NUTRITION TRAINING INTERVENTIONS FOR MOTHERS FOR COMBATING MALNUTRITION AMONG CHILDREN IN MALAKAL COUNTY, SOUTH SUDAN

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2010/X/HD/214/MVP

A RESEARCH THESIS SUBMITED TO KYAMBOGO UNIVERSITY GRADUATE SCHOOL IN PARTIAL FULFILMENT FOR THE REQUIREMENT FOR A MASTERS DEGREE IN VOCATIONAL PEDAGOGY OF

KYAMBOGO UNIVERSITY

OCTOBER 2013

DECLARATION

I JACKLINE SIMON YATA hereby declare that the dissertation for the masters of vocational pedagogy at Kyambogo University, here by submitted by me , has not previously been submitted for a degree at this or any other university and that it is my own work in design and execution .



4/11/2013

APPROVAL

This thesis was developed by our student Jackline Simon Yata under our supervision and it is now ready for submission to the postgraduate school with our approval.

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DEDICATION

I dedicate this master's thesis to my husband who supported me financially and morally, daughters, and sons and to my mother who love and take care of my family in the presence and absence from home during this course. And also to my friends for the encouragement and support throughout the course. God bless you all

ACKNOWLEDGMENT

First I want to thank very much the Norwegian Government through the NOMA programme for sponsoring my education at the Masters level at Kyambogo University in Kampala. I would like to point out the contribution of Professor Dr. Nilsson Lennart, Dr live Mjelde and Dr Richard Dally and Mr. Borg for their guidance and lecturing during this learning process in NOMA. I send special thanks to my supervisors Associate Professor Habib Kato. And Mr. Ali Kyakulumbye for their supervision in the study process.

I further extend my gratitude to all the programme mentors of masters in vocational pedagogy course for their vigorous and constant guidance during the expeditions and writing of the mini project; I appreciate the hard work of all NOMA masters students for the great support and significant group reflection during the presentation, writing of mini project, research proposal and up to this writing of final thesis.

Special thanks to UNICEF organization in Malakal for their close collaboration and support in sharing their programme documents and facilitating site visits. I appreciate the staff of Malakal pediatric hospital, Saut al Mahabba Radio Station for their cooperation during the process of data collection in the field, and similarly extend my gratitude to all the respondents especial the FGD of mothers.

Last but not least, I extend my sincere and heartfelt appreciation to my family and mother for their moral and financial support during this study period.

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LIST OF ACRONYMS

WFP	-	World Food Programme
FAO	-	Food and Agriculture Organization
ANC	-	Ante-Natal Care
UNICEF	-	United Nations Children's Fund
MUAC	-	Mid-Upper Arm Circumference
SMOH	-	South Sudan Ministry of Health
NGOs	-	Non - Governmental organizations.
PHCC	-	Primary Health Care Centre
IYCFT	-	Infant and Young Child Feeding Training.
USAID	-	United State Agency for International Development
IYCN	-	Infant and Young Child Nutrition
MDGs	-	Millennium Development Goals
MM	-	Mother to mother support group
FGD	-	Focus group discussion
ICRC	-	International committee of Red Cross
CHWs	-	Community Health Workers
FHAs	-	Farm Home Assistants
GOSS	-	Government of South Sudan
WHO	-	World Health Organization
ACF	-	Action Against Hunger

ABSTRACT

The purpose of the study was to assess the nutrition training interventions for mothers for combating malnutrition among children in Malakal County, South Sudan. The data collection methods employed in the study were qualitative in nature; and the research instruments used were interview guide, Focus Group Discussion (FGD) guide and the observation checklist. Results showed that, there were various development partners in designing training intervention programmes for mothers in South Sudan; these included; the Government of South Sudan (GOSS), UNICEF, and NGOs with UNICEF taking the leading role. The results also revealed, that the measures used in mitigating malnutrition in Malakal County include; community sensitizations, awareness, promotion of exclusive breastfeeding and support for breast feeding mothers: encourage pregnant mothers to attend Ante natal care (ANC) visits and hygiene promotion. During the study I realized that, the training was helpful in making mothers aware and responsive to the challenges posed by malnutrition, however the training alone would not be sufficient enough to combat the problem of malnutrition, without empowering mothers with means to earn in order to afford the diet. In regards to the findings the following recommendations were made: that nutrition education needs to be added in the school curriculum so as to empower future mothers and fathers with malnutrition preventive measures. Nutrition training curricula in South Sudan should be modularized according to the needs of mothers. The training should be flexible in accordance with the existing lifestyles of the people of South Sudan and pedagogical approaches to vocational training. Nutrition training curricula for mothers should be made more practical; it should use more of the visual teaching aids such as diagrams, posters, demonstrations, videos recordings, models, role playing, models cooking classes and audio visual communication rather than the usual theoretical approaches to teaching and learning. Public private partnerships (PPPs) with other stakeholders and sectors such as agriculture, health, education, media and NGOs should jointly carry out training so as not to send mixed or contradictory messages. In line with pedagogical approaches, nutrition training for mothers should be conducted in learning groups and teams so that the difficult learning tasks are shared and understood by all; tools, equipment and materials should be sufficient and up-to-date; given the cultural and gender power relations in Africa and South Sudan, where men traditionally control resources and are assumed to be the bread winners, they should also be involved in the training.

CHAPTER ONE: INTRODUCTION

1.0 Malnutrition problem in South Sudan

1.1 Background to the Study

The most common malnutrition syndromes are Kwashiorkor and Marasmus, they are known to be rampant in the developing world. Kwashiorkor and Marasmus are common in under-five years in South Sudan as indicated by (Harvey & Rogers, 2007);

Prevalence of acute malnutrition in children under five years in the Republic of South Sudan is one of the highest in the world– approximately one out of every five children suffers from moderate to severe acute malnutrition (wasting). The prevalence of acute malnutrition among this age population in South Sudan is almost twice as high as in other parts of Sudan. A Case where Kwashiorkor and Marasmus are prevalent in children under-five years, they often culminate in death or retarded growth or improper mental development as pointed out by (WHO, 2009). Under-nutrition is associated with at least 35% of child deaths. It is also a major disabler preventing children who survive from reaching their full developmental potential (Anil, 2011).

The leading cause of death in children under- five years old in developing countries is protein-energy malnutrition (PEM). According to (Kreißl, 2009) protein energy malnutrition is characterized by growth failure and continues to be a severe health problem in children in developing countries. This type of malnutrition is the result of inadequate intake of calories, proteins, vitamins, and minerals (Müller& Krawinke ,2013).The authors also indicate that, apart from marasmus and kwashiorkor (the 2 forms of protein– energy malnutrition), deficiencies in iron, iodine, vitamin A and zinc are the

main manifestations of malnutrition in developing countries. Children who are already undernourished can suffer from PEM when rapid growth and disease infections increase the need for these essential minerals or trace elements.

Health complications due to poor diets and inadequate nutrient intake are becoming more and more prevalent in society. There are benefits of having organized public health nutrition programmes where people are properly informed on the critical issues of health and nutrition (Kragenbrink, 2010) . One of the principal aims of nutrition education must therefore be to provide people in rural and urban areas with adequate information, skills and motivation to procure and to consume appropriate diets. Such education covers improvement of family food supplies and more efficient utilization of available food and economic resources to provide nutritious diets and better care for the most vulnerable groups of the communities (UNESCO, 1987).

For a while now, the Republic of South Sudan has been placing effort such as increasing local nutrition knowledge and building capacity with extensive training, adequate hygiene practices and use of safe water sources towards mitigation of acute malnutrition amongst men, women and children, being aware that the concern could threaten the productivity of its citizens. (Mugerwa ,1981) indicated that many world authorities and national governments pay a lot of attention to proper nutrition because malnutrition perpetuates itself and is a formidable deterrent to the progress of a nation; as such, pregnancy or infant malnutrition has resulted into mental retardation in adulthood. This is in line with Harveys & Rogers (2007) who indicated that, malnutrition also brings extremely significant disadvantages to health, cognitive development and educational achievement, and ultimately affect the potential for economic development.

The Government of the Republic of South Sudan in conjunction with development partners joined hand in 2010 to mitigate the chronic malnutrition in children under-five years old despite the increasing cases of acute malnutrition reported in health centers daily (ICRC,2012). The mitigation efforts come in many forms in various communities however, one questions the effectiveness of these interventions given that the global acute malnutrition (GAM) indicators in the Republic of South Sudan are continuously shooting upward (UNICEF, 2013).

1.2 Background of Health Care in South Sudan

Decades of civil war severely impacted negatively on South Sudan's health infrastructure and health indicators. Even after the signing of the Comprehensive Peace Agreement in 2005, the country still had a poor health infrastructure, which affected the health services delivery. To make the situation worse, poor road networks makes the delivery of services and monitoring even more challenging. With all these challenges, the Government of South Sudan has stepped up her efforts and started rebuilding the healthcare system based on the vision of provision of community and essential healthcare services accessible to all the population WHO (2011).

Surveys conducted in 2006 and 2010 across the country by federal of Ministry of health, federal central of statistic and they have reported grim epidemiological and health status indicators. Integral to these poor health indicators is the inadequate existing health infrastructure and system, shortage of basic health services, and shortage of qualified health personnel to provide quality health services and to train health care workers (Lomoro, 2011).

Whilst this lack of skilled personnel applies to all healthcare professions, it is particularly inadequate among Medical Doctors. The development of a doctor-led progressive health care service requires an active and well-funded Medical Training programme at all levels of the health sector, especially at the primary health level. At present this does not exist at all levels of the health care system, and there are limited trained specialized doctors to provide comprehensive health services (Lomoro, 2011).

It is for this reason that the Ministry of Health is planning a structured and sustainable Postgraduate Medical Training programme with the assistance of government and several development partners; it will also support the development of Mid-level Training programmes. Already the St Mary's-Juba Hospitals link has, together with other partners, assisted technically in the establishment of the Juba College of Nursing and Midwifery and this will be replicated in Wau and Malakal. It is expected that over the next 4-5 years, the St Mary's Link Programme will support the training of at least 52 medical specialists within the 15 main medical specialties, so that they can lead local structured training programmes (Lomoro, 2011).

1.3 Contextual Background to the Study

Malnutrition in South Sudan is a serious humanitarian issue. In 2007, nearly 1,800 children were admitted to the Médecins Sans Frontières (MSF) therapeutic feeding centre (TFC) for malnutrition in Greater Upper Nile (MSF, 2008). Malnutrition rates follow seasonal patterns, but MSF is seeing acute malnutrition even during the months following harvest (September to November). Routine nutritional screening of children under five seeking medical care showed high severe malnutrition rates: 2.3% in Nasir, 2.3% in Leer, 3.8% in Lankien and 4.1% in Pieri. An improved level of access to health care services, a

trend that must be encouraged to continue, may explain the increasing number of under-five children for whom medical care is sought MSF (2008).

According to survey (2010), Malnutrition among children below the age of five years has increased the risk of mortality in South Sudan. The details of the findings further indicate that one out of three children below 5 years in South Sudan is stunted (35%), one out four wasted (23%) and 28% are underweight. infectious diseases such as pneumonia, diarrhea, malaria and measles are likely to be among the leading causes of under-5 mortality in South Sudan.

A general lack of food in the region is another concern. According to GOSS (2008) intermittent floods destroy parts of harvest. Besides fields lie unplanted because of the presence of unexploded ordinances, further decreasing food availability in the area. The return of internal displaced people (IDP) and refugees following the peace agreement has also increased the pressure on already-scarce food stocks MSF (2012). Food prices in the market have risen noticeably threatening to deteriorate this situation further.

