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SCHOOL OF PUBLIC HEALTH

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UNIVERSITY OF GHANA

PROCESS EVALUATION OF THE NUTRITION PROGRAMME AT SAINT GREGORY CATHOLIC HOSPITAL IN BUDUBURAM

BY

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22009147

THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE MASTER OF SCIENCE PUBLIC HEALTH MONITORING AND EVALUATION DEGREE

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Declaration

This is to declare that this dissertation is the result of my own research. Published literature of other researches which have been cited have been duly acknowledged by means of referencing.

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Date: 9th November 2024

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Date: 9th November 2024

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Dedication

I dedicate this research work to God Almighty for the immense blessings showered on my life.

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Acknowledgement

I am extremely grateful to God Almighty for granting me good health, wisdom and understanding throughout the period of my study of this programme. I am particularly grateful to my supervisor Dr. Frances Baaba Dacosta Vroom for her guidance and input in this research work. I will like to thank the Medical Director of St. Gregory Catholic Hospital for giving permission for this study to be carried out in his facility. I am deeply indebted to my wife Diana Nortieh for her encouragement and pieces of advice throughout the period of my study. I must acknowledge the contribution of my son Bennett Delngmen Lebenone who was an inspiration to me throughout the period of my study. All those who contributed in diverse ways to making this research work possible, I am grateful to all.

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List of abbreviations

Abbreviations	Meaning
CMAM	Community-based Management of Acute Malnutrition
CSB	Corn soya blend
CTC	Community-based Therapeutic Care
FBF	Fortified Blended Food
g	gram
HFA	Height-for-Age
IYCF	Infant and young child feeding
MAM	Moderate Acute Malnutrition
MUAC	Mid Upper Arm Circumference
kg	Kilogram
RUTF	Ready-to-use therapeutic food
SAM	Severe Acute Malnutrition
SFP	Supplementary feeding programme
TSF	Targeted supplementary feeding
TFP	Therapeutic feeding programme
U5	Under five
UNICEF	United Nations Children's Emergency Fund
WFA	Weight-for- Age
WFH	Weight-for-Height
WHA	World Health Assembly
WHO	World Health Organization

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ABSTRACT

Introduction: Child nutrition is key to the growth and development of every nation and so it has become imperative that nutritional interventions are put in place to improve the nutritional status of children especially those below five years. Though nutritional interventions including therapeutic and supplementary feeding programmes are temporary, they are able to fill a gap by preventing or reducing malnutrition incidence.

Objective: The main aim of this study to conduct a process evaluation of the Nutrition Programme to determine if the programme was delivered as designed in Bududuram.

Methods: This study employed mixed methods involving both quantitative and qualitative approaches to address its objectives. Thus, a cross-sectional survey was conducted among those providing nutrition services at the St. Gregory Catholic Hospital in Bududuram. Key informant interviews were conducted for managers of the Nutrition programme to gain understanding of the nutrition programme and its implementation. Descriptive statistics involving quantitative data was conducted using STATA software (version BE 18.0). Qualitative data were transcribed, coded and put in themes and patterns.

Results: The study found that equipment for anthropometric assessment were available. Foods used for nutritional rehabilitation including RUTF and corn soya blend were available. Most indicators of the Nutrition programme failed to meet the standard. Staff providing nutrition services were trained on case management of malnutrition. Health staff of the programme adhered to counseling principles. Inadequate funding, poor knowledge, stigmatization and distance were identified as some barriers to implementing the Nutrition programme. Participants

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said making funds available, providing continuous education and counseling to caregivers, and making nutrition services available during outreach served as enablers of the Nutrition programme.

Conclusion: Even though certain factors impeded implementation of the Nutrition programme, the programme was implemented well and staff had the capacity to implement the programme.

KEYWORDS: Malnutrition, Under 5, Nutrition, programme, rehabilitation.

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CHAPTER ONE

INTRODUCTION

1.1 Background

The term 'Nutrition' which is a Latin word means "to nourish". It encompasses all the processes of deriving nutrients from food and using the nutrients to support life's processes (Zimmerman & Beth, 2012). The process of nourishment starts from conception and this explains the link between maternal nutrition and that of the unborn fetus. A mother should be well-nourished before conception to be able to give birth to a well-nourished baby (World Health Organization, 2002). At birth, breastfeeding should be initiated within the first hour after delivery. As a feeding recommendation to promote growth and development, infants should be exclusively breastfed for 6 months, while continuing breastfeeding for up to 2 years, appropriate complementary foods should be introduced to infants at age 6 months to provide for their increasing nutritional needs (World Health Organization, 2002). There are several benefits to adequate nutrition through appropriate infant and young child feeding practices. Adequate nutrition in infants and children ensures growth, well-developed organs, strong immunity and development of cognition. To attain economic growth a country requires adequately nourished people who can provide solutions to the needs of the country (United Nations Children's Fund, World Health Organization, & World Bank, 2012). Breastfeeding and complementary feeding combined have the advantage of reducing mortality by up to one-fifth in developing countries (UNICEF, 2012b). The period of transition from breastfeeding to complementary foods is a period of vulnerability. Infants who are not fed adequately to meet their nutritional requirements get malnourished or undernourished (WHO, 2012).

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Undernutrition, which is a result of poor or inadequate intake of nutrients, is a public health problem worldwide. Children under the age of five are the most affected. Globally, 149.2 million children below five years are stunted and 45.4 million people are wasted (United Nations, 2021). Further, it was estimated in the year 2020 that 149 million children under 5 were stunted (too short for their age) and 45 million in the same age bracket were wasted (too thin for their height). In Low and Middle-income countries, close to 45% of deaths among under 5 children are as a result of undernutrition (WHO, 2021). In the year 2012, an estimated 101million (16%) children below five years were underweight worldwide. In Africa, it was estimated that 40% of children below five years were stunted and 27% of children in the same age bracket were wasted in 2019 (UNICEF, WHO, & World Bank, 2020). Even though some progress has been made in reducing stunting, wasting, and underweight since 1990, it is not enough as several children remain at risk (United Nations Children's Fund et al., 2012). In Ghana, there has been much progress in fighting malnutrition among children less than five years. Nutritional indicators including stunting wasting and underweight have all shown a reduction in the trend since 1993. In 2022 stunting prevalence in Ghana was 18% compared to 33% in 1993. Wasting also reduced from 14% in 1993 to 6% in 2022 (Ghana Statistical Service, 2022). Even though there has been progress in reducing malnutrition in Ghana, the current malnutrition rates still fall below the global targets for 2030 set by the World Health Assembly to end all forms of malnutrition. This target among other factors took into consideration the public health importance of malnutrition among children below five years (WHO & UNICEF, 2017).

The causes of malnutrition are multifactorial and are at different levels. According to the 1990 UNICEF conceptual framework on the causes of malnutrition, there are immediate, underlying, and basic causes of malnutrition. The immediate causes of malnutrition are low dietary intake

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and disease. The two immediate causes are influenced by underlying causes which include household food insecurity, inadequate maternal and child care, inadequate health services, and poor sanitation. These underlying causes are a result of poverty, low education, gender inequality, and inadequate infrastructure among others (UNICEF, 1990). Additionally, malnutrition is caused by reduced nutrient absorption, increased requirements for energy and nutrients of a person (Saunders & Smith, 2010).

Childhood malnutrition is not without consequences. The consequences are grouped into short to medium-term and long-term. In the short to medium term, childhood malnutrition can lead to premature death, weak immunity, and low birth weight. Malnutrition can also increase the risk of developing diabetes, hypertension, cancer, and other non-communicable diseases later in life. In the long term, malnutrition results in low productivity, reduced capacity to reproduce, increased risk of developing cardiovascular diseases, and lower cognition among others (Mawuli et al., 2019). Being undernourished can result in early death. Low intelligence quotient (IQ) is the result of undernutrition. In Low and Middle-income countries, close to 45% of deaths among under 5 children are because of undernutrition (WHO, 2021). Not only does undernutrition affect the health and development of individuals, it also affects the development of nations, making it both a cause and a consequence of failed development (Ministry of Health, 2013).

There are several nutrition-specific interventions being implemented by the Ministry of health in Ghana to fight undernutrition including optimal nutrition before, during and after pregnancy for women, optimal breastfeeding, appropriate complementary feeding, and vitamin A supplementation. Other interventions including Community-based management of Acute Malnutrition (CMAM), flour and vegetable oil fortification, universal salt iodization, nutritional care for people living with HIV/AID or TB, growth monitoring and promotion, Baby-Friendly

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Hospital Initiative among others are aimed at addressing malnutrition especially among children under 5. Aside these nutrition-specific interventions, there exist also a number of nutrition-sensitive interventions which are aimed at addressing the underlying causes of malnutrition and these include steps being taken to address food security, poverty, issues of hygiene and sanitation, health and nutrition education, control of diseases among others.

Additionally, Selective feeding programmes exist to meet the special nutritional needs of certain vulnerable groups including children under 5. These feeding programmes include Targeted Supplementary Feeding, Blanket Supplementary Feeding, and Therapeutic Feeding programmes. Targeted supplementary feeding provides dietary supplements to moderately malnourished people to prevent severe malnourishment. Blanket supplementary feeding provides nutritional supplements as well as normal food ration to identified vulnerable groups to reduce the risk of malnourishment. Therapeutic feeding involves providing carefully planned dietary regimens and medical care to severely malnourished children to rehabilitate them and reduce death among those suffering from severe malnutrition (United Nations High Commissioner for Refugees & World Food Programme, 1999).

1.2 Problem statement

A benefit of conducting a process evaluation of the Nutrition Programme is that data obtained will provide insights into why the intervention may have been more or less effective in achieving the intended goal. Additionally, process evaluation adds value to the analysis of interventions through documenting characteristics of the intervention and obtaining information about barriers and facilitators of the components of the Nutrition programme (Schneider et al., 2009). Through

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process evaluation, the accuracy and quality of the nutrition intervention can be determined (Linnan & Steckler, 2002).

In 2005, a baseline nutritional survey was conducted to determine the nutritional status of children aged 6-59 months in Bududuram among other objectives. It was found that 78(8%) and 125 (12.5%) out of a total 974 under 5 were respectively wasted and stunted (Petersen, 2005). As a temporary intervention, the Nutrition programme was established in 2005.The programme aims at reducing malnutrition prevalence to less than 3% among children below five years. Additionally, it aims at reducing morbidity and mortality among malnourished children in this age bracket. Current reports showed a reduction (<1%) in nutritional indicators including stunting and underweight among children under 5 in Bududuram (District Health Information Management System 2, 2022). The Nutrition Programme has not been evaluated since its establishment to determine if the programme is meeting its objectives. A process evaluation will not only highlight the strengths and weaknesses of the Nutrition programme, it will also help identify the training needs of staff implementing the programme. A process evaluation will take into consideration the inputs, activities and output of the Nutrition programme to determine whether programme is meeting its objectives. Further, an assessme nt of the quality of the Nutrition programme as well as the capacity of staff to deliver the programme will be done in this evaluation. Hence this research seeks to conduct a process evaluation of the Nutrition Programme to determine if the programme was delivered as designed in Bududuram.

1.3.0 General objectives

The general objective of this study is to conduct a process evaluation of the Nutrition Programme to determine if the programme was delivered as designed in Bududuram.

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1.3.1 Specific objectives

1. To assess the quality of the components (therapeutic feeding, supplementary feeding and nutritional counseling) of the Nutrition programme in reducing malnutrition among children below five years in Bududuram.

2. To assess the capacity of health staff in implementing the nutrition programme in Bududuram

3. To determine the barriers and enablers of the implementation of the nutrition programme in Bududuram.

1.3.2 Research questions

The research questions are:

1. What is the quality of the components (therapeutic feeding, supplementary feeding and nutritional counseling) of the Nutrition Programme in Bududuram?
2. What is the capacity of healthcare providers and support in providing nutrition care in Bududuram?
3. What are the barriers and enablers influencing the implementation of the Nutrition Programme in Bududuram?

1.4 Justification

A process evaluation of the Nutrition Programme will aid stakeholders obtain information of past and present activities that can be used to streamline the programme and also planning for the future. An evaluation of the Nutrition Programme is an opportunity to determine if the objectives of the programme are met as planned by stakeholders. Further, evaluation of the Nutrition Programme will serve as a guide for healthcare staff in providing improved nutritional care for

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mothers and their children especially those below age five. This study will also shed light on areas of the Nutrition Programme that needs further research to gain insight. Finally, the evaluation will help in proffering possible solutions to the implementation challenges of the Nutrition Programme.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter would focus on the concept of nutrition, maternal nutrition, infant feeding and its benefits, nutrition interventions in Ghana, components of the Nutrition programme, capacity of health staff in implementing the Nutrition programme, barriers to nutrition interventions in Ghana, conceptual framework and logic model on the Nutrition programme.

