAMPUS

JULY, 2017

DECLARATION

I hereby declare that this proposal is my original work. Everything in this research paper is as a result of my hard work through reading various literatures including my personal knowledge and interpretation of the contents of the topic in the field of research under the guidance of my supervisor.

Therefore, am certain that no work of this kind has ever been produced or submitted; either in partial or full publication in any other university, college or institution for the award of a degree or diploma.

I henceforth present it for the award of a Diploma in clinical medicine and community health at Kampala International University western campus

RESEARCHER; SSESANGA GODFREY

SIGNATURE----------

DATE----------

APPROVAL

This research proposal has been produced under my close supervision and I therefore recommend the student to submit the report.

SUPERVISOR: MR. TASHOBYA DANIEL KAMUGISHA.

Signature…… Date----------

ACKNOWLEDGEMENT

I wish to extend my sincere thanks to my mentor pastor WALUGEMBE DAN, Eternal Life Church and all my family members for their support, inspiration and encouragement in several aspects as far as my life is concerned.

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Special thanks go to my mother who has supported me financially throughout my research project.

ABSTRACT

Background; Worldwide, more than 3.4 million children below 5 years are infected with HIV. Both acute and chronic malnutrition are major problems for HIV-positive children living in resource-limited setting. HIV sero-prevalence in severely malnourished Ghanaians children is 27.2% out of the 29.2% worldwide. In Uganda, the data from ART clinics revealed that up to 23% of mothers and 50% of children who were on treatment have moderate acute malnutrition. RTo understand Undernutrition in HIV positive children aged 1-5 years in Bushenyi District western Uganda; a study was conducted in Bushenyi Health Centre IV to determine the common forms of Undernutrition, mother awareness of Undernutrition and the management protocol conferred to HIV positive children

Results; There were 61 participants of which 54% were females and 46% were males, 41% were between age 1-2 years, 31% 5 years and 28% 3-4 years. The study indicated that 82% of the guardians had good knowledge about Undernutrition, with 18% having little knowledge of the problem in HIV positive children. In this study using the z-score in data analysis, there were 3 children which were less than -2SD (-2 standard deviation) and the overall prevalence of Undernutrition was 5%. The guardians were asked whether they had heard about RUTF in the hospital management of Undernutrition in HIV positive children, and 79% of the respondents confirmed that they had heard about it and they prefer their Undernourished children to be managed with that form from the health units. However, 21% preferred managing their children from home without getting to the health unit.

Conclusion; Prevalence of Undernutrition in HIV aged 1-5 years is high and majority of the children are underweight with Moderate Acute Malnutrition. Some HIV positive caretakers still have inadequate knowledge about Undernutrition in their children. Some people are lacking knowledge about the management of Undernutrition in HIV positive children.

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LIST OF ABBREVIATIONS USED

ART	Anti retro treatment
ARVs	Anti-retro Viruses
HIV	Human immunodeficiency Virus
IMCI	Integrated Management for Child Illnesses
MAM	Moderate Acute Malnutrition
MOH	Ministry Of Health
MUAC	Mid Upper Arm Circumference
PITC	Provider-initiated HIV Testing and Counselling
PLWHIV	People Living With HIV
RLS	Resource Limited Setting
RUTF	Ready-to-Use Therapeutic Food
SAM.	Severe Acute Malnutrition
UNAIDS	United Nations Acquired Immunodeficiency Syndrome
UNICEF	United Nations Initiative for Child Emergency Fund
WHO	World Health Organization
UDHS	Uganda Demographic and Health Survey

DEFINITIONS USED

Malnutrition: refers to imbalances in the person's intake of energy or nutrients

Undernutrition: refers to reduced intake of nutrients

Severe Acute Malnutrition (SAM): This refers to a very low weight for height, with MUAC of less than 11. SAM can present as nonoedematus, oedematous or both with nonoedematus being the most common in HIV-positive children. Moderate Acute Malnutrition (MAM), this refers to a low weight for height (wasting); low height for age for age (stunting) or both. The MUAC for MAM is between11-12.5

CHAPTER ONE

1.0 Introduction

This gives an overview of the study using the existing information about the topic. This intends to reveal the possible causes and the disease burden worldwide and in Ishaka-Bushenyi municipality, Bushenyi District.