1.4 Personal Experience

I am a graduate of Ahfad University for Women in Sudan, Faculty of Family Science which has three option or areas of specialization, that is to say, Food and Nutrition, Community Health and Food Technology. My first degree was in Food and Nutrition, where I was awarded an Honors Bachelor's Degree. From the period 2001 to 2002, I worked as a nutrition officer in Ibrahim Malik Teaching Hospital. My job specification doing activities related to nutrition management such as determining all main meals, conducting nutritional clinics and work in supervising the main hospital kitchen. I was trained on job and completed a programme for four weeks at ADRA therapeutic feeding

Centre and also another four weeks in Islamic organization in the area of Child Nutrition which included; immunization against the six killer diseases, control and treatment of diarrhea by using ORS, prenatal care for women, daily round meals provided in relation to diet therapy. In addition, I had a training period from 1st June to 30th July 2000 in Ibrahim Malik Teaching Hospital which included antenatal care. In 1999, I also attended a workshop organized by Oxfam on HIV/AIDs education and awareness programme. Today am a student of Masters of Vocational Pedagogy at Kyambogo University Uganda in cohort two sponsored by NORAD. I was motivated to join the Masters in Vocational Pedagogy to acquire the skills of teaching and training and conduct research in the field of vocational education in order to participate in the individual and community development. Pursuing this course adds teaching to my educational background as a nutrition officer. I will be able to train women in the field of food and nutrition using appropriate pedagogical approaches. After completing this course, I intend to work for community based organization with the intention of training trainers to go out and reach the women at the village level, to have a healthy family and be job creators in order to eradicate poverty as pointed out by the (Kyambogo University , 2009) program which states that;

> *The master's programme in Vocational Pedagogy will be a high quality international programme in the area of vocational education and training. It will build capacity for training in public and private sectors and develop a positive attitude towards skills and competence of students in the partners and universities in the field of vocational pedagogy, economic development, and gender human rights. The programmme has inbuilt themes that address key issues related to poverty reduction strategies and*

human rights. The programme will rhyme with the practical fields from which the student trainees originate (p.5).

Thus Vocational Pedagogy helps the individual to be better problem solvers in the modern changing world and better group workers.

1.5 Problem Statement

Malnutrition is one of the chronic diseases in developing countries with common symptoms of kwashiorkor and marasmus that are prevalent among infants. Malnutrition may lead to growth retardation, improper mental development or even culminate into death in severe cases (WHO, 2009). According to my knowledge and personal experience in the field of food and nutrition points to the fact that the causes of malnutrition are due to insufficient food intake, lack of a balanced diet that contain important nutrients like minerals and vitamins to meet daily nutritional requirements leads to malnutrition. From my two year experiences in Vocational Pedagogy, the nutritional training interventions offered to the mothers with malnourished children in South Sudan seems to lack motivation and uses inappropriate teaching methods. Then South Sudan Ministry of Health (SMOH) indicates that there is an increase of malnutrition among children in South Sudan despite the training of mothers conducted by the Government and NGOs. The major challenges of the Government of South Sudan remains the need for an entirely developmental approach in building up the health training system to address the health needs of the population, especially women and children. Routine nutrition screening of children less than five years seeking medical care showed severe malnutrition rate. It is on the basis of these challenges that the researcher has set out to establish the nutrition training interventions for mothers to reduce malnutrition among children, the measures in place to reduce malnutrition and nutrition training options for mothers to reduce malnutrition among children in Malakal County.

1.6 Purpose of the Study

The purpose of the study was to assess training interventions for mothers to reduce malnutrition among children in Malakal County in South Sudan.

1.7 Objectives of the study

i. To identify the nutrition training interventions for mothers to reduce malnutrition among children in Malakal County.

ii. To establish the effectiveness of nutrition training intervention for mothers in reducing malnutrition among children in Malakal County.

iii. To establish other critical measures put in place to reduce malnutrition among children in Malakal County.

iv. To establish appropriate training options for mothers to reduce malnutrition among children in Malakal County.

1.8 Research Questions

i. What nutritional training interventions were done for mothers to reduce malnutrition among children in Malakal County?

ii. What was the effectiveness of the nutritional training intervention for mothers in reducing malnutrition among children in Malakal County?

iii. What measures were put in place to reduce malnutrition among children in Malakal County?

iv. What were the training options for mothers to reduce malnutrition among children in Malakal County?

1.9 Scope of the Study

1.9.1 Geographical Scope

This study was conducted in Malakal County in Upper Nile State in the Republic of South Sudan (map 1: Appendix 111). The state borders White and Blue Nile rivers to the North; Ethiopia to the East; South Kordofan and Unity States to the West and Jonglei State to the South.

1.9.2 Content Scope

This study was limited to the training of mothers in food and nutrition and the prevalence of malnutrition; training interventions for mothers being carried out and determining the most appropriate training for curtailing the prevalence of malnutrition and measures put in place to reduce the prevalence of malnutrition.

1.9.3 Time Scope

The study covered the period of malnutrition prevalence from 2008 to 2012 in Malakal County, and the study duration was 7 months, that is from April to October 2012.

1.10 Significance of the Study

This study would help in improving the training of mothers in the field of food and nutrition. The findings would be useful for authorities and development partners in designing appropriate measures and training to control malnutrition. The outcomes of this research would also help other researchers as a literature to be used when doing research in the field of nutrition.

1.11 Justification of the Study

Malnutrition has effects on the growth and development of an individual. It also weakens the body immune system particularly in young children making them susceptible to other diseases. Malnourished children often have more difficulties at school than their counterparts, and most grow into adults with reduced cognitive and physical ability making them less productive and less able to provide for their future families. This study is participating in the fight against malnutrition, and uplift the health of mothers and their children in Malakal County and the Republic of South Sudan generally.

1.12 Limitations and Delimitation of the Study

This study was constrained by the insecurity in Malakal County. This delayed my research because I postponed some appointments. However, to solve this constrain I made sure to get security Clarence from the local authorities before going to the concerned study area.

The researcher found difficulties in communication (language). This was a problem because most people in Malakal speak Arabic, Nuer and Shiluk. This was overcome by getting research assistants that helped in translating the findings to English language.

This study was delimited to the training of mothers in food and nutrition for mitigation of malnutrition among children in Malakal County, South Sudan.

1.13 Conceptual framework

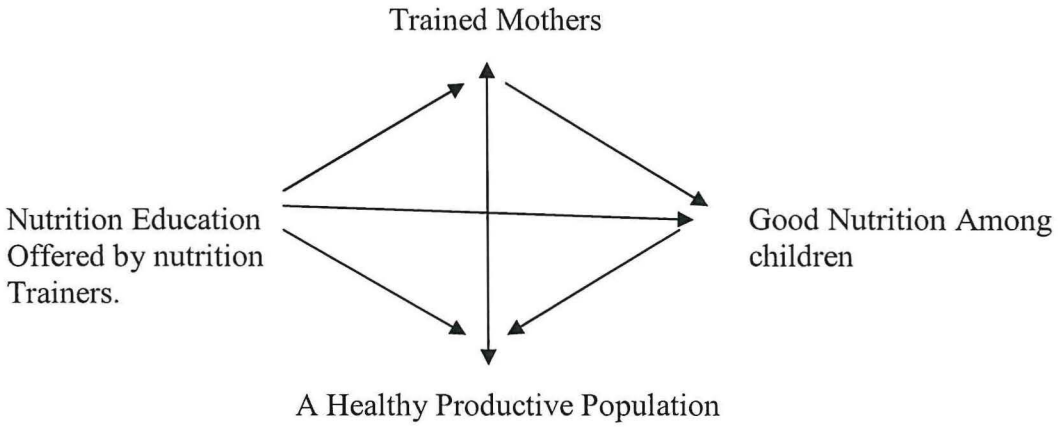


Figure 1: Conceptual Frame Work for Nutrition Education and Nutrition Practices

Figure 1 shows that when mothers are well trained the results is good nutrition among the children which can also help to reduce malnutrition rates, consequently this lead to a healthy reproductive population and reduces malnutrition, the nutrition education trainers design model for the mothers to be trained.

1.14 Definition of key operating terms

Nutrition: The process by which living organisms take in and use food for the maintenance of life, growth , and the functioning of organs and tissues.

Training: It is a learning process that involves the acquisition of knowledge, sharpening of skills, concepts, rules, or changing of attitudes and behaviors to enhance the performance of employees.

Nutritional training is the basic knowledge given to a person about nutrients and their deficiencies which have an impact on the health condition of an individual.

Malnutrition: Disturbance of form or function arising from deficiency or excess of one or more nutrients.

Prevalence: common at a particular time, in a particular place, or among a particular group of people.

Intervention: the act of becoming involved in a difficult situation in order to change what happen.

Kala Azar : *a* chronic and potentially fatal parasitic disease of the viscera (the internal organs, particularly the liver, spleen, bone marrow and lymph nodes) due to infection by the parasite called Leishmania donovani.

1.15 Organization of the report

This report has five chapters. Chapter One comprising of the background to the study, personal experiences, historical background and contextual background, the problem statement, purpose, objectives and the scope of the study; Chapter Two has literature review from different scholars; Chapter Three introduces the methods of data collection, Chapter Four has the presentation, and interpretation of the findings and discussion; Chapter Five has the summary, conclusion, recommendations and the way forward. In general the format of this report has been guided by the American Psychological Association format (APA).

CHAPTER TWO: LITERATURE REVEIEW

2.1. Introduction

This chapter discusses literature related to the nutrition training interventions for mothers to reduce malnutrition among children in Malakal County in the Republic of South Sudan. It also discusses critical measures to reduce malnutrition and appropriate training for curtailing the prevalence of malnutrition.

2.2. Nutrition Training Interventions

Malnutrition contribution to 60% of the 10 million deaths globally that occur every year among children under five years of age Government of India (2006). It is the most important risk factor in the burden of disease in developing countries, causing long-term detrimental consequences, such as impaired cognitive development, growth impairment, and poor academic performance. Children most at risk are those aged less than five years (Mwangome et al., 2010).

According to (Haddad et al. , 2002) there has been an increase in the prevalence of malnutrition in Africa, which means that the goal set to reduce the levels of under nutrition by 50% between 1990 and 2015 may not be met. However, studies have also shown that the use of health education as a component is rarely sufficient on its own and that adequate knowledge is not always translated into appropriate actions (Mwangome, et al., 2010) , understanding the factors that determine the translation of adequate child health and nutrition knowledge into appropriate action might help design more effective interventions against malnutrition.

The primary objective of a nutrition intervention programme is the nutritional improvement of the target group. This may be measured by dietary, biochemical, clinical, anthropometric and biophysical indicators. These indicators indicate different stages of nutritional status of a population (Andrien, 1998).

Nutritional status is a complex phenomenon which is influenced by many factors external to an educational intervention (Masset et al., 2011). The time frames within which different indicators are affected by interventions differ. The nutritional objectives should, therefore, be defined with short term and long-term objectives. According to (Andrien, 1994), an educational programme is basically designed to change behaviour within the long-term objective of improving nutritional status provided the other external factors that influence nutritional status are favorable; for example, improved food production, availability of food and improved health facilities.

The specific objective of a nutrition education program is to obtain lasting changes in the behaviours affecting nutritional status. Adoption of new behaviours depends on many factors external to the communication programme (Ismail et al., 2003) intermediate objectives are those concerned with changes in motivation, knowledge, self-efficacy, preferences for particular behaviours and the skills required. These objectives are the independent outcomes - the promoters of the intervention must attend to these, in spite of external factors (Andrien, 1994).

For the communication (is the activity of conveying information through the exchange of thoughts, messages, or information, as by speech, visuals, signals, writing, or behavior) program to be effective and bring about lasting change, it must focus on exposing the target population to the messages, and on the retention of the messages on their part. In

the field of communication, the methods are as important as the apparent results (Schall & Becker, 1996).