2.2 Concept of nutrition and health

Nutrition is the process by which living organisms take in food for the maintenance of life, growth and development. Nutrients are derived from the food to support various functions of life in living things including humans (Nakamura, 2022). Food is a basic necessity of humankind and it is made up of various nutrients including carbohydrates, proteins, vitamins and minerals. The role food plays in the body are termed the physiological functions of food. There are also the social and psychological functions of food. Socially, food plays an important role as it symbolizes an expression of love, friendship, and happiness at religious, social and family gathering. Additionally, the psychological function of food cannot be overemphasized. For instance, preparing a delicious food for love ones is seen as one's expression of love and affection (John, Karthiga, Parimalam, Chellappa, & Vasanthi, 2004).

Eating too little and not able to meet one's nutritional needs can result in nutrient deficiency and this affects health. Deficiencies manifest in form of wasting, stunting, underweight and micronutrient deficiency which are linked to poor dietary intake (Tebeje, Agitew, Mengistu, & Aychiluhm, 2022). Eating too much food coupled with little or no physical activities results in

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overweight or obesity which have association with non-communicable diseases including diabetes, hypertension, cancers among others later in life (WHO, 2021).

2.3 Linkage between maternal, child nutrition and health.

Maternal nutrition is an important determinant of the growth of the fetus, birth weight and health at infancy (WHO, 2011). Nutrition begins at conception and it is very essential that mothers have enough nutritional reserves before, and during pregnancy. The embryonic and fetal stages of life are the most vulnerable stages of life and during these stages, there is total dependence on maternal nutritional reserves for rapid growth and development. Mothers whose nutritional reserves are not adequate or who are deficient in some nutrients are not able to supply nutrients to meet the nutritional needs of the fetus, hence nutritional deficiencies set in before or after birth (Langley-Evans, 2014). The functions of cells are maintained by the nutrients received from maternal reserves and health problems arise when cell's needs are not met by maternal supply of nutrients (Brown et al., 2008).

As a recommendation on feeding, pregnant women should eat healthy diets which provide energy, protein, vitamins and minerals derived from different food sources. These sources include fruits, green and orange vegetables, meat, fish, beans, nuts, and whole grains (World Health Organization, 2018). In addition to healthy dietary intake, pregnant women should take oral iron supplements daily (30-60 mg) and folic acid (0.4mg) so that mothers do not develop anaemia and as well prevent low birth weight and other negative health outcomes (Tuncalp et al., 2020).

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2.4 Infant feeding and the benefits

Feeding infants starts with breastfeeding within the first hour after delivery and breastfeeding infants with breast milk alone for the first 6 months (exclusive breastfeeding) is recommended to attain optimal growth, development and health. Subsequently, appropriate complementary foods are introduced to infants at 6 months when breast milk alone is not sufficient in meeting the child's nutritional needs (WHO, 2002).

There are several benefits of breastfeeding infants exclusively for 6 months and continued breastfeeding up to two years. This is because exclusive breastfeeding offers infant vital, irreplaceable nourishment for growth and development, it is the cornerstone of infant survival and health. It protects against respiratory infections, diarrheal illnesses, and other potentially fatal conditions. It functions as a child's first vaccination. Later in life, there is a protective benefit of exclusive breastfeeding against obesity and some non-communicable diseases (WHO & UNICEF, 2017). Additionally, breastfeeding has a greater influence on women's health than was previously recognized. As a result, policies aimed at promoting optimal breastfeeding practices may result in significant improvements to public health, including a lower risk of breast cancer, Type 2 diabetes mellitus, hypertension, and myocardial infarction (Bartick et al., 2017).

Complementary foods are introduced to infants at 6 months and this transition is period of vulnerability for infants. It is therefore recommended that complementary foods be timely which means the foods are given to infants when their energy and nutrient needs exceed what is provided through breastfeeding. Complementary foods are expected to be adequate which means that they provide enough energy, protein and micronutrients to meet the increasing nutritional

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needs of infants. It is also recommended that complementary foods be safe, meaning that the foods be prepared and stored in a clean environment with feeding done with clean hands including utensils (WHO, 2002). Additionally, when giving complementary foods, the amount, frequency and thickness should be considered based on the infant's age. Also the foods should contain a variety of food sources which include animal source foods (flesh meats, eggs and dairy products), staples (grains, roots and tubers), legumes and seed Vitamin A rich fruits and vegetables and other fruits and vegetables (UNICEF, 2012a).

2.5 Key Nutrition interventions in Ghana

The following are key nutrition interventions aimed at combating maternal and child nutrition in Ghana.

- Iron and folic acid supplementation for pregnant women to reduce anaemia.
- Essential Nutrition Actions (ENA) integrated maternal and child care.
- Baby-Friendly Hospital Initiative Postpartum women to promote infant feeding and maternal health.
- Growth monitoring and promotion for children under 5 years to track growth, provide appropriate care, promote child health and nutrition.
- High dose vitamin A supplementation for postpartum women and children 6–59 months to improve their Vitamin A status.
- Flour and vegetable oil fortification for the general population of Ghana to increase micronutrients intake.
- Universal salt iodisation for the general population to increase iodine intake

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- Nutritional care/support for people living with HIV/AIDS (PLHIV) and/or tuberculosis (TB) for PLHIV and/or TB clients in selected anti-retroviral therapy (ART) centres to increase access to counseling, food and support.
- Nutrition and malaria control for child survival for pregnant women, mothers of children 0–59 months to increase uptake of nutrition and malaria control services.
- Community-Based Management of Acute Malnutrition (CMAM) children under 5 with severe acute malnutrition for children below five years to treat severe acute malnutrition.
- Supplementary Feeding and Nutrition Education Programme (SF&NEP) for pregnant and lactating women, children under 5 years with moderate malnutrition in food insecure parts of the country, northern parts of Ghana.
- Promotion of regenerative health and nutrition behaviour change communication for the general population to prevent diet-related diseases, promote good health and improve nutrition.
- School feeding programme for primary school children in selected schools nationwide to improve their nutritional status and school attendance (Ministry of Health, 2016).

2.6 Components of the Nutrition programme

2.6.1 Therapeutic Feeding

Therapeutic feeding centers have long been used in inpatient facilities to treat severe malnutrition. This strategy may, however, have a number of drawbacks, most notably limited access, inadequate coverage, and high expenses for families who choose to stay at centers while leaving other children and family members at home. Community-based therapeutic care (CTC)

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provides an alternate approach to care in response. For patients who can get therapy at home, it offers straightforward, efficient outpatient care; for those who require inpatient care, it offers clinical care. This can assist increase program coverage and accessibility and is frequently a more appropriate and acceptable method of providing nutritional rehabilitation (WFP & UNHCR, 2011).

The type of community-based therapeutic care introduced in Ghana is called the Community-based Management of Acute Malnutrition (CMAM) in which severe acute malnutrition (SAM) is classified into 2: Those with medical complications receive inpatient care and those without medical complications receive outpatient care using ready-to-use therapeutic food (RUTF) on weekly basis based on their weight until recovery. Table 2.4 summarizes the classification and the type of care provided. Children aged 6-59 months with SAM are identified using the Mid Upper Arm Circumference (MUAC) tape during growth monitoring sessions, when seeking healthcare or general screening (Health Service Ghana, 2010).

Table 2.1: Classification of SAM

Management Approach	**Inpatient Care**	**Outpatient Care**
Classification	SAM with medical complication	SAM without medical complication
Admission criteria		
Anthropometric and clinical assessment	Children aged 6-59 months Bilateral pitting oedema (+ + +) or Any grade of bilateral pitting oedema with severe wasting (MUAC < 11.5 cm) or SAM with medical complications Infants 0-6 months:	Children aged 6-59 months Bilateral pitting oedema (+ +) or (+) or Severe wasting (MUAC < 11.5 cm

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	Bilateral pitting oedema or Visible wasting Infants ≥6 months who weigh <4.0 kg	
Appetite test	Failed	Passed
Clinical status	SAM with any of the following complications Anorexia, no appetite • Intractable vomiting • Convulsions • Lethargy, not alert • Unconsciousness • Hypoglycaemia • High fever • Hypothermia • Severe dehydration • Lower respiratory tract infection • Severe anaemia • Skin lesion • Eye signs of vitamin A deficiency	Clinically well and alert
Caregiver choice	Caregiver willing	Caregiver willing
Referral/Discharge criteria	**6-59 months** Refer to outpatient care if oedema and medical complication are resolving and child is clinically well and alert **Infants 0-6** Discharge when successful relactation and weight gain (20g/day on breastfeeding for 5 days. 6-59 (special cases) Discharge if 15% weight gain attained for 3 consecutive weeks and/or oedema free for 2 consecutive weeks as well as being clinically well and alert	**6-59 months** Discharge if child attains 15% weight gain or more for 2 consecutive weeks and is clinically well and alert.

Source: CMAM guidelines, 2010

2.6.2 Outcome indicators for CMAM (Effectiveness)

Based on the Sphere standard, the performance of the CMAM programme should meet the following standards. For instance, more than 75% SAM cases on outpatient care should be cured, with less than 15% and 10% respectively defaulting and dying (Sphere Project, 2004) as

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summarized on table 2.5.

Table 2.2: Outcome indicators for SAM based on Sphere standard

Indicator	Outpatient care	Inpatient care
Cured	>75%	Not applicable
Defaulted	<15%	<15%
Died	<10%	<10%
Average length of stay	60 days	4-7 days
coverage	>70%	Camp; >90%, Urban >70%; Rural: >50%

Source: Sphere standard 2004

2.7.1 Supplementary Feeding

Supplementary feeding is giving nutritious foods to individuals or groups identified to be at risk of malnutrition to supplement their energy and nutrient needs. The aim of this activity is to improve the nutritional status of beneficiaries to either reduce or prevent acute malnutrition. Supplementary feeding is grouped into Blanket supplementary feeding - which provides foods/supplements to all members of at risk group (example all children under 5, all pregnant women among others) and Targeted supplementary feeding which provides food supplement to individuals with moderate malnutrition to severe malnourishment and to rehabilitate them (WFP & UNHCR, 2011).

The Supplementary feeding programme in Bududuram is the Targeted supplementary feeding programme which is based on the UNHCR/WFP protocols for managing Moderate Acute

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Malnutrition (MAM) since it was once a refugee camp.

2.7.2 Criteria for selection/discharge into/from the Supplementary feeding programme.

Children below five years are screened using the MUAC (Mid Upper Arm Circumference) tape and same tool is used in discharging. This tool assesses the level of wasting in populations at risk including children below five years. Also, weight and height measurements are done in the screening process. Table 2.1 summarizes the criteria for admission into the programme and criteria for discharge.

Table 2.3: Criteria for selection/discharge into/from the Supplementary feeding programme

Screening process	Admission criteria	Intervention	Discharge criteria
MUAC measurement for all children 6-59 months AND/OR Weight and height measurements (Children with bilateral pitting oedema should be sent for therapeutic feeding)	If MUAC >= 115 mm and < 125 mm AND/OR WFH < -2 z-score & >= -3 z-score of the WHO Growth Standards AND* • Appetite • Clinically well • Alert Also includes children discharged from the therapeutic feeding programme	Targeted Supplementary Feeding Programme	MUAC >=125 mm for two consecutive visits AND >=-2 z-score WHO Growth Standards for two consecutive visits AND Minimum 2 months treatment in the SFP Children discharged from therapeutic feeding should stay in the SFP for 2 – 3 months depending on national guidelines. *Children with MAM and medical complications are

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			admitted to the SFP but are referred for medical care.

Source: UNHCR/WFP 2011

2.7.3 Foods used for supplementary feeding and their nutritional content

Energy-dense, high in micronutrient foods that are easily digested, culturally suitable, and appealing (tasty) are requirements for supplemental foods. Typically, Fortified Blended Food (FBF) such as Corn Soya Blend (CSB), Unimix, or Famix are used. Ready-to-eat meals, including fortified biscuits, ready-to-use supplementary foods (RUSF), or locally produced snacks, can be used in places where cooking may not be practical. However, these are not advised for long-term use due to cost concerns and the over-demand for certain commodities such as compressed biscuits; instead, switching to fortified blended foods as soon as practical is advised. In order to account for sharing at home among other children or adults in the family, take-home or dry rations (THR) should supply from 1,000 to 1,200 kcal per person per day and 35–45 grams of protein in the form of a premix. Premix distribution prevents the ration's constituent parts from being used as separate goods that could be traded or sold instead of being administered to the undernourished patients in the prescribed amounts. The goal of this ration is to enhance, not entirely replace, the typical meals that the undernourished person eats at home (WFP & UNHCR, 2011). Table 2.2 summarizes the weight in grams and nutritional values of supplementary foods.