1.1 Backgroundf

Infection with HIV is one of the greatest challenges to global heath faced by the medical profession. There are 3.4 million HIV-positive children below 5 years of age and 340,000-450,000 new infections in the paediatric population each year. (WHO, UNAIDS, UNICEF, 2011), HIV infection is particularly aggressive in children without access to treatment, more than half of HIV infected infants die before the age of 2 years. The Human Immunodeficiency Virus (HIV) in pandemic has affected the nutritional status and mortality of children in Africa and many developing countries. Both Undernutrition and HIV have effects on the immune system and their clinical presentations overlap with many similarities (WHO and UNICEF, 2011). The commonest form of Undernutrition is severe acute malnutrition (SAM). HIV seroprevalence in severely malnourished Ghanaians children is 27.2% out of the 29.2% worldwide. This means that in such a country, a child with SAM who has 3 or more of the following clinical features; severe muscle wasting, prolonged fever, cough and diarrhoea, oral thrush and generalised lymphadenopathy is strongly suspected to be HIV seropositive (WHO,2010). Chinkhumba et al. (2008) reported that HIV-infected children were more likely to have lower haemoglobin levels. Survival has improved dramatically however challenges remain. In countries with a relatively low HIV prevalence, health workers may not have enough index of suspicion of HIV infection to

request Provider Initiated HIV Testing and counselling (PITC) under appropriate settings. The child's clinical symptomatology may be wrongly attributed to the SAM. HIV-seropositive children may die before they are diagnosed or before they can access ART. But, clinical algorithm for presumptive diagnosis of HIV has its limitations. Nevertheless, it could be useful in Resource Limited setting (RLS) where facilities for testing may be lacking or are in short supply. The utility of such clinical algorithm have been recognised and their use encouraged in the absence of appropriate laboratory test. (WHO, 2010). Current World Health Organisation (WHO) guidelines (2012) recommend provider-initiated HIV testing and counselling (PITC) in clinical settings for all children in countries with an HIV prevalence of $\geq 1\%$ in the general population (WHO, 2012).PITC has been shown to be acceptable and effective in these settings (Mutanga et al.,2012). Despite these recommendations, Baggaley et al. (2012) found that only 9.5% of inpatients (adults or children) were offered PITC by countries that have adopted the WHO PITC policy. Inadequate testing for HIV infection is the major reason why less than one quarter of children eligible for treatment are accessing antiretroviral therapy (WHO and UNAIDS,2011). Early identification of HIV infection will aid in reducing morbidity and mortality in both the children and their families. . In Uganda, despite sustained economic growth and poverty reduction, the proportion of the population that is food insecure increased from 19 percent in 1992 to 21 percent in 2007. Food and nutrition security remain the fundamental challenge to human welfare and economic growth, with almost 30 percent of households considered food insecure and chronic undernutrition in HIV infected children a critical issue. One-third of children under five years old are stunted. Undernutrition is an underlying cause of 60 percent of deaths for HIV positive children under five. Micronutrient deficiencies, including in vitamin A and iron, are highly prevalent in women and children.

The causes of undernutrition vary by region including lack of enough and access to food, lack of dietary diversity, cultural and social traditions, and poverty levels. Producing more staple food does not guarantee improved nutrition, as seen in the southwest region, considered the "food basket" of Uganda, which has one of the highest prevalence rates of stunting in children under five. Similarly, increasing income does not guarantee improved nutrition: Anaemia, vitamin A deficiency and wasting in children are independent of wealth and affect all economic groups. Undernutrition disproportionately affects rural areas, where rates of stunting are over 36 percent compared to 19 percent in urban areas (USAID/Uganda, 2017). December 2008, only about 156,000 were reported to be accessing treatment, with the children under 5 years of age constituting about 9% of this total. The strong relationship between HIV infection and nutrition has been observed and reported from settings within the country. For instance, the data from ART clinics reveal that up to 23% of mothers and 50% of children who were on treatment have moderate acute malnutrition. On the other hand, in 2007 the Mwanamugimu Nutrition Clinic in Mulago reported that 40% of the children who were admitted with malnutrition were found to be infected with HIV. HIV infected mothers who initiate breast feeding should have access to safe, nutritious complementary feeds after six months. This is because their capacity to breast feed is often compromised by their own impaired nutritional status right from the time when they were pregnant till after delivery. On the other hand HIV infected children experience slower growth and particularly at risk of Undernutrition, whereas the SAM in infected children is capable of reversal with appropriate therapeutic feeding, studies reveal that recovery tends to take longer than among the uninfected children. Currently, 33% of Ugandan children less than five years of age are stunted, 16% are under weight, and 4% are wasted. Other forms of Undernutrition do exist and with HIV infection they become aggravated (Uganda MOH, 2009). HIV and

Undernutrition effects are interconnected and worsen one another in a cycle and can have progressive damage to the immune system independently. HIV specifically affects nutritional status by reducing food intake, increasing energy requirements, and harmfully affects nutrient absorption and metabolism (Byron et al., 2008), On the other hand antiretroviral therapy (ART) medications can cause nausea, vomiting, loss of appetite, diarrhoea, and other disorders. Diarrhoea adversely affects the nutritional status of people living with HIV (PLWHIV) (Kim, 2010).