Communication must focus attention to the character of knowledge; there exist different types of knowledge and different ways to organize it (Nilsson 2007a). Knowledge about knowledge is a fundamental issue while organising training or when developing a training programme, it seems very useful to organize content in three different groups; over-view knowledge, relational knowledge and detailed knowledge (Nilsson, 2007a).

Focusing on the character of Knowledge while carrying out the training in both approaches as supported by Nilsson (2007a) above, helps forge lasting attitudes among the population. For example, two communication programs can achieve the same objective of message retention.

According to Valdencanas (1991) nutrition education is a complex intervention that is often tailored to the needs of the people. Any nutritional intervention must begin with the clear identification of the nutrition problem which is to be addressed i.e. what is this problem? How is it manifested? What population is affected? What will it impact on the social, economic and cultural life of the population concerned and where it is a priority public health problem? Trainers of community health workers in nutrition often have different educational backgrounds such as medicine, nutritional science, nursing, and midwifery to mention but a few (Andrien, 1998). Although all trainers have the necessary knowledge about nutrition, they often do not have enough knowledge about teaching methods that can facilitate learning. This is so because they have not been trained to be teachers. Thus, a good doctor, a good nurse, or a good nutritionist is not necessarily a good trainer as well (WHO; 1986). Trainers of community health workers often have no formal training in teaching.

Therefore, it would be appropriate that, before starting to teach, all trainers should learn the basic principles of teaching, formulating a curriculum, and planning a lesson. They must also know the advantages and disadvantages of the commonly used teaching and learning methods and Aids (WHO, 1981).

2.3 Nutrition Education and Training

2.3.1. Imparting Skills

Community health workers have to acquire certain skills to perform the tasks required to provide health care to the community. In nutritional care, for example, community health workers have to perform tasks such as weighing children to monitor their growth, identifying children who are at risk of becoming malnourished and advising mothers on how to feed young children (WHO, 1986). To do any one task well, the community health worker must first understand why the task is necessary and therefore he or she needs to be acknowledgeable and must learn the skills needed to carry out that task WHO (2007).

2.3.2. Nutrition Education Based in the Community

According to Mason et al. (1999, 2001), the language and conceptual framework for nutrition education needs to have meaning in each cultural context. In vocational learning and teaching, the important thing is that no one exists without her/his social background and without her/his intentions, and believes. It is important to communicate also in terms of expectations. People need to be known to each other (Nilsson, 2008). Activities should therefore be planned and implemented by an assisted group of community members rather than by technical experts who are not members of the community. Learners can

best learn through good regular and consistent instructor to learner interaction (teacher-learner relationships). In situations where the instructors have enough one on one time with their learners there is higher possibility for learners to comprehend from their experienced instructor (Mjelde and Daly 2006), and this can be best done if members from that particular take on their own training.

Another breakthrough in nutrition education was the recognition that active involvement of community members is necessary to improve nutritional status because eating patterns are complex phenomena influenced by multiple social, economic and cultural factors. According to (Andrien, 1994), the transformation of social conditions such as improvements in community sanitation, water supply and food availability requires collective awareness, commitment and participation.

The persons on the teaching position need to be responsible members of the community who care about the community as well as the well-being of all the member of the community and are willing to do anything to bring about behavior change. As supported by Nilsson (2008) that, the person in learning position is in need of confidence that the one in position to give help is willing to give help in order to support the productive task and team organization in the frame of vocational training.

According to Freire (1970) collective awareness refers to the process of critical thinking generated by the Freire method which assists people to think in their own terms and speak in their own active voices. Through this consciousness a group discovers the historical roots and socio-economic and political relationships that affect their lives. Arousing consciousness leads to active learning. In this case active learning refers to a method of training which involves the learner in different activities that contribute to the acquisition of skills and knowledge. Active learning involves three aspects: the cognitive,

the emotional and the psycho-motor and the learners are not passive listeners but instead they ask questions, discuss, practice, read and do other activities. This implies that the learner is involved in making decisions regarding the learning process (Freire, 1973).

2.3.3. Use of Lecture Method

A lecture can be used to provide a broad-brush overview or introduction of a topic, particularly where the educational goal is for the learner to acquire a background familiarity with the subject Leamon (2002). With experience most trainers develop an effective way of lecturing. There are useful suggestions for giving effective lectures. For example to find out how much learners already know, because what trainees already know determines what they can learn next (UNESCO, 1987).

In the course of the lecture it is good to use visual aids, such as a blackboard, charts, slides, or photographs to explain certain ideas. When properly used, visual aids can create interest in the subject among the trainees and can break the monotony of the lecture. The trainers should speak in as simple language as possible so that all the trainees understand everything said. However quite often, persons training to become community health workers have a poor educational background and therefore may have difficulty in understanding and interpreting difficult words. According to Nilsson (2008) a professional language is necessary in order to ease communication between learner and learner, learner and tutor.

2.4. Critical Measures for Reduction of Malnutrition in South Sudan

2.4.1 Food Preparation Training at Nutrition Centers

A group of volunteer women of experience and influence such as grandmothers are recruited from within the community to help in the training of mothers. Nilsson (2007) argues that; in vocational pedagogy if learners are to do something or manufacture something they need help in terms of a person who knows how to do something. It means that the learners need a person as a model for his/her actions as a person who gives instructions and explain in a dialogue what to do, how to do and how to act in difficult situations. Nilsson (2008) adds that; a professional language is necessary in order to communicate between learner and learner, learner and tutor.

The training process called for mothers with children under 5 years to bring ingredients and watch the grandmother preparing their child's food at the health house kitchen, supervised by a nutritionist. The nutritional value of locally available foodstuffs, their incorporation in a child's meal, proper cooking techniques, and the importance of growth monitoring were among the subjects discussed at these training sessions. In schools girls were trained at the school kitchen by their teacher and by a nutritionist (Mlekkafzali, 2000).

2.4.2 Demonstration of Diet

Model mothers groups are made up of volunteers who accept to teach other mothers on good nutrition habits. Demonstration approach is part of a community outreach strategy aimed at improving nutritional practices in rural areas, make the best use of foods that

they can easily find in the market, such as eggs, groundnuts, maize, flour, vegetables, sugar, salt, local fruit and others UNICEF(2008).

In this context, vocational pedagogy; its main aims are the learners should learn through "learning by doing" as one learns best when is involve in an activity (Kyambogo University Booklet, 2008).

In Malaysia teachers are perceived as role models for the children, whereby the school teachers are trained to implement the nutrition education activities both in and outside the classroom (Shariff, 2008).

According to Shariff (2008) trained class teachers carry out intervention education over a 6-week period. The intervention comprises of six nutrition topics of Food pyramid, Functions of food, Food choices, Breakfast, Snacks, and food Safety. Each topic was taught for 1 hour per week during the Health and Physical Education lessons. A teaching module for teachers was developed and it contains nutrition information relevant to each topic and instructions for implementation. The teachers attend a two-day training session conducted by researchers on the use of the teaching module. They were also provided with knowledge, skills and relevant resources required for effective delivery of the intervention topics.

2.4.3 Home Preparation of Other Complementary Foods In South Sudan

A culture of a civilization is based upon its accumulating heritage. The dietary habits of people show an aspect of this civilization's culture, South Sudanese cooking is as diverse as its geography and cultures. After having established their basic cooking, they tend to

the development of complementary foods e.g. appetizers, desert and other foods, which allows for the emergence of a distinct cooking.

In South Sudan, the abundance of rivers, lakes and swamps has made the people in these regions dependent on fish for their food. A popular dish is a stew named (Kajaik), which is cooked of dried fish. It is added to the porridge, which common throughout Sudan, (Aseeda) is made of sorghum. Sometimes natural margarine is added to the mixture (Sudan embassy, 2005). In Equatoria, (Aseeda) is made of (Bafra) which is a plant of the same family of potatoes. To the (Aseeda) is added a green vegetable called (Mouloukhiya) with peanut butter (Sudan embassy, 2005). In other tribes like Dinka, children under the age of five, have their diet restricted to cow's milk, although porridge is sometimes introduced sooner (Groves, 2011).

2.4.4 Home Gardening

Promotion of home-grown vegetables is encouraged as an important strategy of alleviating malnutrition (FAO&WHO.1992). Local agricultural authorities determine the type of vegetables suitable for local cultivation and mothers should be encouraged to plant the vegetables at home, using seeds and fertilizer provided by the same source.

The Government of Malawi attempted to swiftly mitigate the effects of vitamin A deficiency when the problem was identified a decade ago (Malawi Ministry of Health, 1990) by advocating for increased intake of vitamin A through the production and consumption of horticultural crops with high carotene contents. Production and consumption of crops such as beet root, carrot, papaya, and leafy vegetables such as

marasmus are encouraged as a method of intervention to increase vitamin A intake in Malawi (Babu, 2000).

(Government of Malawi, 1990), agricultural extension services could provide a major vehicle for nutrition education. The female extension cadres of the Ministry of Agriculture, the so-called Farm Home Assistants (FHAs).

Farm Home Assistant has the main responsibility for the nutrition education programme which is oriented largely to female farmers. Efforts have been made to involve male farmers in nutrition education programmes by extending the messages through the male extension staff. The Government of Malawi published a guideline book on nutrition education to be used by the extension staff and subject matter specialists in the rural areas. Vitamin A related messages are included in the guidelines. A specific manual for prevention and control of vitamin A deficiency has also been prepared (Ayoade, 1990).

2.4.5 Increasing Production and Intake of Foods at Household Level

According to Lopriore & Muehlhoff (n.d), food-based interventions focus on food which may be natural, processed or fortified form, or a combination as the primary tool for improving the quality of the diet and for overcoming and preventing malnutrition and nutritional deficiencies. This approach recognizes the essential role of food for good nutrition and the importance of the food and agricultural sector for supporting rural livelihoods.

In addition to the nutritional value of food, this approach of food-based interventions also recognizes the social significance of food and stresses the multiple benefits derived from enjoying a variety of foods. The approach encourages and equips people to consider their

total diet in relation to their preferences, individual lifestyle factors, physiological requirements and physical activity levels. In so doing, it can contribute to physiological, mental and social development, enhance learning potential, reduce nutritional disorders and contribute to the prevention of diet-related diseases later in life.

2.4.6 Expanding Chances for Work

Arrangements were made with the relevant authorities to increase the number of carpet-weaving working places, enhancing the opportunity for work and income generation (Sheikholeslam , 2004).

Infant and young Child Nutrition project, (IYCN, 2009) promote low cost measures for improving nutrition in Lesotho. Despite the benefits of nutrition practices that save lives many communities are not aware of them or do not have access to programs that can help them. Mothers urgently need nutrition education and support to overcome barriers and use good nutrition practices.

According to IYCN project, firstly, three days each week, mothers bring their children for meals at the feeding programme and they observe the different types of nutritious food prepared by the foundation for their children. Then, once each week the mothers learn to cook healthy meals. Community Health Workers (CHWs) facilitate the cooking sessions. Community Health Workers only use equipment the mothers already have in their own urban homes and use ingredients that the mothers can easily obtain and afford (IYCN, 2009).

2.4.7 Hygiene Promotion for Development

Safe hygiene can greatly improve health Hygienic practices reduce diarrhea, acute respiratory infections such as pneumonia and influenza, worm infestations and infections of eyes and skin. Ten studies showed that hand washing with soap could cut the risk, by an average of 23%, of upper respiratory infections which are the biggest killers of children under five (Curtis, 2001). Hand washing with soap reduces diarrhea, the second leading cause of death in children, by around 45%. The Disease Control Priority Project (DCPP), in which hundreds of specialists are involved, lists hygiene promotion as the child mortality intervention with the greatest effects at the lowest cost (Sijbesma, 2008).