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Table 2.4: Supplementary foods, weight and nutritional values

Type of food	**Weight (g)**
Fortified Blended Food (FBF)	200-250
Fortified vegetable oil	20-25
Sugar	20-25
Nutritional value	
Energy	1000-1300 kcal
Protein	35-45
Fat	32-40

Source: UNHCR/WFP 2011

2.7.4 Indicators for assessing the effectiveness of Supplementary Feeding Programme

Per the Sphere standard, 75% of children exiting the supplementary feeding programme should have recovered from malnutrition, with <3% and <15% of children respectively dying and defaulting. In terms of coverage, targeted supplementary feeding programmes should be >50% in rural areas and >70% in urban areas and >90% in camp situations. The effectiveness of SFP is assessed based on the indicators summarized in table 2.5.

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Table 2.5: Assessing the effectiveness of Supplementary Feeding Programme

Indicators	Acceptable	Alarming
Recovery rate	>75%	<50%
Death rate	<3%	>10%
Defaulting rate	<15%	>30%

Source: UNHCR/WFP 2011

2.7.5 Equipment and Supplies Needed for the Components of the Nutrition Programme

For a therapeutic feeding programme, the following materials are basic requirements: Stadiometers (height boards), scales, MUAC tapes, RUTF, corn soya blend, F-75, F-100 and therapeutic cards. The following materials are requirements for a supplementary feeding programme: MUAC tapes, stadiometers (height boards), scales, registration cards or books, corn soya blend and stationary. For Nutrition counseling, various counseling cards regarding child care and feeding practices are required (Bahwere et al., 2006).

2.8.1 Nutritional counseling

Nutritional counseling is an interaction between a client and a trained counselor that relies on information from nutrition assessments to prioritize actions to take to improve nutritional status. Client preferences, obstacles to changing behavior, and potential ways to get through those obstacles are all identified during counseling. Together, the patient and caregiver use this knowledge to develop a workable plan of action that will encourage healthy behaviors. When choosing suitable messages and directing counseling sessions, the counselor may make use of job aids (FANTA III, 2016).

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2.8.2 Process evaluation - Nutrition counseling

One proven approach to counseling in many settings is what is known as 'GALIDRAA', an acronym which stands for Greet, Ask, Listen, Identify, Discuss, Recommend, Ask and Appointment (FANTA III, 2016).

Greet: As a social etiquette, the healthcare provider and/or counselor is expected to first of all greet the client, provide a seat and exchange introductions to establish rapport with the client. This makes client feel at home and willing to share personal information for help.

Ask: The counselor then proceeds to ask the client about his or her situation or problem and current practices using open-ended questions. With open-ended questions, the counselor is able to get more information about the client that will help in correctly diagnosing the problem and providing solution based on the diagnosed problem.

Listen: After asking the client what the problem is, it is expected that the health care provider will listen to get the details of the client's situation and comprehend adequately.

Identify: Based on the knowledge, experience and expertise of the healthcare provider, he or she is able to identify the client's problems and help select the most important ones to address.

Discuss: The healthcare provider now discusses various options available to addressing the problem, taking into consideration what is realistic and using visual aid materials such as counseling cards to engage the client or caregiver on an issue of interest to both parties.

Recommend: The healthcare provider now makes recommendation on small doable action explaining the rationale and benefits of his recommendation.

Ask: In order to make sure that clients understands what has been discussed and agreed on, the counselor or healthcare provider will now ask the client to repeat what he or she understood from the discussion and what he or she will try at home.

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Appointment: In order to ascertain whether what has been agreed on is working for client, an appointment date is scheduled so that the healthcare provider can find out what is working for the client and whether some changes need to be made. These are the steps in providing effective counseling in the area of nutrition and other health disciplines.

2.9 Capacity of health staff in implementing Nutrition programme

The implementation of Nutrition programme in Ghana has been affected by capacity problems including insufficient trained staff to provide technical support on nutrition (Ministry of Health, 2013). In order to maintain a Community-based Therapeutic Care in the long-term, there should be knowledge and skill transfer. Agencies that establish Nutrition programmes should provide the necessary training and mentoring to health staff and managers so that they build their capacity to implement and supervise Nutrition programs. Health staff are required to have clinical training on malnutrition (Bahwere et al., 2006). There are also issues with management and capacity building. As regards management, there is limited capacity in implementing what is planned and budgeted for in the area of nutrition and this has been a big setback for improving nutrition at all levels. This calls for capacity building across all levels including ministries, regional and district planners, programme managers, nutrition officers, community health staff among other service providers of nutrition programmes. Also the number of staff in the area of nutrition should be increased to ensure effective implementation and coordination of nutrition programmes in the country. In the long term, capacity development in line with human resource development policies in terms of in-service training, short courses in nutrition, on-the-job mentoring and access to job aids should be considered seriously at the national level (Ministry of Health, 2013).

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2.10 Barriers to nutrition interventions in Ghana

There are certain shortcomings in the various nutritional interventions that Ghana is implementing. These consist of:

- Inadequate coordination and harmonization of the nutrition-sensitive and nutrition-specific initiatives among non-governmental organizations (NGOs) and within the pertinent government ministries, departments, and agencies (MDA).
- A restricted incorporation of nutrition into all pertinent fields (health, food, agriculture, education, etc.)
- Insufficient comprehension of the connections among the several factors contributing to malnourishment hinders the development and execution of suitable measures.
- Nutrition programs receive insufficient funding.
- Insufficient human resources and governance to oversee and provide nutrition services on a national basis.
- Limited availability of services, such as social protection, water for drinking, healthcare, and agricultural extension services at various locations in Ghana.
- · High rates of illiteracy and acute poverty, especially in Ghana's north.
- The federal government's insufficient oversight and technical assistance in the field of nutrition for regions and lower levels.
- The health system's roles and obligations for nutrition are unclear at all levels.
- ·The health sector's over-centralization, which prevents local development planning from taking health issues into account.

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- Insufficient data regarding the dietary status of older people and school-age children. As a country, there is no sufficient data regarding dietary status of vulnerable groups including the aged and school age children (Ministry of Health, 2016).

Some studies found that lack of nutritional supplements, economic status of caregivers, low education as barriers to nutrition (Elhady et al., 2023; Albuquerque, Lunet, Breda, & Padrão, 2020;Bain et al., 2013).

2.11 Description of the Nutrition Programme

The Nutrition programme aims at reducing and preventing malnutrition especially among children below five years. The programme comprises 3 components which include; therapeutic feeding, supplementary feeding and nutritional counseling. In therapeutic feeding programme, children with severe malnutrition (severe wasting and/or edema) are admitted on the programme. Those with medical complication are admitted to inpatient care where they receive medical care. Whilst receiving medical care, these children are rehabilitated using various therapeutic foods including formula-75, formula-100 and ready-to-use therapeutic food (RUTF). When these children are well enough, they are then referred for outpatient care where they visit the Nutrition unit every week for nutritional assessment and also resupply of the RUTF to continue the nutritional rehabilitation at home. Severely malnourished children without medical complications are admitted as outpatients and come on weekly basis for nutritional assessment as well as receive RUTF for rehabilitation at home. All severe cases of malnutrition are discharged into the supplementary feeding programme after their conditions have improved. On weekly basis, they are brought to the Nutrition unit for nutritional assessment and supply of take home dry ration of corn soya blend to supplement their diet every week. These children remain on the programme until recovery before being discharged. The Nutritional counseling components of the Nutrition

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programme provides counseling on infant and young child feeding practices for caregivers (malnourished and well-nourished), counseling for adults with various diet-related conditions.

2.12.0 Theory of Change

2.12.1 Narrative for the Theory of change for the Nutrition programme

This conceptual framework was developed by the Principal investigator based on the Standard Operation Procedures (2005). Cases of acute malnutrition of children below five are identified through growth monitoring sessions and referrals directly from communities or health facilities. Anthropometric and nutritional assessments are conducted for these children and if a child is found to have moderate acute malnutrition but without medical complications, s/he is admitted into the Supplementary Feeding Programme (SFP) and is supplied take home dry ration of corn soya blend on weekly basis until recovery. Those with severe acute malnutrition without medical complications are admitted into the Therapeutic Feeding Programme (TFP) and receive ready-to-use therapeutic food (RUTF) and medicines for simple medical conditions for treatment at home. Those with medical complications receive inpatient care as well as nutritional rehabilitation using formula-75, formula-100 or RUTF depending on individual need. When these children are well enough, they are referred to outpatient care where they continue to receive RUTF until further improvement in the status before referral to SFP. At SFP, they are given corn soya blend on weekly basis until full recovery. Nutritional counseling is conducted for caregivers of malnourished children who are not gaining weight as expected and depending on their nutritional status, may be enrolled on the Supplementary feeding programme. Counseling is also held for other caregivers who are not benefiting from any of the programmes

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based on their individual needs. All these are geared toward improving the nutritional status of children. In the implementation of these components of the Nutrition programme, the capacity of health staff determines the quality of these programmes. Certain barriers and enablers can also affect implementation of the Nutrition programme. One of the assumptions of the Nutrition programme is that staff providing nutrition services have the capacity to do so. Another assumption is that the programme does not refer malnourished children to a facility that provides poor treatment.

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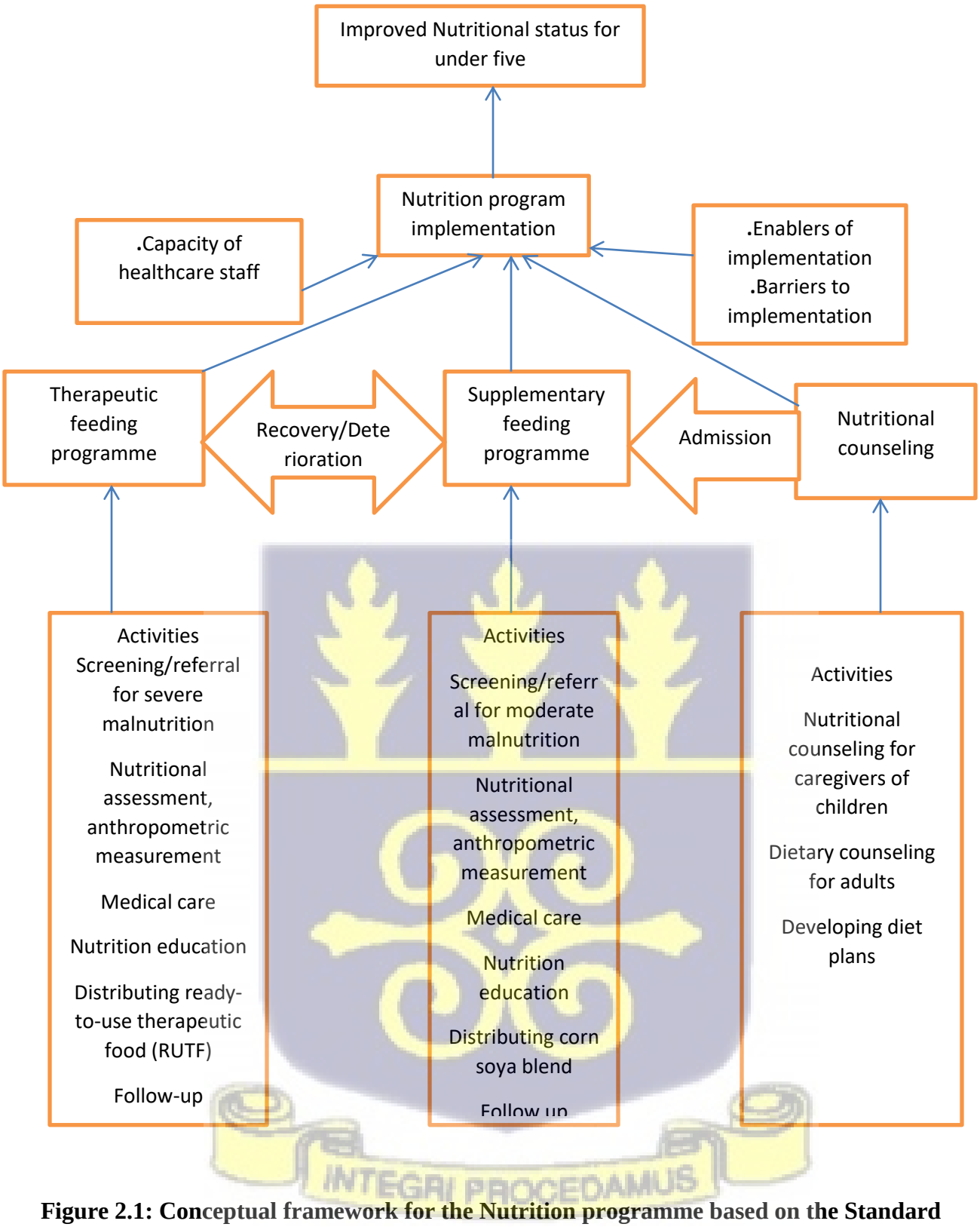

Figure 2.1: Conceptual framework for the Nutrition programme based on the Standard Operation Procedures (Nutrition Programme, 2005)

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2.13 Logic framework

The nutrition programme uses a number of resources termed as inputs to perform activities that yield immediate results (outputs) and ultimately produce short to long term results called outcome and longer term results called impact. For instance, with the therapeutic feeding programme, the following resources serve as inputs; SAM cases, caregivers, health staff, weighing scale, MUAC tape, counseling cards, Ready-to-use therapeutic food (RUTF). These resources are used to perform activities or processes including anthropometric measurement, nutritional counseling, appetite testing and distribution RUTF which yield the following as immediate results or outputs; Anthropometric measurement of SAM done, caregivers of SAM counseled, RUTF distributed to caregivers of SAM. Results of short to long term (outcomes) following these outputs are Increased coverage for SAM cases, and increased knowledge of caregivers of SAM which align with one of the objectives of the Nutrition programme. In the long term, SAM-related deaths will be reduced and also improving nutritional status or good nutrition of beneficiaries which are the impacts of the programme and these impacts align with the goal of the programme. Table 2.4 summarizes the inputs, activities, outputs, outcomes and impacts of the Nutrition programme.