1.2 Problem Statement

Undernutrition in Uganda affects over 2 million children under 5years and below. Stunting (or chronic Undernutrition, measured as "height-for-age"), which occurs when a child fails to grow to the expected height or length compared to a healthy child of the same age, remains a major public health problem in Uganda. The most recent UDHS reported that approximately 39% of children under 5 years were stunted, more than a third of them severely malnourished (based on the WHO Growth Standards). Using the WHO 2015 Growth Standards, the 2015 UDHS reported a prevalence of underweight of 16% for children under 5 years living with HIV (WHO, 2015). With an estimated population of 34.1 million, of which 19% are children under five, it can be estimated that 1.5 % of the children are at increased risk of death due to severe acute malnutrition (SAM), and 4.7% of the children suffer from either severe or moderate acute malnutrition (MAM) with Bushenyi having the biggest number. (FANTA 2014). Therefore, basing on the above background the researcher intends to carry out a study in order to find out

the possible causes of Undernutrition in HIV infected children in Ishaka-bushenyi municipality, Bushenyi District.

1.3 Study Objectives;

1.3.1 General Objective.

To assess the prevalence of Undernutrition among HIV positive children aged between 1 to 5years attending the ART clinic in Bushenyi Health Centre IV, Bushenyi District.

1.3.2 Specific Objectives

To find out the common forms of Undernutrition among HIV infected children aged between 1 to 5years attending the ART clinic in Bushenyi Health Centre IV, Bushenyi District.

To find out whether mothers are aware of Undernutrition among HIV infected children aged between 1 to 5years attending the ART clinic in Bushenyi Health Centre IV, Bushenyi District.

To describe the mode of management of Undernutrition conferred to HIV infected children aged 1-5 years attending the ART clinic in Bushenyi Health Centre IV, Bushenyi District.

1.3.3 Research Questions

What are the common forms of Undernutrition among HIV infected children aged between 1 to 5years?

What is the level of awareness among mothers that there is Undernutrition among HIV infected children aged between 1 to 5 years?

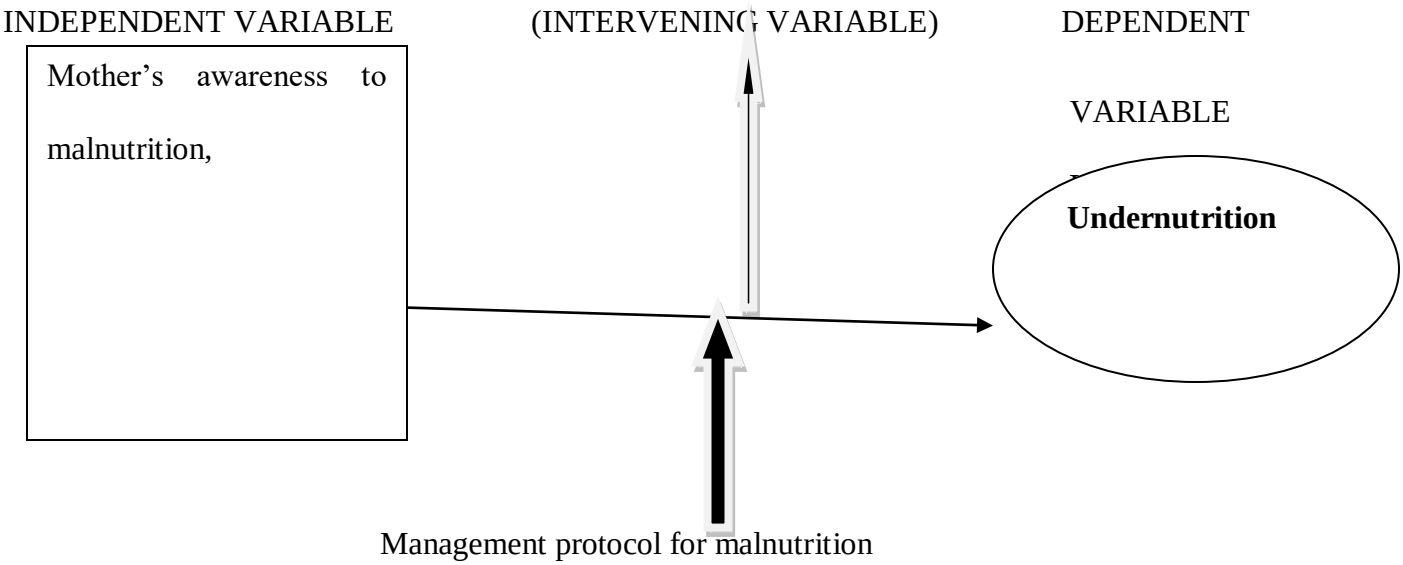
What is the preferred mode of Undernutrition management among HIV infected children aged 1 to 5 years?

1.4 Study Justification

Undernutrition is estimated to contribute to more than one third of all HIV infected child deaths. This is due to lack of access to highly nutritious foods, especially in the present situation where most of the food staffs are sold to urban centres and little is left for consumption.