The relationship between the identified Millennium Development Goals (MDG's) and development is shown in Table 1. However, the value of hygiene promotion goes beyond health benefits. Table 1 shows how the eight (MDGs), which have been adopted by almost all countries in the world South Sudan inclusive, are all related to good hygiene and its promotion. Table 1 clearly shows that either directly or indirectly hygiene promotion supports all the Millennium Development Goals. However, to improve health, some hygiene practices are more important than others.

Table 1

The Millennium Development Goals (MDGs) and the relevance of hygiene promotion)

No	MDGs	Relationship with hygiene /hygiene promotion
1.	Eradicate extreme poverty and hunger	Households with less WASH-related disease lose fewer working days and have fewer expenses related to illness. Households' productive use of water surplus and composted waste improves nutritional status and reduces poverty.
2.	Achieve universal Primary education	Less diarrhea, respiratory infections and worm infestation improve school attendance and learning performance. Girls' school attendance is influenced positively when they can use toilets. Providing for privacy and hygiene for older girls during menstruation is very important.
3.	Promote gender equality and empower women	Better education for women and girls is related positively with smaller family size and higher income, a higher status of women, better hygiene practices and health.1 All this, in turn, benefits maternal and child health and poverty reduction.
4.	Reduce child mortality rate	.Hand washing with soap, improved water quality and excreta disposal reduce diarrhea by about 45%, 17% and 36%respectively. Hand washing by midwives and mothers may reduce neonatal mortality by 25% and 60% respectively.
5.	Improve maternal health	Nutrition and health are improved by fewer diarrheas, fewer worm infections and the use of surplus water for food and income from kitchen gardens and animal breeding.
6	Combat HIV/AIDS,	Control malaria, and other diseases and keeping water points and drains free from stagnant water reduces breeding places for malaria-transmitting mosquitoes, especially in areas where surface water is scarce. Good hygiene reduces the risk of chronic diarrhoea in HIV/AIDS infected persons and keeps them healthier.
7.	Ensure environmental sustainability	Environmental sustainability means that improving access to safe water and sanitation must go together with hygienic use and maintenance of toilets and water.
8.	Develop a global partnership for development	Although not mentioned in the targets for this goal, cooperation among hygiene promoters and local industries, shops and masons has been shown to be important for the adoption of hand washing with soap and sanitary toilets.

Source: (Sijbesma, 2008)

2.5 The Potential of Vocational Pedagogy in Training for Curtailing Malnutrition

Proper nutrition education has been shown to be effective in Asia and Africa, for example, where community-based intervention was conducted with the aim of increasing awareness, incentives and self-reliance through training. According IYCN (2009) considerable changes were observed in the practice of child-feeding, management of diarrheal diseases and personal hygiene. After the education proper child nutrition is further evidence of the effectiveness of appropriate nutrition education intervention.

Education on proper nutrition has caused changes in mother's feeding practices. Optimal breastfeeding, complementary foods, frequency of feeding, appropriate amount and density of food, good care practices, active feeding, food hygiene, personal and environmental hygiene, child supervision and care and caring behavior. At the same time mothers are practicing good health care such as immunization, breastfeeding during child's illnesses, early management of diarrhea and fever at home, and seek professional medical help early. Hence health and nutrition trainer should have the ability to counsel mothers regarding feeding problems, ability to communicate health education messages effectively, ability to give correct health information and dispel myths , ability to refer malnourished children to appropriate feeding center (Kabahenda, 2002).

In Malaysia teachers are percived as role models for the children (Shariff, 2008). They are trained to implement the nutrition education activites both in and outside the classroom. In the Republic of South Sudan, however the teacher role is yet to reach the standard of other countries through training that emphasizes the protection of chlidren. Thorough and thoughtful planning for training of nutrition educators improves the likelihood that desirable outcomes will result. In the best of all worlds there would be

time, money, facilities, willing and capable volunteers, good channels of transportation and communication, co-operative government, and well-established organizational structures in which the trainer could operate. In the real world, this is often not the case and many barriers exist that cannot be overcome even by the most careful planning.

Nevertheless, careful planning coupled with the flexibility to modify plans to overcome barriers is likely to achieve more than unplanned efforts. The content of training sessions should be partially determined by the experience of the selected nutrition educators. While subject matter must be provided to prepare credible educators, educators must also be prepared to communicate their messages effectively.

Nilsson (2011) observes that vocational competence through training in school and many years of work experience in the world of work. He further mentioned that certification of training and professional ethics and use different knowledge.

CHAPTER THREE: MATERIALS AND METHODS

3.1 Introduction

The study was conducted in Malakal County in the Republic of South Sudan. The study was carried out to identify and assess the nutrition training interventions for mothers, to establish the critical measures put in place to reduce malnutrition among children and to establish appropriate training options for curtailing malnutrition.

3.2 Study Area

This study was conducted in Malakal County in Upper Nile State because the rate of malnutrition situation still above the WHO emergency cut off as shown in figure 2 (GOSS, 2008). Upper Nile state borders White and Blue Nile to the North; Ethiopia to the East; South Kordofan and Unity States to the West and Jonglei State to the South. The state comprises of 12 counties namely: Renk, Melut, Manyo, Fashoda, Malakal, Panyikang, Maban, Maiwut, Baliet, Nasir and Longuchok. Malakal has five administrative payams namely Northern, Central, Southern, Lelo and Ogod. Malakal town hosts the state headquarters and it lies on the Eastern bank of White Nile River. The main inhabitants of Malakal belong to Shiluk ethnic group with increasing numbers from other ethnic groups particularly the Nuer and Dinka. The main sources of livelihood in the area are employment and trade since it is an urban setting. The population of Malakal town which includes Central, Southern and Northern Zones (Malakal Survey Report, 2008) was estimated at 129,626 inhabitants. The population of Southern zone which the study focused on was estimated at 42,500 inhabitants. The official results of the recent census are yet to be released.

3.3 Research Methods Used

This study was carried out using the qualitative approach with a descriptive design. According to (Amin, 2005) a qualitative researcher seeks to describe findings that promote greater understanding of how and why people behave the way they do. This approach helped to explain and gain deeper insight and understanding of phenomena through intensive collection of narrative data. The study method used was based on the study objectives. I chose the qualitative approach for this study because I was interested in understanding the reasons as to why there is high rate of malnutrition amongst children despite the nutrition training interventions for mothers in Malakal in the Republic of South Sudan. I carried out fieldwork to collect data in order to get an in-depth understanding of the problem and make adequate qualitative interpretations.

3.4 Study Population

In this study the target population included the nutrition coordinators, and nutrition officers both in the Ministry of Health in Malakal County, Communication for Development officer, health and nutrition specialists and the health nutrition officer in UNICEF organization, nutrition workers and nurses from the therapeutic feeding center in Malakal teaching hospital and mothers from Malakal Community. I chose this population because of their knowledge on the prevalence of malnutrition and mothers' nutritional training interventions in the Republic of South Sudan.

3.5 Sampling

Out of the targeted study population, samples of respondents were obtained by a purposive sampling technique to obtain 3 Nutrition Officers, and 3 Nurses, a Development Officer, a Health and Nutrition Specialists and 3 Nutritional Workers from the Hospital. A random sampling technique was employed to obtain 9 trained mothers and then a purposive and a snow ball sampling was used to obtain 3 Nutrition Coordinators, a social worker was acquired by snow ball sampling technique. Total sample size was 24 respondents instead of 25 because one of the respondents who is a nutrition coordinator at the Ministry of Health had gone to Khartoum and had been blocked from travel due to the political unrest. I made use of purposive sampling basing on my understanding of information of the group that was to be sampled and having in mind that these respondents had the knowledge I required (Amin, 2005) . Gender was considered, that is, both male and female were selected for this study. Random sampling was used to obtain mothers because the population of mothers that fit the required profile for the study was higher than needed by the study, and it was therefore appropriate to randomly pick the respondents without bias.

3.6 Target Population and Sampling Technique

Out of the targeted study population, respondents were obtained by the following random sampling techniques listed below:

Table 2:

Number of the target category and the sample size selected for the study

Target Population	Sample Size	Sampling Technique
Nutritional Coordinators	3	Purposive Sampling
Nutritional Officers	3	Purposive Sampling
Health and nutrition Specialists	1	Purposive Sampling
Nutritional Workers (Hospital)	3	Random Sampling
Mothers	9	Random Sampling
Nurses	3	Random Sampling
Development officer	1	Purposive Sampling
Social worker	1	Snow ball Sampling
TOTAL	**24**	--

3.7. Methods of Data Collection

In this study, I used interviews, observation, and documentary analysis. The instruments and tools employed were interview guides, focus group discussions (FGDs) guide, observation checklist and documentary analysis, recorder and camera.

3.7.1 Interview Guide

The interviews were held with the help of open-ended questions in semi-structured interview guides (Appendix 1 section B and C). The interviews were held with people in the Ministry of Health, Nutrition Coordinators, Nutrition Officers, Health and Nutrition Specialist, hospital nutrition workers and nurses. The researcher used the interview method because it is a face to face direct interaction with the respondent that builds good relationship between the interviewer and the interviewee, and hence brought out the

information required in the study from the respondent with the consideration of ethical issues. Hence the In-depth interview method was used across all the three objectives of the study. Interviews are good to help in gathering data in which I agree with Amin (2005, p 178) that interviews are particularly appropriate when dealing with all types of persons

3.7.2. Focused Group Discussion

This approach was used to collect data from the mother respondents in the community. Focus group discussions helped the researcher to get different views from the group and it saved time as well. It also encouraged mothers to reflect on their training practices and sharing their ideas that enabled the researcher to probe further into the information provided so as to gain elaborations from the respondents. The FGDs were carried out using the interview guide (Appendix 1 section A).

3.7.3 Direct Observation

I used the direct observation method to observe tools and materials used in the training of mothers and their interaction with the trainers. A camera and a recorder as a complement to observation, was used and enabled me to capture some data in form of pictures that could be analyzed once again from different points of view. An observation check list was used that helped me record my observation on a daily basis in the form of data observed, it also helped me assess the progress of the field work done. This technique also cut across all the three objectives of the study.

3.7.4 Documentary Analysis

Document source was used and document literature was obtained from the NGOs working in Upper Nile state, internet, newspapers, magazines and library sources. These actors had records and documents about the malnutrition and community needs assessments information. The technique also cut across all the three objectives of the study.

3.8 Data Quality Management

3.8.1 Validity

According to Odiya (2009) the validity of an instrument refers to the ability of the instrument to collect justifiable and truthful data. The researcher carried out the initial test among the Masters in Vocational Pedagogy students of Kyambogo University to assess whether the designed instruments were grammatically correct and sensible; they were then tested by answering the research questionnaires by the supervisors before applying them in the field.

3.8.2 Reliability

Odiya (as cited in Burns, 1997) described reliability of an instrument as its ability to collect the same data consistently under similar conditions. The test for the instruments reliability was done in Malakal in the Republic of South Sudan before the researcher started the collection of data to ensure the consistency of the instruments.

3.9 Data Collection Procedure

3.9.1 General Procedure and Ethical Issues

The research started with a proposal as a guide for the whole process of the study. An introductory letter was obtained from Kyambogo University to be presented to the relevant authorities in the study area. While in Malakal, the official letters for permission were processed by Ministry of Health. I made the first visit to the research location to familiarize myself with the different research locations. Pretesting of research tools was carried out as apriority before going to the field to collect data. Pretesting of the tools was done in order to find out whether they were valid and reliable. The interview guide provided me with structure for data- collection and the log book records provided direction and record of what I had observed and carried out. The first steps were to collect relevant literature about Malnutrition and training Interventions for mothers from the secondary documents available after which I proceed to collect the primary data.