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Table 2.6: Logic model of the Nutrition programme.

Input	Activity	Output	Outcome	Impact
Severe Acute Malnutrition) SAM cases, caregivers, health staff, weighing scale, MUAC tape, counseling cards, Ready-to-use therapeutic food (RUTF)	Anthropometric measurement, nutritional counseling, appetite test, Distributing RUTF	**Anthropometric measurement of SAM done** Caregivers of SAM counseled RUTF distributed to caregivers of SAM	**Increased coverage for SAM cases** Increased knowledge of caregivers of SAM	Reduced SAM related deaths Improved nutritional status
Moderate Acute Malnutrition (MAM) cases, health care staff, weighing scale, MUAC tape, corn soya blend.	Anthropometric measurement, nutritional counseling, distribution of corn soya blend	Anthropometric measurement of MAM done Caregivers of MAM done Corn soya blend distributed to MAM caregivers	Increased coverage of MAM management	Reduced MAM cases becoming SAM cases
Children under 5, caregivers, health staff, counseling cards, space for counselling	Counseling caregivers on infant and child feeding practices, general care	Counseling done for caregivers on infant and young child feeding practices	Improved feeding and care practices of children	Reduce morbidity of infants and children below 5 Reduced incidence of malnutrition
Health staff, trainer, training logistics	Training health staff on nutrition services including SAM, MAM management, nutritional counselling	Training of health on nutritional services carried out	Increased knowledge on nutrition	Reduced nutritional-related morbidities and mortalities.

Source: M&E Fundamentals by Gage et al 2016

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CHAPTER THREE

METHODS

This chapter provides an overview on the methods used in the study.

3.1 Study location/area

Bududuram, a sub-district in Gomoa East in the Central region of Ghana, is predominantly an Akan-Fante community. The St. Gregory Catholic Hospital is situated in Bududuram. On the Accra-Cape Coast route, Bududuram is situated roughly 35 kilometers to the west of Accra. The estimated population of Bududuram for the year 2023 is 99,606 people(Ghana Statistical Service, 2021) . When a civil war broke out in Liberia early in 1990, the government of Ghana consented to take in a number of refugees from that country. About 1,496 acres of lands that were close to the nearby Akan-Fante Community were first allotted by the government. The number of refugees living at the refugee settlement increased twice in the 1990s from initial figure of about 5,000 to nearly 42,000 people in the 2000s in addition to the local Ghanaian community. In the early years of the influx of the refugees, not all could be accommodated in the initially allocated land and some started to build dwelling structures on the land surrounding the camp and some settled in nearby local communities. The Gomoa District went through a process of administrative changes and the district has now been divided into Gomoa East and Gomoa West. Bududuram is now under the Gomoa East Administration.

There are five health facilities in Bududuram which include The Lord is My Shepherd Maternity Home/Clinic, Odura Maternity Home/Clinic, God's will Maternity Home/Clinic, Bacerota

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Maternity Home/Clinic and St. Gregory Catholic Hospital which serves as a referral hospital for other health facilities in and around Bududuram.

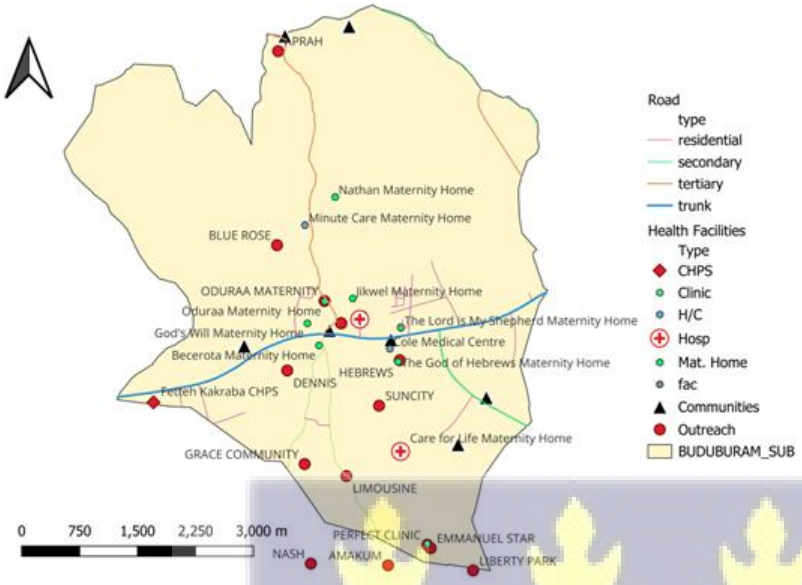

Figure 3.1: Map of Bududuram Sub-district

Source: Gomoa East Directorate 2024

3.2 Study design

This was a cross-sectional study involving a triangulation of both qualitative and quantitative research methods. Mixed method overcomes the limitations of quantitative and qualitative methods (Almeida, 2018). Also, employing mixed method yielded rich detailed information about the study outcomes that neither qualitative nor quantitative research methods alone could achieve (Linnan & Steckler, 2002). Mixed method gives a detailed insight into questions under study in order to address the set objective. This approach helps to explore and validate findings

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using both qualitative and quantitative data sources. The use of mixed methods neutralizes biases associated to any single method (Creswell, 2009).

3.3 Study population

The study population comprised of nutrition service providers (Nutrition officers, community health nurses) and a manager of the Nutrition Programme in St. Gregory Catholic Hospital in Bududuram sub-district in Gomoa East.

3.4 Eligibility criteria

3.4.1 Inclusion criteria

The inclusion criteria of the study was all nutrition service providers (Nutrition officers), support staff (community health nurses) and managers of the Nutrition Programme who were directly involved in implementing the programme in St. Gregory Catholic Hospital.

3.4.2 Exclusion criteria

The exclusion criteria for the study was all persons who qualified for the study but were unable to communicate verbally due to ill health. Also, all persons who qualified to be part of the study but for some reasons were not willing to be part were excluded.

3.5 Definition of Indicators

Three (3) specific objectives were used to assess the implementation of the Nutrition programme. The objectives were measured as the dependent variables;

3.5.1 Assess the quality of the Nutrition programme

This variable was explored with series of questions focusing on the performance of the three components of the Nutrition programme viz: Therapeutic feeding programme, supplementary

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feeding programme and nutritional counseling. On therapeutic and supplementary feeding programmes, questions were focused on the availability of equipment for anthropometric assessment, availability of therapeutic foods, identification of cases of malnutrition, routine services, new admissions, recovery rate, death rate, defaulting rate, coverage and average stay on the programme.

On nutritional counseling, a non-participant observation was conducted using an observation guide to ascertain adherence to counseling principles using the acronym GALIDRAA (G- Greet client and exchange introduction, A- Ask about client's situation and current practices using open ended questions, L- Listen to what client says, take into consideration body language and ask probing questions, I- Identify client's key problems and how to address them, D- Discuss options that are realistic and use visual material to engage client, R- Recommend and agree on small doable actions, stating the benefits of the recommendations, and A- Ask client to repeat what they understood and what they are willing to try at home, A- Appointment for follow up visit) USAID (2023).

3.5.2 Capacity of health staff in implementing the Nutrition programme

Questions were focused on processes of capacity building for nutrition service providers and support staff to enable them acquire the needed knowledge, skills and positive attitude in providing nutrition services to the general population.

3.5.3 Barriers and enablers of the implementation of the nutrition programme

Here, questions will be directed at factors serving as barriers and enablers of the implementation of the nutrition programme.

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Table 3.1: Definition of indicators and sources of measurement

Objective	Indicators	Measurement	
		Estimation/measurement	Evidence
Objective 1 – therapeutic feeding	Mean length of stay on TFP	Sum No. days of admission of recovered children 6-59 months/ No. 6-59 months exits due to recovery	Monthly reports
	Average weight gain on TFP	Sum [(weight on exit (g) minus minimum weight (g))/(weight on admission (kg)) x duration of treatment (days)] / No recovered children.	Monthly reports
	Recovery rate for TFP	No of 6-59 months recovered/ Total No. of U5 exits (recovered, died, defaulted) x 100	Tally sheet reports
	Death rate for TFP	No. U5 deaths/Total No. of U5 exists (recovered, died, defaulted) x 100	Tally sheet reports
	Default rate for TFP	Number of U5 defaulters/Total No. of U5 exits (recovered, died, defaulted) x 100	Tally sheet reports
Objective 1 – supplementary feeding	Mean length of stay for SFP	Sum No. weeks of admission of recovered children 6-59 months/ No. 6-59 months exits due to recovery	Monthly reports
	Average weight gain for SFP	sum [(weight on exit (g) minus minimum weight(g))/(weight on admission (kg)) x duration of treatment (days)] / No recovered children	Monthly reports
	Recovery rate for SFP	Number of 6-59 months recovered/ Total No. of U5 exits (recovered, died, defaulted) x 100	Tally sheet reports
	Death rate for SFP	Number of U5 deaths/Total No. of U5 exits (recovered,	Tally sheet reports

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Objective	Indicators	Measurement	
		Estimation/measurement	Evidence
		died, defaulted) x 100	
	Default rate for SFP	Number of U5 defaulters/Total No. of U5 exits (recovered, died, defaulted) x 100	Tally sheet reports
Objective 1 Nutrition counseling	Nutritional counseling	Number of staff adhering to counseling guidelines	Counts from facility records Cross-sectional study at the Nutrition unit
Objective 2- health staff capacity building	Proportion of staff trained on inpatient, outpatient care for SAM, outpatient care for MAM and Nutritional counselling	Number of health staff trained in inpatient, outpatient care for SAM and outpatient care for, nutrition counselling MAM /total number staff providing nutrition service	Cross sectional study at the Nutrition unit

Source: CMAM guidelines 2010 and Sphere standard 2004

3.6 Sample size determination

Due to the limited number of Nutrition service staff, total population sampling was employed for this study. This helped to reduce errors and possibly introducing bias in selecting a sample. Sample size calculation from a small population will reduce the chance of detecting significant outcome (Etikan, Musa, & Alkassim, 2016). A total of 31 participants were involved in this study. Of this number, questionnaires were administered to 30 of the participants. One participant who was the sole manager of the Nutrition programme including 9 participants who answered the questionnaires giving a total of 10 took part in the in-depth interview to get more insight in the implementation of the programme. A point of saturation was reached at a maximum of 10 interviews and further responses from participants were no longer generating new themes (Francis et al., 2010).

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3.7 Sampling method/procedure

Total sampling was employed in selecting service providers (Nutrition officers, Community Health nurses) and one manager of the Nutrition programme who was not directly involved in the provision of nutrition services at the St. Gregory Catholic Hospital in Buduburam. The Nutrition officers, Community Health Nurses who had links with the programme were recruited into the study after obtaining their consent. Purposive sampling was used to select the manager of the Nutrition programme for an in-depth interview.