This fact will guide the researcher to determine the actual reasons why Undernutrition remains to be a health burden in the country specifically in Bushenyi district. The results will be disseminated to relevant stakeholders in order to inform them of the current status of the condition in the district and might help them to get the way forward into eradicating Undernutrition in HIV infected children in the region. The research will also act as a source of information and reference for future researchers willing to undertake the same topic of study and who share the common motivation of eradicating Undernutrition and HIV in children aged 5years and below in Bushenyi District.

1.5 CONCEPTUAL FRAME WORK



CHAPTER TWO

LITRATURE REVIEW

2.1 Introduction

This chapter includes the available literature about common forms of Undernutrition, mother's awareness to Undernutrition in HIV positive children 1-5years of age and management protocol conferred to Undernutrition in HIV positive children.

2.1 Common forms of malnutrition in HIV infected children

UNICEF global data based on child Undernutrition 2016 report showed the prevalence of wasting (weight/length or height) which represents acute Undernutrition to be 15% in South Asia, 7% in Middle East and North Africa, while 10% and 9% were observed in sub Saharan Africa and in developing countries respectively (UNICEF, 2016). According to data from the World Bank Report, 2010; 9.73% of sub Saharan African under-five children had severe Undernutrition based on assessing for wasting (weight/length. Malnutrition in under-fives varies from country to country according to the socio-economic status. Undernutrition and human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) are highly prevalent in Sub-Saharan Africa, according to a 2008 review an estimated 178 million children under 5years and below are stunted, most of them live in sub-Saharan Africa. A 2008 review of malnutrition found that about 55 million children are wasted, including 19 million who have severe wasting or severe acute malnutrition. Malnutrition in Uganda affects over 2 million children under 5years and below. Stunting (or chronic malnutrition, measured as “height-for-age”), which occurs when a child fails to grow to the expected height or length compared to a healthy child of the same age, remains a major public health problem in Uganda. The most recent

UDHS reported that approximately 39% of children under 5 years were stunted, more than a third of them severely malnourished (based on the WHO Growth Standards). Underweight is often considered a composite measure of both acute and chronic malnutrition in HIV positive children. Using the WHO 2015 Growth Standards, the 2015 UDHS reported a prevalence of underweight of 16% for children under 5 years living with HIV (WHO, 2015).

2.2 Mothers, awareness to Undernutrition in HIV positive children

A 2013 world food programme report said, Undernutrition leads to a higher progress of HIV. When a child has HIV, they are most likely to have mouth sores which can affect the appetite and general nutrition of the patient. Emily Tindimweba, the nursing officer in-charge of the paediatric ward at Kabale hospital said that ignorance is the number one cause of Undernutrition in western Uganda. In addition, Hope Hamibana, Kisoro District nutrition focal person and the principal education officer, said that 54% of the people in western Uganda think that eating meat, drinking milk and doing away with vegetables is having a balanced diet (UDHS, 2016).

2.3 Management protocol for Undernutrition in HIV positive children

Management of Undernutrition in malnourished HIV positive children, both severe acute or moderate acute malnutrition includes stabilization and rehabilitation phases. In stabilization phase, hypoglycaemia, hypothermia, infection and dehydration must be assessed. These disorders usually respond to early and frequent feedings and temperature control. Blood glucose should be monitored if hypothermia or apnoea occurs. Feeding should be initiated using a formula containing 75-kcal/100 mls (known as F-75 formula) soon after the child reaches the hospital. Infants are fed orally using a cup, spoon or syringe and nasogastric tube if there is impaired consciousness or there is vomiting, Tachypnea, or painful stomatitis.

Hypothermia is common to malnourished child and is considered a sign of infection. If the rectal temperature is $<35.5^0$C, the child should be warmed by using a warming blanket or by close contact with the mothers body, diarrhoea can be acute or chronic and can cause death due to either dehydration or electrolyte imbalance, Dehydration is treated with oral rehydration (rehydration solution for malnutrition) which has high amount of potassium with low amounts of sodium and is balanced for better absorption of these mineral.

Treatment of HIV and other infections is required as early as possible since most of these patients have systemic infections. Oral Cotrimoxazole is recommended for treatment of non-severe infections like UTI. In case of complications like hypoglycaemia, hypothermia or lethargy, concomitant sepsis must be suspected and coverage with a wide spectrum of antibiotics (Ampicillin, Gentamycin or Chloramphenicol) is recommended by WHO (WHO, 2005).