This study put consideration to related ethical issues during the data collection process. The confidentiality of the respondents was protected. Participants were informed in advance of the overall purpose of the study and assured that this study was for academic purposes. I kept a good relationship with target centers, relevant authorities and the respondents for the success of data collection during the field work.

3.9.2 Establishing of Nutrition Training Intervention for Mothers (objective 1)

To identify and assess the nutrition training interventions for mothers I visited South Sudan Ministry of Health (SMOH), UNICEF headquarters and mothers in the community. At the SMOH I established the status of malnutrition from government

records and identified the government initiatives, both physical and policy directed towards helping mothers alleviate chronic malnutrition in their communities.

UNICEF being a big player in helping children all over the world, South Sudan is one of the countries enjoying these benefits. I therefore visited UNICEF to establish their view of the prevalence of malnutrition, their mandate in nutrition and to establish the role they are playing in helping mothers to help their children, to identify and assess the nature of nutrition innervations and identify interventions put in place to curtail malnutrition in children under-five years

At hospital Level I looked for the practitioners' view of all kind of interventions being carried out by all players (governmental or non-governmental) and cross checked with the responses given by respondents at the SMOH. I collected data for Objective I using interview guide and focus group discussion (Appendix 1 section A, B and C).

3.9.3 Establishment of the Effectiveness of nutrition Training Intervention for Mothers (objective 2)

To establish the effectiveness of nutrition training interventions for mothers. For this objective, I gathered data by observing the mothers attending various nutrition training interventions at the health centers, training centers and the community-based training sessions; particularly the use of training tools, materials and training method (Appendix II section C).

3.9.4 Critical Measures to Reduce Prevalence of Malnutrition (Objective 3)

To establish critical measures put in place to reduce prevalence of malnutrition in Malakal, I visited communities, health centers and training centers. I also visited homes;

community centers to establish all kinds of critical measure players are putting in place to help mothers in Malakal. I visited therapeutic feeding centers, health centers as well as Malakal pediatric hospital health centers to establish measures they both put in place to curb malnutrition in Malakal County in South Sudan. I employed interview guide in Appendix II section A to collect data related to Objective 2.

3.9.5 Appropriate Training Options (Objective 4)

I employed the interview guide in Appendix III section A in order to collect information to establish appropriate training options for curtailing the prevalence of malnutrition in Malakal County. I visited the various training centers in communities, homes and hospitals and attended the various training sessions being conducted by various players. I engaged in dialogue with mothers who attended the training as well as those who did not attend to assess their understanding of the problem. I visited and observed mothers' homes for both those who had attended the training as well as those who did not so as to assess if the training had brought about behavior change in the lives of the mother who had attended the training.

I critically analyzed the training programme in hygiene promotion and assessed how the programme is logically organized, the content, and the intended methods of delivery as well as the times scheduled for the training in comparison with the actual training.

3.10 Data Processing and Analysis

As the data was raw, it was processed qualitatively and by description. It was further processed by breaking down the information received from the respondents for interpretation objective by objective. After the field work, 1 reflected daily on the data

critically following the research objectives set. Cohen and Manion (2009) asserted that "the data collected is known to be raw information and not knowledge by itself and therefore has to be organized in various stages. In this case, the data collected from the interviews was transcribed, sorted out according to the emerging themes, coded, analyzed and discussed.

CHAPTER FOUR: FINDINGS AND DISCUSSION

4.1 Introduction

In this chapter, I present the findings of the study conducted in Malakal County, assessing the relevance of the nutrition training interventions in reducing malnutrition prevalence in South Sudan. For a systematic flow of this chapter, the presentation, analysis and interpretation of findings are in line with the three research objectives. Instead of using the names of the respondents codes were attached using numbers.

4.2. Nutrition training interventions for mothers to reduce malnutrition among children in Malakal County

4.2.1. Background

In an effort to mitigate rampant malnutrition, the Government of South Sudan (GOSS) focuses on limited curative services for common illnesses in children but emphasized preventive measures to minimize occurrence of illnesses such as malaria, parasite infestation, running stomach that accelerate the effects of malnutrition. The SMOH service elements to mitigate these illnesses are: (i) first line curative interventions for malaria; (ii) oral rehydration therapy (ORT), Co-trimoxazole and albendazole for enteric, skin infections, and for de-worming; (iii) Training mothers on how to feed their children, and various preventive measures.

4.2.2 Training programmes for Mothers (objective 1)

4.2.2.1 Interventions by UNICEF

Appendix I instrument was used as a guide to identify the nutrition training interventions for mothers being carried out in Malakal County.

There were various players in designing intervention training programmes for in, mothers in Malakal County, South Sudan; and these include GOSS, UNICEF, and NGOs with UNICEF taking the leading role. Interventions by UNICEF were Malakal County stated as follows;

> *Proper nutrition helps to give every child the best start in life. UNICEF has worked from its founding on nutrition programming aimed at fulfilling every child's right to adequate nutrition. UNICEF is committed to scaling up and sustaining coverage of its current high-impact nutrition interventions in the programme areas of: (1) Infant and Young Child Feeding; (2) Micronutrients; (3) Nutrition Security in Emergencies; and (4) Nutrition and HIV/AIDS. UNICEF is committed to a life-cycle approach, to using partnerships and to creating and enhancing integrated interventions to maximize effectiveness, such as combining vitamin A supplementation with other accelerated child survival interventions through Child Health Events.*

Nutrition training interventions for mothers in Malakal County were carried out in various forms, levels and institutions. The first and most common intervention was carried out at health centers; aiming and focusing on mothers with malnourished children, other mothers were trained on how to administer a good diet so as to help the children recover quickly, prevent other diseases from attacking the vulnerable child and how to prevent future malnutrition occurrences. The various scattered health centers have cadres

from both Government and non-Governmental Organization with UNICEF taking the leading role. This type of intervention was mainly curative and caters for cases that were already faced with the problem. Thus, it was not very effective in preventing malnutrition. In a FGD with mothers, mother 1, a mother from Malakal pointed out the problem arising from the few and scattered nature of health centers as follows;

> *The hospital and health centers are few and scattered and some mothers have to walk very long distances to reach them while other mothers are too far to go at all. In fact some chronically malnourished children of such mothers who live in communities very many kilometers far from the health centers die on their way to hospital.*

Hence, the health centers are not accessible to many mothers with malnourished children. Action Against Hunger (ACF) South Sudan undertook a nutrition survey in Malakal southern zone area in April 2007. In addition, it has been conducting nutrition sentinel site surveillance in Malakal on a quarterly basis since March 2008. The results of the sentinel site surveillance assessments have indicated Global Acute Malnutrition (GAM) rates above emergency malnutrition thresholds as shown in figure 2. Emergency threshold: Mortality rate above which an emergency is said to be occurring.

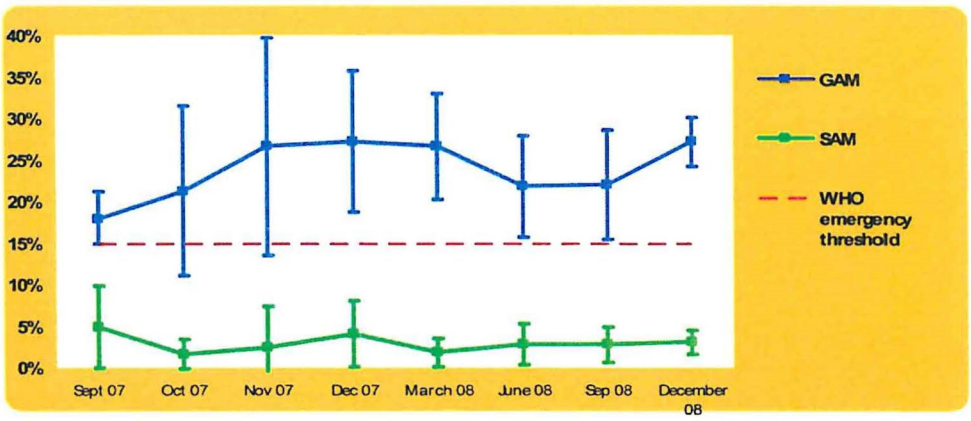


Figure 2; Malnutrition Rates.(adapted from ACF) Nutrition Anthropometric Survey Children Five Years of Age (2008,p.4) by Kutondo,E. Rop, J.Biar,G.

The sentinel results show that Malnutrition remains and will continue to be the single biggest contributor to child mortality in South Sudan if not vigorously mitigated. This perception was supported by a detailed qualitative and quantitative analysis by Mohamed Ag Ayoya, who is a nutrition specialist at UNICEF, Sierra Leon, who stated as follows;

> *Recent trend estimates show that by 2015 (the target year for reaching the MDGs) there will be more malnourished children than they are today in 32 countries in the world, most of which will be in sub-Saharan Africa.*

According to Ayoya (2007) most strategies are focusing on dietary and curative measure yet to tackle malnutrition one needs to take into account the affordability of the diet which meets nutritional requirements. He stresses that education campaigns which fail to tackle the economic constraints on families may achieve small gains, but these are insufficient to eradicate chronic malnutrition, and recognize that focus on economic constraints alone will not address entirely this problem either.

According to the trainers, nurses and the nutritionists from the SMOH "the effects of chronic malnutrition are irreversible beyond the age of 24-36 months". Attempting to quantify the extent to which households could afford to feed appropriately their children under the age of 5 years, good diet remains unaffordable for large proportions of the populations in South Sudan. Therefore, many children do not receive the frequency of feeding and dietary diversity they need due to poverty amongst the populations.

The intervention at the health care centers was single faced. I saw the pediatricians willing to give and giving the instructions and mothers receiving the instructions. Usually

mothers do as they are told without asking why. This method is very efficient in dealing with the overwhelming numbers of patients. The zeal and willingness to give help by the pediatrician was commended by Nilsson (2008) who argues that,

> *The person in learning position is in need of confidence that the one in position to give help is willing to give help in order to support the productive task and team organization in the frame of vocational training.*

However the mothers might never learn how to deal with their own problems as supported by Freire (1973) who says,

> *People should be assisted to think in their own terms and speak in their own active voices. Through this consciousness a group discovers the historical roots and socio-economic and political relationships that affect their lives.*

In this case the mothers were passive listeners, they do not ask questions, do not discuss nor participate in any activities. Thus mothers continue to depend on health centers for the same complications because they haven't been empowered to find their own solutions.

4.2.2.2. Community Based Training

The second most common intervention was the training established at community level in South Sudan. Community based programmes and sessions are organized by both government and non-governmental organizations, UNICEF still taking the leading role. Usually some mothers are approached and told about the training, while for other mothers, announcements are passed on the radios as well as on the public address systems regarding when and where the training will be carried out. The training provides opportunity for mothers' awareness on control measures for malnutrition and other

tropical diseases including Kala azar and hydrated disease, schistosomiasis and trypanosomis through identification, reporting and empowerment to control them. In a focus group discussion (FGD) with mother 3 it was established that;

> *The training usually was conducted in business hours so it's sometimes impossible to attend for some of the mothers. It usually covers a third of the day so mothers with relatively bigger families cannot attend because they have to prepare both breakfast and lunch for their families. And in some other cases husbands do not allow their wives to leave home, clamming that such assemblies will make their wives stray from their responsibilities.*

It is therefore important that programme developers design other training interventions that target for mothers who cannot leave their home in the morning hours as well as those who can't leave at all.

4.2.2.3. Mother to Mother Support Group (MMSG)

The third and biggest training intervention was the mother to mother support group. The Mother-to-Mother Programme was originally launched by as a health and nutrition education framework in South Sudan in which mothers with special nutrition training assist their peers and provide support in parenting skills. Mother to Mother is implemented in four phases of training:

a. Watching experienced mother to mother implement the intervention in an inspiring manner, learning how to approach a family and build trust;

b. Attending training innervations that cover nutrition; basic child health care including weighing of babies and completion of growth charts; and how to

encourage depressed mothers to be more active and engaged with their children.

c. Learning how to help mothers bond with their children and improve the consistency of healthy daily routines.

d. Implementing their first round of home visits independently in their neighborhoods.