3.8 Data collection techniques/tools

The main data collection techniques that were employed in this study are: Facility-based cross-sectional survey, activity records review, and in-depth interview. A structured questionnaire (made up of closed and open ended questions) was used for the cross-sectional survey for service providers at the Nutrition unit and the Reproductive and Child Health unit. An in-depth interview was conducted for the manager of the Nutrition programme. A structured observation guide was used to collect data on the quality of Nutritional counseling, taking into consideration the level of adherence to nutrition counseling principles by nutrition service providers. The questionnaires used for this study were developed by the Principal Investigator (PI).

3.9 Data collection procedure

3.9.1 Quantitative approach

Structured questionnaires were administered to all service providers (Nutrition officers and Community health nurses) by the researcher and research assistants after obtaining their consent at their respective units after their morning shift at the St Gregory Catholic Hospital in

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Bududuram. It took a maximum of 30 minutes in completing a questionnaire per individual. Review of activities from the records was done after administering questionnaires and results recorded under the appropriate indicators.

3.9.2 Qualitative approach

A face-to-face in-depth interview was conducted with the managers of the nutrition programme at Apra, a suburb of Bududuram. Semi-structured questionnaire were administered alongside the face-to-face interviews. A research assistant took notes during the face-to-face in-depth interview with the manager of the Nutrition programme. A tape recorder was used to record the interview session after obtaining consent from the participant. The recording served as reference to clarify issues of doubt or ambiguity.

3.10 Quality control

3.10.1 Training of field staff

One day training was organized for 2 research assistants. The training was focused on key concepts and methods regarding the study to equip them to do quality data collection. Research assistants were taken through the objectives of the study, importance of respect for research participants, voluntary participation, the process of obtaining informed consent from participants, among other important ethical issues.

3.10.2 Pre-testing data collection tools/questionnaires/instruments:

To ensure validity of data collection tools, pre-testing of the tools was done in Breku, an adjourning community to Bududuram, where a similar Nutrition Programme was being implemented. Participants who took part in the pre-testing of the data collection tools were

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excluded from the actual study conducted in Bududuram. Research assistants took part in the pre-testing process to familiarize themselves with the data collection tools.

3.10.3 Revision of data collection tool/questionnaires/instruments:

Based on the feedback from the pre-testing of the data collection tools, questions were modified to address issues of clarity, ambiguity and reliability.

3.10.4 Supervision of fieldwork

Supervision of data collection was done by the Principal Investigator (PI) on daily basis until completion of the process. All answered questionnaires were checked individually for completeness and consistency by the principal investigator on all the days of the data collection.

3.10.5 Data coding and transcription

Data collected from all the interviews were transcribed and stored on a computer with password.

3.10.6 Data entry

A database was created in Microsoft Excel (2010 version) for the purpose of data entry. All questionnaires were double-checked individually with the original hard copies to reduce errors.

3.11 Data processing and management

All soft copies of data collected were stored with a password on the personal computer of the principal investigator. Hard copies of questionnaires were stored in a cabinet with a lock that only the principal investigator had access. Variables of interest were created and coded in Microsoft excel (2010 version).

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3.12 Data Analysis

3.12.1 Quantitative analysis

Quantitative data were analyzed using STATA/BE 18.0. Simple descriptive statistics were conducted on background characteristics of respondents, quality of the components of the nutrition programme as well as capacity of service providers variables. Thus objectives one and two were analyzed using simple descriptive statistics including means frequencies and percentages.

3.12.2 Qualitative analysis

Data was transcribed as the first step in analyzing the variable – barriers and enablers of the nutrition programme. Themes and patterns which were inductive were then generated. Similar responses were grouped under the same theme and were assigned codes. Names identifying individual participants were not used in the analysis or report writing. However, quoting individuals word for word were employed in instances where the actual words of the participants were needed to place emphasis on issues or make meaning clearer on issues.

3.13 Ethical consideration

3.13.1 Ethical clearance:

Ethical clearance for this study, with approval ID GHS-ERC: 085/04/24, was sought from the Ghana Health Service Ethics Review Committee. Permission to carry out this study was sought from the District Health Director of Gomoa East through a letter by the principal investigator. The letter of permission was then sent to the management of the St. Gregory Catholic Hospital where the study was conducted before the commencement of the study.

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3.13.2 Permission/Approval from study area:

At the facility level, the objectives of the study were explained to participants of the study. Concerns and questions of participants were addressed appropriately by the principal investigator and research assistants. Participants who accepted to participate in the study by signing the consent form were enrolled in the study.

3.13.3 Description of subject involved:

This study involved service providers (Nutrition officers, community health nurses) and the manager of the Nutrition programme at the St. Gregory Catholic Hospital in Buduburam.

3.13.4 Potential risk/benefit:

The study posed minimal risk as this could likely cause discomfort in participants who sacrificed their time in taking part in this study.

3.13.5 Covid-19 Safety measures

All safety measures against Covid-19 were adhered to by the researcher and all research assistants. Hand hygiene using hand sanitizer were done by the researcher and research assistants before and after carrying out in-depth interviews. Also, physical distancing between researchers and participants of the in-depth interview was adhered to so as to protect participants and the research team from Covid-19.

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3.13.6 Privacy/confidentiality:

Data collection did not include names or other things that identified individuals in the study. Only the principal investigator for this study had access to the data that were collected.

3.13.7 Data storage, security, and usage:

Data from this study were stored in a computer with a password. Hard copies of questionnaires were stored in a cabinet that had lock and key. Data that were collected in this study were used for the intended purpose of this study only.

3.13.8 Description of consenting process:

As a social etiquette, research assistants first greeted participants and established rapport with them. This was followed by introducing the study and its objectives to participants. Participants were informed that their role in this study was to provide responses to questions that were asked. Participants were made aware that a maximum of 30 minutes was required to do this and for the in-depth interview, this would take about 90 to 120 minutes. Any clarifications, concerns and questions of participants were addressed before consent forms were given to participants to sign before the actual data collection commenced.

3.13.9 Voluntary consent/Withdrawal:

Taking part in this study was voluntary and participants could choose not to participate or if they chose to participate, they could opt out at any time they wished to and this would not have future consequences on how they or their relatives would be treated.

3.13.10 Compensation:

There was no compensation in taking part in this study.

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3.13.11 Declaration of Conflict of interest:

The researcher declared no conflict of interest so far as this study was concerned.

3.13.12 Protocol funding information

This study was self-funded by the principal investigator.

3.14 Limitation of study

Based on the objectives of this study, the target group (mothers/caregivers and their children, other community members) were not included in study which is a limitation to understand how well the Nutrition programme is being implemented.

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CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents the study findings and how data collected was analyzed. Quantitative data was analyzed using STATA version 18 whilst content analysis was done for qualitative data collected from the field.

Quantitative

4.1 Demographic Characteristics of Service Providers of the Nutrition programme

Table 4.1 presents the demographic characteristics of respondents. The average age of respondents was 31.67(±3.30) with majority 23(76.67%) of them being less than 35 years of age. Few 7(23.33%) were aged 35 years and above. Most respondents 27(90%) were females, more than half 17(56.67%) were married, less than half 12(40%) and 1 representing 3.3% was cohabiting, majority 18(60%) had certificate in community nursing, more than a quarter 8 (26.67%) had Diploma in community nursing, and 2 representing 6.67% had Degree in nursing. Only 2 respondents representing 3.33% each had Diploma and Degree in community nutrition respectively, almost all 29(96.67%) of the respondents were Christians.

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Table 4.1 Demographic characteristics of service providers

CHARACTERISTICS	FREQUENCY (N=30)	PERCENTAGE (100%)
Mean Age 31.67(± 3.30)		
Age groups		
Below 35 years	23	76.67
35 years and above	7	23.33
Sex distribution of respondents		
males	3	10
females	27	90
Marital status of respondents		
Married	17	56.67
Single	12	40
Cohabiting	1	3.3
Category of certificate of respondents		
Certificate in nursing	18	60
Diploma in nursing	8	26.67
Degree in nursing	2	6.67
Diploma in nutrition	1	3.33
Degree in nutrition	1	3.33
Type of religion of respondents		
Christianity	29	96.67
Islam	1	3.33

Source: Field Data, 2024.

Quality of the Nutrition Programme- Foods/Equipment available for the programme

From Table 4.2.1, the equipment available and used for the Nutrition programme included MUAC (Mid-Upper Arm Circumference) tapes, functioning scales, infantometers and stadiometers. Various counseling cards including breastfeeding, complementary feeding, general care practices for children less than 5 among others were available. Foods used for SAM on the

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Therapeutic Feeding Programme (TFP) included Ready-to-use therapeutic food (RUTF) and corn soya blend was used for children under 5 with Moderate Acute Malnutrition (MAM) enrolled on the Supplementary Feeding Programme (SFP). In terms of the nutrition content of the corn soya blend (1.5kg) given per child for one week, the total energy content was 6,600 kilocalories with a total 337.5 grams of protein and 198 grams of fat.

Table 4.2.1: Quality of the Nutrition Programme- Foods/Equipment available for the programme

Equipment for the Nutrition Programme	Therapeutic Feeding Programme	Supplementary feeding Programme	Nutritional counseling
Counseling cards			+
MUAC tape	+	+	
Functioning scale	+	+	
Infantometer	+	+	
Stadiometer	+	+	
Foods used Nutrition programme			
Formula-75	-		
Formula-100	-		
Ready-use-therapeutic Food	+		
Corn Soya Blend		+	

+= present, - = not present

Source: Field Data, 2024.

Quality of the Nutrition programme – Other variables assessed

Two therapeutic foods were available for the Nutrition programme; the ready-use therapeutic foods and corn soya blend (CSB). The nutrient content of the corn soya blend included the following: 1.5kg CSB contained 6600kcal of energy, 337.5g of protein and 198g of fat. In terms of the availability of these foods (CSB, RUTF), 30(100%) of nutrition service providers reported these foods were not always available due to lack of funds to purchase them. In terms of SAM

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and MAM identification, all service providers predominantly identified cases through measurement weight, 7(23.3%) indicated height measurement as mode of identification, 10 (33.3%), 11(36.6%) respectively identified cases through MUAC measurement and observing clinical signs of malnutrition in children below 5 years of age. For SAM cases, all service providers reported that weight, MUAC measurement as well as supply of RUTF were the routine services provided for these children on the therapeutic feeding programme. For MAM cases on the supplementary feeding programme, all reported that weight and height measurement as well as supplying corn soya blend were the routine services provided for the affected children. In terms of nutritional counseling, all respondents adhered to the principles of Nutrition counseling. In terms of SAM identification, 9(30%) of service providers identified a total of 26 SAM cases in 2023 and 19(73.1%) out of a total of 26 were successfully referred to the Nutrition programme. Thus, 7(26.9%) were not referred to Nutrition programme.

Table 4.2.2 Quality of the Nutrition programme – Other variables assessed

Variable	**Number (n=30)**	**Percentage (100%)**
Therapeutic foods for SAM – RUTF	30	100
Therapeutic foods for MAM – Corn soya blend	30	100
Availability of foods for the Nutrition programme		
Yes	0	0
No	30	100
Reason why foods are not always available		
Lack of funds to purchase commodities	30	100
How SAM and MAM cases are identified		
Weight measurement	30	100
Height measurement	7	23.3
MUAC measurement	10	33.3
Observing clinical signs	11	36.6
Routine Services Provided for SAM cases		

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Weekly Weight and MUAC measurement	30	100
Weekly supply of RUTF	30	100
Routine Services Provided for MAM cases		
Weekly weight measurement	30	100
Monthly height measurement	30	100
Weekly supply of corn soya blend	30	100
Identification of SAM last year		
Yes	9	30
No	21	70
Number of SAM cases identified last year (n=26)		
Males	13	50
Females	13	50
Referral to the Nutrition programme		
Successfully referred	19	73.1
Not referred	7	26.9
Quality of Nutrition Counselling		
Greeting client		
Yes	30	100
No	0	0
Asking client situation		
Yes	30	100
No	0	0
Listening to what client says		
Yes	30	100
No	0	0
Identifying client's Key problems		
Yes	30	100
No	0	0
Discussing realistic Options with client		
Yes	30	100
No	0	0
Recommending small doable actions		
Yes	30	100
No	0	0
Asking client to repeat what they heard		

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Yes	30	100
No	0	0
Appointment for follow up		
Yes	30	100
No	0	0

Source: Field Data, 2024.

Figure 4.1 presents indicators for the therapeutic feeding programme. A total of 22 children below 5 years with Severe Acute Malnutrition (SAM) were recorded in the past one year (2023). 13(59.1%) out of the 22 SAM cases were enrolled on the therapeutic feeding programme (on treatment). Eight (61.5%) of 13 were cured and discharged from the programme. Five (38.5%) defaulted (absent 3 consecutive times) and no child died. On average, SAM cases stayed on the programme for 182 days with an average weight gain of 4.3g/day.