Usually malnourished children improve appetite from two to six weeks. Feeding formula is gradually changed from F-75 to F-100 which provides 100kcal. Mineral supplements are also recommended in the rehabilitation phase. Folic acid, vitamin A and zinc are recommended during admission while Iron is given in the rehabilitation phase. These children also need emotional and sensory stimulation throughout the initial and rehabilitation phases. Treatment should continue until the child's weight-for-height is recovered. During discharge, mothers are fully trained to continue with care at home and any social problem is addressed. Follow up of the child is done for about six months at the clinic in order to look for child's wellbeing and provide ongoing counselling for proper diet, danger signs and address other social problems, a recently developed home-based treatment for severe acute malnutrition is improving the lives of hundreds of thousands of children a year. Ready-to-use Therapeutic Food (RUTF) has revolutionized the

treatment of severe acute malnutrition by foods that are safe to use at home and ensure rapid weight gain in severely malnourished children (Horton, Alderman & Rivera, 2012). The advantage of RUTF is that it is a ready-to use paste which does not need to be mixed with water, thereby avoiding the risk of bacterial proliferation in case of accidental contamination. The product, which is based on peanut butter mixed with dried skimmed milk, vitamins and minerals, can be consumed directly by the child and provides sufficient nutrient intake for complete recovery. It can be stored for a longer period of three to four months without refrigeration, even at tropical temperatures. Treatments with antibiotics such as amoxicillin improve the response and survival rate of severely malnourished children to an outpatient treatment plan which provided therapeutic food (Duggan, Watkins and Allan, 2008). This confirms the recommendation, "In addition to the provision of RUTF; children need to receive a short course of basic oral medication to treat infections." Contained in "Community-based management of severe acute malnutrition, a Joint Statement by the World Health Organization, the World Food Programme; the United Nations System Standing Committees on Nutrition and the United Nations Children's Fund." (Srinivansan, 2010).

Nationally, nutrition-related interventions constitute an important integral part of HIV prevention, treatment, care and support services. The interventions that form the basis for this strategic plan include: counseling and support to improve food intake / maintain weight during asymptomatic infection; prophylaxis and education to prevent food and waterborne infections; counseling to manage nutrition-related symptoms of HIV-related illnesses; counseling on management of treatment-related side-effects and prevention of drug-food interactions; therapeutic feeding to manage moderate and severe malnutrition among HIV-infected mothers

and children; and counseling on optimal feeding for HIV-exposed and infected infants and young children. In other words, the priority actions within this strategic plan will focus on the nutritional status of mother and children infected with HIV. The Strategic Plan defines the priority actions that are required to mainstream nutrition within the context of HIV infection into existing programmes with a focus on general Nutrition and HIV Control Programmes. It covers interventions at all levels ranging from global, national, regional, district to sub-district. It includes the interventions within the public sector, the civil society (NGO, CBO and FBO) as well as the private sector. In Uganda 72% of women and 80% of men said that they are willing to care for a family member with AIDS at home, they said that they would buy fresh vegetables from the market and give to the member to avoid malnutrition, as reported in the 2011 UDHS (WHO, 2011).

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes the geographical scope where the research was conducted, method for choosing participants, methods of collecting data, ways of interpreting results, how to provide relevant information and protocol of issuing results.

3.1 Study Design

The study was a cross-sectional Health centre based.

3.2 Study Area

Bushenyi District Health Centre IV located 64 miles alongside Mbarara-kasese road in Bushenyi town and Bushenyi District is a district in western Uganda. It is bordered by Rubirizi District to the northwest, Buhweju District to the northeast, Sheema District to the East, Mitooma District to the south and Rukungiri District to the west.

The health Centre receives clients from neighbouring towns and villages like Ishaka, Kashenyi, and Sheema etc. It has administration offices, outpatient department, accident and emergency ward, surgical ward, medical ward, laboratory, paediatric ward, dental department, ART Clinic, etc. The study area was chosen by the researcher because of easy geographical accessibility and accessibility coupled with turnover of patient services offered include, Antenatal care, Paediatrics, Accident and emergency care, Nutrition and ART clinic etc.

3.3 Study Population

These were malnourished children between the ages of 1 to 5 years attending the ART clinic of Bushenyi Health Centre IV from the month of April- July 2017.

The population in study comprised of health records acquired from Bushenyi Health centre IV of children diagnosed with malnutrition and HIV under the age of 1 to 5 years from Bushenyi district.

3.4 Sample Size Determination

This was calculated using the Fischer's et al 1990 formula. I.e. $N=Z^2PQ/D^2$:

Where N is the desired sample size

Z is the standard normal deviation taken as 1.96 at a confidence interval of 95%.

P is the proportion of the target population estimated to have desired characteristics=7% (Fischer's et al, 1990).

D is the degree of accuracy= 5%

Q= (1-P) which is the population without the desired characteristics.

Therefore;

$N= 1.96^2$ X0.07 (1-0.07)/ $(0.05)^2$= 100 people.

3.5 Sampling Method

Respondents were chosen using random selection without considering their level of education and social economic status to avoid biasness .Women were mostly because they are responsible for food preparation for the family and they are care takers of children

3.6 Inclusion And Exclusion Criteria

3.6.1 Inclusion Criteria

All children attending ART clinic in Bushenyi Health centre IV aged 1 to 5 years whose mothers consent for the study.