Plate 1: participants showing the steps on mother to mother support groups

In Plate 1, above, a participant was demonstrating to the mothers the steps of how to implement the mother to mother support group practically using writing a board and manila card teaching materials.

An essential part of the intervention was for the MMSG training intervention to create a respectful and caring relationship with the mother. According to mother 1from Malakal

town (a mother and trainer in the MMSG programme), mothers have found that changing behavior is not possible without such trusting relationships. This is in line with Nilsson (2008) who reported that mutual friendly relations are the wanted frame situation for giving and using help as a learning strategy in vocational training. Mother 1 continued to confess that,

> *The MMSG has developed coping mechanisms which have made it possible for me to raise healthy children; the key component in this intervention for me was sharing these coping mechanisms with other mothers.*

The mechanisms in the MMSG included initiating and maintaining breastfeeding; hygiene promotion; introducing solids correctly; feeding frequently, creating good sleeping habits; providing organization, discipline and structure in the home; protecting the child from sources of infection and accidents; and seeking care when needed.

The mother to mother support group mode of intervention was appropriate in mitigating malnutrition prevalence in Malakal in the Republic of South Sudan, as testified in a FGD; the mothers in Malakal indicated that;

> *A successful intervention will see the child gaining weight rapidly until fully rehabilitated, with a significant decrease in episodes of infection. With a healthy growing child the incidence of maternal depression will decrease and the bonding between mother and child will improve (FGD with mothers Malakal 2012).*

The same FGD continued to confess that;

> *Before the war people had enough food for the children, they used to go to the field and cultivate and bring food to the family but this cannot happen now*

because there is insecurity in Upper Nile. This makes people to fear; otherwise with the knowledge we have acquired we would go back to the field and cultivate our own food than to depend on the relief food which is only sorghum and sometimes lentils and oil. With this food we can only prepare our local meal, eat one or two meals only a day, which is breakfast and supper.

As a result, the citizens were uncertain whether or not the war will re erupt, and for that reason the people of Malakal shy away from all kinds of long term production or investment which increases house hold food insecurity in the region, thus leading to chronic malnutrition among their children.

There were community based training programmes organized by the Government of South Sudan with the support of UNICEF targeting mothers, pregnant women and young women preparing them for safe mother hood. These programmes were focusing on good feeding, food preparation, hygiene promotion and dietary issues focusing on prevention and mitigation of malnutrition amongst pregnant mothers and their unborn children.

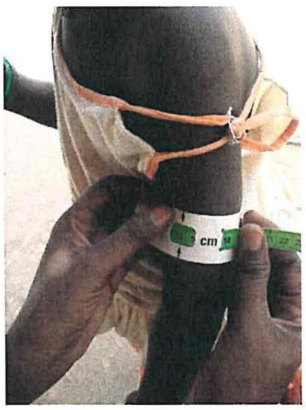


Plate 2: The facilitator is demonstrating to mothers how to measure Mid-Upper Arm Circumference (MUAC).

Mid-upper arm circumference is one of the materials mothers use in the field to identify the malnourished children in their locality.

The trainers in MMSG included nutritionists from the SMOH as medical personnel, UNICEF and medical personnel and resource persons from the NGOs e.g. Goal organization, while others were experienced mothers from the community. WHO (1986) pointed out that,

> Trainers of community health workers in nutrition often have different educational backgrounds such as medicine, nutritional science, nursing, midwifery to mention but a few. Although all trainers have the necessary knowledge about nutrition, they often do not have enough knowledge about teaching methods that can facilitate learning.

This was so because they have not been trained to be teachers. Thus, a good doctor, a good nurse, or a good nutritionist is not necessarily a good trainer as well.

4.2.2.4. Media

The Media intervention was also a common training method or strategy for mothers with malnourished children as well as an avenue to prevent malnutrition in the Republic of South Sudan. Various radio programmes have been designed to reach mothers through radio stations. These programmes articulate some malnutrition preventive and curative descriptions for mothers. The radio programmes were sponsored by the SMOH and other various licensed organizations such as UNICEF and other NGOs.Sister Elena a Catholic nun, who works in a media organisation Saut al- Mahaba- Voice of Love stated as follows,

> *Nutrition problems are tackled through various radio programmes. I founded a programme in Malakal County with the help of UNICEF in which ideas on how to cure and prevent malnutrition are suggested to the mothers e.g. not to give food to children under 6 months. She added that the highest prevalence of*

malnutrition in children is at the post breast feeding stage because of lack of enough food to feed their stomach; this is when they become malnourished, in this regard to we have also developed programmes to educate mothers on how to cultivate simple food crops and other money generating activities.

Supported by IYCN (2009), the programme encourages mothers to protect their children by giving them additional breast milk if they are younger than six months, or breast milk, food, and other fluids if they are older.

This method of intervention had the capacity to reach various mothers and other members of the community in Malakal as well as the neighboring counties. It would be such an effective method because people had a tendency to believe what they listen on radio but for an area like Malakal County where most families had no radio sets and even for the families that own one men carry them to their work places. Therefore, for one to carry out such a campaign on radio one had to consider such challenges.

4.3 Effectiveness of Training Programmes(objective 3)

4.3.1 The Training Programmes for Mothers Developed by UNICEF

Some of the training programmes targeting mothers were designed by UNICEF with the help of the SMOH while some had been designed and packaged for other countries. As these programmes had been successful in other countries, UNICEF borrowed them for use in the Republic of South Sudan. The training manuals contain training materials and handouts to enable facilitators to rapidly prepare training for different levels of mothers. The manuals also served as a resource for self-directed learning by both trainers and others involved in supporting or managing the training interventions. The training

packages were mainly aimed primarily at trainers who need to know how training fits into the malnutrition intervention strategies.

The programmes created awareness on malnutrition. The programmes included: exclusive breastfeeding immediately after birth until six months, hygiene and sanitation, save mother hood, early marriages, basic education, entrepreneur skills, and other primary health care solutions. These programmes are being implemented by various stake holders ranging from Government to nongovernmental organizations. Sister Elena, a presenter at Saut al Mahabba radio said;

> *Women in rural areas appreciate the opportunity of receiving all this kind of education and she believes that, encouraging the girl child to take part of this kind of training will help in reducing malnutrition.*

In a FGD, nutrition officers said;

> *It has been observed that mothers' interest in their children's sickness has improved; when the child is sick they take him/her immediately to the health care center. However due to the far distances of some villages to the health center, some of these children die on their way to the health center.*

In a FGD with Mothers Support Groups, the mothers said;

> *In general training has been pertinent in teaching mothers on how to best bring up a child in a good, healthy and clean environment, as well as helps them learn how to breast feed their children and prepare special food for them.*

In spite of other prevailing challenges such as economic constraints, scattered health care centers the UNICEF training programmes had made some mothers aware of the malnutrition prevalence within their communities, causes, symptoms and some mitigation strategies within their reach.

4.3.2 Community Based Training

I carried out observation by attending various community-based training sessions to observe how the training was conducted in various training centers and three out of four were hygiene promotion under the SMOH. While in the session I observed that, the instructors make appropriate introduction of hygiene promotion and labored to made mothers understand the boundaries of various terminologies such as Health Promotion, Hygiene Education and Public Health Promotion, Sanitation, Approaches and Methods. Some of the terminologies were quite complex for mothers to comprehend; and the instructors also found it challenging to translate the difficult terminologies in the local language for the mothers to understand. In some places the instructors required translators which made it even more challenging for the instructors to interact with mothers. Yet;

> *Learners can best learn through good regular and consistent instructor to learner interaction (teacher-learner relationships). In situations where the instructors have enough one on one time with their learners there is higher possibility for learners to comprehend from their experienced instructor.* (Mjelde and Daly, 2006)

This, however was not very visible in the first session due to lack of a common language between the instructor and the mothers.

I attended another community based training in Malakal County and I observed the top down approach to teaching and learning and during the training the following training methods were observed;

> *Theoretical in case where the trainer introduced a terminology and explained it, instruction in cases where the instructors told mothers what was required of them, and this theoretical method accounted for 80% of the session:*
>
> *Demonstration was applied in cases where mothers were shown on how to detect a malnourished child using weighing scales, rulers and a tape measure. This theoretical method accounted for less than 5% of the total session.*
>
> *Group discussion: this method accounted for approximately 15% of the session, and in this method mothers shared their experiences with one another. This was the most interactive and most interesting segment of the training session.*

The observed mix of training methods could be good for adult learning as supported by Musyoki (2012) who observed that;

> *A judicial mix of several training methods is good for adult learning. Theoretical methods are used as a first step in enlightening the trainees on key fundamental concepts. Demonstrations and hands on practices are good during the training to compliment the theory learnt. Meaning that Participants must be shown first how and supported in doing return demonstrations.*

The trainings in Malakal County were conducted through plenary presentations, drama and group discussions.

The main language used during the training in Malakal was local Arabic which was not known to some, although there was a translator to translate for those who do not

understand it. Most of the mothers were from Shilluk, Nuer and Dinka tribes who were pastoralists and fishermen, and had low literacy skills. A translator was very important in this case. However, this might not have been sufficient enough for effective learning and retention as indicated by Nilsson (2007) who states as follows;

> *If learners are to do something, or put in practice what they have learnt, they need help in terms of a person who knows how to do something. The learners need a person who gives instructions and explain with good dialogue what to do, how to do and how to act in difficult situations.*

Nilsson (2008) adds that;

> *A professional language is necessary in order to communicate between learner and learner, learner and tutor.*

It was therefore very important that the language of the instructors was known to the mothers, or the language of the mothers was known to the instructors that the learning process can effectively achieve its overall goals.

The community based training in Malakal was based on a particular programme or curriculum as well as conducted on preset time table. The time table had sessions and breaks during and after each session. This was a good element according to Nilsson (2009) who stated as follows;

> *One of the most important elements in the human/task activity is rhythm and periodicity; no human being can exist without periodicity and rhythm. We need to adapt the organization of work and learning to the reality that a human is not a mechanical construction without these needs. This means that the schema of*

the day has to be adapted to important variation related to human beings and to the surrounding contexts.

This means that the mothers' biological, mental and social needs were satisfied.

During my earlier interview with the trainers, nutrition officers and health and nutrition specialist indicated that the tools and materials which were used during the training included posters, mosquito nets, flipcharts and markers plus note books, pens, other visual aids, questions and answers. However, while I attended the community based training, I observed that the trainer was giving a lecture without using any of the above mentioned tools and materials as they had indicated. (UNESCO, 1987) stated that,

In the course of the lecture it is good to use visual aids, such as a blackboard, charts, slides, or photographs to explain certain ideas.



Plate 3: Mothers were in a training session with a lady trainer and a male translator in a health centre.

Plate 3 above indicates the nutrition officer giving health education without using tools and materials, while next to her is the assistant helping her to translate from Arabic to the local language. This means that without the appropriate tools and materials the training will not be effective helping to retain the content or later on transform.

The training usually lasts for only three days due to; limited government resources and time for the participants and as indicated earlier, the training was a short term intervention. Yet Andrien (1994) stated that;

> *Nutritional status is a complex phenomenon which is influenced by many factors external to the training. The time frames within which different indicators are affected by interventions differ. The nutritional objectives should, therefore, be defined with short-term and long-term objectives.*

This was not the case with community based training programmes in Malakal. The programme only highlights short term intervention strategies without any long term intervention strategies.