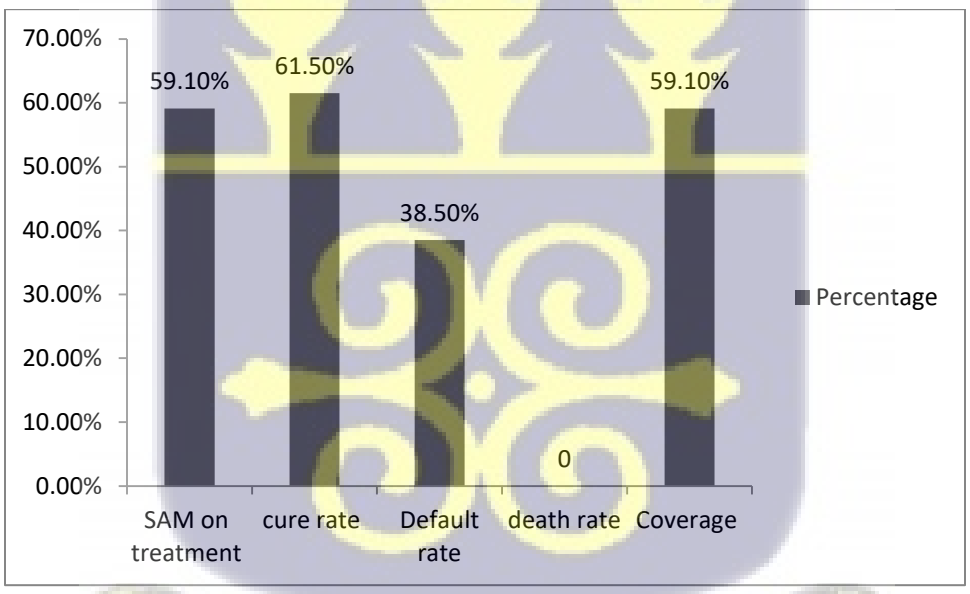

Figure 4.1: Indicators for Therapeutic feeding programme

Source: Field data, 2024.

In the past one year (2023), a total of 21 MAM cases were recorded among children less than 5 years. Nine (43%) were placed on treatment (enrolled on supplementary feeding programme), 4

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(44%) out of 9 were cured and none of them died. On average, MAM cases stayed on the programme for an average of 365days/one year with a mean weight gain of 4.3g/day.

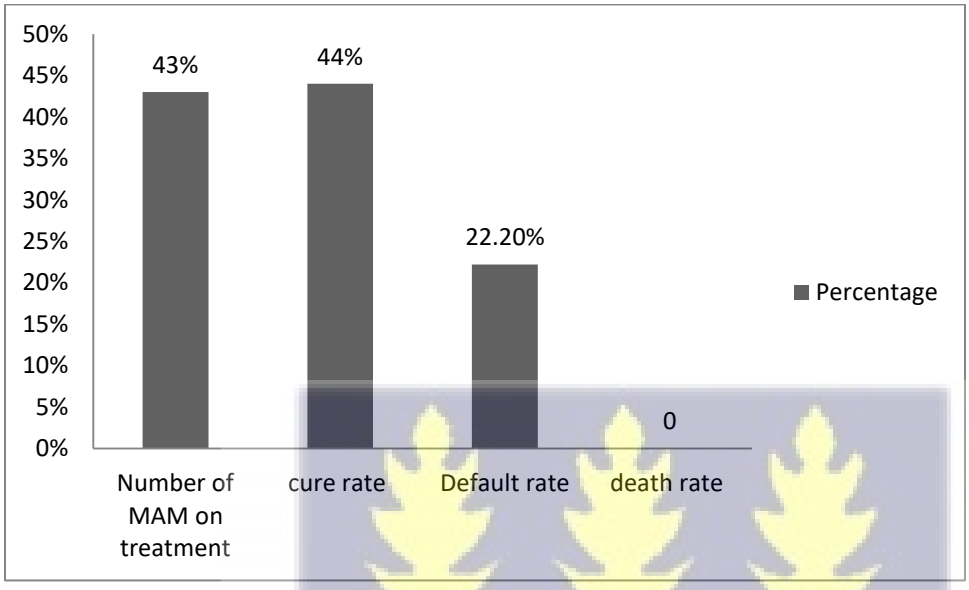

Figure 4.2: Indicators for supplementary feeding programme

Source: Field data, 2024.

Capacity of Health staff in implementing the Nutrition Programme

All (100%) implementers of the Nutrition programme said they knew the objectives of the programme. A total of 18 (60%) service providers of the Nutrition programme had training on the management of malnutrition. Of the 18 service providers who received training on malnutrition management, 8(26.6%) received training on inpatient care for SAM, all 18 representing 60% each received training on outpatient care for SAM, outpatient care for MAM and nutrition counseling. In terms of training for new staff who join the Nutrition unit, all 30 respondents reported that in-service training on malnutrition management are held for the new staff of the programme.

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Table 4.2.3: Capacity of Health staff in implementing the Nutrition programme

Variable	Number (n=30)	Percentage (100%)
Knowledge on the objectives of the Nutrition programme		
Yes	30	100
No	0	0
Training on management of malnutrition		
Yes	18	60
No	12	40
Areas of training received (n=18)		
Inpatient care for SAM	8	26.6
Outpatient care for SAM	18	60
Outpatient care for MAM	18	60
Nutritional counselling	18	60
No training	12	40
Training for new staff		
Yes	30	100
No	0	0

Source: Field Data, 2024.

Qualitative

Demographics

Table 4.2.4: Participants of key informant interview

Participants/groups	**Number of participants**
Manager of the Nutrition programme	1
Community health Nurses	7
Nutrition officers	2
Total	10

Source: Field Data, 2024.

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Barriers to implementing the Nutrition programme

The participants of the key informant interview shed light on some factors they perceived as barriers to the implementation of the nutrition programme and enablers of the said programme.

Barriers

The key informants mentioned the following as barriers to implementing the Nutrition programme: Individual factors, systemic factors, community factors and lack of logistics and funds.

Individual factors

At the individual level, caregivers are always in a state of denial when their children are malnourished and as a result fail to seek for medical care. This is a barrier to implementing the Nutrition programme. Some mothers do not have the right knowledge to feed their children which is also a major barrier to implementing the programme. These mothers do not know the right food to give their children as they age. Also, caregivers who earn low income are not able to provide nutritious meals for their children which is another barrier to implementing the programme. Also, some mothers see distance as a barrier as they are expected travel from their homes to the location of the programme to access nutrition services. It is important to add that some caregivers/mothers do not have time to feed their children, making the implementation of the nutrition programme difficult.

> *"...caregivers not accepting that the child is malnourished ..., ... caregivers do not have the right knowledge on feeding practices of children ... Some caregivers also complain about distance and money to pay for transport to access nutritional*

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care. Due to poverty, caregivers are not able to buy nutritious foods for their children and … they do not have enough time to feed their children"

Participant 01, KII.

Systemic factors

The nutrition programme as part of its design, provides free nutritional and medical care for children who are malnourished. Based on these incentives, mothers/caregivers tend to keep their children in a state of malnutrition so that they continue to receive these incentives.

"…there is free medical care for children who are malnourished so mothers try to work out so that their children remain malnourished so that they continue to benefit from the free medical care"

Participant 01, KII.

Community factors

Caregivers of children who are suffering various forms of malnutrition are often stigmatized by the community they live in and so they shy away bringing such children to the public especially outreach points or health facilities for the needed care and this is barrier to implementing the programme.

"…The community, there is stigma regarding malnutrition. So caregivers with malnourished children are reluctant in seeking the right medical care"

Participant 01, KII

The frequent shortage of the necessary logistics including Ready-use-therapeutic food and corn

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soya blend which two important food products for running the Nutrition are a major barrier to the Nutrition programme. The root cause of the lack of these food products is the lack of funds to purchase these products and is major barrier to implementing the Nutrition programme programme in terms of treatment for cases enrolled on the programme and as well affect the enrolment of new ones.

"...frequently, we run out of RUTF and corn soya blend for treating cases of malnutrition".

Participant 02, KII.

"*Because we do not have funds to purchase the foods for the malnourished children, we experience shortage from time to time"*

Participant 03, KII

Some mothers/caregivers have large family sizes and lack the means to provide nutritious foods for them. Also some mothers have the wrong perception that malnutrition is caused by childhood wasting. others think malnutrition is caused people who are spiritually strong. Additionally, the influence of extended family members on poor feeding practices of children below five years cannot be overlooked. Further, some caregivers perceive wrongly that they will be made to pay for the therapeutic foods - RUTF, Corn soya blend used for rehabilitating their malnourished children. Some caregivers fail to adhere to recommended feeding practices even though they know these feeding practices.

"... some mothers have too many children and find it difficult to take care of them"

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Participant 04, KII

"You see mothers are not working and …can't buy food for their children"

Participant 05, KII

"Mothers see malnutrition to be caused by 'asram'(childhood wasting)..."

Participant 06, KII

"…Some people have 'bad eyes'(spiritually strong)…and can make your child become 'small' (become wasted)."

Participant 07, KII

"…family members like grandparents can give water and food to children below six months."

Participant 08, KII

"Mothers think that when they come here [Nutrition unit] they will be made to pay for the food [RUTF, corn soya blend]."

Participant 09, KII

"Some mothers do not follow the feeding practices that we ask them to follow"

Participant 10, KII.

Enablers of the Nutrition programme

In order to deal with the problem of poor feeding practices and misconception about the causes of malnutrition, health staff should adopt appropriate behavior change communication aimed at

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dispelling minds. Nutrition services should also be integrated in the community outreach services to make these services more accessible to caregivers. Providing appropriate education and counseling to caregivers on feeding practices when the need arises also can serve as enablers of the Nutrition programme. Government should consider implementing policies that provide support for households with children suffering malnutrition. Thus, this can be another enabler of the programme.

> *"…Behaviour change communication strategy, change in mind set of caregivers about malnutrition."Nutrition services should be part of the community outreach…constantly educating and counseling caregivers on the right foods to give can help to improve nutritional status"Government should have policies that provide supports to malnourished children and their households"*
>
> Participant 01, KII

Another enabler of the Nutrition programme is availability of therapeutic foods for rehabilitating malnourished children as well as government giving financial support to affected households to engage in income generating activities.

> *"…Corn soya blend, for example should be made available for treating malnutrition."*
>
> Participant 02, KII

> *"…If government can give money to support households with children who are malnourished to enable them start business…"*
>
> Participant 03, KII

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One enabler of the Nutrition programme is organizing family planning campaigns aimed at reducing family sizes that caregivers are able to provide the needed care and prevent malnutrition. Also taking RUTF, corn soya blend to outreach points can enable accessibility to these therapeutic foods, thus serving as an enabler of the Nutrition programme implementation.

"… there should be family planning activities to reduce household sizes…and taking the foods [RUTF, corn soya blend] to outreaches can also help…"

Participant 04, KII

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CHAPTER FIVE

DISCUSSION

This process evaluation of the Nutrition programme focused on three specific objectives for the study: to assess the quality of the components (therapeutic feeding, supplementary feeding and nutritional counseling) of the Nutrition programme, assess the capacity of health staff in implementing the nutrition programme in Bududuram and determine the barriers and enablers of the implementation of the nutrition programme in Bududuram.

5.1 Quality of the components (therapeutic feeding, supplementary feeding and nutritional counseling) of the Nutrition programme.