3.6.2 Exclusion Criteria

Patients attending ART clinic in Bushenyi Health centre IV aged 1 to 5 years that were critically ill and those that had congenital abnormalities.

3.7 Data Collection Method

Data was collected by use of questioners through direct interaction with mothers/guardians of children attending the ART clinic in Bushenyi Health Centre IV. Where participants were requested to give appropriate answers of choice to questions, key informants were equally made use of. The results of which were considered in the end.

3.8 Data Quality Control

Data collection was done according to the standards, especially using the appropriate weighing scale. Data was clearly collected by one person (the researcher) to avoid errors.

3.9 Data Analysis And Presentation Methods

The acquired results were analysed by use of WHO growth standards and eventually presented using Microsoft Word.

3.11 Ethical Considerations

An introductory letter from the school of Allied health sciences and public health was obtained before embarking on the research. And this letter was signed by the in-charge Bushenyi Health Centre after data collection. And a copy was left at the Health Centre.

CHAPTER FOUR: RESULTS

This chapter consists of data which was collected and analysed in tables and pie charts.

4.1 SOCIO-DEMOGRAPHIC CHARACTERISTICS.

There were 61 participants of which 54% were female and 46% were males, 41% between the age of 1-2 years, 31% being 5 years and 28% 3-4 years. It was also shown that the highest level of education was a secondary level (44%) followed by primary level (33%), tertiary level (13%) and informal education being 10%. Most guardians were peasants (62%), 30% housewives and 8% civil servants. Majority of the guardians were Banyankole (59%) followed by Bakiga (33%) and other tribes 8%. As shown in Table 1 below.

Table 1: summary of socio-demographic data

Variables

Child's Age (years)	**Frequency (61)**	**Percentages (100%)**
1-2	25	41
3-2	17	28
5	19	31
Child's gender(sex)		
Males	28	46
Females	33	54
Guardians' education		

Informal	6	10
Primary	20	33
Secondary	27	44
Tertiary	8	13
Guardians' occupation		
Peasants	38	62
Housewives	18	30
Civil servants	5	8
Tribe		
Banyankole	36	59
Bakiga	20	33
Others	5	8

4.2 common forms of Undernutrition in HIV infected children

Table 2 shows that 95% of the children had a normal weight for Age according to the Uganda guidelines of Integrated Management for Acute malnutrition 2016, which 32 were females, 26 were males and 5% were Underweight with 2 males and 1 female.

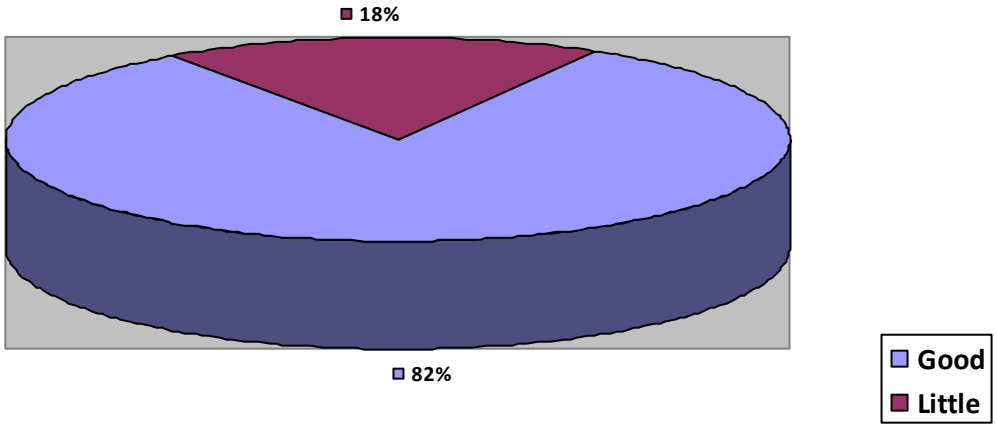
Table 2: Weight for Age

YEARS	Males and weights	Females and weights	Percentages (100%)
1	11 normal	2 normal	21
2	9 normal	3 normal	20
3	1 normal	10 normal	18
4	5 normal	1 underweight	10
5	2 underweight	17 normal	31

4.3 Guardians' awareness of Undernutrition

In the study 82% of the guardians had good knowledge about Undernutrition and 18% had little knowledge about Undernutrition in HIV infected children.

Figure 1: Pie chart showing Guardians awareness of Undernutrition



4.4 Management protocol for Undernutrition in HIV positive children

The table below shows that majority of the respondents take their children to health units (79%) for management of Undernutrition while 21% preferred home based management.

Table 4: Shows management protocol for Undernutrition

Management protocol	Frequency (61)	Percentages (100%)
From health units	48	79
Home based	13	21

CHAPTER FIVE

This chapter presents the discussion, conclusion, recommendations and dissemination of the study in the line with the objectives.

DISCUSSION

5.1 Common forms of Undernutrition

In this study using the z-score in data analysis, there were 3 children which were less than -2SD and the overall prevalence of Underweight was 5%, this is almost 3 times less than 16% Underweight prevalence for children under 5 years living with HIV as reported in the 2015 UDHS (WHO,2015). However the UDHS report 2015 of 16% was a national report including HIV infected children and non-infected children. This is due to increased population in the region and increased standards of living.

5.2 Mothers' awareness of Undernutrition

The study indicated that a large percentage of 82% of the respondents had good knowledge about Undernutrition i.e. signs, symptoms and the likely causes, with 18% having little knowledge i.e. knew signs and symptoms but couldn't tell the likely causes, the 18% little knowledge is less than the 54% ignorance reported by UDHS 2016. This is because the UDHS 2016 report was for the whole western region and my study was a health centre based.

5.3 Preferred management protocol for Undernutrition in HIV positive children

The guardians were asked whether they had heard about RUTF in the hospital management of Undernutrition in HIV positive children, and 79% of the respondents confirmed that they had heard about it and they prefer their malnourished children to be managed with that form from the

health units. However, 21% preferred managing their children from home without getting to the health unit, this 21% is less than the 72% of women and 80% men who were willing to care for any family member with AIDS at home by buy fresh vegetables and increasing the diet of such members as it was reported by the UDHS 2011. This is due to the work that was done by the millennium development goal to improve maternal and child health up to 2015.

CONCLUSION

Prevalence of Undernutrition in HIV aged 1-5 years is high and majority of the children are underweight with Moderate Acute Malnutrition. Underweight can be considered as a measure to predict both acute and chronic malnutrition in the HIV positive children.

Some HIV positive caretakers still have inadequate knowledge about Undernutrition in their children.

Some people are lacking knowledge about the management of Undernutrition in HIV positive children.

RECOMMENDATION

More screening of Undernutrition should routinely be performed to identify the risk group, with different degree of Undernutrition so that proper interventions can be taken in the management by WHO regimens in order to reduce mortality due to Undernutrition.

The Government of Uganda should train and employ health workers so that mothers can acquire adequate knowledge about Undernutrition in HIV positive children.

The ministry of finance and economic planning should add more money in the operation wealth creation programmes to provide income activities even to the housewives in different homes.

Involving the community in health programs so that the local people can have a feeling of ownership and actively participate in health activities, this will increase the number people attending health services.

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APPENDICES

Appendix I: Informed Consent For The Study Participants

My name is SSESANGA GODFREY, a Diploma student at Kampala International University western campus, School of Allied Health Sciences. I am carrying out a research to determine the prevalence of Malnutrition among HIV positive children aged 1-5 years attending the ART clinic of Bushenyi Health Centre IV, Bushenyi District.

You are therefore invited to participate in the study, note that it is your right to decide to participate in the study or not to participate.

Your cooperation in answering these questions will be highly appreciated and your refusal to participate will not interfere with the services you are getting currently at the Health Centre.

If you accept to take part, you will be asked some questions in regard to the topic, there will be no procedures or tests done on you.

There are no risks anticipated in this study however, the interviewer will take few of your minutes.

You are assured that the information you will provide will not be linked to you directly and your personal details will not be revealed to any person.

No follow up is required after the study for more information contact the researcher through telephone (0706650968).

I conform that this study has been explained to me and all the questions satisfactorily answered to me by the interviewer, I am happy and free to take part in the study

Name of the Mother.....

Signature…….

Appendix II: Questionnaire

Dear respondent, your requested to answer the following questions and your answers will be treated with a lot of confidentiality.

Code number……

Instruction

Tick the right option

SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTIC OF THE PARTICIPANTS.

Weight of the child……. (kg)

How old is your child?

a) ……. years

What is your child's gender/sex?

a) Male ☐

b) Female ☐

What is your occupation?

a) Pleasant ☐

b) Farmer ☐

c) Housewife ☐

d) Others (specify) ……

Is the child's mother alive?

a) Yes ☐

b) No ☐

What is your tribe?

☐

a) Munyankole

b) Mukiga ☐

c) Others (specify) ……..

What is your education status?

a) Informal education ☐

b) Primary level ☐

c) Secondary level ☐

d) College/University level ☐

SECTION B: MOTHER'S AWARENESS TO MALNUTRTION IN HIV POSITIVE CHILDRENS.

1) Have you ever heard about malnutrition?

a) Yes ☐

b) No ☐

2) If yes, how can a child become malnourished?

a) Through take unboiled water ☐

b) Through poor feeding ☐

c) Others (specify) …….

3) How can you tell that the child is malnourished?

a) Through visible muscle wasting ☐

b) Others (specify) …….

4) What will you do if you realize that your child is malnourished?

a) Manage from home ☐

b) Go to the Hospital ☐

c) Go to the clinic ☐

d) Visit a clinic ☐

e) Others (specify) …….

5) Can malnutrition be cured?

a) Yes ☐

b) No ☐

6) How can you protect your child from getting malnutrition?

a) Through eating a good diet ☐

b) Through immunization ☐

c) Others (specify) ……...

SECTION C: THE COMMON FORM OF MALNUTRITION.

i. What is the common forms of malnutrition

a) Under weight ☐

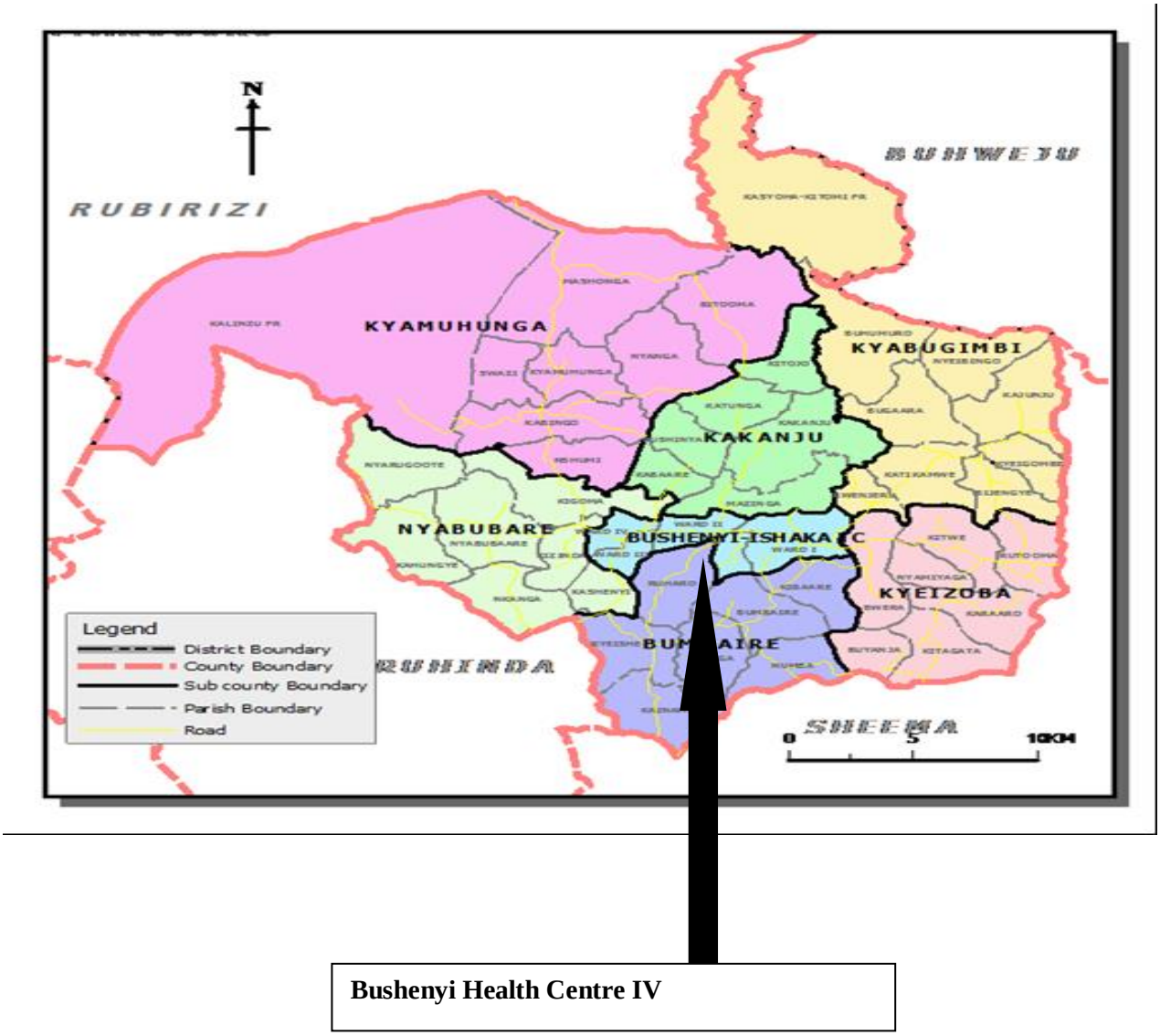
b) Obesity ☐

c) Others (specify)……

Conclusion:

Thank you for your cooperation and response, please if you have any questions or opinions you may raise it.

Appendix III: MAP OF BUSHENYI DISTRICT AND THE NEIGHBOURING DISTRICTS



Bushenyi Health Centre IV

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