4.3.3. Health Centers

During the study at Malakal Pediatric Hospital, I found out a take home brochure with a variety of foods was issued to the mothers as shown in Plate 4. First and foremost the brochures were in Arabic with images of the types of foods appropriate to feed their children. I find this approach inappropriate, because it may not help the mother who can't afford to buy any of the food items. Besides, the mothers may not even read the instructions of admiration which were in Arabic and English.

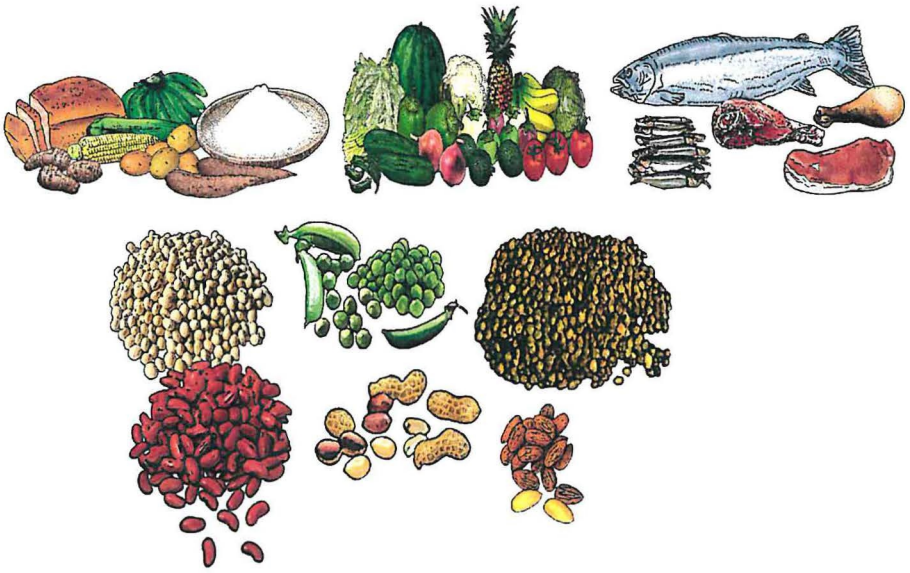


Plate 4: Food groups. From (adopted from WHO"Training Course on the management of Severe Malnutrition"(p.19) by WHO Printed with Permission

Most of the nutrition education activities that have been implemented within the health centers focus on face to face contact with the mothers of malnourished children. It is usually a one way transfer of information. The other factor is that Nutrition messages were considered as a cure for nutrition problems. A common example was when I visited Malakal feeding center where the pediatrician was nutrition officer telling the mothers to give more fruits and vegetables, to breastfeed their children and teaching them the different types of food groups. These might not be very effective messages for a number of reasons because; it only made use of one way of communication where not much was heard from the mothers' perspectives

In my opinion the training intervention might continue to be lame because Nutrition education focused on the promotion of individual behavior change rather than encouragement of active community participation as supported by Nilsson (2008) who reported that everyone has equal right and equal responsibility to acquire an education independent to which sex each has.

The training pays little attention to the people's social and cultural context. All interventions in my opinion should be built on indigenous knowledge about local foods and food preparation and promoting healthy eating patterns as supported by Babu (2000). In all the training sessions I attended none of them addressed the issue of traditional and socio cultural practices that might be accelerating malnutrition amongst the people of Malakal. It has also been observed that;

It is also important to document and disseminate the information on the success of indigenous food plants in nutrition interventions. International agencies, such as FAO, have already started their role by documenting the presence and the use of edible wild plants in local communities in several developing countries (FAO, 1989).

4.3.4. Overview

In general, there were various pedagogical aspects that were not addressed in the various training interventions that in my opinion need to be addressed if the training will yield more tangible and admirable results. For example, understanding the knowledge being disseminated in terms of general, relational and detailed knowledge would be fundamental while designing developing and delivering the training programmes. In this case question about how, why, what were the characteristic features for relationship between different phenomena and consequences of action in both short and long term perspectives will be addressed. As supported by Nilsson (2007):

> *Communication must focus attention to the character of knowledge; there exist different types of knowledge and different ways to organize it. Knowledge about knowledge is a fundamental issue while organizing training or when developing a training programme, it seems very useful to organize content in three different groups; over-view knowledge, relational knowledge and detailed knowledge*

Another important pedagogical aspect that needs to be considered is approaching the training in a more holistic manner than as a separated approach. For example mothers were subjected to a training programme at time; a group of mothers attended breast feeding sessions for a three days, a month later the same group attended training on hygiene promotion and this goes on for the rest of the programme yet there were related characteristics within the various programmes that ought to be integrated. This is supported by Nilsson (2007)

Cautioning that if the learning outcomes are separated then the functional integrated competence will be lost yet this is a fundamental issue of vocational training.

4.4 Other Critical Measures carried out to Reduce Malnutrition among children (objective 3)

There are measures that would enhance benefits of good nutrition good hygiene to a child such as good health, food availability.

Appendix II instrument was used as a guide to identify critical measures being undertaken. Nutrition officers from the Ministry of Health outlined the following critical measures in mitigating malnutrition in Malakal County: community sensitizations, awareness and promotion of exclusive breastfeeding, encourage pregnant mothers to attend ante natal care(ANC) visits, hygiene promotion and support to breast feeding mothers.

According to Sister Elena, a radio programme director and presenter on Saut al Mahaba Radio, Agricultural promotion was also encouraged, which she said was a big field, because huge areas were not cultivated in Malakal town. Other skills in areas of farming were demonstrated to the community for example; Poultry rearing while other small

scale enterprise management skills were also passed on through radio programmes. This was a pertinent area to tackle because the main cause of malnutrition in Sub-Saharan countries is economic constraints on households. Mohammed Ag Ayoya (2007), a UNICEF nutrition specialist from Sierra Leon argues that:

Strategies to tackle malnutrition need to take into account the affordability of the diet which meets nutritional requirements. Education campaigns which fail to tackle the economic constraints on families may achieve small gains, but these are insufficient to eradicate chronic malnutrition, and recognize that focus on economic constraints alone will not address entirely this problem either.

Therefore, the attempt to sensitize the population on how to start and manage small and medium scale businesses, imparting sustainable skills in farming and agriculture was a smart and relevant move in tackling chronic malnutrition as that in Malakal.

Health and nutrition specialists from UNICEF indicated that FAO was working very hard to reduce malnutrition by giving out seeds of food crops to the people. The assumption was that the giving out seed of various food crops will encourage mothers to cultivate nutritious food crops. This effort was directed at improving food security in Malakal, as well as expanding the food types for ease of balancing the diet. However the UNICEF health and nutrition specialist had this to say;

> *These seeds are genetically modified and tested to yield here especially in South Sudan they have been tried and tested; they should work in almost all regions of South Sudan but they are not making use of it they expect, if this problem is not reversed the challenge of malnutrition will continue to prevail.*

Therefore, there was a need for Government of South Sudan to research further why communities had refused to plant the seed. Otherwise the goal set to reduce the levels of under nutrition by 50% between 1990 and 2015 may not be met (Haddad, et al., 2002).

According to UNICEF, the Upper Nile is the area with one of the highest prevalence of malnutrition in South Sudan due to chronic poverty leading to inadequate food supply and poor hygiene. Poor hygiene was one with far reaching effects but also responds to short term achievable mitigation objectives. Most UNICEF programmes target hygiene promotion among others with specific focus on behavior change. The social worker in UNICEF said;

> *Poor hygiene can affect the nutrition status of children, so it is important that mothers are encouraged to keep utensils clean and also wash their children's hands from time to time. For this to be achieved, training is important in providing the knowledge and imparting good practices as well as help change the attitude of mothers, towards sanitation related malnutrition mitigation strategies and practices.*

As supported by the Millennium Development Goals for hygiene promotion (Sijbesma, 2008) that;

> *Households with less wash-related disease lose fewer working days and have fewer expenses related to illness. Households' productive use of water surplus and composted waste improves nutritional status and reduces poverty.hat;*

Therefore, UNICEF was trying hard to improve safe drinking water through the promotion of hygiene and sanitation. UNICEF had and was constructing boreholes in various regions had constructed underground tanks in other regions and was training people on how to collect rainwater, storing it and preparing it for safe use. This initiative

targeted reducing cases of malnutrition caused by diseases like Birrhazia, diarrhoea and others caused by unsafe drinking water. It was reported by UNICEF (2009) that:

> *Cases of sickness caused by unsafe drinking water are reducing however the bigger challenge to most families now is storage. Due to poor hygiene, the water is usually safe until it get into their home stead. It is usually the storage container, like pots, cans and others which are not well cleaned that contaminate the water.*

Both UNICEF and FAO supported feeding centers in Malakal where they handle severely malnourished children. In this case formulas have been developed for these kinds of cases. These formulas helped children gained all micronutrients which were lacking in their bodies and in the shortest time possible the babies began to gain weight.

On visiting these feeding centers I realized it was where the mothers themselves who were feeding their children under the guidance of a nutrition specialist, allowing mothers to learn and bond with their children. I also observed that the feeding centers were overwhelmed by numbers of children with their mothers sleeping on verandahs and hospital floors, thus making it harder for supervisors to attend to each child and mother frequently.

Thus strategies to tackle malnutrition must be multi-dimensional if they will be effective. Therefore the governments of South Sudan as well as other players need to take into account the economic aspect of the diet which meets nutritional requirements. Education campaigns which failed to tackle the economic constraints on families may achieve small, they didn't focused on empowering the community with productive skills that will improve their house hold incomes. It was also important to have men involved in all campaigns because they were the lead decision makers in a home also the entire

community should be involved in developing these programs such that the community members inform the programmes developers on the appropriate training in curtailing malnutrition from their communities.

4.5 Appropriate Nutrition Training Options for Mothers to Reduce Malnutrition Among Children. (Objective 4)

Appendix III instrument was used as a guide to identify appropriate training for curtailing the prevalence of malnutrition in Malakal County.

From the findings, a number of issues regarding appropriate training to curtail prevalence of malnutrition in Malakal County have emerged.

In a discussion with the social worker in UNICEF, the social worker revealed that;

> *The most appropriate training is the hygiene promotion especially when mothers are breast feeding. They need to wash their hands and breasts. They further indicated that; the way most mothers were brought up was adopted from the past generation and therefore, it would be a tough task to have visible behavioral change in a short period of time.*

I observed that the town was very dirty and people defecated around the river from which they fetch drinking water.

Besides, the Malakal survey of 2008 cited in UNICEF(2012), indicated that;

> *Sanitation situation in Malakal is still poor; there is no proper waste disposal, sanitation facilities and drainage systems. Most households did not have latrines thus open defecation was common in the area. Similarly, the stools of young children were disposed by either throwing outside the yard or burying on the*

> *ground. This irresponsible practice could be due to the fact that most of the population still adhered on the cultural mores that prohibited latrine use and ignorance.*

Hence the emphasis by UNICEF on hygiene promotion education as a means to curtail the prevalence of malnutrition in Malakal County was justified.

Nevertheless, it was apparent that the community had received some form of health education and support to be able to dig latrines as evidenced by dug pit latrines which had slabs but no walls. This still poses a health risk of water borne diseases to the population especially during rainy seasons when the waste was washed down to the river. It was therefore important to strengthen health education in the area while looking into more sustainable, suitable, and relevant practice. The training should not only focus on mothers but all members of the community who were involved in decision making at house hold level.

There was a possibility that some recommendations drawn by the training programmes were not well thought through with particular reference to the local people. Even some of the government officials had issues with some recommendations. The Communication Officer at the SMOH pointed out that,

> *The training recommends that the local people should boil drinking water to make it safe yet boiling water takes a lot of charcoal which is expensive.*

Andrien (1998) pointed out the issues to be addressed by training programmes as follows;

> *Nutrition education is a complex intervention that is often tailored to the needs of the people. Any nutritional intervention must begin with the clear identification of the nutrition problem which is to be addressed i.e. what is*

> *this problem? how is it manifested? What population is affected? What will it impact on the social, economic and cultural life of the population concerned and where it is a priority public health problem? The extent and the magnitude of a nutritional problem, groups affected, its socio-economic importance and prioritization as public health problems is determined by nutrition workers on the basis of assessment of nutritional status of the population.*

This was a clear indication that no adequate survey was made before the training programmes were developed. Mwangome et al (2010) observed that;

> *Understanding the factors that determine the translation of adequate child health and nutrition knowledge into appropriate action might help design more effective interventions against malnutrition.*

However, SMOH and UNICEF officials believed that, mother to mother, infant and child feeding programmes and community based interventions were very appropriate. They were basically meant to show mothers how to prepare and feed children, how to keep a home clean, how to breast feed and many more. These programmes have been effective in other countries with similar characteristic. Besides UNCEF and GOSS have expressed views that there were various challenges that still disable the training interventions. The UNICEF health nutrition Specialist indicated that;

> *Lack of motivation from trained mothers because there are no incentives of the sort that go to them to motivate them to visit fellow mothers. There is no specific place or centers where the mothers could gather regularly to learn skills, lack of standard training materials to guide the trainers, no regular budget for*

sustainable training programme, communication barrier and accessibility when training starts.

Nilsson (2008) pointed out that;

Work and learning as a human activity with duration is also connected with and depend on rewards of economical, mental and social character.

It is therefore important to provide incentive for the trainers as well as experienced mothers in order to motivate them help other mothers.

A nurse at Malakal pediatric hospital pointed out that;

Sociocultural beliefs and traditions, mothers have superstitious beliefs that if a child is malnourished it's because his mother stepped on a chameleon. So when a child is sick they visit witch doctors first, by the time they wake up to take the child to real hospital the effect are irreversible.

Thus, many traditional beliefs and customs regarding infant and young child feeding were detrimental to child nutrition. Other factors included discarding of colostrum, pre-lacteal feeds, lack of exclusive breastfeeding, inappropriate introduction of complementary foods (timing and type), and inequitable distribution of food within the household. Such practices disadvantage women and children and contribute substantially to the high prevalence of malnutrition (Harvey &Rogers, 2007).

In vocational learning and teaching, the important thing is that no one exists without her/his social background and without her/his intentions, and believes. It is important to communicate also in terms of expectations. People need to be known to each other (Nilsson, 2008).



Plate 5: Mother with malnourished child waiting for therapatic food supplies at Malakal hospital

Therefore, in designing nutrition training intervention the government and NGOs need to look at the cultural belifes as one of the hindering factors promoting malnoutrition among the children.

CHAPTER FIVE: SUMMARY,

CONCLUSIONS, RECOMMENDATIONS AND WAY FORWARD

5.1 Summary

With my background in food and nutrition and the two year experiences as a master's student in Vocational Pedagogy, I undertook the study to assess the nutrition training intervention for mothers to reduce malnutrition among children in Malakal County in the Republic of South Sudan.

This study focused on identifying and assessing the nutrition training interventions for mothers being carried out in Malakal County in the Republic of South Sudan, to establish other critical measures put in place to reduce malnutrition, and to establish appropriate training options for curtailing malnutrition among children.

While carrying out the study I employed Qualitative research methods in collecting and analyzing data from various categories of respondents. The categories included nutrition coordinators, and nutrition officers both in the Ministry of Health in Malakal County, Communication for Development officer, health and nutrition specialists, nutrition officer in UNICEF organization, a Social worker from UNICEF, nutrition workers and nurses from the therapeutic feeding center in Malakal teaching hospital, mothers and media personnel.

Results revealed there are various players in designing nutrition training interventions for mothers to reduce malnutrition among children in South Sudan; who included Government of South Sudan (GOSS), UNICEF, and NGOs with UNICEF taking the leading role.

During the study the following nutrition training interventions in mitigating malnutrition among children in Malakal County stood out; community based training for mothers, Mother to Mother Support Group programme, UNICEF training interventions carried out at health centers and media interventions.

There were a number of other critical measures visible in place, to help the mothers to overcome malnutrition among children. These include; equipping health centers with curative drugs to cure diseases that accelerate malnutrition, hygiene promotion amongst the community members, promotion of agriculture, and equipping mothers with skills to improve their house hold incomes was yet to be established

The study, results further revealed that while the training was helpful to mothers in the community, the training alone was not sufficient enough in combating the problem, if the economic constraints that come with providing a balanced diet were not addressed. Hygiene promotion stood out as the most effective training intervention for the mothers, because as a result of this intervention a reasonable number of families had put up latrines and was reasonably clean. There were extensive campaigns on radios regarding breast feeding, washing hands and boiling drinking water.

In general a number of fundamental pedagogical aspect were not addressed while developing the programmes as well carrying out the training that in my opinion needed to be addressed if the training were to yield tangible and admirable results. For example understanding the knowledge being disseminated in terms of over-view knowledge, relational and detailed knowledge and approaching the training as holistic rather than separated.

5.2. Conclusion

As a result of the study I can conclude that nutrition training interventions for mothers being carried out in Malakal County to reduce malnutrition among children have impacted on mothers to a certain extent; mothers are now aware of the prevalence of malnutrition as opposed to the past when mothers had a perception that if a child was malnourished it was because his/her mother stepped had on a chameleon so they would visit the witch doctor instead. Today with the increased awareness, mothers take their children to hospital once they have malnutrition complications. In fact the increasing cases of malnourished children under-five years reported in health centers and interpreted as an indication of persistent increase in malnutrition, were a pointer to increased awareness by mothers of the curative approaches that require visiting the hospital first.

The critical measures that have been put in place to reduce malnutrition among children require understanding of the cultural fabric, the indigenous knowledge systems as well as the economic constraints of the local people.

Some of the training programmes were appropriate and were yielding positive results, for example the hygiene promotion was a very relevant programme, bringing to people good practices, such as use of latrine, washing hands, addressing critical unhygienic practices that the community needs to change while focusing on behavior change. These practices being good health with enhance the benefits of good nutrition in children in the community.

From the pedagogical context, the training interventions for mothers in South Sudan were lacking practical aspects such as cooking sessions, hand washing demonstrations and many others yet training for behavior change places emphasis on learning by doing in order to facilitate the comprehension and retention of the learners.

All in all, South Sudan as a country fresh from war and with the appalling effects the war has had on the livelihoods of the people, the nutrition training interventions for mother might not show significantly visible child nutrition improvement now or in the near future in South Sudan.

5.3 Recommendations

- Nutritional training curricula in South Sudan should be modularized according to the needs of mothers.

- Nutritional training curricula for mothers should be made more practical, it should use more of the visual teaching aids such as diagrams, posters, demonstrations, videos recordings, models and role playing, models and audio visual communication rather than the usual theoretical teaching.

- Nutritional training tools, equipment, materials should be current, sufficient and up-to-date in line with the requirements of the training programmes.

- Given the cultural and gender power relations in Africa and South Sudan, where men are assumed to be the bread winners and traditionally control resources, nutritional training should incorporate men and address their role in mitigating malnutrition with in their communities.

- It is also good strategy to involve women who have acquired a certain level of behaviour change within the communities in the teaching process, so that other mothers learn from their experiences and testimonies on how the training and other interventions has saved their children's lives.

- Some of the customs, beliefs and practices affecting the children's nutrition status need to be addressed and sensitized against.

- A system should be created to collect all relevant information shared and collected at all levels of the training programmes and ensure that the nutritional related information is not only collected but communicated and applied to improve intervention services.

- Training interventions for mothers should not discuss hygiene cases without discussing the costs involved on both the mothers as well as the government obligation. The programmes therefore must clearly mention who must do what to for every recommendation and clearly outline how.

5.4 Areas for Further Research

- Further research should be conducted to investigate the challenges facing nutrition training intervention for mothers in South Sudan.

- A study should be conducted on ways to improve nutrition and access to food for children under five years in South Sudan.

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Appendix I: Instruments For Objective 1 (Nutrition Training Intervention For Mothers In Malakal County)

Section A: Focus group discussion guide for trained mothers.

A1. Nutrition training intervention for mothers

- What training have you ever attended on prevention of malnutrition?
- How long is the duration of the training?
- Who is the trainer?
- What did you learn from the training?
- Which language do they use in the training?
- How many meals do you get per day with the children?
- Do you prepare separate food for children? If yes, what food?
- Why do you prepare meals for children?

A2. Tools and materials

- What type of tools and materials are used in the training?
- Are the tools and materials adequate for the training?
- Are the tools and materials appropriate for the training?

A3. Learning outcomes

- How are you trained?
- How do you identify malnourished children?
- How do you train the mothers with malnourished children?
- Do you have any suggestions to improve on the training?

Section B: Interview Guide for Nutrition Co-ordinators, Nutrition Officers, Nutrition Workers and Nurses in the Ministry of Health Malakal County

B1: Nutrition training intervention for mothers

Are there some nutrition training programmes organized for the mothers with malnourished children as an intervention?

Yes	No

- Who are the trainers?
- What training methods are used?
- How long is the duration for the training?
- Which language do they use in the training?
- What type of tools and materials are used in the training?

Section C: Interview Guide for Communication development officer/Health and Nutrition Specialists

1. Is there any nutrition training programmes organized for the mothers with malnourished children as an intervention? Yes No
2. Who are the trainers?
3. What training methods are used?
4. How long is the duration of the training?
5. How was the nature of malnutrition before the training?
6. How is the nature of malnutrition after the training?

Appendix II: Instrument For Objective Ii

(To Establish The Effectiveness Of Nutrition Training Intervention For Mothers In Reducing Malnutrition Among Children In Malakal County).

Section A: Interview Guide for Nutrition Co-ordinators, Nutrition Officers, Nutrition Workers and Nurses in the Ministry of Health Malakal County.

Section A1: Critical measures put in place to reduce the prevalence of malnutrition

- What are the steps that you have taken to reduce malnutrition?
- How important is the training for the mothers?
- What is the response of the Mothers towards the nutrition training?

Positive Negative

Give reasons for your answer.

Section A2: Interview Guide for Communication development officer/Health and Nutrition Specialists. (Critical measures put in place to reduce the prevalence of malnutrition)

1. What are the steps that you have taken to reduce malnutrition?
2. What is the response of the Mothers in the community towards these steps?

Negative Positive

Give reasons for your answers.

Section B: Survey data on malnutrition

Section C: Observation check list.

Tools: video, weighing scale, growth chart, height meter and blackboard

a) Materials used in the training: posters, flipcharts, films or slides and learning packages.

b) Food preparation: locally made, ready made

c) Communication between the trainer and trainee

d) Participation of the trainees

e) Trainees attitude towards the training (non verbal behavior)

f) Section E: Training manual

g) Section F: Minutes of meetings

h) Section G: List of trainers

Appendix III: Instrument for Objective iii

(Appropriate Training Options for Curtailing the Prevalence of Malnutrition)

Section A:

Interview Guide for Nutrition Co-ordinators, Nutrition Officers, Nutrition Workers and Nurses in the Ministry of Health Malakal County

A1: Appropriate training for curtailing the prevalence of malnutrition

Basing on your experiences from all the trainings conducted for the mothers, which training is appropriate for reducing the prevalence of malnutrition.

What challenges do the trainers face in the training of mothers?

Section A2:

Interview Guide for Communication development officer/Health and Nutrition Specialist. (Appropriate training for curtailing the prevalence of malnutrition)

Basing on your experiences from all the trainings conducted for the mothers, which training is appropriate for reducing the prevalence of malnutrition.

Appendix IV : Map of South Sudan Showing Malakal County



Upper Nile State