Nutrition programmes are established to combat malnutrition especially among children below five years. The effectiveness of Nutrition programmes largely depends on the availability of some basic equipment, services and foods. The study found the availability of basic anthropometric tools which facilitated the process of identifying and managing children with various forms of malnutrition. This finding is contrary to a study by Tengepare, Chirawurah, & Apanga, (2024) which found that logistical constraints impeded provision of nutrition services for children in Jirapa Municipality in the Upper West region of Ghana. For the process of rehabilitating malnourished children, Ready-to-use therapeutic foods (RUTF) were available and used for the intended purpose. Apart from RUTF, F-75 and F-100 are other foods used for rehabilitating malnourished children depending on the state of malnourishment. Given the crucial role of these foods in the rehabilitation process of malnourished children, F-75 and F-100 were not available for the therapeutic feeding programme and this partially did not meet the basic

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materials needed for the said programme (Bahwere et al., 2006). This finding is consistent with a study by Elhady et al., (2023) which found some nutritional foods to be lacking, hence affecting services for children under 5. RUTF and corn soya blend are two therapeutic foods used respectively for the therapeutic and supplementary feeding programmes. In order that malnourished children receive these therapeutic foods continuously until recovery, the availability of these foods is paramount. Nutrition service providers reported frequent shortage of these foods thereby hampering the rehabilitation process. This finding complements a study by USAID (2023) that found frequent shortage of RUTF in the northern part of Ghana. Thus, the inconsistent nature of the supply of this commodity could serve as a demotivation for staff to actively search for SAM cases in their community to treat them. This could lead to an increase in SAM cases at the community level and in the general population as well. To effectively combat child malnutrition, it is essential that various standard methods are followed in identifying them so that rehabilitation can take place. Various methods were used by nutrition service providers to identify cases of malnutrition with weight measurement being the predominant mode used by all. Weight measurement in combination with other assessment methods including height measurement, MUAC measurement and making observations for clinical signs, were used by staff to identify children with malnutrition. The process of nutritional rehabilitation involves providing some services on routine basis until recovery. Those with Severe acute malnutrition (SAM) had their weight and MUAC assessed on weekly basis as well as weekly supply of RUTF to aid recovery from malnutrition. For children with moderate acute malnutrition, they had their weight measured every week, their heights measured every month and were given corn soya blend every week to facilitate recovery from their state of malnutrition. The year 2023 recorded 26 SAM cases with most of them being enrolled on the Nutrition programme. Some SAM and

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MAM cases were not enrolled on the programme with the following as reasons: Long distance to the hospital where the Nutrition unit is located, lack of funds for transport, knowledge gap on causes of malnutrition, poor feeding practices among others which are barriers to implementing the Nutrition programme. Not enrolling malnourished children on nutrition programmes could increase the number of malnutrition in the community and this can be a public health issue in the country at large. In terms of counseling services, various counseling cards which served as job aids were available and used for counseling services. Counseling principles were adhered to by all the nutrition service providers. In assessing the effectiveness of the therapeutic feeding programme, aside the death rate (0) which met the SPHERE's standard, the cure rate (61.5%), default rate (38.5%), coverage (59.1%) failed to meet the standard (cure rate >75%, default rate <15%, coverage >70%) (Sphere Project, 2004). The current study's finding of SAM prevalence of 59.1% was higher compared to a study by Anato (2022) who found a SAM prevalence of 8% among children below 5 in Ethiopia. Further a study by Paola & Ana, (2023) found malnutrition prevalence of 76% in children aged below 5 in Brazil and this is higher relative to the current prevalence of 59.1% by this study. SAM cases if not treated promptly could result in increased under 5 mortality as these cases usually present with medical complications. The cure rate and default rate fell below the standards due to the logistical constraints (lack of therapeutic foods) faced by the programmed as found in the qualitative study. This could increase the prevalence of severe acute malnutrition in the community, thereby hindering the fight against malnutrition. In a similar way, the effectiveness of the supplementary feeding programme fell below the SPHERE's standard (cure rate - >75%, default rate - <15%, death rate <3%) as the cure rate of the programme was 44%, and default rate – 22.2% with no incidence of death. A study by Kumar, Zode, & Basu, (2023) found similar cure and default rates of 44%, 41% respectively in

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under 5 who were malnourished. Again, not achieving at least 75% cure rate for children with moderate malnutrition could eventually plunge the affected children into severe malnourishment and possibly lead to death among children aged below 5. The World Health Assembly target of ending all forms of malnutrition by the end of year 2025 will not be achieved if nutritional interventions are not meeting the said nutritional standards.

5.2 Capacity of health staff in implementing the Nutrition programme.

For the Nutrition programme to be able to achieve its desired results, there is the need to have staff with the required capacity, thus knowledge and skills, to provide nutrition services. In-service training in the area of nutrition can enhance staff capacity in the provision of nutrition services (Ministry of Health, 2013). In this respect, all staff had knowledge of the objectives of the Nutrition programme which is one example of demonstrating their capacity in implementing the said programme. The provision of clinical training to health staff in areas such as inpatient and outpatient care for SAM, outpatient care for MAM help improve the capacity of these staff to better manage malnutrition in children, especially those below age 5 (Bahwere et al., 2006). One important benefit of providing training for staff is increase case detection of SAM at the community level as found by USAID (2023). In order to sustain the Nutrition programme in the long term, there is the need to have knowledge and skills transfer from experienced staff to new trained ones (ibid). Without the transfer of knowledge and skills, case detection for SAM will eventually decrease as the knowledgeable and skilled staff leave the service, making cases of malnutrition to rise in the community. In this regard, this study found that there was knowledge

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and skills transfer as staff indicated that new staff had training on case identification and management of SAM.

5.3 Barriers and enablers influencing implementation of the Nutrition programme

In order to gain insight in the implementation of the Nutrition programme, it is important to identify factors that serve as either barriers to or enablers of the implementation of the programme. These factors when managed properly can enhance the implementation of the programme and aid in achieving its objectives.

The following serve as barriers to implementing the Nutrition programme: Poor knowledge, low income, distance, stigmatization, frequent shortage of therapeutic foods, lack of funds to procure therapeutic foods, large family size, superstitious beliefs-'asram' influence of extended family members on child feeding, wrong perception to pay for therapeutic foods and non-adherence to recommended feeding practices.

One of the findings of this study is poor knowledge which affects the implementation of the Nutrition programme. Caregivers/mothers lack basic knowledge on the causes of malnutrition in children below five years. As a result, they are usually in a state of denial and will not accept that their children are malnourished. Therefore, they do not find the need to improve their care and feeding practices of their children, making malnutrition to persist or even deteriorate. A study had similar finding related to poor feeding practices that resulted in malnutrition in children less than five years (Albuquerque, Lunet, Breda, & Padrão, 2020).

Distance is one barrier to implementing the Nutrition programme. Caregivers find it difficult to access the Nutrition programme due to its location. They often complain that the programme is far from their homes making it difficult for them to access the needed services of the programme.

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The availability of nutrition services is therefore limited given that people who are in need of these services are supposed to travel a certain distance to access the services. Limited access of nutrition services due to distance as the study's finding aligns with the finding by the Ministry of Health (2016).

Another important finding which is a barrier to implementing the Nutrition programme is low income of caregivers. Due to low incomes of caregivers, they are unable to buy or access nutritious foods of the right quantities and qualities for their children. They are limited to what they have which makes them vulnerable to malnutrition. Consistent with the study, some studies found low income of caregivers as a barrier to good nutrition (Elhady et al., 2023; Albuquerque, Lunet, Breda, & Padrão, 2020;Bain et al., 2013). Also, some mothers/caregivers wrongly perceive that they will be made to pay for the therapeutic foods that are given to them, so they refuse referral to the programme and this serves as a barrier to implementing the Nutrition programme.

Further, stigmatizing households where malnutrition in children exist by the community, is a barrier to implementing the Nutrition programme. Stigmatizing households that have malnourished children makes the fight against malnutrition difficult if not impossible to overcome. Households who are stigmatized due to this problem shy away from bringing such children to the public, let alone seeking medical care. These children are usually home bound making their nutritional status to deteriorate further. Consistent with this finding is a study conducted by Bliss, Njenga, Stoltzfus, & Pelletier (2016) which found stigma as a major barrier to accessing nutrition services in Marsabit county in Kenya.

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The frequent shortage of therapeutic foods including ready-to-use therapeutic food (RUTF) and corn soya blend (CSB) is another barrier to the Nutrition programme. RUTF and CSB are two important therapeutic foods used to respectively treat severe acute malnutrition and moderate acute malnutrition in children aged less than 5years. The Nutrition programme, from time to time experience shortage of these foods, impeding continuous care and recovery of malnourished children. If the food shortage continuous, malnourished children will not get the needed treatment and this could result in an increase in the incidence of malnutrition in children. The root cause of the shortage is due to lack of funds to procure these foods for rehabilitating malnourished children. Similar to the finding of the study was a study by Albuquerque, Lunet, Breda, & Padrão (2020) which found that lack of Nutritional supplements affects nutritional status including children.

Another barrier to implementing the Nutrition programme is the superstitious belief that malnutrition is caused by 'asram'(childhood wasting). With this belief, caregivers fail to seek medical care and this makes the condition of such children worse. A similar finding identified cultural belief as a barrier to attaining good nutrition (Albuquerque et al., 2020).

Continuous health education of caregivers/mothers on nutrition can serve as an enabler to implementing the nutrition programme. Thus caregivers/mothers will be enlightened on nutrition and care practices of children below age 5. This will also help deal with the issue of stigmatization, misconceptions about malnutrition among others. Providing nutritional counseling which is tailored to individual needs is also an enabler of the of the Nutrition program. Another enabler of the programme is integrating nutrition services in community outreach so as to make nutrition services more accessible to caregivers. The intervention by

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central government in making therapeutic foods available and accessible malnourished children is one major enabler to the implementation of the Nutrition programme.

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CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The quality of the Nutrition programme was largely good as basic logistics required for the programme implementation were available.

Nutrition service providers demonstrated enough capacity to implementing the Nutrition programme.

Several factors, as perceived by service providers, impeded the implementation of the Nutrition program: These include poor knowledge, low income, distance, stigmatization, frequent shortage of therapeutic foods, insufficient financial resources to acquire therapeutic foods, superstitious beliefs and wrong perception of having to pay for therapeutic foods.

Nutrition service providers believe continuous health education for caregivers, counseling services, community outreach with nutrition services incorporated, and government intervention in making therapeutic foods accessible to malnourished children are essential enablers of the nutrition programme.

6.2 Recommendations

Policy Makers

1. Government should provide essential commodities for the rehabilitation of malnourished children.

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District Health Directorate

2. Continuous nutrition and health education should be provided to caregivers at the community level.
3. Timely supply of logistics to health facilities for the implementation of the Nutrition programme.
4. Formation of support groups to facilitate management of malnutrition in every community in the district.

Research

5. Research should be conducted to determine the impact of the Nutrition programme
6. An evaluation of the implementation of the CMAM (Community-based Management of Acute Malnutrition) policy in Ghana should be conducted.

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APPENDICES

4. Appendix 1: Draft Informed Consent Forms

PARTICIPANT INFORMATION SHEET FOR SERVICE PROVIDERS, AND MANAGERS

TITLE OF STUDY: Process Evaluation of the Nutrition Programme at the St. Gregory Catholic Hospital in Bududuram.

INTRODUCTION: My name is Emmanuel Ziem Lebenone, a student studying MSc. Public Health Monitoring and Evaluation at the University of Ghana, School of Public Health. I am the Principal Investigator (PI) for the study mentioned above.

BACKGROUND AND PURPOSE OF RESEARCH: Child nutrition is essential to attaining growth and development of every country. The process of nourishment starts from conception and continues throughout the life cycle. One proven way of nourishment for infants after delivery is breastfeeding and breastfeeding exclusively (breastfeeding with only breast milk for 6 months after birth) is known to have benefits for both mother and child. Complementary feeding which introduces the child to family foods starts at 6 months and continues as a way of nourishment for the rest of the child's life. Despite these processes of nourishment for infants, it is still common to find various forms malnutrition due to poor feeding, ill health, inadequate access to food among other factors. Nutritional interventions including therapeutic and supplementary feeding are employed as temporary measures to prevent malnutrition. Hence this study aims to conduct a process evaluation of the Nutrition programme at the St. Gregory Catholic Hospital in Bududuram

NATURE OF RESEARCH: The study is a one-time event involving service providers and managers of the nutrition programme at the St. Gregory Catholic Hospital.

PARTICIPANTS INVOLVEMENT:

- **DURATION/PARTICIPANT'S ROLE**: The study will take about 30-45 minutes to complete a questionnaire on nutrition related activities and services for each of the

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service providers of the nutrition programme. Records of the nutrition programme will be reviewed to gain insight on implementation of the programme. Additionally, there will be an in-depth interview with managers of the Nutrition programme and the whole interview session will be recorded.

- **POTENTIAL RISK**: The study poses minimal risk as participants will be expected to spend about 30 to 45 minutes of their time in taking part in this research work.
- **BENEFITS**: There are no direct benefits for individual participants of the study; however findings of the study will contribute to knowledge in nutrition intervention. Also, findings will help improve implementation of the nutrition programme.
- **COST**: Aside the time of participants that will be spent on this study, it is expected that this study will not have direct financial cost on participants.
- **COMPENSATION**: You will not receive any compensation in taking part in this study. The time you will spend on this study will be appreciated.
- **PRIVACY AND CONFIDENTIALITY**: Data collected will he kept confidential. Data and voice recordings will be stored on computers with passwords and filled questionnaires safely locked in a drawer. Access to the data will be limited to the researcher and the supervisor. Your name and other details of your identity are not needed for the study. However, the information you would provide is going to be identified by a special code and would be treated strictly as confidential. We assure you that your name shall not appear or be mentioned in any report that might come out from this study.
- **VOLUNTARY PARTICIPATION AND WITHDRAWAL:** Participating in this study is voluntary. You have the right to refuse answering any question we ask you and you may stop or end the interview at any point in time. You may also withdraw your participation at any time of the study without losing anything or getting any form of penalty.
- **OUTCOME AND FEEDBACK:** The outcome of the study will be disseminated to the managers of the Nutrition programme at the St. Gregory Catholic Hospital in Bududurram and it is expected that managers will disseminate to service providers and other staff of the Nutrition programme.

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- **SHARING OF PARTICIPANTS INFORMATION/DATA:** Group data and/or information and not individual information will be shared with those who need to know to make decisions and act on findings.
- **PROVISION OF INFORMATION SHEET AND CONSENT FORM:** : You will be given a copy of the information sheet and the consent form after you have agreed and signed to take part in this research.
- **WHO TO CONTACT FOR FURTHER INFORMATION:** Should you require further information on this study, you can contact the Principal Investigator and/or supervisor on this address

Emmanuel Ziem Lebenone (PI)

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ACCRA LEGON

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DR. BAABA FRANCIS DACOSTA VROOM (Supervisor)

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ACCRA LEGON

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. **For further clarification on ethical issues and your right as participants please contact the Ghana Health Service Ethics Review Committee Administrator: Madam Hannah Frimpong P. O. BOX MB 190, Accra 0507041223**

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CONSENT FORM FOR SERVICE PROVIDERS OF THE NUTRITION PROGRAMME

STUDY TITLE: Process Evaluation Of The Nutrition Programme at the St. Gregory Catholic Hospital In Bududuram

PARTICIPANT'S STATEMENT

I acknowledged that I have read or have the purpose and content of the participant's information sheet read and explained to me. I have been given the opportunity to ask questions about the research and all questions have been answered to my satisfaction in English. I fully understand the content and any potential implications as well as my right to change my mind (withdraw from the research) even after I have signed this form. I voluntarily agree to participate in this study.

5. **……**

6. **Participants Signature/ Thumbprint** **Date**

NVESTIGATOR'S STATEMENT

I certify that the participant has been given ample time to read and learn about the above study. All questions and clarification raised by the participant have been addressed.

Researcher's name …… Signature of researcher ……

Date ……

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CONSENT FORM FOR COMMUNITY HEALTH NURSES OF THE NUTRITION PROGRAMME

STUDY TITLE: Process Evaluation of the Nutrition Programme at the St. Gregory Catholic Hospital in Bududuram

PARTICIPANT'S STATEMENT

I acknowledged that I have read or have the purpose and content of the participant's information sheet read and explained to me. I have been given the opportunity to ask questions about the research and all questions have been answered to my satisfaction in English. I fully understand the content and any potential implications as well as my right to change my mind (withdraw from the research) even after I have signed this form. I voluntarily agree to participate in this study.

……

Participants Signature/ Thumbprint **Date**

NVESTIGATOR'S STATEMENT

I certify that the participant has been given ample time to read and learn about the above study. All questions and clarification raised by the participant have been addressed.

Researcher's name …… Signature of researcher ……

Date ……

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CONSENT FORM FOR MANAGERS OF THE NUTRITION PROGRAMME

STUDY TITLE: Process Evaluation of the Nutrition Programme at the St. Gregory Catholic Hospital in Bududuram

PARTICIPANT'S STATEMENT

I acknowledged that I have read or have the purpose and content of the participant's information sheet read and explained to me. I have been given the opportunity to ask questions about the research and all questions have been answered to my satisfaction in English [ ]. I fully understand the content and any potential implications as well as my right to change my mind (withdraw from the research) even after I have signed this form. I voluntarily agree to participate in this study.

I agree for my voice to be recorded Yes [ ] No [ ]

Initials of participants ....

Signature of participant…… Date ……..

Participants Signature/ Thumbprint

NVESTIGATOR'S STATEMENT

I certify that the participant has been given ample time to read and learn about the above study. All questions and clarification raised by the participant have been addressed.

Researcher's name …… Signature of researcher ……

Date ……

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Data collection tools

7. Appendix 2: Draft questionnaire for Service providers (Nutrition officers, community health nurses)

Section 1(DEMOGRAPHICS)			
Code	**Questions**	**Response Option**	**Resp**
Q1	Age of respondent	----------	
Q2	Sex	[1] Male [2] Female	[__]
Q3	Marital status	[1] Married [2] Single [3] Divorced [4] Widowed [5] co-habitation	[__]
Q4	What certificate do you hold in nutrition?	[1] Diploma in nutrition [2] First degree in nutrition [3] second degree in nutrition	[__]
Q5	What is your religion?	[1] Christianity [2] Islam [3] Traditional	[__]

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QUALITY OF THE THERAPEUTIC FEEDING PROGRAMME				
Q6	Do you have the following equipment for anthropometric assessment of children 6-59 months?	MUAC Functioning scale Infantometer Stadiometer	[1] Yes [0] No [1] Yes [0] No [1] Yes [0] No [1] Yes [0] No	[__] [__] [__] [__]
Q7a	What therapeutic food(s) do you use in treating your SAM cases?	RUTF F-75 F-100 Corn-soya blend	[1] Yes [0] No [1] Yes [0] No [1] Yes [0] No [1] Yes [0] No	[__] [__] [__] [__]

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Q7b	Do you have these foods always available?		[1] Yes [0] No	
Q7c	If no to Q7b, why?			
Q8	Do you have a separate facility for managing SAM who require inpatient care?		[1] Yes [0] No	[__]
Q9	How are SAM cases identified?		[1] Weight Measurement [2] Height measurement [3] MUAC measurement [4] Observing clinical signs	[__]
Q10	What routine services are provided to SAM cases		[1] weekly weight and MUAC measurement [2] weekly supply of RUTF [3] Weekly medical assessment [4] Others (specify)	[__]
Q11	How many SAM cases did you record last month?		Indicate the number…….	
Q12	What is the sex distribution of your SAM cases		Indicate number of males …….. Indicate number of females……	

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Q13	How many of your SAM cases are receiving treatment?	Indicate number……..
Q14	Indicators for therapeutic feeding Cure rate……. Default rate…… Death rate …… Average length of stay for SAM…….. Average weight daily weight gain …… Coverage …….	
QUALITY OF THE SUPPLEMENTARY FEEDING PROGRAMME		

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Q15	What therapeutic food(s) do you use in treating your MAM cases?	RUTF	[1] Yes [0] No	[__]
		Sugar	[1] Yes [0] No	[__]
		Fortified vegetable oil	[1] Yes [0] No	[__]
		Corn-soya blend	[1] Yes [0] No	[__]
Q16 a	What is the nutritional content of the food you give to MAM cases?	Energy (Kcal) …… Protein (g)…….. Fat (g)……		

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Q16 b	Do you have these foods always available?	[1] Yes [0] No	
Q16 c	If no to Q7b, why?		
Q17	How are MAM cases identified?	[1] Weight Measurement [2] Height measurement [3] MUAC measurement [4] Observing clinical signs	
Q18	What routine services are provided to MAM cases?	[1] weekly weight measurement [2] weekly supply of corn soya blend [3] Weekly medical assessment [4] monthly height measurement	[__]
Q19	Do you have a separate facility for managing inpatient MAM cases?	[1] Yes [0] No	[__]
Q20	How many MAM cases did you record last month?	Indicate the number……	
Q21	What is the sex distribution of your MAM cases	Indicate number of males …….. Indicate number of females……	

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Q22	How many of your MAM cases are receiving treatment?	Indicate number……..	
Q23	Indicators for Supplementary feeding Cure rate……. Default rate…… Death rate …… Average length of stay for MAM…….. Average daily weight gain …… Coverage …….		
	QUALITY OF NUTRITION COUNSELLING Observe counselling and check the appropriate box using the acronym GALIDRAA		
Q24 a	**Greet** client and exchange introduction	[1] Yes [0] No	[__]

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Q24 b	**Ask** about client's situation and current practices using open ended question	1] Yes [0] No	[__]
Q24 c	**Listen** to what client says, take into consideration body language and ask probing questions	[1] Yes [0] No	[__]
Q24 d	**Identify** the client's key problems and how to address them		[__]
Q24 e	**Discuss** options that are realistic and use visual materials to engage client	[1] Yes [0] No	[__]
Q24f	**Recommend** and agree on small doable actions, stating the benefits of the recommendation	[1] Yes [0] No	[__]
Q24 g	**Ask** client to repeat what they understood and what they are willing to try at home		
Q24 h	Appointment for follow up visit		
	CAPACITY OF HEALTH STAFF IN IMPLEMENTING THE NUTRITION PROGRAMME		
Q25	Do you know the objectives of the Nutrition programme?	[1] Yes [0] No	[__]

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Q26 a	Have you been trained on the management of malnutrition cases?	[1] Yes [0] No	[__]
Q26 b	If yes, which areas have you received training on?	Indicate Yes [1] or No [0] [1] inpatient care for SAM [2] Outpatient care for SAM [3] Outpatient care for MAM [4] Nutritional counselling others indicate……..	[__] [__] [__] [__]
Q27	Does your facility hold in-service training for new staff who join the unit?	[1] Yes [0] No	[__]
Any other comments			

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Appendix 4: Interview guide for the manager of the Nutrition Programme

Section 1(DEMOGRAPHICS)			
Code	**Questions**	**Response Option**	**Resp**
Q1	Age of respondent	----------	
Q2	Sex	[1] Male [2] Female	
Q3	Marital status	[1] Married [2] Single [3] Divorced [4] Widowed [5] co-habitation	[__]
Q4	Level of education of respondents	[1] No formal education [2] Basic education [3] Secondary education [4] Tertiary	[__]
Q5	What is your religion?	[1] Christianity [2] Islam [3] Traditional	[__]
QUALITY OF THE NUTRITION PROGRAMME			

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Q6	What equipment are available for the Nutrition programme? Please list them
Q7	What foods are made available for the management of SAM cases? Please list them
Q8	What foods are made available for the management of MAM cases? Please list them
Q9	What are the job aid materials you have provided for the running of the nutrition programme Please list them
CAPACITY OF HEALTH STAFF PROVIDING NUTRITION SERVICES	
Q10	How are new staff introduced to the Nutrition programme?

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Q11	What measures are in place to update staff on current management nutritional conditions?
Q12	How many of your staff received training on the management of malnutrition cases based the components of the Nutrition programme? Indicate Number
Q13	What are the barriers to implementing the Nutrition programme?
Q14	What are the enablers for the implementation of the Nutrition programme? List them
Any other comments	

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Qualitative tool- Manager of the Nutrition programme

Section 1(DEMOGRAPHICS)			
Code	**Questions**	**Response Option**	**Resp**
Q1	Age of respondent	----------	
Q2	Sex	[1] Male [2] Female	
Q3	Marital status	[1] Married [2] Single [3] Divorced [4] Widowed [5] co-habitation	[__]
Q4	Level of education of respondents	[1] No formal education [2] Basic education [3] Secondary education [4] Tertiary	[__]
Q5	What is your religion?	[1] Christianity [2] Islam [3] Traditional	[__]

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Q13	What are the barriers to implementing the Nutrition programme?
Q14	What are the enablers for the implementation of the Nutrition programme? List them
Any other comments	

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GHANA HEALTH SERVICE ETHICS REVIEW COMMITTEE

In case of reply the number and date of this Letter should be quoted.

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My Ref. GHS/RDD/ERC/Admin/App/24/238
Your Ref. No.

29th May 2024

Emmanuel Ziem Lebenone
P.O. Box 9
Bududuram

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol.

GHS-ERC Number	**GHS-ERC: 085/04/24**
Study Title	Process Evaluation of the Nutrition Program at Saint Gregory Catholic Hospital in Bududuram
Approval Date	29th May, 2024
Expiry Date	28th May, 2025
GHS-ERC Decision	**Approved**

This approval requires the following from the Principal Investigator

- Submission of a yearly progress report of the study to the Ethics Review Committee (ERC)
- Renewal of ethical approval if the study lasts for more than 12 months,
- Reporting of all serious adverse events related to this study to the ERC within three days verbally and seven days in writing.
- Submission of a final report after completion of the study
- Informing ERC if study cannot be implemented or is discontinued and reasons why
- Informing the ERC and your sponsor (where applicable) before any publication of the research findings.

You are kindly advised to adhere to the national guidelines or protocols on the prevention of COVID -19

Please note that any modification of the study without ERC approval of the amendment is invalid.

The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Kindly quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED.....
Mr. Kofi Wellington
(GHS ERC Chairperson)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra