UNIVERSITY FOR DEVELOPMENT STUDIES

QUALITY OF SERVICE AT CHILD WELFARE CLINICS AND ITS IMPACT ON CHILD NUTRITIONAL STATUS IN EAST MAMPRUSI DISTRICT

BY

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A THESIS SUBMITTED TO THE DEPARTMENT OF COMMUNITY HEALTH, SCHOOL OF ALLIED HEALTH SCIENCES, UNIVERSITY FOR DEVELOPMENT STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PHILOSOPHY DEGREE IN COMMUNITY HEALTH AND DEVELOPMENT

FEBRUARY, 2017

DECLARATION

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere:

..... 07/03/2017

YAKUBU SUMANI **DATE**

(STUDENT)

I hereby declared that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of thesis laid by the University for Development Studies

..... 07/03/2017

DR. ROBERT KUGANAB-LEM **DATE**

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ABSTRACT

Early and regular child welfare clinic attendance is essential for improved health and nutritional status of children. This study sought to assess the quality of service at child welfare clinics and its impact on the nutritional status of children in the East Mamprusi District. The study population was children attending child welfare clinic and were between the ages of 0-59 months. A child welfare clinic in each of the five sub-districts was selected for the study. A sample size of 423 children was used with the caretakers/mothers as respondents. They were randomly sampled across all the five (5) sub-districts during the data collection. Both qualitative and quantitative methods were used. Eleven (11) Participant observation sessions were done; Fifteen (15) key informant interviews were held whiles both structured and semi-structured questionnaires were used in the qualitative and quantitative data collections. Majority of respondents 78.3% (331) started the CWC attendance in the first week after delivery, 41 (9.7%) of them started a month after birth whilst 39, (9.2%) had their first attendance after forty days with only 15 (3.5) starting after six months. The study found that determinants of CWC usage included educational level ($p<0.005$), wealth index ($p<0.005$), available of incentives at the CWC ($P<0.05$), parity of mother ($p<0.005$), and prevalence of child deaths in the family ($p<0.005$). The determinants of child's weight and height found by the study were birth weight, regular CWC attendance, educational level, content of CWC, household wealth index. Bivariate analyses indicated that babies/children who made adequate CWC (early initiation, consistency in attendance and made not less than 20 visits were more likely to have better or normal weight-for-height and height-for-age. Child welfare clinic usage in the east Mamprusi district is universal. All nursing mothers or CWC attendees who were interviewed made child welfare clinics attendance, though sometimes not regular. However, early initiation, and regular attendance of CWC are not encouraging as some mothers still deliver at the home under the supervision of unskilled birth attendant and may start the child welfare clinic attendance at or after forty (40) days which is not helpful in detecting early birth complications for appropriate treatment

DEDICATION

I dedicate this work to my parents the late Chief Kpanalana Yakubu Wumbee, and Madam Sanatu Neindow as well as madam Mary (wife) and children; Hamidatu, Saliima, Muslima, and Al-Zakir.

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LIST OF ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Clinic
BASICS	Basic support for Institutionalizing Support for Child Survival
BCG	Bacilli Curette Gram
CWC	Child Welfare Clinic
CMAM	Community Management of Acute Malnutrition
DHD	District Health Directorate
DHMT	District Health Management Team
DHS	District Health Services
DOR	Drop-out Rate
DTP	Diphtheria
EBF	Exclusive Breastfeeding
GHS	Ghana Health Service
GMF	Ghana Marketing Foundation
HIV	Human Immune Virus
IMCI	Integrated Management of Childhood Infection
KEEA	Komenda -Edina-Eguafo-Abrem

LBW	Low Birth Weight
MDGs	Millennium Development Goals
MOH	Ministry of Health
MUAC	Mid Upper Arm Circumference
NMCCSP	Nutrition and Malaria Control for Child Survival
OPC	Out-Patient Care
OPV	Oral Polio Vaccine
UN	United Nations
PNC	Post Natal Clinic
RHD	Regional Health Directorate
SSPS	Statistical Package for Social Sciences
TBA	Traditional Birth Attendant
UNICEF	United Nations Children's Funds
W/A	Weight for Age
WHO	World Health Organisation
YF	Yellow fever

OPERATIONAL DEFINITION OF TERMS

Low Height-for-Age: It refers to a child with a z-score of -3 SD for height-for-age

Low Weight-for-Height: It refers to a child with a z-score of -3 SD for weight-for-height

Child Welfare Clinic (CWC): The care that a child within the ages of 0-59 months receives. It involves the continuous observation of growth through regular weighing and taking of other body measurements and health services.

Content of CWC: The content of CWC services considered the types or range of services rendered in the CWC sessions. This included the anthropometric measurement of height, weight, nutritional counseling and so on.

Appropriateness of CWC: These talks about the exactness, timing and content of the nutritional intervention adopted at the child welfare clinic/ services.

Household Wealth Index: A composite measure of the economic status of a household

Appropriate complementary infant feeding: this is the addition of solid, semisolid foods at six months with continue breast feeding till two years and beyond. A timely initiation of feeding from six month onwards bridges the energy, vitamin A, and iron gaps which arise in breast fed infant by six months of age.

Improved child survival: In this study refers to the situation where the child is psychologically, socially and physically independent/ free from any hazards detrimental to the health.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Child welfare clinics form an important component of the health care system in Ghana and renders invaluable health care services to children under-five years. However, patients and clients often complain about poor quality of services in our health facilities and child welfare clinics are not exception (GHS, 2004). Poor quality is costly; it leads to loss of lives, loss of time, and loss of public confidence, low staff morale and also results in wastage of our limited resources (GHS, 2004)

Ghana as a developing country is making conscious efforts to promote child health through active implementation of programmes which could help achieve the UN Millennium Development Goals which sought to reduce the under-five mortality rate by two-thirds between 1990 to 2015. This is also reiterated by Sustainable Development Goals (SDGs).

The Ghana Health Service has as one of its main objectives; the improvement in quality of care at all service delivery points. In view of the health, growth and development of children in Ghana, child welfare clinics have been set up throughout the country to provide the needed services to children. These clinics are usually sited in health care facilities in both urban and rural areas and are manned by trained health professionals or staff. Children under five years of age are captured at the child welfare clinic and health services (Adu-Gyamfi, 2013).

According to the MOH, fifty-four percent (54%) of newborns received postnatal care in 2006; and when it is received, care is rarely in the first 24-48 hours of life. In 2003, 34% of newborns

received postnatal care visit in the first seven (7) days of life. Early postnatal visits are important for identifying, managing and reducing deaths (MOH, 2011).

Quality of a service is viewed from different perspectives depending on the consumer. Quality of health care is crucial to the health of patients/clients. According to the World Health Organization, (2006) every country has an opportunity to improve quality care as well as performance of the health system, and there is growing awareness and public pressure to do so. According to Andaleeb, (2003) and Hall, (2004) the need for quality care has become an increasingly predominant part of our lives. The main purpose for the introduction of CWC in the formal health delivery system is for timely prevention and detection of danger health signs through assessment for early interventions to prevent further complications. However this goal seems far from meeting its target since maternal, and under five malnutrition are still major health issues in the developing countries. According to Snoj et al, (2002) and Lee et al, (2006) quality of healthcare services improves health productivity and availability of better health service for clients and decrease cost, productivity increases and a better health service available to clients, and provides long-term working relationships for employees and suppliers.

The Child Welfare Clinics offer the following child health activities; there are growth monitoring, immunization against the childhood killer diseases, registration of new attendees, vitamin A supplementation, treatment of minor ailments, referral of complicated illnesses, health talks and counseling of mother and care takers on health issues. The under-five clinic also combines preventive, treatment, health surveillance and education into a system of comprehensive health care. (MOH, 2007). Despite the numerous advantages associated with child welfare clinic attendance, there are reported cases of low attendance among children 24-59 months (Adu-Gyamfi, 2013).

However, according to the DHMT, (2012), reported that a good number of children who started the routine immunizations do not complete the schedule resulting in high Dropout Rates (DOR). Bacille Calmette Guerine and Yellow Fever (BCG/YF) has recorded highly unacceptable Drop-Out Rate though there is a reduction from 31.8% in 2011 to 23.4%, suggesting/indicating there may be a drop in child welfare activities in the year under review. Furthermore, Penta and Oral Polio Vaccine (OPV) recorded high levels of dropout. In the year under review, (2012), 18.5% of children who started with Penta 1 did not complete the schedule to Penta 3 as against 7.6% last year 2011, so is OPV from 5.8% in 2011 to 17.4% in 2012. These high dropouts can be attributed to so many crushing programs affecting the child welfare activities. (DHMT, 2012).

The East Mamprusi district has a total population of 128129 and with 25625 been children under-five years (0-59 months). Out of 24576 registered at the child welfare clinics in the district, 18825 representing 76.6% completed their routine immunizations within the first 12 months after birth and out of this number only 3984 representing 21.6% attended the routine child welfare clinics up to 24 months, and none completed the 59 months schedules, and therefore CWC attendance drops after the first year after birth (DHMT, 2012).

Again, there was no improvement as under-five death/fatality rate still stands at 6.8% in the year under review. These figures are extremely high and there is an urgent need to stop this by improving child welfare services in order to meet the millennium development goal four by the end of 2015 which may not be met considering the years left to deadline. Anaemia ranked second as the top ten causes of admission and deaths, as well as eighth in terms of top ten diseases in the district. Also, malnutrition ranked fifth as the top ten causes of admission. (DHMT, 2012).

Once lactating mother attend CWC services regularly, they stand the chance of benefiting from all the health interventions such as immunization, nutritional/health risk assessment, health education among others.

It is, however, observed that, some activities at the child welfare clinics have been shelved thereby denying many children within the age bracket of 0-59 months the fullest opportunity to access all the services for better health outcomes in the East Mamprusi District (NORSAAC, 2012). The absence of some of these activities may lead to adverse health outcomes including severe acute malnutrition and other medical complications (Saaka & Miriam, 2013)

Children with moderate malnutrition are more at risk of developing acute severe malnutrition and other health complications when there is failure to detect it early at the CWCs (Smith et al, 2010). More so, the periodic monitoring and assessment of the CWC activities turn to focus on accessibility but the quality of CWC services among attendees has never been looked at critically in the East Mamprusi District and Ghana as a whole.

According to the WHO, 2012, in 2011 over 101 million children under the age of 5 were underweight (low weight for age), 165 million were stunted (low height for age), and approximately 52 million were wasted (low weight for height). Consequently, estimates of the prevalence of malnutrition among school-aged children suggest that these indicators do not improve much with age. In 2010, according to the Growth and Assessment Surveillance Unit of the WHO, the global prevalence rate of malnutrition among preschool children as indicated by the prevalence of stunting, was approximately 28% (171 million children), with Eastern Africa suffering a higher rate of 45%.

Malnutrition is a serious public health problem particularly in the developing world or countries where it is responsible for fifty four percent (54%) of under-fives mortality. Anthropometric measurements are key tools for the assessment of nutritional status and diagnosis of malnutrition. Height and weight measurements are not routinely done in most clinics and hospitals in Ghana. Children therefore miss the opportunity for accurate nutritional assessment and detection of malnutrition (Asenso, 2008)

1.2 Problem Statement

According to the DHMT, 2012 report, all the eighteen (18) zones in the district provide outreach antenatal and child welfare clinics (postnatal services), and though, there has been an improvement in the child welfare clinic attendance in the district, a proportion of children (6.8%), supposed attendees of the child welfare clinics still recorded some degree of severe acute malnutrition (low weight-for-age).

There is a high dropout rate on routine immunizations; the East Mamprusi district recorded 23.4% drop out rate in BCG and YF. Also, 18.5% drop-out in Penta 1 vaccines as against7.6% the previous year, 2011, so is OPV from 5.8% in 2011 to 17.4% in 2012 (DHMT, 2012).

Again there was no improvement as under-five death/fatality rate still stands at 6.8% in the year under review. Anaemia ranked second as the top ten causes of admission and deaths, as well as eighth in terms of top ten diseases in the district. Also, malnutrition ranked fifth as the top ten causes of admission (DHMT, 2012).

More so, the periodic monitoring and assessment of the CWC activities turn to focus on accessibility but the quality of CWC services among attendees has never been looked at critically in the East Mamprusi District and Ghana as a whole.

However, the risk factors that led to these negative child health indicators cannot be attributed to one particular reason but to a myriad of factors. Therefore, it was on the basis of this that this study sought to investigate the quality of service at the child welfare clinics (content, appropriateness, staffing, accessibility, and logistics) and its effect on child nutritional/health status within a group of children in the East Mamprusi District.

1.3 Objectives of the Study

The objectives of the study are categorized into two. These are general and specific objectives.

1.3.1 General objective

To assess the quality of services at the CWCs and its impact on child nutritional status in the East Mamprusi District

1.3.2 Specific Objectives

The study sought;

1. To determine the rate of utilization of CWC services in the East Mamprusi District.
2. To assess the content, staffing, safety and logistics, and appropriateness/equity of the child welfare clinic in the East Mamprusi District.
3. To assess clients' perception/satisfaction levels of the CWC services in the East Mamprusi District.

4. To establish the relationship between the quality of service at the CWC and nutritional status of children (wasting, and stunting) attending child welfare clinics in the East Mamprusi District.

1.4 Significance of the Study

The purpose of the study was to discuss or obtain unbiased estimates of the effect of quality of service at the child welfare clinics and its effect on child nutritional status to help improve child survival or nutrition and health status in the East Mamprusi District. The results of this study will help all health facilities in the district and the entire nation to know the relationship between CWC quality and nutritional status of children. This study will also espouse the logistics, content of CWCs and the staffing in all CWC clinics in the district. This will help all stakeholders to address the challenges of staffing and logistics.

The findings of the study will also serve as a reference point for future research that will be conducted by academic institutions and non-governmental organizations in the district and elsewhere.

1.5 Conceptual Framework

The study was conducted with reference to the conceptual framework presented below (Figure 1.1). This framework served as a guide and gave direction to the relationship between the various components of quality of service at the child welfare clinic.

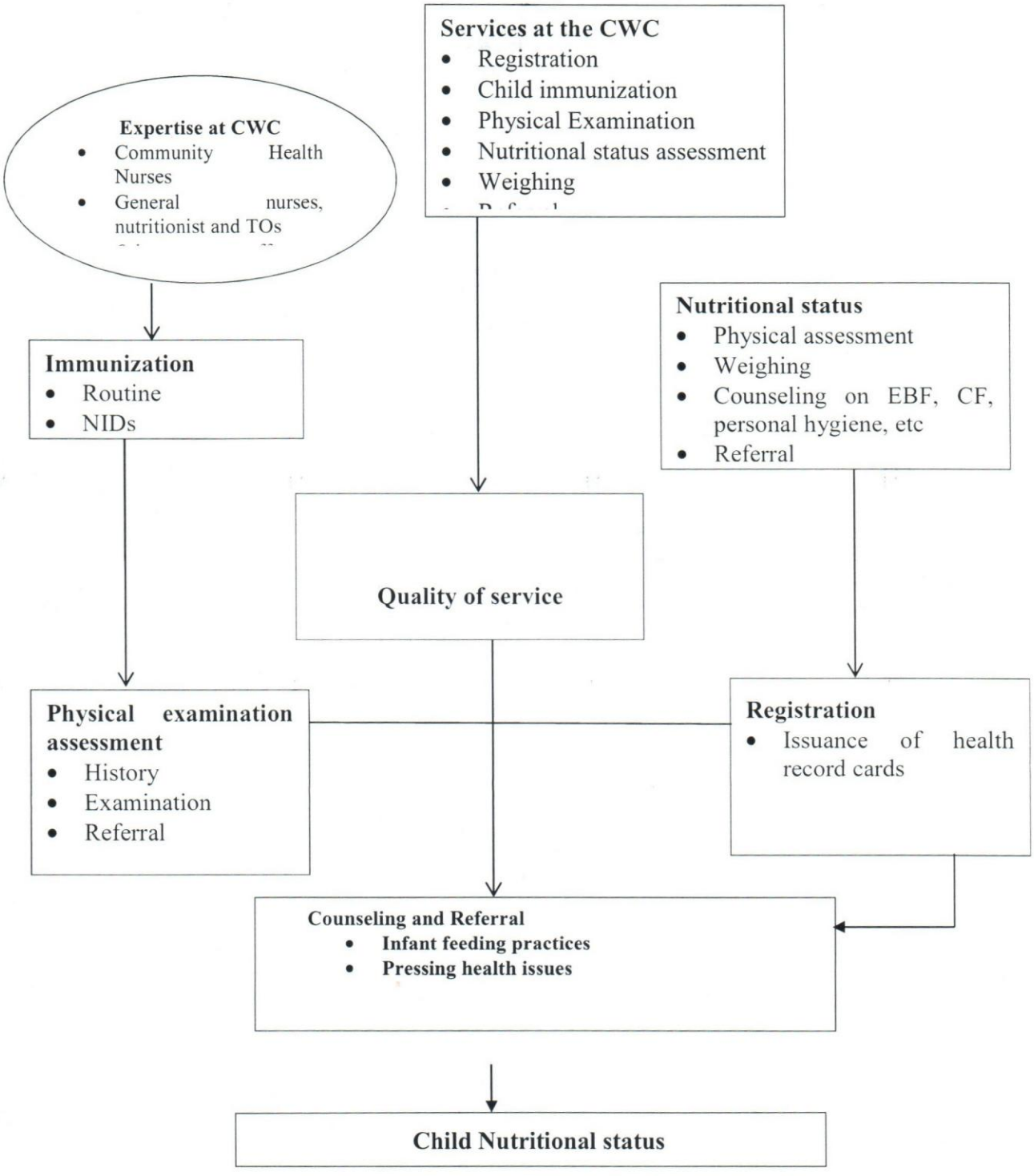

Figure 1.1: Conceptual Framework of Services at the CWC and its effect on child nutritional status (Author's own construct)

Terminologies

Services at the CWC: services at the CWC in this study refer to all the conventional or protocols observe/ perform on clients during child welfare session. The protocols or activities at the CWC include the following:

Registration of CWC: This refers the documentation processes capturing the demographic and physical health records of the client.

Weighing of children/clients: Refers to measuring and recording of the client's weight in kilograms and interpret base on age.

Physical Examination at the CWC: This refers to physical assessment of client's to determine his or her previous and present health status. It may include the hair texture, assessing conjunctival for paleness, mouth for sores, etc

Nutritional assessment at the CWC: Refers to assessment of the feeding pattern and/ or history, and weighing or physical assessment of client. Some of them include, exclusive breast feeding, appropriate complementary feeding, weighing, etc

Counseling at the CWC: This refers negotiating and reaching consensus with a client on positive behavior change towards an important health issues.

Referral at the CWC: This refers to transferring a client to a specialty area for further management of a condition or problem detrimental to health.

Immunization at the CWC: This refers to providing protection and immunity to clients against certain prevailing disease conditions.

The core staff at CWC: This was considered based on the workers available at the child welfare sessions.

Community health nurses: refer to those health staff official underwent training and licensed to practice as preventive nurses.

Nutritionist: Those officially trained and certificated to provide nutritional services or advice to clients.

Other staff: Considering other assistive health workers at the child welfare session like cleaners, laborers, clinical nurses, midwives, etc.

Routine Immunization: This refers to the conventional immunization activities undertaking at the child welfare session.

NID: Refers to the national immunization day occurs as special events for mass immunization of a targeted group against a threatening health problem.

Quality of CWC: The quality of CWC in this study was considered under six areas thus the content of the CWC services, the accessibility, the appropriateness, the expertise/staffing, the client perception about the services rendered and other logistics.

The Content of CWC services: The content of CWC services was considered in the types or range of services rendered in the CWC sessions. This includes the anthropometric measurement of height, weight, nutritional counseling and so on.

Perception of Quality of CWC services: This constitutes the judgment of mothers attending CWC sessions.

Access/Frequency of CWC: This referred to the number of CWC sessions visited during the first 24 months after birth and beyond.

Appropriateness: These talks about the exactness, timing and content of the nutritional intervention adapted at the child welfare clinic/ services.

History: This is considered the based on digging into the previous and present disease burden of the client.

Issuance of health records card: The documentation of the child health records

Improve child survival: In this study refers to the situation where the child is psychologically, socially and physically independent/ free from any hazards detrimental to the health.

1.6 Organization of the Thesis

This thesis has been presented or organized into six chapters using the IMRaD arrangement which involves; Introduction, Methodology, Results and Discussions. The conclusion and recommendations and the appendices of the study are also added or incorporated in the report.

Chapter one includes the introduction to the study, background to the study, the problem statement, the study objectives, the significance of the study, conceptual framework and the operational definition of terms as used in the study.

The second chapter reviewed relevant literature in relation to the study. The methodology, which is made up of the study design, study type, study variables (independent and dependent variables), data collection instruments, sampling procedure and sample size, study population, sources of data, data collection methods, determination of educational level, determination of

household wealth index, quality control measures, some ethical considerations as well as plan for dissemination of results are captured in the third chapter.

The results of the study are presented in chapter four whilst the discussion of the results of the study is done in chapter five. The conclusion and recommendations of the study are also presented in chapter six. References cited in this study and the study questionnaires are attached as appendices of this report.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter considered relevant literature and studies conducted on similar topics by other researchers on the quality of service at the child welfare clinics and its effects on child nutritional status

2.1 Overview of Child Welfare Clinic Services

According to Popple and Vecchiolla (2007), child welfare service is seen as the wide range of activities related to the well-being of children while child health services are activities aimed at promoting and maintaining the optimal growth and development of children from birth to 19 years.

The child welfare services or clinics involve the continuous observation of growth through regular weighing and taking of other body measurements. Usually months before a child shows obvious signs of malnutrition he or she will have stopped growing. Measuring a child's growth regularly is one way of measuring his or her nutritional status or condition and general health. Through growth monitoring, growth failure is detected early for appropriate measures to be taken to correct it in time (GHS, 2003).

Child welfare can be viewed under various perspectives including health, formal education and care of children at the household level. From the health perspective, people have different perceptions in caring for their children. For various reasons, some people believe in the use of traditional medicine to cure their sick children instead of using orthodox medicine (GHS, 2003).

Literature revealed that in 2006, fifty-four percent (54%) of newborns received postnatal care, when it is received; care is rarely received in the first twenty-four hours (24 hours). In 2003, 34% of newborns received a post-natal care visit in the first 7 days of life. An uptake trend for coverage with newborn interventions has been seen in the last decade- early initiation of breastfeeding (46 percent in 2003), exclusive breastfeeding in the newborn period (54 percent in 2003)- although coverage remains relatively low.

The latter revealed that, there are a number of traditional practices around the newborn period (early bathing, pre-lacteal feeds) that can be harmful. Overall home practices in the newborn period need further improvement (Tina, 1999)

According to Ghana health Service child growth standard, at birth the weight of babies of well-fed mothers in most parts of the world is between 3 to 3.5kg. During the first 6 months, birth weight increases are usually between 0.5 and 1.0 kg per month. Between seven to twelve months (7-12 months) the weight increases between 0.35 to 0.5 kg per month, thus, the birth weight triples at the end of first year. At month 13 to 24 weight; the monthly weight increment is within 0.25 kg (GHS, 2003).

With regards to height (length), at birth the average height is about 50cm which increases by fifty percent (50%), thus to about 75cm within the first year after birth, and doubled to 100cm at the end of four (4) years (Ministry of Health, Ghana, 2002)

According to records available, Fifty-four percent (54%) of infants 0-6 months were exclusively breastfed in 2006 and fifty eight percent (58%) of infants 6- 9 months received appropriate complementary feeding.

Sixty percent (60%) of children had received vitamin A in the previous six months. Further improvements in feeding practices will reduce stunting and underweight and contribute to a reduction in mortality from all causes (Tina, 1999).

2.2 An Overview of Child Nutrition in the World

In 2009, 8.1 million children under age five died, with most deaths concentrated in low-income countries (WHO 2011). Nearly two-thirds of these deaths were caused by preventable infectious diseases (WHO 2011). An underlying cause of just over half of under-five deaths is under-nutrition (UNICEF, 2008).

The United Nations (2005) Millennium Development Goals (MDG), adopted in 2000, proposed to halve the proportion of people living in extreme poverty between 1990 and 2015 and to insure that all children can complete a full course of primary education by 2015. Yet another goal was to reduce the prevalence of underweight among children under age five. As of 2006, East Asia/Pacific and South Asia experienced the greatest declines in underweight. The Middle East/North Africa and Sub-Saharan Africa exhibited the smallest declines. Nearly three-quarters of the 62 countries that made little or no progress in child survival between 1990 and 2006 are in Africa (UNICEF 2008). Among other factors, armed conflicts and natural disasters have impeded progress Child Well-being in Africa UNICEF (2008) estimates that nearly one third of children under age five in Sub-Saharan Africa are underweight. In thirteen Sub-Saharan countries, underweight prevalence rates are expected to *increase* by 2015 (Chhabra & Rokx, 2004). Eastern and Southern Africa have shown no improvement in underweight in children under age five since 1990 due to a combination of declines in agricultural productivity, recurring food crises associated with drought and conflict, increased poverty, and HIV/AIDS and malaria.

In five countries elsewhere in Africa (Sierra Leone, Niger, Central African Republic, Burkina Faso, and Cameroon), prevalence of underweight has not improved or has worsened (WFP & UNICEF 2006). The high levels of child malnutrition in Sub-Saharan Africa reflect the region's struggling economies and high fertility. Meager resources are spread among many family members, often unevenly, in a way that increases the risk of malnutrition for the most vulnerable children (UNICEF, 2006). Furthermore, public health services are generally inadequate, and caregivers are often unable to insure that children have access to effective health services as well as food (Benson and Shekar 2006).

Only six countries in Sub-Saharan Africa (Botswana, Congo, Ghana, Guinea Bissau, Malawi, and Mauritania and Sao Tome and Principe) are expected to meet the MDG target of halving the proportion of people who suffer from hunger by 2015. These countries have increased budgetary allocations to health and education. They have increased immunization coverage and achieved nearly universal primary school enrollment (ACPF, 2008). They have demonstrated that widespread adoption of such basic health interventions as early and exclusive breastfeeding, vitamin and A supplementation.

Adequate nutrition during early childhood is fundamental to the development of each child's potential. It is established that the period from birth to two years of age is a "critical window" for the promotion of optimal growth, health and overall survival of children (Ali et al., 2006). Nutrition plays a major role in maintaining health, and malnutrition appears to generate vulnerability to a wide variety of diseases such as malaria and general ill health (Semba and Bloem, 2000). Malnutrition is particularly prevalent in developing countries, where it affects one out of every three preschool-age children (UN Sub-committee on Nutrition, 2004).

Nutritional status spread from severe undernutrition such as underweight, stunting and wasting to over-nutrition and obesity (Otoo, 2008). It is however known that, Ghana and other developing countries are faced with the burden of undernutrition.

Undernutrition continues to be a public health crisis that kills millions of children each year. In addition to this tragic loss of life, in countries where there are great numbers of undernourished, the costs to society are high. Undernourishment under the age of two results in life-long consequences, including increased risk of death, disease, and poor cognitive development; lower school performance; reduced productivity; and increased risk of chronic disease later in life (Allen, 2001; Barker, 1998). The effects of malnutrition on human performance, health and survival have been the subject of extensive research for several decades and studies show that malnutrition affects physical growth, morbidity, mortality, cognitive development, reproduction, and physical work capacity (Pelletier et al, 2008, FANTA Project, 2002).

WHO (2010) stated that children under five years of age, together with pregnant women, have been identified as the most vulnerable risk group for malaria and malnutrition, with 88% of all deaths in sub-Saharan Africa attributed to malnutrition and malaria occurring in children under five. Children who are underweight are thought to have increased susceptibility to diseases for a variety of reasons, most notably through a reduction in the function of the immune system. When a child is undernourished, he or she may be unable to mount an appropriate immune response to the malaria parasite due to reduction in T lymphocytes, impairment of antibody formation, decreased complement formation, and atrophy of thymus and other lymphoid tissues among others (Scrimshaw & San Giovanni, 1997). Moreover, malnutrition may be even more important risk factor for anemia than malaria itself .In contrast, some studies have indicated that malaria control alone effectively reduces the prevalence of childhood anemia.

Malnutrition is a widespread concern in developing countries affecting more than 200 million children (UNICEF, 1998). It is as a result of both inadequate food intake and illness. Inadequate food intake is a consequence of insufficient food availability at the household level, improper feeding practices, or both (ANC, 2005).

When severe, immunity is impaired, wound healing is delayed and operative morbidity and mortality increased. Malnutrition worsens the outcome of illness, example; malnourished children are susceptible to diseases and more apathetic. These behavioural abnormalities are rapidly reversed with proper feeding, but prolonged and profound malnutrition probably does cause some permanent delay in intellectual development (Clayden and Lissaurer, 2005

It is also an established fact that after a child reaches 2 years of age, it is very difficult to reverse stunting (one of the indicators of malnutrition) that has occurred earlier in life (Martorell et al., 1994). UNICEF (2013) stated that poor nutrition in the first 1,000 days of children's lives can have irreversible consequences and for millions of children, it means they are, forever, stunted. As a result of these, the cornerstone for child survival, health and development for current and succeeding generations is good nutrition. Well-nourished children are known to perform better in school, grow into healthy adults and in turn give their children a better start in life (UNICEF, 2006).

In spite of all the known benefits associated with good nutrition, as many as 800 million persons worldwide are affected by malnutrition and more than half of the childhood deaths in developing countries are related to malnutrition (Benson et al., 2004).

Therefore one of the key measures in a strive to combat malnutrition is to provide sustainable diets rich in micronutrients and minerals although the causes of childhood malnutrition are multi-faceted (Victora et al., 2008).

2.3 Child Healthcare services in Ghana

. At the CWC, caregivers are guided and counseled on good infant feeding practices which help to strengthen the immune system and promote the growth and development of children.

Similarly, minor health problems are treated as they arise so that they do not deteriorate into more complex conditions (Starr & McMillan, 2003; McMeniman,et al, 2011).

Thus, regular supervision of the child at the CWC goes a long way towards maintaining his health and is perhaps one of the central functions of the child welfare clinic.

Available literature asserted that adequate health services are necessary for good health and better health status of children ((Negussie & Chepngeno, 2005). Many common infectious diseases and common parasites have a major effect on health and nutritional status. The infections themselves damage health and nutritional status: a person suffering from infection usually has little appetite and tends to eat less. This lack of food during illness can be a serious threat to the health of a malnourished person, who has little or no stored reserves of energy and nutrients (Negussie and Chepngeno, 2005). Poorly nourished child are likely to suffer from diseases more often, more severely and for longer periods of time than well-nourished children. In addition, infectious diseases can increase the need for certain nutrients, and especially energy (GHS, 2007). When children have diarrhoea, their bodies lose fluids and nutrients instead of absorbing them, so their supply of nutrients gets used up very quickly, and may leads to a continuing cycle of malnutrition and infection. Again the child health services also provide

immunizations to help prevent childhood killer diseases, providing care and therapy to help children recover from illness and by proper and quick diagnosis and treatment of disease, people can suffer less from lasting effects of disease and hence boasting the nutritional status of children (MOH, 2013). Health care providers can also play a major role in educating the community about disease and providing information and counseling for improving and maintaining good health and nutritional well-being of children.

The Integrated Management of Childhood illnesses is one of the key strategies carried out by Ghana health services for improving child health and reducing mortality in children less than five years of age (GHS, 2007).

However, finding on the "better medicines for children in Ghana" documents revealed there are gaps in the case management of common childhood illnesses, especially diarrhea and malnutrition. Case management protocols and guidelines were most often not available in some of the facilities where a research was conducted (MOH, 2011)

Also, it found out that there were gaps in the assessment and diagnosis of children with malnutrition in most of the hospitals. Although the weight of children was measured, this was not use to plot the weight-for-age; as a result, children with various severities of malnutrition were likely to be missed. In cases diagnosed as severe malnutrition, laboratory examinations were inadequate to determine underlying or concurrent infections and history was not detailed enough to establish the social circumstances of the child. (MOH, 2011)

Again, monitoring the progress of sick children was poorly done and in some instances monitoring charts were not available. Also, ensuring adequate nutrition for sick children on

admission was not considered part of the child's management. This was left to caregivers, with no supervision from health workers (MOH, 2011).

The later revealed that, there was a shortage of professional nurses; in most of the facilities, sick children were care for by student nurses, health care assistants and ward aides who had inadequate skills and knowledge to do the job (MOH, 2011).

According to a research conducted in Johannesberg on quality of child healthcare services, revealed that quality of child health services for sick children offered by clinics was disappointingly poor (Kebashni & Haroon, 2010).

However, the main areas of concern were the long waiting time; poorly skilled staff; poor triage and management of emergencies; and limited practice of child health promotion activities.

2.4 Health Care Seeking Behaviors of Mothers attending child welfare clinics

Ghulam (1996) identified mother's behaviour in seeking health either as a preventive or curative treatment as an important factor in determining child survivorship through the child's health and nutritional status, as well as through her own health. The study further stated that women are expected by policy makers and society in general to implement the child survival revolution by: bringing children to be immunized four times during the first year of life, procuring or producing oral rehydration solutions and administering them to a sick child many times over the course of each day of every bout of diarrhoea, breast-feeding their babies on demand until the child is six months to two years old and processing and feeding proper weaning foods in frequent meals to small children at the appropriate ages and bringing children under age five to a weight surveillance programme monthly.

Health-seeking behavior includes consulting a physician during the prenatal (for mother's immunization against tetanus), natal (place of delivery and help at delivery) and postnatal (immunization of the child) period, especially when disease symptoms are apparent. Education of mother and father and their work status have strong effect on child survival in developing countries (Caldwell, 1979 and Caldwell et al, 1983).

Care seeking interventions have the potential to substantially reduce child mortality, in the country where common childhood illnesses are a major problem. Prompt and appropriate care seeking practices have importance to avoid many deaths attributed to delays and not seeking care particularly in developing countries (Negussie & Chepngeno, 2005)

Appropriate care seeking is of particular importance in areas where access to health services is limited (Mariam et al, 2000). In addition, effective management of childhood illness involves a partnership between families and health workers. Families need to be able to respond appropriately when their children are sick, seek a timely assistance when children need additional care and give the recommended treatments (WHO, 2001)

McCombie (1996) reported that care-seeking in the event of fever is very poor and many cases of fever have non-specific treatment at home. He recommended that home-based management of malaria be improved in order to reduce the progression of cases to severe forms.

Although WHO promotes a malaria home management initiative, it is arguable as to whether this initiative addresses peoples' interests (Were, 2004)

According to Terra et al (2000) seventy five percent of children who seek medical care suffer from preventable illnesses such as; malaria, diarrhea, pneumonia, measles and micronutrient deficiency. Almost half a million children are dying each year from easily preventable diseases

despite the existing interventions. Yet, our Knowledge about how and when families seek treatment for these prevalent illnesses are not well known. Even though care seeking interventions have the potential to substantially reduce child mortality, in developing countries large number of children die without ever reaching a health facility and due to delays in seeking care.

The WHO estimated seeking prompt and appropriate care could reduce child deaths due to acute respiratory infections by 20%. However, millions of mothers and their children live in a social environment that is against seeking and enjoying good health (Jaffré, 2003).

Consequently, efforts to better understand mothers' beliefs, attitudes, and health practices have been carried out (Nichter, 1991). Maternal practices regarding health care seeking have been recognised as important social and anthropological factors, explaining high mortality rates among children aged less than five years. Maternal literacy and health education (Mull and Mull, 1988).

Tsion et al (2008) indicated that Seeking appropriate health care and promoting care for childhood prevalent illnesses is not only low but also is delayed. Lack of money, distances from health facilities and mothers' being busy with household chores are challenges to seek health care. Parental age, family's socioeconomic status (Reyes et al, 1993) and access to health care (Weis, 1988) are among the factors that impede health care seeking.

Factors that influence the health seeking behavior of mothers have been studied by various authors and organizations .The current place of residence of the parents has been identified as an important factor in explaining differentials in health care seeking patterns by mothers. Infant and child mortality rates are lower in urban than in rural areas. The differentials by place of residence

may be an artifact of differences in standard of living, access to health facilities and economic factors. The type of health care and environmental sanitation available to a woman at the time of delivery is important factors in infant and child mortality (Hobcraft et al, 1984 and Alam and Cleland, 1988).

As expected, educated mothers are far more likely to use the health services, feed their children better, use contraception and act in various ways to improve on traditional means of health care. The key issue is not the increased social standing of the educated women but the changes in their behaviour and attitudes towards health care seeking (Caldwell, 1979).

Despite the substantial reductions in the number of deaths observed in recent decades, around 10.6 million children still die every year before reaching their fifth birthday. Almost all of these deaths occur in low and middle-income countries. Most deaths among children of under five years are still attributable to just a handful of conditions and are avoidable through proper health care seeking behaviours (WHO, 2006).

Mortality of children under five years is also attributable to delay in seeking health care by their mothers and also trying of home care including traditional treatment, lack of money and access to health facilities (Savigny et al, 2004).

Aguilar et al (1998), in their study found that, mothers' health care seeking is frequently influenced by their perception of severity of illness. They also identified as a serious constraint on a family's choices about how to treat children's illnesses. In addition, the availability of modern health facilities within the community has a substantial impact on the type of providers sought to treat children's illnesses. Mothers who live in urban area are more likely to seek care from the health facilities than the rural mothers.

Bentley (1988) also postulated that, lack of information to identify complications, such as dehydration; limited use of oral rehydration solutions; inadequate maternal health-seeking behaviour and dietary modifications, such as restricting certain foods or breastfeeding as contributors of child mortalities. Williams and Jones (2004) alluded to the fact contend that it is not people's lack of knowledge that determines their healthcare.

2.5 Child Welfare clinic Services in Ghana

Child welfare clinics form an important component of the health care system in Ghana and renders invaluable health care services to children under five years. Despite the numerous advantages associated with child welfare clinic attendance there are reported cases of low attendance among children 24-59 months (Adu Gyamfi, 2013)

In Ghana population about; 3.5 million are children below five years. In view of the importance attached to the health, growth and development of children in Ghana, child welfare clinics have been set up throughout the country to provide the needed services to children. These clinics are usually sited in health care facilities and outreach points in both urban and rural areas and are manned by trained health staff (Adu- Gyamfi, 2013).

Children under five years are captured at Child Welfare Clinics for various child welfare and health services. Among the child health activities at CWC are growth monitoring, immunization against childhood killer diseases, vitamin A supplementation, treatment of minor ailments, referral of complicated illnesses, health talks and counseling of mother and caretakers on health issues (Adu - Gyamfi, 2013).

The under-five clinic also combines preventive, treatment, health surveillance and education into a system of comprehensive health care. (MOH, 2007).

The study also understand that, at the Child Welfare Clinic, caregivers are guided and counseled on good infant feeding practices which help to strengthen the immune system and promote the growth and development of children.

Similarly, minor health problems are treated as they arise so that they do not deteriorate into more complex conditions (Starr & McMillan, 2003; McMeniman,et al, 2011).

Thus, regular supervision of the child at the Child Welfare Clinic goes a long way towards maintaining his health and is perhaps one of the central functions of the child welfare clinic (Adu-Gyamfi, 2013).

However, though, a research revealed that, sometimes due to heavy work load during growth monitoring sessions, health workers do not give much attention to growth promotion actions. Rather a lot of emphasis is placed on weighing the child and plotting the weight on the growth chart. Some mothers do not understand that the weight and growth of their children are related to feeding practices and the basic knowledge on nutrition is needed by health workers to advice on the type of foods that should be given to the child (Tina, 1999).

2.5.1 The need for Quality Child Welfare Services in Ghana

Many nations the world over have placed child health promotion high on their developmental agenda. Ghana, as a developing country, is making conscious efforts to promote child health through active implementation of programmes which could help achieve the UN Millennium

Development Goal four which seeks to reduce the under-five mortality rate by two-thirds, between 1990 and 2015.

As a result, the physical, mental and social wellbeing of children should not be ignored. There is therefore the need for a holistic approach to child care done in a co-ordinated manner through implementation of child health programmes at child welfare clinics (Ministry of Women and Children's Affairs, 2014).

Globally, more than 600million out of the 7billion world population are children aged below five years (UN, 2011). According to United Nations Children's Fund (UNICEF) report, 27% of children less than 5 years of age in developing countries suffer from wasting. This is against the background evidence that malnutrition contributes to 54% of all deaths among children less than 5 years of age.

In Ghana, malnutrition accounts for 40% of under 5 mortality. The contribution of malnutrition to morbidity and mortality has been shown to be synergistic rather than additive. Thus mortality increases exponentially with declining nutritional status. (Ghana Med Journal, . 2008 September).

In a study by Antwi, (2013), the prevalence of wasting identified among children less than five (5) years of age was 21.2% this implies that that 1 out of every 5 child in Ghana is malnourished. Available literature revealed that, early post-natal visits to the child welfare services or clinics are important for identifying, managing, and referring sick newborns and reducing deaths (Smith, 2013)

The growth monitoring sessions or child welfare clinics provide the opportunity for the health worker to educate mothers on child diet or feeding, immunization, and other issues related to the health of the child. (MOH, 2007).

The growth chart has two main purposes, thus, to determine the growth pattern of children, and offer the opportunity for health workers and mothers to discuss issues relating to the growth and health of the child. The right interpretation of the growth line or curve of a child will help you take the best decisions to help the mother improve the child's growth and health. (MOH, 2007)

2.5.2 Quality of service at the Child Welfare Clinic

Quality of service according to the GHS standard is the extent to which a product of service satisfies a person or a group; thus how much satisfaction the person gets from the service (GHS, 2004). Patients often complain about the poor quality of the service they receive at our health facilities and poor quality services comes with loss of lives, revenue, low morale among staff, and poor image of health care providers (GHS, 2004).

Quality of service embedded accessibility, efficiency, equity, effectiveness, safety, technical competence, continuity, and amenities (GHS healthcare manual for quality assurance for sub-districts, July 2004).

Available data of the USAID, 2011) show that, Child care information is usually given to caretakers or mothers during monthly growth monitoring sessions at health facilities or during community outreach clinics. According to the study, infants and young child nutrition information at the health facilities is usually given en masse and occasionally in group discussions, without any supporting audio visuals or information, education and communication

materials. Only about 23.7% of study participants had received (Info Educ and Commun) IEC materials such as flyers or leaflets from a health facility (USAID, 2011).

According to (Adu-Gyamfi, 2013), Child welfare clinic attendance in the Assin North municipality reduces as the child grows older. In 2009, CWC attendance for children 0 to 11 months stood at 28,776, this figure dropped to10, 609 for children 12 to 23 months and further dropped to 3,608 for children 24 to 59 months. The consistent decline in the Child Welfare Clinic cannot be attributed to one specific reason but to a myriad of factors. Moreover, the expanded programme on immunization surveys conducted periodically turn to focus on the assessment of immunization status of children 0-11 months to establish reasons for failure to complete their immunizations schedules.

Another research conducted in Komenda-Edina-Eguafo-Abrem District (KEEA) in Ghana revealed that some health workers were perceived to have poor attitude towards clients attending primary health care services including child welfare clinics. Good interpersonal relation establishes trust and credibility by demonstrating respect, confidentially, courtesy, responsiveness and empathy (Turkson, 2009).

2.5.3 Growth Assessment and its interpretation at the Child Welfare Clinics

The growth chart is basically a graph on which a child's weight is plotted at different ages. For Infants, the growth chart is a weight for age indicator which has been put in a graphical form. The chart may provide information like personal information about the child and family, child's immunization status, reasons for special care management of diseases like diarrhoea and other disease conditions. (MOH, 2007).

The growth chart has two main purposes, thus, to determine the growth pattern of children, and offer the opportunity for health workers and mothers to discuss issues relating to the growth and health of the child. (MOH, 2007). The right interpretation of the growth line or curve of a child will help you take the best decisions to help the mother improve the child's growth and health. The interpretation of the growth chart is based on the direction and position of the growth curve. However, the direction of the growth curve is more important than its position. Basically, there are three directions such as; upwards, horizontal, and downwards. If the child's growth curve is climbing upwards in the same direction, then, the child is growing well, and indicates healthy child and therefore a warning sign. A horizontal curve means that the child is not putting on weight and therefore normal growth has stopped, whiles the down wards curve indicates malnutrition and therefore needs immediate help (MOH, 2005).

2.5.4 Nutritional status assessment of children at healthcare facilities

Ensuring that children are well nourished in early childhood saves lives and improves the quality of life of the children who survive. Even though highly efficacious and feasible interventions are available to improve child nutrition, effective implementation of these interventions is often problematic (Saaka & Miriam, 2013)

Literature revealed that the concept of Integrated Management of Childhood Illnesses (IMCI) is based on the premise that sick children usually present with more than one medical condition to health facilities. It is therefore expected of health practitioners that all children who present to health facilities are well assessed so that the child could be managed in a holistic manner. Surveys of management of sick children at these facilities revealed that many of these children

are not properly assessed and treated. That only 15 (5.9%) out of the 251 malnourished children were so identified by the attending physician support this observation (Antwi, 2008).

Literature again revealed that though weight measurements are recorded as routine practice in this outpatient clinic, heights are never measured to allow for computation of weight-for-height Z-scores and thus for detection of wasting (WHO, 2013). It is likely, also, that even in clinics where height measurements are made, they are never computed on any reference growth chart for nutritional assessment. Anthropometric measurements such as weight alone or height alone are themselves meaningless unless they are interpreted on a reference chart with respect to age (Smith, 2013). It is therefore important that physicians caring for children do not omit this aspect of care if malnutrition is not to be missed. For less developed countries where age is often not known, weight-for-height (which is age-independent index for nutritional assessment) offers additional advantage in assessing nutritional status (Antwi, 2008).

According to available literature children with severe form of malnutrition are at risk of dying from many disease conditions, yet in apparent, complications such as hypothermia, hypoglyceamia, sepsis, dehydration and shock WHO therefore recommends that all such children be admitted to hospital where they can be observed, treated and fed day and night. Stunted children on the other hand may be satisfactorily managed in the community, rather than in hospital. The 4.1% of study children who were severely malnourished were all managed on outpatient basis contravening this recommendation by WHO and putting these children at increased risk of dying (Antwi, 2008)

Pelletier et al has reported that 45–83% of all malnutrition-related deaths occur in the mild-moderate category of weight-for-age 60–80% of the median. For public health purposes,

malnutrition death rate will therefore not be reduced if nutritional programmes were directed solely towards treatment of the severely malnourished. The greatest impact on reduction in mortality can therefore be achieved when attention is paid to all grades of malnutrition by appropriately identifying them. This recognition of all grades of malnutrition is only possible if anthropometric measurements are routinely done at all child health clinics (Antwi, 2008)

2.5.5 Child Immunization Service at the Child welfare services

Improving immunization coverage is vital to promoting child nutrition and health, and reducing childhood diseases and deaths. In spite of being actively promoted as a major public health intervention for national development since the late 1970s, immunization coverage in Ghana remains low (Adu- Gyamfi, 2013).

According to a study investigating factors that influence attendance to immunization sessions in the KEEA District of Ghana revealed that poor knowledge about immunization, lack of suitable venues and furniture at outreach clinics, financial difficulties, long waiting times, transport difficulties, poorly motivated service providers and weak intersectoral collaboration as the major hindrance. However, the timing of immunization sessions, length of prior notice to the community, attitude of service providers and fear of side-effects generally did not deter attendance (Adu-Gyamfi, 2013).

In a similar research, the results indicate significant reductions in infant and child mortality associated with receipt of BCG, polio, DPT, and measles vaccinations in Kassena-Nankana District in northern Ghana. Middle post-neonatal mortality (between the ages of 4 and 8 months) is reduced by three-quarters among children who have received some of the BCG, polio, and DPT vaccinations, and by a remarkable 90 percent for children who have received all of them.

Mortality between 9 months and five years is reduced by one-third for those who have received BCG, polio, and DPT vaccinations and by two-thirds for those who have received the full EPI immunization package (BCG, polio, DPT, and measles). The incremental reduction in mortality associated with measles vaccination among children with full BCG, polio, and DPT coverage is approximately 50 percent (Nyarko et al., 2001). The later estimate of the all-cause mortality reduction produced by measles vaccination is consistent with a number of studies from a variety of developing-world settings (Kristensen et al., 2000; Aaby, 1995; Koenig et al., 1991). These studies have consistently shown that measles vaccination campaigns reduce all-cause mortality far in excess of the proportion of child deaths that can be directly or even indirectly attributed to measles, prompting speculation that the vaccine may provide nonspecific protective or immunostimulant benefits (Nyarko et al., 2001).

The study asserted that, verbal autopsy data in Navrongo indicate that a mere 3–4 percent of child deaths can be attributed to measles (Binka et al. 1995) and anecdotal evidence suggests that measles incidence is relatively uncommon now that immunization campaigns are inducing high levels of herd immunity (Nyarko et al., 2001)

Records revealed that immunization clinics can be a good platform for educating mothers on providing a complementary feeding. A research conducted in NEPAL by Chapagain, revealed that forty point five percent (40.5%) of mothers received the feeding advice during immunization. It was found that mothers who received complementary feeding advice during immunization were more likely to feed their children appropriately (Aveira, 2012). Though, the study could not proof whether the mere attendance alone contributed to the receipt of the complementary feeding advice by mothers and its likeliness of being practice appropriately. A similar type of underutilization of immunization clinics as a platform for advising the mothers

about complementary feeding was reported in INDIA where only 21.40% mothers received the complementary feeding advice during immunization (Madson, 2013)

According to Adu Gyamfi (2013), some immunizations may not be accepted by parents due to lack of knowledge and understanding, for example oral polio (Andrewset al, 2009). These forms of perceptions and practices according to the study could have serious consequences on the welfare of the child. Therefore parents, families and opinion leaders considered as key stakeholders in the pursuance of programmes that seek to improve the welfare of the child (Olson & DeFrain, 2000) must be consulted in order to gain their confidence and persuade them to patronize child welfare clinics (Andrews, 2009).

Available literature revealed that in 1992, coverage for the third dose of diphtheria-pertussis-tetanus (DPT) was 43% for children under 12 months of age. The main factors motivating mothers to attend were the perceived benefits of immunization for disease prevention, its impact on socioeconomic development, the relatively low cost of disease prevention, and the need for vaccination cards for school entry (Adu Gyamfi, 2013).

The timing of immunization sessions, length of advance notice to the community, attitude of service providers, and fear of side effects were however considered generally not to have been a deterrent to immunization session attendance.

2.6 Factors influencing the patronage/use of child welfare clinic services

The patronage level of the child welfare clinic service is measure by the ability of the child to have all the routine immunizations at the appropriate time and or completed all the routine immunizations in time. According to a research conducted by Adu- Gyamfi (2013) on the factors

influencing child welfare clinic attendance among children 24-59 months in Assin North Municipality, it revealed that the factors including; mother's busy schedules contribute to low child welfare clinic attendance in many parts of Africa including Ghana. In addition factors impeding the attendance of the child welfare included business activities, forgetfulness, and frequent travel of caretakers and lack of knowledge on child welfare clinics.

Davis (2011) asserts that distance between the residence of mother and the child welfare clinic is a determining factor in child welfare clinic attendance. This is confirmed by Nwaniku, Kabiru, and Mbugua (2002) who found in Kenya that mothers living less than five kilometers to a health care facility utilize child welfare clinic services than those who live beyond five kilometers of the facility (Adu- Gyamfi, 2013).

Similarly, Feikin, et al (2009) in their research in Kenya also concluded that the rate at which young children access health services decrease by distance. Also, Gething et al (2004) found that utilization of health care facilities decrease by distance.

Furthermore, records available mentioned family size and composition, age of the mother, education of the mother, economic status, sex of the child, perception of the severity of illness, sources of referral, and failure to keep clinic appointment as the factors influencing child welfare clinic attendance. The research revealed that the younger mothers attend the clinics more than the older mothers, and in the group aged 17-25 over 75% of their children attending the clinics were fully immunized. Only 33% of the children of mothers over age 32-36 were immunized. The more educated the mother the higher the level of immunization (Adu- Gyamfi, 2013).

Also, the way mothers perceived the child's condition or illness the more they attend clinic sessions. Mothers with smaller number of children or families had more immunized children

than the mothers with large families (Adu- Gyamfi, 2013). Moreover, the illiterates were found to have fewer immunized children than those who had completed primary school. However, the research found that family income does not seem to have a clear-cut effect on the attendance at the clinic. Those in the higher income groups, however appear to attend the clinic more often than those in the lower income group. Health care ranks low among the priorities of the poor, being over shadowed by employment, finance, housing, safety and other daily concerns (Adu-Gyamfi, 2013).

Another study by Adu- Gyamfi (2013), stated that during farming seasons, mothers do not send their children to CWC because they are always busy on their farms. Besides, on market days caregivers cannot carry their babies in addition to their farm produce to the market and subsequently to the CWC; therefore, they forgo CWC attendance. The situation becomes worse when the woman is carrying another pregnancy.

2.6.1 Proximity and Child Welfare clinic attendance

Distance to healthcare services is a known barrier to access; distance may impact different patients in different ways and be mediated by the context of medical need.

Davis (2011) asserts that distance between the residence of mother and the child welfare clinic is a determining factor in child welfare clinic attendance. This is confirmed by Nwaniku, et al{2002) who found in Kenya that mothers living less than five kilometers to a health care facility utilize child welfare clinic services than those who live beyond five kilometers of the facility (Adu- Gyamfi, 2013).

Similarly, Feikin et al (2009) in their research in Kenya also concluded that the rate at which young children access health services decrease by distance. Also, Gething, et al (2004) found that utilization of health care facilities decrease by distance.

Indeed, Archarrya and Cleland (2000), Magadi et al (2000), and Raghupathy (1996) also revealed a negative effect of distance and/or travel time to antennal care on its use. A similar research, assert that utilization of available public health facilities increases with proximity to the health centers. Thus, rural households utilize self-medication and traditional care closer to their residence. This is according to the study expected to reduce their cost of transportation and rigour of accessibility to distant modern health care services (Awoyemi et al., 2011).

2.6.2 Effect of Costs on Child welfare clinic Attendance

According to the World Health Organization (WHO), access to basic health services of acceptable quality is still denied to many of the world's poorest people including children. A research in U. S (Simpson et al., 1997) revealed that, in 1993, over 7.3 million U.S. children had at least one unmet healthcare need or had medical care delayed because of worry about the cost of care.

Available information (James et al, 2005) indicates that abolition of user fees can have an immediate and important impact on reducing child deaths. Evidence on the positive relation between out of pocket and catastrophic health expenditures suggests that it may also help to stabilize household incomes, although only if fees make up a substantial proportion of the costs of ill health. The study shows that abolition of fees could prevent approximately 233 000 deaths (estimate range 153 000-305 000) annually in 20 African countries. This amounts to 6.3% (range

4.1-8.2%) of deaths in children under 5 in these countries (Chris et al., 2005). Available literature on World Health Organization Bulletin (2001) revealed that the introduction of free care in South Africa in 1994 was intended to increase access to health services among the poorest people, nevertheless, in most of South Africa, preventive services for children have always been free and therefore it was scarcely surprising that attendances for such services did not increase in 1994 and 1995 (Wilkison et al., 2001).

According to available information; Quality Health Partners (2006), the child health records is supposed to be distributed free of charge, 88% who received the Child Health Records through outreach programmes paid either for the book or for a cover for the book. The economic model asserted that, a perceived lower quality and higher costs of antenatal care, including both time and financial costs of treatment and travel, would reduce its use.

A similar research by Awoyemi, et al (2011) asserted that, private hospitals are least utilized across various age groups probably because of the high cost associated with their services since private health providers are out to maximize profit.

The study is detailed to including treatment costs, transportation, and traveling time in the analysis, but its results are somewhat confusing and do not show systematic effects of costs on child welfare activities. However, national health insurance exemption cover for children, has lowered the child welfare utilization costs, and is significantly associated with more visits.

2.6.3 Parental education and child nutritional status

There exist a direct relationship between educational qualification of mothers and the nutritional status of their children or wards. It is expected that the more educated a mother is, the more

likely she is to be receptive to developmental initiatives such as the childhood survival strategies which has the resultant effect of improved family nutrition and less risk of childhood malnutrition (Senbanjo, Adeodu et al, 2012).

The effects of education in relation to outcomes of children's health have been well documented in academic literature. A study published in 2004 with regard to the same topic in Ethiopia found that parental education is one of the key determinants of chronic malnutrition in Ethiopia. That a mother with secondary school education has a significant effect on anthropometric scores of their children when compare to uneducated mothers.

In another study in Brazil assert that, children whose responding guardian had received no formal education presented 4.55-times higher risk of being undernourished compared with those whose responding guardian had one or more years of schooling. This result agrees with previous reports that low educational levels of the guardians or parents had an association with child nutritional status (Marcelle et al, 2008). A similar research conducted in Nepal revealed that, mother's educational level, type of family and religion of the family were strongly associated with appropriate feeding practices. Available records asserted that, no child of parents without formal education attended Child Welfare Clinic within age 48-59 months, 60% of children whose caregivers had Senior High School (SHS) and above attended CWC up to 59 months (Adu-Gyamfi, 2013).

The latter study indicates that attendance of Child Welfare Clinic among children less than 59 months (5 years) reduces by the level of education of the caregiver. It again reveals that 83.3% of respondents who have no formal education stopped sending their children to child welfare clinics at age 23 months (2years) as against 81.4% of those with primary education and 58.8% of those with junior secondary education. All respondents with Senior High School education and above

sent their children to Child Welfare Clinic beyond age 23 months while 60% of respondents with education up to senior secondary school completed Child Welfare Clinic attendance.

The study asserts that, the high default rate of CWC attendance among children between 24 and 59 months in the district is because mothers are of the view that it is not important to bring their children to the clinic when the child completes the immunization schedules. For example, those who travel some distance before reaching the clinic do not see the need to travel from their villages to the clinic and the child will not receive any immunization or drugs (Adae et al, 2010))

Education has an important impact on utilization of health care facilities. According to the research by, Awoyemi, Obayelu, and Opaluwa (2011) , the results show that a large percentage of household whose heads have tertiary education utilize modern healthcare facilities while a higher percentage of 57.9% of households whose heads do not have access to formal education do not utilize modern health care facilities including child welfare clinics. Maternal education has a significant effect on the health outcomes of a mother's male and female children when measure by both height-for-age and weight-for-height. However, the relation of maternal secondary education on female children's height-for- age is larger than male height-for- age. The probit model reveals that maternal secondary education is significantly negatively correlated to the probability of a child being stunted, but not significantly related to the wasting of her child. This study reveals that in Nicaragua, a mother's completion of secondary education correlates positively with higher levels of child health (Awoyemi, et al, 2011)

2.6.4 Living standard and Child Nutritional Status

Children whose energy intake was less than 54.5 kcal/kg presented risk 2.45-times higher of undernutrition when compared with children who had energy intakes greater than 75th percentile. The high prevalence of inadequate energy intake observed in the present study indicates that the undernutrition observed was based predominantly on energy deficit and that the children studied lived in an environment of food insecurity. It is known that within such populations, mothers may inaccurately augment the quantity of food claimed to have been ingested, or even fantasize about the ingestion of complete meals in order to conceal the poverty of consumption and thus avoid the embarrassment of reporting that they suffer from hunger (Marcelle et al., 2008)

The latter suggested that, risk factors associated with undernutrition that have been identified in the present study confirm the influence of socio-economic determinants on the nutritional status of children. The index for economic level of living had by far the greatest average magnitude of effect on the nutritional status of children or a sample population. Numerous other studies have found that nutritional status is lower among families at a lower economic level of living (Greiner and Latham, 1981)

According to Senbanjo et al (2012), the nutritional status of children of fathers that earned more than ten thousand naira per month and those that earned less than ten thousand naira per month was similar. While underweight and stunting were common in both groups of mothers, wasting was more significantly associated with mothers who earn less than ten thousand naira.

2.6.5 Other personal features

Available literature revealed that the more siblings a child had, the lower was his or her nutritional status (Greiner and Michael, 1981). Accordingly, the number of times the child had been taken to the clinic was positively associated with weight for-age. This was mainly a well-baby clinic where children were weighed and simple health and nutrition advice was given. The magnitude of effect of this variable was relatively large (Greiner & Latham, 1981). Greater clinic attendance was found to be associated with better nutritional status in urban Jamaica (Ted Greiner & Latham, 1981). However, study or survey could not find it possible to tell whether better nutritional status came before or after clinic attendance.

In a child anthropometric study conducted in Tripura, (INDIA), revealed that a differences in rates of stunting and wasting between rural and urban children. It assert that, the rate of stunting and wasting were lower among urban children indicating their better nutritional status than rural ones (Ray & Chandra, 2013).

The later again came out that stunting and wasting show differences between two caste groups. The researcher revealed that the children of General castes showed the highest prevalence of stunting and wasting whiles the children of the ST group showed the lowest prevalence of stunting and wasting (Ray & Chandra, 2013). However the study could not tell clearly the differences in economic status between the two groups, since there is correlation.

Place of residence was found to influence time children stop attending Child Welfare Clinic. While 56.7% of urban dwellers stopped sending their children to child welfare clinic at age 23 months 85% of their rural counterparts stopped child welfare clinic attendance at age 23 months. Similarly, 10% of urban dwellers completed child welfare clinic at age 59 months as against 1.7% of rural dwellers (Addae, 2013).

Again, the results further indicate that child welfare clinic attendance declines as the child advances in age. For example, only 6.6% of respondents completed CWC attendance at age 59 months (5 years), the majority (60%) stopped attending CWC at age 23 month. However, the study could not conclude on other socio-economic factor that has direct correlation with attendance of the child welfare clinic services.

2.7 Effects of Quality Child Welfare clinic services on child nutritional status

Available literature recorded that, the more a child continues to attend Child Welfare Clinic to age 59 months the greater his/her chances of survival, growth and development. (Adu -Gyamfi, 2013)

According to a similar research conducted in Nigeria, the result suggested that 72.5% of the infants attending child welfare clinic were exclusively breastfed for six months, 94.5% were given colostrum which is the first milk produced and rich in antibodies. This is not surprising as most of the women had some level of education and 49% of them attended tertiary institution (Alamu et al., 2011).

Immunization is the elimination of vaccine preventable diseases. Eradication of small pox has been achieved currently; global efforts are directed at the eradication of polio and the elimination of measles. From the findings, the children were adequately immunized against many vaccine preventable diseases (92-97%). According to GMF, infants need a healthy supply of macronutrient. In the findings 95% of the infants have been given vitamin A and the care givers know the consequences of lack of vitamin A which mean there is adequate intake of micronutrients. (Alamu et al., 2011).

In the study, however, the results could not tell the impact of the above findings on nutritional outcome of the children especially weight-for –height and height-for-age.

Greater clinic attendance was found to be associated with better nutritional status in urban Jamaica (Greiner and Latham, 1981). Accordingly, the number of times the child had been taken to the clinic was positively associated with weight for-age. This was mainly a well-baby clinic where children were weighed and simple health and nutrition advice was given. The magnitude of effect of this variable was relatively large. (Greiner and Latham, 1981).

2.8 Birth Weight and Nutritional Status

A healthy start in life is important to every newborn baby. The first 28 days, the neonatal period, is critical. It is during this time that fundamental health and feeding practices are established. It is also this time that the child is at highest risk for death. The thirty million low-birth-weight babies born annually, representing 23.8% of all births, often face severe short and long term health consequences (WHO, 2011).

The latter stated that Low-birth-weight is a major determinant of death: 53% of all newborn and infant deaths have under-nutrition as an underlying cause. It can also lead to long term impact on health outcomes in later life (WHO, 2006).

A research conducted on similar topic revealed that, birth weight has an influence on the child's growth and development and, over the long term, has repercussions for the health of the adult. Low birth weight (LBW) is a risk factor linked with both infant mortality and morbidity and is used to investigate the conditions for survival and the quality of life of individuals (Maria et al., 2005).

According to the World Health Organization (WHO) defines low birth newborn infants as newborn weighing less than 2.500 g, irrespective of gestational age. In developed countries, Low Birth Weight is linked to prematurity in almost all cases; in developing countries, however, its principal cause is intrauterine growth restriction (Maria et al, 2005).

Low birth weight has been identified as an important determining factor for malnutrition. In a research by Olinto et al. observed that Low Birth Weight children had a nine times greater chance of presenting a stature/age (S/A) deficit by the end of their second year of life, when compared with those born at adequate weight (Maria et al, 2005).

According to Gigante et al. a higher percentage of children with deficits in weight/age (W/A) and H/A indices at the end of their first year of life are among those who had been born at Low Birth Weight (Maria et al, 2005). Notwithstanding, other variables, such as unfavorable socioeconomic conditions, early weaning and diarrhea also contribute to nutritional deficits, thereby interfering with interpretation of the association of birth weight with nutritional status in the form of confounding variables. In the study mentioned above it has been observed that Low Birth Weight was a contributing factor to nutritional risk at the end of the first year of life. In this study, Low Birth Weight and inadequate weight reflect intrauterine growth restriction, the principal cause of which is maternal malnutrition allied with poor living conditions and prenatal care.

In areas with high prevalence rates of malnutrition it has also been observed that Low Birth Weight has an important function in reduced physical growth, lasting for years, and that postnatal factors have only a partial influence. According to Arifeen et al., children with normal birth weights gain an average of 73 g more than Low Birth Weight children during their first

three months of life, which possibly makes them more vulnerable to postnatal factors which may act on them after this age.

What differentiates the LBW children is that, irrespective of excellent catch up growth during the first three months of life, they remain below the children with adequate birth weight throughout their first year of life, confirming, on the one hand, their greater vulnerability to diseases, especially diarrhea, and on the other, their growth programmed prenatally.[15,21,22] When anthropometric indices are adjusted for birth weight, no other significant alteration to weight or stature takes place during the first year of life, denoting the magnitude of the influence of birth weight on future growth patterns.

2.9 Effects of exclusive breast feeding on child nutritional status

Adequate nutrition during the critical formative years has both immediate and longtime consequences. During their early months, nutritional needs can be entirely met with breast milk so it is the preferred milk for infants and best in their first year of life. It is perfectly suited to the nutritional needs of the human infants which make it superior to infant formula and cow's milk. The immediate consequences include mobility, mortality and delayed mental and physical development, while the long time consequences include impaired intellectual performance, reproductive performance, work capacity and increased risk of chronic diseases.

According to literature the causes of malnutrition in children can be summarized as both behavioral and resource related. Behavioral in the sense that poor breastfeeding and inadequate complimentary feeding coupled with poor environmental sanitation and infectious diseases are the immediate direct causes, while there source related causes are house hold poverty and inadequate health care (Alamu, et al, 2011).

According to WHO and UNICEF, exclusive breastfeeding means giving the infant only breastmilk-no other liquids or solids, except vitamin or mineral drops and medicines. They recommend that infants should be exclusively breastfed for at least the first four and, if possible, the first six months of life.

Breastmilk is a safe, hygienic source of energy, nutrients and fluids. It contains disease-fighting substances and vitamins that support the body's natural immune system.

A research conducted in the Honduras to assess the effect of breastfeeding on the motor development of infants, recorded that, infants in the exclusive breastfeeding group crawled sooner and were more likely to be walking by 12 months than infants in the solid foods (Dewey et al).

Also, between four and six months, diarrheal episodes were 1.8-fold higher in the short compared with long breastfeeding group. Continued breastfeeding is associated with reduced risk of diarrhoea related morbidity and mortality among uninfected children born to HIV-infected mothers in this low-resource setting despite provision of replacement and complementary food and counseling, revealed by a research to assess the early weaning increases diarrhoea morbidity and mortality among uninfected children born to HIV-infected mothers in Zambia (Ashraf et al., 2011).

Another research conducted in the USA concluded that, children who were breastfed had 0.79 times the risk of never breastfed children for dying in the post neonatal period. Longer breast feeding was associated with lower risk. (Chen and Rogan, 2004). Records available indicate,

other infant feeding products significantly increase deaths from diarrhoea and respiratory diseases (Tina, 1999).

According to the baseline survey for Ghana promotion of complementary feeding practices project, early initiation of exclusive breastfeeding, more than half of the respondents (52.2%) reported that their children were put to the breast within one hour of delivery. Of this number, more than half (54.5%) reported that they put the child to the breast within 30 minutes of delivery.

Nearly 80% of respondents endorsed exclusive breastfeeding specifying that it is good to give only breast milk to a baby for the first six months. Documenting actual practices, however, showed that exclusive breastfeeding was practiced by only 43.7% of respondents (MOH, 2011)

In another research conducted in Brazil, Marcelle, et al., (2008) indicated that underweight almost doubles in non-breastfed infants and wasting also rises significantly. This result is similar for mixed feeding and bottle-feeding. This most likely show the impact of increased infections linked to the use of the bottle. The results in infants under 1-month showed that the degree of malnutrition increases if the baby is on mixed feeding or artificial feeding.

2.10 Appropriate complementary feeding and child nutritional status

During the last 30 years in various developing countries a large number of supplementary feeding programmes have been conducted, varying in content and methods of operation depending on the resources available and the objective for which they were established. These supplementary feeding programmes, operating with funds made available from local and international sources, varied from supplementary foodstuffs issued to mothers attending maternal

and child health (MCH) centres, to Mother craft Nutrition Centres, nutrition rehabilitation services, food assistance such as food-for-work, and emergency feeding programmes. Almost all of these programmes focused on delivery of fortified foods and in some cases were complemented with health and nutrition education.

Available records showed that, World health organization (WHO) recommends exclusive breast feeding for the first six months of age, addition of complementary feeds at six months with continue breast feeding till two years which if followed appropriately can decrease infant mortality by nineteen percent (19%) and prevent malnutrition especially in developing countries.

Infant and young child feeding practices recommend exclusive breast feeding up to age of six months; timely initiation of feeding solid, semisolid foods from six month onwards. Complementary feeds bridge the energy, vitamin A, and iron gaps which arise in breast fed infant six month of age (Chapagain, et al, 2013).

According to the Chapagain, it was found that that mothers educational level, type of family and religion of the family were strongly associated with appropriate feeding. Similarly, the family income and the income sufficiency for their livelihood had no relation with the feeding practices. Mother's profession was found to be protective against inappropriate feeding practices

It was precisely from 3 to 12 months that the weight and stature of children in rural South Africa deviated significantly below the NCHS reference curves, probably coinciding with the introduction of inappropriate complementary foods with a concurrent increase in the incidence of diarrhea. However, both LBW children and those born at normal weight are potentially exposed to these factors (Marias et al, 2005).

There are many issues related to feeding during the early years of life that need immediate intervention. Too early introduction of complementary food, using infant formula without an indication, adding sugar to infant formula, too frequent breastfeeding and overnight feeding of older children are among them. The early introduction of solids or formula can increase the risk of allergies and atopic conditions in later life. A review published in 2008 found that the risk of allergies in later life is high if solids were introduced before 3 to 4 months of age. However, the issue of adding solid foods after 4 months is more complex, where some studies have even shown reduced incidence of allergies when solids are introduced after 4 months rather than at 6 months (Priyantha et al, 2011).

Delayed introduction of complementary feeding is a well-known cause of growth failure and iron deficiency, as breast milk alone cannot provide adequate nutrients required by a child after 6 months. These issues regarding complementary feeding need urgent attention and correction.

Adding sugar to infant foods is not recommended until one year of age. This is because it will suppress the appetite and reduces the intake of proteins, increase the risk of dental caries, cause obesity and concerns about diabetes mellitus in later life. Overnight feeding with infant formula is an identified risk factor for dental caries. Adding sugar to infant formula increases this risk substantially. However, there is no clear evidence in medical literature regarding the association between overnight breastfeeding and dental caries. Therefore, it is important to educate mothers not to continue overnight feeding in older children and not to add sugar to formula, even if it has to be given due to a specific indication. Continuing too frequent breastfeeding, especially on demand, and offering breastfeeding when a child refuses a main meal will result in the child

developing lack of interest in solids. This will result in growth faltering, as breast milk alone cannot support the growth of a child beyond 6 months.

According to literature, there are specific instructions regarding breastfeeding beyond 2 years given in "Infant and young child feeding guidelines for Sri Lanka" issued by the Ministry of Health. It states that "Breastfeeding should be continued during the second year up to two years or beyond, given after main meals, not to breastfeed before main meals and not to replace a main meal with breast milk". However, these instructions either have not reached mothers or they have ignored them. We feel that correcting breastfeeding practices after 2 years is as important as enforcing exclusive breastfeeding during the first 6 months (Priyantha et al., 2011).

Records available on the Ghana promotion of complementary feeding practices project; a base line survey ; December, 2011, revealed that 37.6% of respondents practiced timely complementary feeding, thus, adding other foods to breastmilk at 6 months, and 62.4% either started earlier or later than 6 months.

Also, knowledge of frequency of feeding according to recommendations was low across all child age groups, with the frequency of feeding decreasing with increased age. Amounts of food given per meal were adequate for all the age groups, with a few discrepancies, especially in the 9-11 months and 12-24 months groups. A 24-hour recall showed that respondents gave a variety of locally available foods; however rates were low for giving animal-source proteins and dark green leafy vegetables (MOH, 2011). Additionally, only a little more than one-third of respondents could adequately name examples of energy-rich, body-building, and protective foods.

The survey revealed that there was a potential market for commercially fortified complementary foods. About 53% of respondents purchased commercial foods that have added vitamins and minerals. About 74% of respondents bought these products because they believe the foods will make their children healthy. Again, in terms of nutrient density of foods, only about a third of respondents gave porridges "thick enough to stay on the spoon". A large proportion of children were fed thin/not-too-thick porridges (Chappagin, 2008).

The survey revealed that responsive feeding practices were not always the best, particularly for children recovering from illness. About 62% of respondents reported feeding the child in the usual way, rather than the recommended additional meal each day for two weeks (GHS, 2011).

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This section of the research report presents the methods and procedures used in collecting data for the study. The chapter includes a presentation of the study area, study design, study population, sample size determination, sampling technique, data collection, data quality, limitation of the study, data processing and analysis, ethical considerations, as well as publication plan.

3.1 Study Area

East Mamprusi (the study district) is located in the North - Eastern part of the Northern Region. The district capital is Gambaga. The district shares common borders with the following; Bawku East to the North, Bunkpurugu-Yunyoo to the East, Karaga to the South, and West Mamprusi to the West.

The district is divided into five sub-districts with 11 health facilities (9 Ghana Health Service and two Christian Health Association of Ghana) running twenty four hour health services delivery. The Baptist Medical Centre in Nalerigu serves as the District Hospital. The district has five sub-districts for the provision of health services. The district has been zoned into nineteen (18) and each zone has a community health nurse who is in charge and goes there to render services together with the Volunteers. Each community is also seen as an outreach point where services like immunization, ANC, PNC, and treatment of minor ailments are carried out.

The district has five static CWCs, one in each sub-district which operates everyday with the exception of weekends. Also, there are out reach programmes or home visits three times a week to cater for will be defaulters who for one reason or the other would not make it to the clinic for child welfare services.

The land is generally gently undulating and the Gambaga escarpment marking the Northern limit of the Voltain Sandstone basin. Apart from the mountainous areas bordering the escarpment there is little runoff when it rains.

There are different types of rock formation given the different relief features, which range from flat bottom valleys to steep-sided highlands. The upper half of the District is underlined by the middle Voltain formation consisting of shale, mudstone, iron pans and sandstone. The District has very good water drainage basin. The White Volta, which enters the northern region in the northeast is joined by the Red Volta near Gambaga, the Nawong and Moba rivers are major perennial rivers in the District.

The District lies in the tropical continental western margin and characterized by a single rainfall pattern brought in by the rain bearing tropical maritime air mass (MT). This occurs around April to October every year. This is followed by the tropical continental air mass (CT) which brings about the dry season which occurs from late November to March. The mean annual rainfall is between 1000mm to 1500mm with the peak occurring from July to September. The district experiences a prolonged dry season with the peak occurring between March and April.

There are two major soil types in the District. These are the Savannah Ochrosols and Groundwater Laterites. The Savannah Ochrosols which covers almost the entire District, is moderately drained and the upland soils developed mainly on Voltain sandstone. The texture of

the surface soil is sandy to sandy loam with fairly good water retention. The Groundwater Laterite covers a smaller portion of the District and is mainly found in the southern part of the District. These are concretionary soils developed mainly from Voltain shale, mudstone and argillaceous sandstone materials. The texture of the soil is sandy loam which is suitable for the cultivation of annual food crops such as maize, millet, sorghum, watermelon etc and tree crops with long gestation period such as sheanut, dawadawa, cashew etc. which are of economic importance.

The District lies within the interior woodland savannah belt and has Common grass vegetation with trees like dawadawa, baobab, sheanut trees, etc. Grasses grow in tussocks and can reach a height of 3 metres or more. There is marked change in the vegetation depending on the two prevailing climatic condition. During the raining season animals graze on the grasses. The sheanut tree is of great economic value for women pick the nuts and process it into sheabutter.

The district has four major tribes, the Mamprusi are the over lords, the Bimobas, the Konkombas and the Frafras. About 70% of the people are Moslems. The rest are made of Christian and Traditional Faith Practitioners.

The people are mostly subsistent farmers who cultivate food and some cash crops such as groundnuts, maize, millet and vegetables. Animal rearing is also practiced.

3.2 Study Design

A descriptive cross- sectional survey was used to assess the quality of service at the CWC and its effects on child nutritional status in the east Mamprusi district. The study design was deemed the most appropriate to answer the study/research questions. The study highlighted some of the

issues needing closer attention both at the interventional strategies and policy formulation levels. Study participants were interviewed at the child welfare sessions in all the five main sub-district facilities immediately after the session.

3.3 Study Population

The main study population comprised children between the ages of 6-59months attending CWC services in the East Mamprusi district with mothers as the main respondents, and community health nurses conducting CWC sessions in the facilities in all the five sub-districts as the key informants/ respondents.

3.4 Study Unit

Sampling frame was children between the ages of 6-59months attending CWC in all the five health facilities selected from each of the sub-districts. Mothers of children attending the child welfare sessions were the main respondents. Also, community health nurses and other child welfare clinic staff with in-depth knowledge in the CWC processes were also interviewed as key informants.

3.5 Sample Size Determination

The required sample size was calculated based on the standard formula for one point population sample size estimation. The primary outcome variable used to estimate the sample size was the known population proportion of children with stunting, and wasting based on height-for age, and weight-for-height respectively in the study area. A sample size of 423 was arrived at to ensure that the prevalence of the main outcome variable was within plus or minus 5% of the true prevalence at 95% confidence level. A non-response rate of 10% and other unexpected events

(e.g. damage, unanswered questionnaires etc.) was factored in the sample size determination and so the final sample size was adjusted to 465.

Using the formula for single population sample size determination (Snedecor and Cochran, 1989) with confidence level of 95% and margin of error 5%, the sample size was determined as follows:

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

Where;

n=the sample size

z= the z-score of the confidence level of 95%=1.96

p=the proportion of under-five malnutrition in the district is assumed to be 50% of children under five years (0.5) since the exact figure for the district was not available.

q=the proportion of under-five normal nutrition in the district, thus 50% of under-five population in the district.

d=the desire precision=0.05

n=(1.96x1.96)x0.5x0.5/(0.05x0.05)= 3.8416x0.25/0.0025

n=0.9604/0.0025=384.16 + 38.416

Adding a non-response rate of 10%, the sample size was 423

Therefore: n= 423.

3.6 Sampling Technique

The district has five (5) administrative sub-districts, and a facility each from the sub-district were purposively sampled as the research sites for the study due to the high CWC attendance, and children between the ages of 6-59months prior to the start of the study were selected for

interview with the mothers as respondents using a systematic random sampling of the first 10 and the last five mothers at a session.

In the sub-districts; Gambaga health center was chosen from the Gambaga sub-district, whereas Sakogu health center, Nalerigu public health unit, Gbintiri health center, and Langbinsi health center were also chosen from Sakogu sub-district, Nalerigu sub-district, Gbintiri sub-district and Langbinsi sub-district respectively. The child health record books/ chart served as the sampling frame. Also a purposively selected sample of community health nurses involved in child welfare clinics was interviewed using an interview guide.

3.7 Study Variables

The independent variables that were investigated include

- Age of respondent
- Parity
- Religion
- Tribe of respondents
- Housing

The outcome variables include;

- The number of times the child attended or visited a child welfare clinic
- The completion or otherwise of the childhood immunization schedules
- The nutritional status assessment done during the session on clients or children (weight and height/length)

- The actions taken based on the outcome of the nutritional status assessment.

3.8 Data Gathering Tools

Structured questionnaires were used with closed ended questions to interview mothers, and opened ended interview guide for community health nurses during child welfare clinic sessions. The child health record books were used to confirm some information provided.

Data on birth weight, CWC attendance were extracted from the child health records booklet. Also, an infantometer and a weighing scale were employed in data gathering to assess the nutritional status of children attending CWC services.

Participant observation was also employed to capture data regarding the content, technical, logistics and safety of some of the activities at the child welfare clinics.

3.8.1 Measurement of Child Welfare services

Child welfare clinic services are those recommended by the WHO and the GHS. The measure involves the:

- Number of times the child/mother visit the child welfare clinic
- The completion of the childhood immunization schedules,
- The nutritional status assessments
- The actions taken based on the outcome of the nutritional assessment.

The quality of service at the child welfare clinics was evaluated using the Nutritional care Assessment index by the UNICEF for both sick and healthy children visiting the health facility.

The child welfare service regarding the nutritional assessment was then classified as appropriate or inappropriate. The quality including content, expertise, appropriateness, client perception, logistics and accessibility of the child welfare service were also assessed using checklists.

Using the World Health Organization (WHO) child Growth Standard procedures, (with weight-for-age Zscore -2SD and weight-for-height Zscore -2SD) the weight and height of children was assessed.

3.8.2 Secondary Data

Secondary data was collected from many sources including Child health records, published works on similar studies both within and outside the sub-region, and the annual child welfare services report from the District Health Management Team (DHMT) or the District health Directorate (DHD). The information expected include birth weight of children, number of CWC visits with respect to age, number and type of immunization, morbidity level or number of sick visits, type of breastfeeding practiced for the first six month after birth and feeding practices afterwards and as well as actions taken during each visit.

3.9 Data Processing and Analysis

Data collected from the study was first cleaned and entered into computer software data base system for processing and analysis using the EPI INFO and SPSS Statistical tools version 21.0. This was employed to establish the association and/or correlation of quality of service at the child welfare clinics and the defined outcome of its effects on child nutritional status. Both crude and adjusted odds ratios (OR) and ninety five percent (95%) confidence intervals was calculated by means of unconditional logistic regression.

3.10 Data Quality

To avoid introducing bias, team members were trained appropriately to avoid inter observer variation in measurement at the various points of assessment, as well as calibrating scales daily with a standard weight.

3.11 Ethical Considerations

Clearance from the ethical committee of UDS, and oral consent was sought from both traditional and modern political leaders as well as the primary data source (responders). Data obtain from every member of the family/household was considered private and confidential. Letters of introduction was sent to the DHMT and all the health facilities in the District.

3.12 Limitations of the Study

Many research works are faced with a lot of limitations and this particular research is not an exception since some limitations were recorded during the research period. Below are the limitations of the study:

Caretakers or mothers were not able to recall everything regarding services during the child welfare session and feeding practice employed after delivery. Because the main farming season just begun, caretakers did not have enough time to provide adequate answers or feedbacks to some of the questionnaires as majority of mothers in the district are farmers, and this reduced the validity of the data.

The inability of traditional birth attendants (TBAs) and some health facilities to record birth weight and other infant feeding practices resulted in a lot of missed data.

CHAPTER FOUR

RESULTS

4.0 Introduction

The results of the study are presented in this chapter. The quantitative data results are presented in tables whilst the findings from the qualitative data are presented in themes and quotations from the participants.

4.1 Socio-Demographic Characteristics of Respondents

A total of four hundred and twenty eight (428) mothers with children between the ages of 6-59 months attending child welfare clinics in the five sub-districts main health facilities were recruited for the study. Majority of the women, thus 97.2% (413) were married with the mean age 0f 29.3 ± 4.0 years with the minimum and maximum ages of 17 and 50 years respectively. However, 5 were widows 1.2% (1.6%) 7 single mothers and (0.7%) 3 divorced.

Muslim women were found to be the dominant respondents of the study subjects forming 67.0% (286), 23.8% (102) respondents were Christians whilst 9.3% (40) respondents practiced the traditional African religion.

The dominant tribe in the study was Mamprusi forming 68.2% (292) of the respondents, 24.5% (105), were Konkombas and the remaining 7.2% (31) representing other minority tribes in the district. Table 4.1 shows the socio-demographic characteristics.

An assessment of the educational level of respondents showed that, 62.1% (264) respondents representing had no education, 23.4% (100) had primary education. 4.0% (17) attained junior

high level, 9.6% (42) had secondary education and only 0.7% (5) representing had post-secondary or tertiary education.

Table 4.1: Socio-Demographic Characteristics of the Respondents

Variable	Frequency	Percentage (%)
Age		
15-25	58	13.5
26-35	291	68.0
36-45	63	14.7
46-50	16	3.8
Marital status		
Single	7	1.6
Married	413	96.5
Widowed	5	1.2
Divorced	3	0.7
Religion		
Islam	286	66.8
Christianity	102	23.9
African Traditional Religion	40	9.3
Ethnicity		
Mamprusi	292	68.2
Konkomba	105	24.5
Frafra	17	4.0
Others	14	3.3
Educational level		
No formal education	264	61.7
Basic	117	27.3
SHS	42	9.8
Tertiary	5	1.2

(Source: Field survey; June-July 2014)

4.1.2 Housing Characteristics

An assessment, through questionnaire, of the housing characteristics of the respondents revealed that, majority 77.7% (330) of the study respondents dwelled in mud houses with zinc roof, and 63% (268) have access to borehole/ potable water, 33% (140) of the study respondents engaged in petty trading.

Two hundred and thirty eight, 56.0% (238) of the study respondents were from nuclear family households whilst 44.4% (190) were from the extended family households. Three hundred and nine representing 72.2% (309) of the study respondents practiced open defecation, and only 27.8% (119), i.e. either owned a pit latrine or shared public toilets.

Table 4.2: Housing characteristics of respondents

Variable	Frequency	Percentage
Housing		
Mud house with zinc	330	77.7
Mud house with thatch	69	18.2
Block house with zinc	15	2.3
Brick/ house with zinc	11	1.7
Access to Potable water		
Pipe borne	70	10.4
Borehole	254	37.7
Dug well	255	37.8
Dam	89	13.2
Stream	6	0.9
Household sanitation		
Open defecation	155	36.2
Own latrine	105	24.4
Public/shared toilet	64	15.0
Own flush toilet	11	2.6
Public flush toilet	91	21.3
KVIP	2	0.5

(Source: Field survey; June-July 2014)

4.2 The Utilization of Child Welfare Clinic Service

Majority78.3%, representing (331), of the respondents interviewed started the child welfare clinic attendance the first week after delivery, 9.70% (41) of the respondents started a month after birth whilst 9.2 % (39), had their first attendance after forty days and only 2.8% (12) respondents started after six months.

Out of the 423 respondents interviewed, 78.3% (331) recorded regular monthly attendance whiles 22.9% (97) respondents recorded a default. Table 4.2 shows the time period at which respondents initiated Child Welfare clinic attendance, and their frequency. Child welfare clinic attendees were asked to rate the accessibilities of the services at the child welfare clinic looking at the financial, geographical, and other social accessibilities like staff attitudes at the service delivery points. Majority, 92.8%, (397), admitted no challenges regarding the financial, geographical and social accessibilities, and therefore considered the services at the child welfare clinic very accessible. The remaining 7.2% (31), , respondents, considered geographical accessibility as their main challenge, and therefore required financial capabilities to attend the child welfare clinics to access services. However, 1.6% (7) respondents rated the staff attitude at the child welfare clinic services as poor. The Table below considered the geographical, financial, and social accessibilities of CWC attendants.

Table 4.3: Time at which respondents initiated Child Welfare clinic attendance

Factor	Frequency	Percentage
Time period		
At birth	331	78.3
Month after Birth	41	9.7
After Forty Days	39	9.2
Six Months after birth	15	2.8
Frequency of CWC Service		
1-22 times	154	34.4
At least 12 times	274	64.8
Accessibility of services		
Financial accessibility	397	92.8
Geographic accessibility	397	92.8
Social accessibility	421	98.4

(Source: Field survey; June-July 2014)

4.4 The Determinants of CWC Attendance (utilization)

Reasons sought from the study respondents on why they attend child welfare clinic services led to many reasons being assigned including 'because it is a routine', 'when the child is not well', 'important for child health', 'health workers and/ or the traditional birth attendant (TBA's) encouraged me to attend' . However, the main reason given was that it is "important for child's health" (90.0%). The results showed that only 0.9% (4) of the respondents were encouraged by TBAs to attend CWCs. Table 4.3 shows the reasons for regular monthly child welfare clinics attendance.

Table 4.5: Reasons Given for Regular Monthly CWC Attendance

Reasons	Frequency (n)	Percentage (%)
Reasons for attending CWC		
Because it is a routine	27	6.4
Child not well	6	1.4
Important for child's health	384	90.8
Health workers encouraged me to attend	7	1.7
TBA encouraged me to attend	4	0.9
Total	**423**	**100**

(Source: Field survey; June-July 2014)

4.4.1 Factors Affecting CWC Attendance

The mothers were asked to give the reasons why they sometimes missed CWC service. Though, many varying reasons were assigned, majority stated social reasons like "attending a family member's funeral, outdooring/wedding and as well as paying a family member a visit. Almost (23.0%) of the study respondents ever missed the monthly attendance, and cited reasons beside those previously mentioned like sickness, geographical, financial, not properly informed of the review date, and workers not at post. The table 4.4 below shows the reasons for defaulting monthly CWC attendance.

Table 4.6: Reasons for Defaulting CWC Services

Reason	**Frequency (n=195)**	**Percentage (%)**
Reasons for defaulting monthly CWC attendance		
Social/family problems	106	54.40
Financial	40	20.51
Geographical	14	7.18
Mother sick	24	12.31
Health workers absence	6	3.08
Review date not properly communicated	3	1.54
Loss of Child Weighing Card	2	1.03
Total	**195**	**100.00**

(Source: Field survey; June-July 2014)

4.4.2 The content of CWC Service Rendered to Clients

The respondents were asked to mention the various services received at child welfare clinics. The main activity given by the respondents were the weighing (100%). Majority (91.7%) attended the child welfare clinic for weighing purposes. It could be assumed then, that the respondents are certainly aware of the importance of growth monitoring and promotion plays in assessing the nutritional and the general health status of their children, and that it is the main reason for attending child welfare clinics.

Table 4.6: Content of CWC services that were given to mothers

Content of ANC given	Frequency (n)	Percentage (n)
Weight Measured		
Yes	421	99.5
No	2	0.5
Immunization		
Yes	423	100.0
No	0	0.0
Height measured		
Yes	423	100.0
No	0	0.0
Physical assessment		
Yes	376	88..9
No	47	11.1
MUAC Measurement		
Yes	196	29.8
No	297	70.2
Health education given at CWC		
Yes	423	100.0
No	0	0.0

4.4.2 Expertise/Staffing at the Child Welfare Clinics

A quantitative data was captured through the key informant interview conducted among the CWC staff across all the five sub-districts. Table below shows the sub-districts and the health professionals providing services at CWC.

Table 8: Health professionals providing services at CWC

Sub-district	Variables	Frequency (n)
Gambaga	Community nurses	3
	Professional nurses	0
	Nutritionist	0
	Disease Control/Technical	0
Nalerigu	Community nurses	2
	Professional nurses	0
	Nutritionist	0
	Disease control/technical officer	1
Langbinsi	Community nurses	3
	Professional nurses	0
	Nutritionist	0
	Disease Control/Technical	0
Sakogu		
	Community nurses	2

	Professional nurses	0
	Nutritionist	0
	Disease Control/Technical	0
Gbintri		
	Community nurses	2
	Professional nurses	0
	Nutritionist	0
	Disease Control/Technical	0

(Source: Field survey; June-July 2014)

The data revealed that majority 75.0% (12), of the CWC staff were community health nurses, 6.3% one (1), was technical officer, and 18.7% (3), were either health Aids and/ or community health volunteer. An average of forty clients (40) each was seen daily at all child welfare delivery points. Majority (80.0%) of the CWC staff attained a maximum of only two years working experience and therefore assumed then that, they belong to the in-experience working class.

4.4.3 Appropriateness/Equity of Services at the CWC

Though, all the respondents, 100% (423), admitted having received registration, Immunization, and weighing of the child as part of the growth monitoring and promotion; none had the weight of the child interpreted hence overlooking the growth promotion aspect. Again, respondents revealed that no individual counseling was given, however, majority, 62.4% (267), admitted having received group health education/talks on personal hygiene, exclusive breastfeeding and complementary feeding. This suggested that, the individual child growth monitoring and

promotion peculiar problem was not a concern in planning the health talks/educations, and may not have been relevance in some circumstances. The table below showed the frequency and percent of interventions activities performed on clients.

Table 4.9: Intervention activities performed on clients.

Variables	Frequency (n)	Percent (%)
Weighing	423	100
Weight interpretation	0.0	0
Counseling	0.0	0
Health talk/education	267	62.4
Registration	423	100
Immunization	423	100
Physical assessment minor medical problems	0	0
Referral	0	0
Home visits	0	0

(Source: Field survey; June-July 2014)

4.4.4 Logistics and Safety of the services at the CWC

The CWC attendees were asked to mention or describe the services received and tools/logistics used on their children at point of receiving any service from CWC staff. All the respondents, 100% (423) acknowledge receipt of child's health records card for documentations of CWC activities including some demographic data of the child. The five (5) CWCs provided the growth monitoring services with the used of weighing scales. All respondents admitted the receipt of

child weighing and documentations. All, 100% (423), of CWC attendees received their scheduled immunizations, and 62.3% (267) respondents received group health talks/educations. The table below shows the logistics used in the services received.

Table 4.10: Logistics used in the services provided to clients

	Services received	Logistics used
1	Child Registration	Child health record's book, pens, rule
2	Weight measurement	Weighing scale
3	Immunization	Vaccines, syringes and needles
4	Health education	Child health record's book

(Source: Field survey; June-July 2014)

4.4.5 Perception/satisfaction of Respondents on the Quality of Services at the CWC Services

The women or respondents were asked to state their own perception about the quality of the Child Welfare Clinic Services received including the waiting time. About the quality of CWC services, 1.87 % (8) respondents described it as excellent, 90.00% (385) as good, whiles 6.12% (26) described as fair and 1.65% (7) said poor. On the waiting time, 32.94% (141) said was good, 20.30% (87) stated very good, whiles 46.73 % (200) described the waiting as bad. Again, respondents were asked about whether any money was paid for the services, all (100%) stated have not paid any money.

Table 4.11: Perception/satisfaction of respondents on content and waiting time

Variable	Frequency	Percent
Client perception on Content		
Excellent	8	1.89%
Good	380	89.83%
Fair	26	6.15%
Poor	9	2.13%
Total	423	100%
Client perception on waiting time		
Very good	82	19.39%
Good	141	33.33%
Bad	200	47.28%
Total	423	100%

(Source: Field survey; June-July 2014)

4.5 Prevalence of Stunting and Wasting Among Children Attending CWC

In the bivariate analyses to examine the nutritional status (weight-for-height, and height-for-age) of children attending child welfare clinics, the results showed that, majority, 95.1% (407), of CWC attendees obtained a z-score of weight-for-height, and height-for-age, not less than -2, (z-score > or equal -2), 3.0% (13), of the CWC attendees showed signs of wasting (low weight-for-height) with a z-score of < than -2). Also, 1.9% (8) attendees, obtained a z-score of < -2, and therefore exhibited signs of stunting (low height-for-age). The table below showed the frequencies and percentages of the nutritional status of the CWC attendees.

Table 4.12: Prevalence of malnutrition (stunting and wasting) among CWC attendees

	Variable	Frequency (n)	Percentage (%)
	Normal weight-for-height, and height-for-age	402	95.04
	Low Weight-for-Height	13	3.07
	Low Height-for-Age	8	1.89
	Total	**423**	**100**

(Source: Field survey; June-July 2014)

4.5.1 Determinants of child's Nutritional Status (weight, and height)

Comparing the child's current weight and height to the variables, using bivariate analysis at 5% level of significant, indicated that, the delivery place, and child's position in the family has no positive relation with the child's current weight and height, (Table 4.13). However, the time of initiation of child welfare clinic has a positive relation at 5% level of significant, $p<0.05$. Likewise, irregular/default attendance of child welfare clinic has a positive relation with the child's current weight and height. Also, the type of breastfeeding practice for the first six (6) months after birth related positively with the child's current weight and height at 5% level of significant, ($p<0.05$). The type of weaning/complementary feeds used has positive relation with the current weight and height of the child at 5% level of significant, ($p<0.05$).

Table 4.13: Determinants of Child Nutritional Status

Variable	5% level of significant (p<0.05)		Interpretation
	Weight	Height	
Delivery place	0.402	0.293	No relation
Position of child in family	0.807	0.807	No relation
Time of initiation of CWC	0.02	0.012	Positive relation
Irregular CWC attendance	0.00	0.000	Positive relation
Type of breastfeeding practice	0.01	0.000	Positive relation
Complementary feed used	0.00	0.000	Positive relation
Education	0.02	0.003	Positive relation
Knowledge of the signs of malnutrition	0.00	0.009	Positive relation
Composite index of CWC content	0.004	0.000	Positive relation

(Source: Field survey; June-July 2014)

The determinants of mean weight and height were similar to that of the child under nutrition but gender of the child and knowledge of signs of child under nutrition by mothers were additional predictors of mean weight and height. Regular attendance and early timing or initiation of CWC was a stronger predictor of child's weight and height than the length of attendance. Caretakers/mothers who are literates stand the higher chance of maintaining a child with normal weight and height as compared to those without any formal education. The set of predictors

accounted for 44% of the variance in nutritional status (Adjusted R Square=0.44). Going by beta coefficients, the strongest predictor of child nutritional status was the content of child welfare. A unit increase in child welfare clinic content increases child nutritional status, thus, weight and height by 0.42 standard units (Beta coefficient=0.42). Women of higher household wealth index tend to have children with positive signs of normal weight and height/ nutritional status indicators. Again, multi- parous mothers or respondents (with live children above four in number) tends to have children with signs of malnutrition, however, respondents with 1- 4 were likely to have children show positive signs of better nutrition.

Child welfare attendance peak from age 0- 12months, and however dwindled from 12months to 59months. At age 24months – 59months there is virtually no child welfare attendance.

4.6 Relationship between quality of service at the CWC and child nutritional status

Using the chi square analyses against explanatory variables, the results showed that children with regular child welfare clinic attendance/care (that is, right from birth without defaulted and with all the required services} had Z-score of weight-for-height, and height-for- age not less than – 2 z-score than those of the same age with defaulted attendance of child welfare clinics.

Again, adjustment for mother's/caretaker's perception of the service, CWC content, complementary feeding practices, exclusive breast feeding, gender of the child, household wealth index, caretaker's knowledge on danger signs of malnutrition, the family size had z-scores of greater or equal to -2 (z-score > or = -2). The table 4.9 shows the relationship between regular CWC attendance and the nutritional status of the child.

Table 4.14: Relationship between quality of CWC service and child Nutritional Status

Frequency of CWC attendance					
		Regular	Irregular	p-value	χ^2- value
Indicator	Nutritional Status	No. (%)	No. (%)		
WAZ	Normal	296 (98.3)	116 (91.3)	0.001	24.7
	Underweight	5 (1.7)	11 (8.7)		
HAZ	Normal	298 (99.0)	119 (93.7)	0.001	21.5
	Stunted	3 (1.0)	8 (6.3)		
WHZ	Normal	296 (98.3)	109 (85.8)	0.001	18.6
	Wasted	5 (1.7)	18 (14.2)		

(Source: Field survey; June-July 2014)

4.7 The Results from Key Informants Interview

Qualitative data was captured based on some selected topics or themes of interest such as service rendered at the child welfare clinics and its challenges, institutional policies that geared towards improving child health/ nutrition and survival, in the east Mamprusi district. In all 19 key informants were involved from all the sub-districts within the east Mamprusi District. The results or findings from the key informants interview have been arranged according to the outlined above. The areas of interest and the themes were linked to the results of the quantitative data analysis. These were also compared or linked with the findings from related studies or existing literature.

4.7.1 Service Rendered at Child Welfare Clinics

Major activities are rendered at the child welfare clinics to improve child health/ nutrition and survival. The data captured were on the services rendered at the child welfare clinics in the east Mamprusi district to include; the registration, weighing, physical assessment, immunization, referral, and health education/talks on certain key public health issues of importance like exclusive breast feeding, complementary feeding, personal and environmental sanitation etc.

These were some of the comments or statements of the key informants;

4.7.2 Registration

This is one of the key activities at the child welfare clinic; the records of the child are captured to include the biometric, weight and important public health events on the child's health record book.

" ……..Registration usually starts at birth and the card needs to be used till age 59months, however, sometimes some do come at times they feel like coming, or when the child is sick, or prompted by somebody somewhere to do that. Many do use the 40 days outdooring as good opportunity to attend the child welfare clinic and only to disappear again till any eventful moment. Though, we have outreach programmes weekly, some are still not capture for the excused farming or household activities, or social events like funerals, outdooring/travels."(A community Health nurse from Nalerigu)

4.7.3 Weighing

Every child undergoes weighing at the child welfare clinics to help assess the health/nutritional status.

"…….We do weigh the child on every visit normally monthly and record on the child's health card which is easy for mothers or caretakers to interpret. Because when the child is gain weight, and or losing weight you will know. For the numbers at each session, coupled with staff numerical strength it is always difficult to interpret to every mother unless it comes critical, then we do."(Community Health nurse from Langbesi)

"…….We do interpret when the session is less busy, but most of the times we don't get time to do that individually, so we opt for the mass/bringing them together and talk on one selected important health issue."

However, our working equipment are disappointing, the weighing scale is not functioning well currently and we are only managing with it to take the children's weight. For height we never tried recording the child's height, but I believed with time it will be in- cooperated in the child welfare clinic services" (Community Health nurse from Gambaga)

4.7.4 Physical assessment for medical abnormalities

One of the key activities at the child welfare clinics, where the child is physically assess for any medical condition that poses danger to the feeding and affecting the survival.

"…….We do our best by observing for sick children through touching, facial expression of the child, body weaknesses and so on. However, we do not have the capacity to do other analysis

like blood, urine, and stool to determine who is sick and who is not sick."(Community heal;th nurse from Sakogu)

4.7.5 Expanded Programme of Immunization (EPI)

Child immunization is considered one of key public health interventions to child survival, therefore, the expanded programme of immunization was seen as one of the most important programmes in the east Mamprusi district.

The key informants' made statements such as;

……."Though we have recorded a lot of successes in the area of routine and national immunizations, we still have some challenges like wrong perception of the vaccines use by care takers, long waiting times at the child welfare clinics, transportation difficulties, poorly staffed and motivated service providers and weak intersectoral collaboration as the major hindrance".
……."Although, there have been significant improvement in antigen coverage, a good number of children who start the immunization do not complete the schedule resulting in high Dropout Rates (DOR) in 2012. BCG/YF has recorded highly unacceptable DOR though there is a reduction from 31.8% in 2011 to 23.4% in the year 2012."(Community Health nurse from Sakogu)

……."You see we have been recording high dropout rate in some areas, for instance, Penta and Oral Polio Vaccine (OPV) recorded high levels of dropout. In 2012, 18.5% of children who started with Penta 1 did not complete the schedule to Penta 3 as against 7.6% in 2011. So is OPV from 5.8% in 2011 to 17.4% in 2012".

……."These high dropouts can be attributed to so many crushing programs. In order to curb this phenomenon, there is the need to post more community health officers (CHOs) to the district to help in conducting the child welfare clinic services in the east Mamprusi district". (Community Health Nurse Nalerigu)

……." Sometimes how to transport ourselves to our communities to conduct child welfare services is a problem, because we do not have enough motorbikes, we risked sometimes by picking three or four staff members on one motorbike just to get them to their destinations"
"……. As a referral hospital, the Baptist Medical Centre record high numbers of deliveries outside the district. These children take BCG immunization in the hospital and continue with the rest of the vaccination schedules afterdischarge in their respective districts. This may account for the high dropout rate."

"…….However, the district has opened four (4) functional CHPS which will help capture babies who hitherto may not have return for subsequent schedules".

4.7.6 Referral

Sick children are referring for further medical examination and treatment at the child welfare clinics to improve their survival.

"……We do refer sick children to hospitals for further examinations and treatments, and sometimes those with nutritional challenges are also referring to the nutritionist for further management."

4.7.7 Health education/Talk

Education forms part of the major activities at the various child welfare clinics across the east Mamprusi district. These were the statements from the key informants on health education on selected public health issues;

4.7.7.1 Exclusive breastfeeding:

This is feeding the child on only breast milk within the first 6 months after birth. These were some of the comments or statements of the key informants;

> *…." In fact, for the higher achievement in the area of exclusive breast feeding malnutrition cases among the under 5 has improved within the east Mamprusi district. We have set up health education unit to educate mothers on exclusive breast feeding and we are achieving results".*
> *….."Actually, most mothers have confessed to me that exclusive breast feeding is the best thing ever happened to them and that because of that the children have been breast fed exclusively and they hardly fell ill as compare to those who were not exclusively breast fed, and that she has started spreading the gospel among expectant mothers. Therefore, this suggested the health status of children and by extension the entire populace have improved in the east Mamprusi district".*

……"Though a lot have been achieved regarding the exclusive breast feeding in the district, no enough capacity to continuously monitor mothers at home to ensure that impressions created at the health centres are the same things happened at home/on ground. Because there are

information out there that some health workers go contrary to the exclusive breast feeding policy by telling mothers that they can give water and other concoctions provided they are clean, and some mothers still believed that a child cannot survive without water within the first six months and hence they do give water alongside breast feeding within the first six months after birth" (A community Health nurse from Gbintri)

4.7.7.2 Complementary Feeding Practices

This is introducing other foods alongside the breast milk to the child at age 6 months. This was seen as one of the child health/ nutrition improvement programmes currently running within the east Mamprusi district. These were some of the comments shared by the key informants:

> ....."We *advised mothers the need for appropriate complementary feeding from age 6months to 24months and even beyond up 59 months. However the right foodstuffs or the complementary feeding equipment or items are not readily available at our disposal to be given to mothers. We always advised to use the foodstuffs they have at their various homes. The difficulty is that we do not have the capacity to go from mother to mother to monitor if they are doing the right thing. So sometimes we do record moderate and even severe malnutrition cases specially those defaulting the child welfare services.*
> *....."For the lack of potable water across the whole district, one cannot be 100% sure that mothers are practicing appropriate complementary feeding in the east Mamprusi district. For instance, mothers and care takers are not getting potable water to be able to prepare hygienic and "infection free diets or meals or hygienic food" for the child, and some report with diarrhea diseases.*
> *....."mothers would have preferred that food stuffs are share to them during weighing or child welfare clinic services to support their complementary feeding practices, however, that is not the case, and some mothers and care takers are not encouraged for regular child welfare services attendance".*
>
> *....."Much is not seen in the area of regenerative health, nutrition and healthy lifestyles. But notwithstanding, a number of trainings were done on the use of locally available foods to improve nutrition."*

4.7.7.3 Water, environmental and personal hygiene

Water and sanitation if improve would go a long way to supporting child survival through good health and nutrition and hence considered one of the child health/nutrition improvement programmes in the east Mamprusi district.

The key informants made these statements regarding water and sanitation;

> *……"we are grappling with water and sanitation situation in the district and this facility is not an exception. Sometimes we buy sachet water/pure water to wash our hands after physical examination or assessment. So I would describe the water and sanitation situation as poor in the east Mamprusi district".*
> *……"Majority in this community/sub-district are adapting to the so call free range system of defecating, yet we depend heavily on dam water for domestic and other usage and even sometimes using it in the facility. Though efforts are been made to provide boreholes in every community, the effort currently is not enough. Even the communities with boreholes are experiencing frequent breakdowns leaving them no choice then to resort to dam waters."(Community Health nurse fromGbintri)*

4.7.8 Logistics and safety

The comments on logistics were as follows:

> *"Sub-districts at time used faulty weighing scale at child welfare clinics thereby resulted in long waiting time for clients, and may possibly faulty recordings of the weight. Though, health talks are given, there are no logistics like leaflets, flipcharts, and other audio visuals to help clients appreciate exactly what have been said. For growth monitoring, there are not infantometer or microtoise/stadiometers to record height or recumbent length for children. Scheduled immunizations are sometimes deferred for a day or week for running out of stock of vaccines. Sometimes no enough ice packs, vaccine carriers, and transportation to transport vaccines, and staff scheduled for out-reach programmes. The CWCs staff always relied on the sub-district transport allocation by DHMT for child welfare clinic activities in all the five sub-districts. Also, individual counseling on infant feeding practices and health issues because of lack of enough/qualified staff. Many referred cases failed to report at the district nutrition office due to the distance. Majority, 363, (85.0%) of respondents admitted standing throughout their waiting period to receive CWC services, because there were not enough seats to accommodate all attendees (Community Health Nurse from Gambaga)*

4.7.9 Institutional Policies to Improving Child nutritional status

On policies, these were the comments from the key informants;

> *"..... The routine practices at the child welfare clinics were considered universal for child survival, and therefore, anything done locally was to improve on the existing public health policies in the east Mamprusi district. Notwithstanding, we mounted education unit within the public health set up for daily conduct of educational activities on current public health issues like appropriate complementary feeding practices, immunizations, exclusive breastfeeding, hygiene and sanitation among others".(community Health Nurse from Sakogu)*
>
> *".....Staffing at the child welfare clinic services was considered an ingredient for quality service at the child welfare clinic; therefore, it's our policy that all the welfare points are equipped with competent and dedicated staff for the work to go well in the east Mamprusi district. For instance, though we are doing our best despite the fact that we do not have enough professionals to help conduct the Child welfare services. You could see that we are relying on community volunteer to assist in the weighing of children. So we would have wished we have professionals like; nutrition officers, technical officers, and clinical nurses".*
>
> *....."Sometimes nurses have to cancel scheduled outreach clinics to attend to equally pressing activities. In order to curb this phenomenon, there is the need to post more community health officers (CHOs) to the district. For example, in Jawani CHPS and like any other CHPS in the district have only one CHO who run thirteen (13) outreach and static clinics for antenatal care, child welfare clinics, and postnatal care clinics, and also conduct deliveries. They also sometimes provide OPD services. This is the situation in the district".*
>
> *"..... Actually the staff we have currently are very committed and dedicated to duty and they are do well for their clients, and I always observed that clients always felt happy before leaving here. (Community health Nurse from Gambaga)*

4.8 Results from the Participant Observation Checklists

Data was gathered on the activities at the child welfare clinics included the client's behavior and staff attitude towards clients, using the participant observation checklists. The results and findings of the participant's observation were arranged according to the activities, client's attitude and the health staff attitudes towards clients. The area of interest and the themes were linked to the results of the quantitative data analysis. These were again compared or linked with

findings from related studies or existing literature. The participant observations were done in fifteen child welfare sessions across all the five sub-districts within the east Mamprusi district.

4.8.1 The activities at the Child Welfare Clinics

Child welfare clinic activities/content were universal across all the five sub-district in the east Mamprusi district. Never the less, the challenges, conducts and practices at various points differed in magnitude. In finding out or observing the processes including challenges, these finding or observations came to light;

4.8.1.1 Registration

All attendees or clients were duly registered and issued the child health record's booklet. Though, some looked "dirty and thorn", it contained every bit of information needed to executed appropriate services to those clients. Every activity done was recorded including the next schedule date, however some clients defaulted and reasons assigned, some could not give reasons for defaulting.

4.8.1.2 Immunization

The routine scheduled immunizations were adhered to in the all the child welfare sessions in the east Mamprusi district. Child welfare attendees were immunized according to the schedules against the childhood killer diseases. However, in some places mothers were asked to go back home and come the following week to receive their scheduled immunization since they run out of stock, and were expecting the supplies within the week.

4.8.1.3 Health Education/Talk

Health educations/talks were running in some child welfare sessions, it was a group business and not necessarily based on the peculiar problem(s) of an individual child. The child welfare staff

pre-determined the topic or issue to be talked about the next day within the week, though, topics discussed were of public health relevance. Issues on exclusive breast feeding, balance diet, and personal hygiene were the dominant topics during the research period.

4.8.1.4 Physical Assessment for Medical Conditions

Children were been assessed physically for medical conditions by simple touch for fever and observed for signs of weakness. However, they lacked equipment like clinical thermometers for scientific assessment of the body temperature and also no assessment done to determine the haemoglobin level of clients or children. No referred was done during the research period.

4.8.1.5 Weighing

All the child welfare attendees were weighed though sometimes by non-skilled workers and results recorded in the child's health record's book. Notwithstanding, non-skilled workers were allowed to weigh, whiles obsolete weighing equipment were used at certain points, and CWC staff would have to manipulate weighing scales before it could be read. No interpretation of the weighing results was done for mothers or caretakers.

4.8.1.6 Staffing

Averages of 63 clients were seen on "normal child welfare clinic days per session. Though, committed and dedicated work force, staffing generally was a problem in the east Mamprusi district. Health/Ward aides and/ or community volunteers at some sessions weighed the children and with or without the supervision of the only community health nurse. The community health nurses were the only professionals supervising the process at each child welfare point.. At some places two community health nurses were seen conducting the sessions, despite the high attendance, where physical assessment, weighing, registration, immunization among others were

to be done. Notwithstanding, clients or mothers clearly showed appropriations for being attended to despite the long waiting time.

4.8.1.7 Logistics

Generally, all the CWCs lacked some basic logistics for effective services like health talks/education, counseling, height measurement, physical medical examination for minor ailments. This may suggest why most of these activities are not being practiced at the CWCs in the East Mamprusi district. It was observed again that, faulty weighing scales were been used at most of the CWC points, resulted in long delays of clients and wrong weight recordings. In one particular point, clients due for scheduled immunization were re-scheduled for the following day for haven run out of stock.

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This study looked at the quality of service at the CWC and its effect on child nutritional status in the East Mamprusi District in Northern Ghana". The utilization, content, satisfaction and the relationship between the quality of service at the child welfare clinic and nutritional status (wasting and stunting) of children attending the child welfare clinic in the district were investigated.

The main findings are discussed as follows:

5.1 Utilization of the Child Welfare Clinics

The study results showed that majority, 78.34%, (331), of the respondents interviewed started the child welfare clinic attendance the first week after delivery, 9.6% (41) of the respondents started a month after birth whilst 9.2% (39), had their first attendance after forty days and only 3.3% (14) respondents started after six months. Only 42.3% of respondents had up to 24 or more visits as recommended by Ghana health Service.

Out of the 423 respondents interviewed 64.43% (230) representing recorded regular monthly attendance right from birth without defaults. In this study adequate child welfare attendance was defined as one that had initiated the service within the first week after delivery and has not defaulted till the child attained age 24 months and above. Going by this definition, only 42.3% of the respondents received adequate child welfare clinic in the district. The early initiation of child welfare services was high and very encouraging because of the facility delivery initiative by the

Ghana Health Service. The results also revealed that, the regularity of child welfare attendance dwindled when the child attained 12 months. The results affirmed the findings of the Adu-Gyamfi, 2013, that, child welfare clinic attendance in the Assin North municipality reduces as the child grows older. In 2009, Child Welfare Clinic attendance for children 0 to 11 months stood at 28,776, this figure dropped to10, 609 for children 12 to 23 months and further dropped to 3,608 for children 24 to 59 months.

5.2 Factors that Influenced Child Welfare Clinic Attendance

The results of the study showed that predictors that influence attendance of child welfare clinic were educational level, parity, household wealth index, number of child deaths experience in the family, the family size, physical state of the child, facility accessibility, and the socio-economic activities of the caretaker. These findings therefore agreed with the result of a similar research that the factors influencing child welfare clinic attendance among children 24-59 months in Assin North Municipality revealed that the factors including; mother's busy schedules contribute to low child welfare clinic attendance in many parts of Africa including Ghana. In addition factors impeding the attendance of the child welfare included business activities, forgetfulness, and frequent travel of caretakers and lack of knowledge on child welfare clinics (Adu- Gyamfi, 2013)

As the respondent's education progressed, the likelihood of the mother attending child welfare clinics regularly increased. It was revealed that if one of the parents has higher education, the tendency of the child patronizing regular and consistent child welfare clinics was high. Also, mothers from higher house hold index families and with higher socio-economic background turned to have higher patronage of the child welfare clinics than those from low socio-economic

status and with low household wealth index. This could be attributed to the ability of such parents to pay for certain services like transportation and other medical services that would improve the child's health/nutrition and development but are not borne by the NHIS. Parents who had higher education initiated child welfare clinic activities within the first week after birth as compared to children born to illiterate parents who normally started two weeks after or at forty (40) days. This could be attributed to the fact that literates know the importance of child welfare services, and as well understood the need for the facility delivery initiative by the Ghana Health Service. This results is consistent with the work of Adu-Gyamfi, 2013, that the illiterates were found to have fewer immunized children than those who had completed primary school (Adu-Gyamfi, 2013).

Furthermore, records available mentioned family size and composition, age of the mother, education of the mother, economic status, sex of the child, perception of the severity of illness, sources of referral, and failure to keep clinic appointment as the factors influencing child welfare clinic attendance. The research revealed that the younger mothers attend the clinics more than the older mothers, and in the group aged 17-25 over 75% of their children attending the clinics were fully immunized. Only 33% of the children of mothers over age 32-36 were immunized. The more educated the mother the higher the level of immunization (Adu- Gyamfi, 2013).

Also, the way mothers perceived the child's condition or illness the more they attend clinic sessions. Mothers with smaller number of children or families had more immunized children than the mothers with large families (Adu- Gyamfi, 2013).

5.3 Determinants of Child Nutritional Status

Binary logistic regression analyses were applied to those variables that had significant association in the bivariate analysis, to examine the net effect of each independent variable on child's weight and height in respect to age by controlling for the effects of all other intervening variables. The set of predictors accounted for 84.3% of the variance in height-for-age and weight-for- height (spearman's rho test, r=0.638, p=0.000). The child's delivery place, has no positive correlation with the child's current weight and height at 5% level of significance, p>0.5

The results indicated surprisingly, compared to the used of commercial weaning foods, mothers who used locally prepared baby weaning foods had equal chance of haven children with normal weight-for-height and height-for-age.(5% level of significance), P= 0.00. This finding, however, contradict that of the Ghana promotion of complementary feeding practices project; a baseline survey, December, 2011, that there was a potential market for commercially fortified complementary foods. That about 53% of respondents purchased commercial foods that have added vitamins and minerals. About 74% of respondents bought these products because they believe the foods will make their children healthy. (Ghana Health Service, 2011).

The finding also not in support of the finding by WHO, that, in terms of nutrient density of foods, only about a third of respondents gave porridges "thick enough to stay on the spoon". A large proportion of children were fed thin/not-too-thick porridges. Records available indicate, other infant feeding products significantly increase deaths from diarrhoea and respiratory diseases. (Nutrition essentials; WHO, 2006).

The results revealed at 5% significance level with p<0.05, that birth weight has positive relation/correlation with the child's current weight and height. Those with normal birth weight of

greater than 2.5kg showed signs of normal weight-for-height and height-for-age than those with birth weight of less or equal to 2.5kg. This finding is consistent with the finding of Maria et al (2005), that, birth weight has an influence on the child's growth and development and, over the long term, has repercussions for the health of the adult. Low birth weight (LBW) is a risk factor linked with both infant mortality and morbidity and is used to investigate the conditions for survival and the quality of life of individuals (Maria et al, 2005).

The study results showed that, the early initiation of child welfare services has a positive correlation with the child's current weight and height (5% level of significance), $P<0.05$.

The result established that, the frequency of child welfare clinic attendance has direct correlation with the child's weight –for-height and height-for-age 5% level of significance), $P=0.131$. The finding has been by Adu-Gyamfi, (2013), that, the more a child continues to attend Child Welfare Clinic to age 59 months the greater his/her chances of survival, growth and development

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Also, the number of times the child had been taken to the clinic was positively associated with weight for-age. This was mainly a well-baby clinic where children were weighed and simple health and nutrition advice was given. The magnitude of effect of this variable was relatively large. (Greiner & Latham, 1981).

The study results revealed that, the child's position in the family has no correlation with the child's weight and height, $p>0.05$ at 5% level of significance.

The study established that defaulting the child welfare clinic services has a positive correlation with the child's present weight and height. Compared weight of children who recorded regular CWC attendance with those recorded irregular CWC attendance, revealed, those with regular

attendance had the better chance of recording normal weight-for-height and height-for-age at 5% level of significance, $P<0.05$. The results are consistent with the finding that greater clinic attendance was found to be associated with better nutritional status in urban Jamaica (Ted Greiner and Michael C. Latham, 1981).

5.4 Barriers to Regular CWC Attendance

The study results established that all mothers in the study attended CWC severally before. However, there were still some barriers to seeking regular child welfare clinic services in the East Mamprusi district. In probing further, to find out the barriers to regular CWC attendance among the mothers in the district, the following were mentioned, and there included, traveling out of town for both economic and social reasons, health workers absenteeism, ill-informed review date, sickness for either the mother and or child, busy household chores, geographical location and lack of incentive like giving food supplements/stuff to be prepared for the children at home. These finding are consistent with similar research result by Adu- Gyamfi, 2013, that factors impeding the attendance of the child welfare included business activities, forgetfulness, and frequent travel of caretakers and lack of knowledge on child welfare clinics.

Also, Davis (2011) asserts that distance between the residence of mother and the child welfare clinic is a determining factor in child welfare clinic attendance. This is confirmed by Nwaniku,et al, (2002) who found in Kenya that mothers living less than five kilometers to a health care facility utilize child welfare clinic services than those who live beyond five kilometers of the facility (Adu-Gyamfi, 2013).

Similarly, Feikin, et al (2009) found in their research in Kenya also concluded that the rate at which young children access health services decrease by distance. Again, Gething, et al (2004) found that utilization of health care facilities decrease by distance (Adu- Gyamfi, 2013).

Also, the results stated that during farming seasons, mothers do not send their children to CWC because they are always busy on their farms. Besides, on market days caregivers cannot carry their babies in addition to their farm produce to the market and subsequently to the CWC; therefore, they forgo CWC attendance. The situation becomes worse when the woman is carrying another pregnancy" (A community health nurse) and collaborate Adu-Gyamfi, 2013 findings.

5.5 Content of child welfare services

The study results portrayed a number of activities being carried out during the child welfare clinics/ services in the district. However, height measurement was never done and these findings is consistent with literature that, though weight measurements are recorded as routine practice in this outpatient clinic, heights are never measured to allow for computation of weight-for-height Z-scores and thus for detection of wasting. It is likely, also, that even in clinics where height measurements are made, they are never computed on any reference growth chart for nutritional assessment. Anthropometric measurements such as weight alone or height alone are themselves meaningless unless they are interpreted on a reference chart with respect to age. It is therefore important that healthcare professionals caring for children do not omit this aspect of care if malnutrition is not to be missed. For less developed countries where age is often not known, weight-for-height (which is age-independent index for nutritional assessment) offers additional advantage in assessing nutritional status (Antwi, 2008).

The physical medical examination/assessment recorded the least (3.2%) in terms of percentages. The results indicated that, guiding and counseling on good infant feeding practices/ appropriate complementary feeding have recorded 1.3% activity, however, with the majority (83.7%) of respondents received group health education/talk.

Results of the study showed that the activities carried out at the child welfare clinics in the health facilities at all the five sub-districts include weight measurement, immunizations, and including physical assessment for minor health problems, registration of new attendants, guiding and counseling on infant feeding practices. Health educations/talks on pressing health issues were also done during child welfare sessions/ services. These findings are consistent with research findings by Adu- Gyamfi (2013), that, children under five years are captured at Child Welfare Clinics for various child welfare and health services. Among the child health activities at CWC are growth monitoring, immunization against childhood killer diseases, vitamin A supplementation, treatment of minor ailments, referral of complicated illnesses, health talks and counseling of mother and caretakers on health issues (Adu- Gyamfi, 2013).

The results also agreed with the Ghana Health Service assertion that, child welfare services or clinics involve the continuous observation of growth through regular weighing and taking of other body measurements. Usually months before a child shows obvious signs of malnutrition he or she will have stopped growing. Measuring a child's growth regularly is one way of measuring his or her nutritional status or condition and general health. Through growth monitoring, growth failure is detected early for appropriate measures to be taken to correct it in time (Ghana Health Service, 2003). Thus, regular supervision of the child at the Child Welfare Clinic goes a long way towards maintaining his health and is perhaps one of the central functions of the child welfare clinic (Adu-Gyamfi, 2013).

The study also understand that, at the Child Welfare Clinic, caregivers are guided and counseled on good infant feeding practices which help to strengthen the immune system and promote the growth and development of children. However, guiding and counseling on good infant feeding practices recorded the least activity at the various child welfare clinics in the district. This finding was in line with the proposition of WHO, that, sometimes due to heavy work load during growth monitoring sessions, health workers do not give much attention to growth promotion actions. Rather a lot of emphasis is placed on weighing the child and plotting the weight on the growth chart. Some mothers do not understand that the weight and growth of their children are related to feeding practices and the basic knowledge on nutrition is needed by health workers to advice on the type of foods that should be given to the child(; WHO, 1999). The growth monitoring sessions or child welfare clinics provide the opportunity for the health worker to educate mothers on child diet or feeding, immunization, and other issues related to the health of the child. (MOH, GHANA). The study also agreed with the ministry's policy that the growth chart has two main purposes, thus, to determine the growth pattern of children, and offer the opportunity for health workers and mothers to discuss issues relating to the growth and health of the child. The right interpretation of the growth line or curve of a child will help take the best decisions to help the mother improve the child's growth and health.

More so, the research results showed that physical assessment for minor health problems is carried out at the various child welfare clinics across the district. These findings are supported by studies that show that at the child welfare clinics minor health problems are treated as they arise so that they do not deteriorate into more complex conditions (McMeniman, et al, 2011).

5.6 The Quality of Service at the Child Welfare Clinic

The results considered a number of factors/activities that constituted quality of services at the child welfare clinics in the district. The study portrayed staff quality and quantity, clients perception (accessibility, waiting time, staff attitude, efficiency, equity, effectiveness, safety, technical competence, continuity, and amenities), and the working environment. These findings agreed with the Ghana Health Service (GHS) definition of quality of service, that, standard is the extent to which a product of service satisfies a person or a group; thus how much satisfaction the person gets from the service. (GHS, 2004). Also, quality of service embedded accessibility, efficiency, equity, effectiveness, safety, technical competence, continuity, and amenities (GHS, 2004). Patients often complain about the poor quality of the service they receive at our health facilities and poor quality services comes with loss of lives, revenue, low morale among staff, and poor image of health care providers (GHS, 2004).

The study revealed that, staffing at the various designated child welfare points were woefully inadequate. Majority (80%) of the child welfare clinics were manned by only community nurses with an average working experience of 3years. Also, the average number of staff at each CWC was sometimes with the support of a community health volunteer. These situations led to shared/abandonment of some activities like guiding and counseling on infant feeding practices, weight interpretations, properly planned health talk, and so on. These findings are consistent with the assertion of WHO, that, sometimes due to heavy work load during growth monitoring sessions, health workers do not give much attention to growth promotion actions. Rather a lot of emphasis is placed on weighing the child and plotting the weight on the growth chart.(WHO, 1999).

The results are also related to the findings by the ministry of health (MOH), Ghana, that, there was a shortage of professional nurses; in most of the facilities, sick children were care for by student nurses, health care assistants and ward aides who had inadequate skills and knowledge to do the job. (Better medicines for children in Ghana, MOH, December, 2011). According to a research conducted in Johannesberg on quality of child healthcare services, revealed that quality of child health services for sick children offered by clinics was disappointingly poor (Kebashni & Saloojee, 2010).

5.7 Quality Child Welfare Clinic and Improving Child Nutritional Status

Bivariate analyses showed that children with regular or adequate child welfare clinic attendance/care (that is, right from birth without defaulted} had Z-score of weight-for-height, and height-for- age not less than – 3 z-score than those of the same age with default or inadequate attendance of child welfare clinics. Again, adjustment for mother's/caretaker's perception of the service, CWC content, complementary feeding practices, exclusive breast feeding, gender of the child, household wealth index, caretaker's knowledge on danger signs of malnutrition, the family size had z-scores of greater or equal to -3 (z-score > or = -3).

The findings re-affirmed that of Adu-Gyamfi, 2013 that, the more a child continues to attend Child Welfare Clinic to age 59 months the greater his/her chances of survival, growth and development.

Also, according to a similar research conducted in Nigeria, the result suggested that 72.5% of the infants attending child welfare clinic were exclusively breastfed for six months, 94.5% were given colostrums which is the first milk produced rich in antibodies. This is not surprising as

most of the women had some level of education and 49% of them attended tertiary institution (Alamu, 2011).

More so, greater clinic attendance was found to be associated with better nutritional status in urban Jamaica. Accordingly, the number of times the child had been taken to the clinic was positively associated with weight for-age. This was mainly a well-baby clinic where children were weighed and simple health and nutrition advice was given. The magnitude of effect of this variable was relatively large (Greiner and Latham, 1981).

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

This chapter summarized the findings of the study into the conclusion, and as well as make recommendations based on the conclusions.

6.1 Summary of the Findings

The study sought to investigate the effects of quality of service at the child welfare clinics (that is, both content and perception) on improving child nutritional status and therefore promoting child survival in the East Mamprusi district. Variables that were investigated included the socio-demographic determinants of child welfare clinic utilization, the content, staffing, logistics and safety, and appropriateness/equity, client's perception or satisfaction level, and relationship between quality of service at the CWC and child nutritional status.. The results of the study revealed that:

Majority, 78.34%, (331), of the respondents interviewed started the child welfare clinic attendance the first week after delivery, 9.70% (41) of the respondents started a month after birth whilst 9.2% (39), had their first attendance after forty days and only 2.8% (17) respondents started after six months. Out of the 423 respondents interviewed 77.1% (331) recorded regular monthly attendance from the first week after birth without defaults.

The study results determined that, ill health, attending social events and economic travels, ill-informed review date; busy household schedules of caretakers were identified as some of the barriers to CWC attendance.

The study revealed that determinants of CWC usage include educational level ($p<0.005$, at 5% level of significance), wealth index ($p<0.005$), available of incentives at the CWC ($P<0.05$), parity of mother ($p<0.005$, at 5% level of significance), and number of children lose to the childhood killer diseases by the mother ($p<0.005$, at 5% level of significance),

The determinants of child's weight and height found by the study were birth weight, regular CWC attendance, educational level, adequacy of CWC attendance, household wealth index.

Bivariate analyses indicated that babies/children who made adequate CWC (early initiation, consistent with attendance and made not less 24 visits) were more like to have better or normal weight-for-height and height-for-age with z-score not less than -3, $p<0.05$, at 5% level of significance.

6.2 Conclusions

Child welfare clinic usage in the east Mamprusi district is universal as all nursing mothers or CWC attendees who were interviewed made child welfare clinics attendance, though sometimes not regular. However, early initiation, (77.34%), and regular attendance, 77.11%, of CWC are not encouraging considering the fact that about 23% of respondents either started CWC late and /or defaulted attendance. This defaulter rate (23%) is attributed to the fact that some mothers still deliver at the home under the supervision of unskilled birth attendant and may start the child welfare clinic attendance at or after forty (40) days which is not helpful in detecting early birth complications for appropriate treatment.

Though, the child height, individual infant feeding counseling, physical assessment for minor medical problems that are likely to affect infant feeding were not observed, the content of the child welfare clinic were found to have a significant influence on the weight and height of the

children as children who had high CWC quality index exhibited normal weight-for-height and height-for-age as compared to those with low CWC quality index.

Community health nurses manned the child welfare clinics in the district with assistance from community volunteers or unskilled facility attendants, and staffing at the CWC is a challenge in the East Mamprusi district which affected the content delivery and created un-necessary delay at the child welfare clinics. Again, obsolete and or non-existent equipment were been used for weight and height measurement and this affected the computation of weight-for-height and height-for-age for early detection of children with eminent danger of malnutrition.

6.3 Recommendations

The following recommendations are made based on the results of the study;

i. Early initiation of child welfare attendance have not been encouraging due to home delivery been adopted by some of expectant mothers or women, and therefore health education should be intensified in the East Mamprusi District so that expectant women who are due or at term will be encourage to report to any nearby health facility for skilled delivery should they start experiencing signs of labour.

ii. The district health directorate (DHD) or the district health management team (DHMT) should make available for use at the various CWCs those basic equipment or items needed to work effectively and efficiently.

iii. The DHMT should embark on a frequent monitoring and supervisory visits at all the child welfare clinics at least once a week to ensure that the right and scheduled activities are provided the clients.

iv. Qualified nutrition officers as well as clinical professional nurses should be attached to the child welfare clinics for professional nutritional and medical assessment of clients in order to adopt appropriate interventions at the right time for clients who may need their services.

v. Although, some of the services at the child welfare clinic were provided, other services were not met like measurement of height, nutritional counseling, interpretation of child's weight, physical assessment for minor medical problems that may affect infant feeding and/or for referral. It's therefore recommended that education among child welfare clinic staff is necessary to ensure early diagnosis and appropriate interventions.

vi. Government should introduce some incentives like food supplements, free transportation for mothers walking beyond 5km to access child welfare clinics, increasing accessibility to child welfare clinics to encourage caretakers to attend CWC because some mothers cited these as some of the factors that will encourage them to attend CWC regularly.

vii. Nursing mothers should be educated on when, how and what to use as complementary feeds for infants and their fathers should support to ensure constant supply of the food stuff and/or ingredients.

REFERENCES

Abd Latif Laili, Brizee Lori S., Casey Susan, Cumbie Elaine, Feucht Sharon, Glass Robin, Hunt Kathryn L., James Nancy, Johnson Kelly A., and Katsh Naomi (April, 2010): Nutrition interventions for children with special health care needs, 3rd Edition, 2010; Washington State Department of Health.

Acheson Roy M. (November, 1962); attitudes of mothers to infant and child health and welfare clinics: Br Med J. 1962 November 24; 2(5316): 1355-1359.

Addo Yobo E. O. D (2010): Neonatal survival in Ghana- Challenges and way forward; 3rd annual scientific conference.

Adu-Gyamfi Addae Boateng and Adjei Benjamin (2013): Child welfare clinic attendance among children 24-59 months in Assin North Municipality, Ghana. International Journal for Innovation and Research, vol.1-04, 2013. www.ijier.net

Alamu T. O., Atawodi S.E. and Edokpayi J. N. (2011): Nutritional status of infants attending infant welfare clinic of Ahmadu Bello University, health service Samaru: Pelagia research library, advance in applied science research, 2011,2(4): 58-64; www.pelagiaresearchlibrary.com

Aryeetey R. N. O. and Goh Y. E. (March, 2013);Duration of exclusive Breastfeeding and subsequent child feeding adequacy: Ghana Medical Journal, volume 47, number 1.

Asirifi Yaw (June, 2009); Child Health: past, present and future challenges: Ghana medical journal, volume 2, number 43.

Awoyemi T.T., Obayelu O.A., and Opaluwa H.I. (2011): Effect of distance on utilization of health care services in rural Kogi State, Nigeria. World Health Organisation, 2011.

BASICS and UNICEF (1999); Nutrition essentials, a guide for health managers; World Health Organisation, 1999.

Bosu W K, Ahelegbe D, Edum-Fotwe E, Bainson K A, Turkson P K (1997); Factors influencing Attendance to immunization sessions for children in a rural district of Ghana. Health Research Unit, Regional Health Administration, Cape Coast, Ghana W.bosu@Ishtm.ac.uk

British Dietetics Association policy statement (April, 2013): complementary feeding: Introduction of solid food to an infants diet: The British Dietetics Association.

Burchi Fransceco (2011), whose education affects a child's nutritional status,?From parents' to household's education.Max Planck institute for demographic research. Volume 27, article 23. www.demographic-research.org.

Chapagain RH (2013): Factors affecting complementary feeding practices of Nepali mothers for 6 months to 24 months children: J Nepal Health Res Counc: 11(24): 205-7

Das Sibabrata and Sahoo Harihar (2011); an investigation into factors affecting child undernutrition in Madhya Pradesh. Anthropologist, 13 (3): 227-233 (2011).

Fader Mieke, and Spinnler Benade A S (2007); breastfeeding, complementary feeding and nutritional status of 6-12 month old infants in rural Kwazulu Natal: SAJCN, 2007, Volume 20, No. 1

Ghana Health Service (2005): Child health record review- QHT Technical report (2006); Ghana Health Service.

Ghana Health Service (2012)-Policy planning, monitoring and evaluation division: Improving access to quality maternal and child health service; an initiative of the Gramen foundation.

Ghana Health Service and DANIDA (July, 2004): Healthcare quality assurance manual for sub districts.

GHS, GAIN, PATH and IYCN (December, 2011): Ghana Promotion of Complementary Feeding Practices Project; Baseline Survey Report. Ghana health service.

Health Service Executive, Ireland (September, 2011); Child protection and welfare practice.Health Service Executive 2011.www.hse.ie.

Herbst Chris M. and Tekin Erdal (October, 2011): The geographic accessibility of child care subsidies and evidence on the impact of subsidy receipt on child hood obesity. IZA DP No.6025.

Huntsman Leone (2008); Determinants of quality in child care: A review of the research evidence; Centre for parenting and research service system development division; NSW Department of community services. www.community.nsw.gov.au

Indrajit Ray and Chandra Amar K. (May 2013), an anthropometric study on the children of Tripura: Nutritional and health coverage and redefining WHO percentile cut-off points; international journal of scientific and research publications, volume3, issue 5.

Khor GL, Noor Safiza MN, Jamalludin AB, Jamaiyah H, Geeta A, Kee CC, Rahmah R, Alan Wong NF, Suzana S, Ahmad AZ, Ruzita AT, and Ahmad FY (2009); Nutritional status of

children below five years in Malaysia: Anthropometric analyses from the third national health and morbidity survey III; Mal Nutr 15(2): 121-136.

Meshram I I, Laxmaiah A., Venkaiah K., Brahmam G. N. V. (2012); Impact of feeding and breastfeeding practices on the nutritional status of infants in a district of Andhra Pradesh, India: The National Medical Journal of India, vol. 25, No. 4, 2012.

Ministry of Health (2007-2015): Under Five's child health policy: 2007-2015: Ministry of health, Ghana

Ministry of Health (GOI) and UNICEF/IRAQ (November, 1999); nutritional status survey of children below two attending routine immunization sessions at primary health care centres in Iraq. World Health Organisation (WHO, November, 1999)

Ministry of Health- Ghana (2014): immunization programme comprehensive multi-year plan in line with global immunization vision and strategies. Ministry of health, Ghana.

Ministry of Health Ghana (December 2011): Assessment of quality of care for child in selected hospitals in Ghana: WHO 2011, www.who.int.

Nnyepi Maria S., Bond Jenny T., Mullan Brendan, Uebersax Mark, Weatherspoon Lorraine (2006); user perceptions of the quality of nutrition care for children under five year in Botswana. Ethiop. J. Health Dev. 2006; 20 (3).

Normand Charles, Iftekar Mustak Hassan, and Rahman Syed Aziz (2002): Assessment of the community clinics: effects on service delivery, quality and utilization of services. World Health Organisation.

Novella Rafael (May, 2013); parental education, gender preferences and child nutritional status: evidence from four developing countries.Institute for social and economic research.

Nyarko Philomena, Pence Brian and Debpuur Cornelius (2001); Immunization status and child survival in rural Ghana; World Health Organisation (WHO), (2001, No. 147)

Park K., and MBBS,Ms (2004);Essentials of community health nursing. 1167 Premnagar, Jabulpur-482 001; Third Edition.

Perera Priyantha J., Femando Meranthi, Wamakulasuria Tania, and Ranathunga Nayomi (2011); Feeding practices among children attending child welfare clinics in Ragama MOH area: a descriptive cross-sectional study, Int Breastfeed J. 2011; 6:18.

Ponsar Frederique, Tayler-Smith Katie, Philips Mit, Gerard Seco, Van Herp Michel, Reid Tony, Zachariah Rony (2011); no cash, no care: how user fees endanger health- lessons learnt regarding financial barriers to healthcare services in Burundi, Sierra Leone, Democratic Republic of Congo, Chad, Haiti, and Mali: international health 3 (2011) 91-100

Sassi M (June, 2013); child nutritional status in the Malawian district of Salima: A capability approach; World Health Organisation (WHO).

Senbanjo I O, Adeodu O O, and Adejuyigbe E A (2006); Influence of socio-economic factors on nutritional status of children in a rural community of Osun State, Nigeria; WHO (2006).

Sika-Bright Solomon (January, 2010): socio-cultural factors influencing infant feeding practices of mothers attending welfare clinic in Cape Coast. French Embassy; small grants programme in the humanities and social science, Accra, 2010.

Thandrayen Kebashni and Saloojee Haroon (September, 2010): Quality of care offered to children attending primary healthcare clinics in Johannesburg: SA journal of child health.

Turkson P. K (June, 2009); Perceived quality of healthcare delivery in a rural district of Ghana: Ghana medical journal, volume 43, number 2.

UNICEF (2010): A successful start in life: improving breastfeeding in west and central Africa. World Health Organisation, August, 2010.

UNICEF (April, 2013); improving child nutrition, the achievable imperative for global progress.WHO.

Wilkinson David, Gouws Eleanor, Sach Marlene and Abdool Karim Salim S. (2001): Effect of removing user fees on attendance for curative and preventive primary health care services in rural South Africa: World Health Organisation (WHO), (2001, 79: 665-671).

World Health Organisation (2007); child growth standards: head circumference-for-age, arm circumference-for-age, triceps skin fold-for-age, and sub scapular. W.H.O library cataloguing-in-publication data.

World Health Organisation (W.H.O, 2010): WHO Library cataloguing-in-publication data: nutrition landscape information system; country profile indicators: interpretation guide.

APPENDIX

Study Questionnaire

These questionnaires are designed to assess the determinants/quality of child welfare clinics and its effects on child nutritional status as part of the requirements for the award of post graduate degree in community health and development in the University for Development studies. Client identity is not necessary, and all information provided would be treated with optimum confidentiality.

INFORMED CONSENT

Hello, I am Yakubu Sumani, a student of University for Development Studies, offering post graduate degree program in community Health and Development. I am conducting a study on "Quality of Service at the Child Welfare Clinics and its Effect on Child Nutritional Status in the East Mamprusi District". I would be much appreciative of your participation in this study. This information will help the District Health Directorate, Private Organizations, the Community and other decision making bodies to know the exact relationship between quality service at the child welfare clinic and child nutritional status outcome and so as to plan how to reduce malnutrition among the under five children in the district.

The survey usually takes between 15 and 20 minutes to complete. Whatever information you provide will be treated with confidentiality. Participation in this survey is voluntary and you can choose not to answer any individual or all questions. However, we hope that you will participate in the survey since your views are important. At this time, do you want to clarify, or ask questions about the survey?

May I begin the interview now? Yes ..... No.....

IDENTIFICATION

District.....

Sub-district.....

Interview date.....

Interview Number.....

Section of the district respondent located.....

Facility Name.....

Interviewer Name.....

Language used to interview.....

Translator used.....

A. Yes.....

B. No……

INSTRUCTION: Administer the questionnaire to mothers attending CWC (of children between the ages of 6-59 months)

SECTION A: SOCIO-DEMOGRAPHIC DATA

1. Age in years……..
   a. 12-15years
   b. 16-19years
   c. 20-23years
   d. 24-29years
   e. 30years and above
2. Tribe:
   a. Mamprusi
   b. Bimobas
   c. Konkombas
   d. Frafra
   e.others, specified……..
3. Educational background/ level
   a- No education
   b- Primary
   c- Secondary
   d- Post secondary/university
   e- Others, specify……..
4. What is your religion?
   a. Islam
   b. Christianity
   c. African Traditional Religion
   d. Others, (specify)……..
5. Marital status:
   a. widow
   b. married
   c. single mother
   d. divorcee
   e. Others specify…
6. 5. The household/family type
   a. Nuclear/ monogamy
   b. Extended/polygamy
   c. Others, specify……
7. How long have you been married (in years)……
   a. One-five years
   b. Six- ten years
   c. Eleven –fifteen years
   d. Sixteen-twenty years
   e. Above twenty years

8. How many children do you have?
    a .one child
    b. Two children
    c. Three children
    d. Four children
    e. Five and above
9. Did you experience any death among your children?

a- Yes
b- No

If yes state the number.....

If yes, can you state the sex,

a. Male
b. Female

If yes, state the position

a. First one.....
b. The second one.....
c. The third one.....
d. Others.....

If yes, can you state the cause of death(s)?

a. Diarrhea

b. Cough/ difficulty in breathing

c. Convulsion

d. CSM

e. Others,(specify).....

SECTION B: THE CHILD CWC RECORDS/ BIRTH HISTORY

1. How old is your child?
    a. 6 -12 months
    b. 13-18 months
    c. 19-24months
    d. 25-30 months
    e. 31-36 months
2. Place of delivery.....
    a. Hospital
    b. Home
    c. Others specify.....
3. Sex of the child
    a. Male

b. Female
c. Others, specify……..

4. What was the birth weight?
   a. Below 2.5kg-2.5kg
   b. Between 2.6- 3.0 kg
   c. Between 3.1-3.5kg
   d. Above 3.5kg
5. What is the position of the child in your children?
   a. First child
   b. Second child
   c. Third child
   d. Others. (specify)……..

6. When did you start the CWC attendance?
   a. right after birth
   b. First month after birth
   c. After forty days
   d. After six months
   e. Others. specify……..
7. How many times did you attend CWC after birth?
   a. Once
   b. Twice
   c. Thrice
   d. Four times
   e. More than four, specify……..
8. Have you ever defaulted the CWC attendance?
   a- Yes
   b- no

If yes, state the reason……

If no, state the reason……

9. What type of breastfeeding practiced within the first six months after birth?
   a- Exclusively breastfeeding
   b- No exclusive/mix breast feeding
   c- Bottle feeding with lactogen
   d- Wet nursing
   e- Others, specify
10. State the reason(s) for adapting any of the above breastfeeding practices….
11. Does the child have a normal weighing chart?

a. yes

b. no

12. If yes, state the type of complementary feeds use?

a. home prepared complementary feeds

b. processed complementary feeds bought from market

c. others, specify.....

13. If no, state the possible cause?

a. birth defects

b. medical problem/ sickness

c. poor feeding practices

d. lack of food accessibility

e. others, specify.....

14. Is the weight of your child been taken during the session?

a. Yes

b. No

15. Is your child's height been taken?

a. Yes

b. No

16. Does the weight and height of your child been interpreted to you?

a. yes

b. No

17. If yes, were they considered.....

a. Normal

b. Abnormal

18. What is the current weight of the child...?

19. The height/length of the child.....

SECTION C: CLIENT'S SATISFACTION SURVEY

1. Have you completed the session for the day?

a. yes
b. no

2. How was the reception like?

a. Good

b. Very good

c. Bad

d. Very bad

3. Can you mention the services received at the child welfare clinic?

a. weighing

b. registration

c. height measurement

d. physical examination

e. referral

f. health education

g. counseling

h. immunization

i. others, specify.....

4. How long have you been here for the day's session?

a. 30 minutes

b. 1 hour

c . About 2 hours

d. Above 2 hours

5. How long have you being coming for weighing?

a. 1-6 months ago
b. 7-12months back
c. 13-18months ago
d. 19-24 months back

e. 24months and above

6. How old was your child when you started attending CWC?

a. within the first month after birth

b. one month after birth

c. after six months

d. after one year

7. What encourages you to attend CWC sessions?

a. because it's a routine

b. child not well

c. important for child health

d. health workers encouraged me to attend

e. others, specify.....

8. How frequent do you attend CWC sessions?

a. Weekly

b. Monthly

c. whenever free
d. Others (specify).....

9. Have you ever defaulted in attending the CWC?

a. yes
b. No

10. If yes, what was the reason for defaulting?

a. social problem
b. financial/ economic
c. geographical
d. Others, (specify).....

11. How would you rate the services rendered?

a. Good
b. Very good

c. Bad
d. Very bad

12. Would you like something to be added or subtracted to/ from the weighing session next time you come?

a. yes

b. no

13. If yes, can you mention some of them?

.....

14If no, why.....

15. What education have you received in today's session?

a. Sanitation and Personal hygiene

b. Exclusive breast feeding

c. Appropriate complementary feeding

d. Importance of child weighing

e. Others, specify.....

16. Was the education given to a group or you alone?

a. Group

b. Individually

c. Others, (specify)

17. Was it relevant to your child's problem(s)?

a. yes

b. No

c. Cannot tell

18. Have you been given education concerning your child nutrition including food preparation, constituents, sanitation, etc?

a. yes

b. no

19. Have you been educated on identifying a child with good or malnutrition?

a. yes

b. no

20. How will you rate the quality of CWC services rendered?

a. Poor

b. Fair

c. Good

d. Excellent

21. How can you describe your level satisfaction regarding the CWC service received today?

a. Dissatisfied

b. satisfied

c. Very satisfied

d. Indifferent

e. Can't say

f. Irrelevant

22. How much were you charged for the services rendered?

a. No fee Paid

b. Less than 5 GHC

c. Above 5 GHC

23. Will you like to come back next time?

a. Yes

b. No

24.If,yes,why.....
.....
.....

25.If,No,why.....
.....

.....
.....

SECTION D: SOCIO-ECONOMIC HOUSEHOLD WEALTH INDEX OF RESPONDENT

1. What is the occupation of your household head?
   a. Peasant farmer
   b. Commercial farmer
   c. Petty trader
   d. Civil Servant
   e. Others, (specify).....

2. What type of house do members of the household dwell in?
   a. Block house zinc
   b. Brick house with zinc
   c. Mud house with zinc
   d. Mud house with thatch
   e. Others, (specify).....
3. Does the house hold own a house?
   a. Yes
   b. No
4. How many rooms does the household have at their disposal?
   a. One
   b. Two
   c. Three
   d. Four
   e. Above four
5. What kind of toilet facility do members of the household usually use?
   a. Own flush toilet
   b. Public or shared flush toilet
   c. Own pit latrine
   d. Public or shared pit latrine
   e. Open defecation

6. What is the source of lighting for the household?
   a. Electricity
   b. Kerosene lanten
   c. Gas
   d. Others, (specify)
7. What type of fuel does your household mainly use for cooking?

a. Fire wood
b. Charcoal
c. LPG
d. Electricity
e. Others, (specify)

8. What is the main source of drinking water for members of your household?
   a. Pipe borne water
   b. Borehole
   c. Dug well
   d. Dam
   e. Stream

9. **Indicate yes or no?**

ITEM	YES	NO
Radio		
Bicycle		
Refrigerator		
TV Set		
Sewing machine		
Mobile phone		
Computer		
Video deck		
Motor bike or cycle		
Tractor, car or truck		
Ownership of livestock		

SECTION E: INTERVIEW GUIDE

INSTRUCTION: ADMINISTER TO HEALTHCARE PROVIVERS RENDERING CWC SERVICES

1.Name……Rank/position……..

2.Number of years in practice……

3.Primaryduty(ies)……

4. Do the CWC services have the capacity to impacting positively on child nutrition?.....
.....
.....

5. Did you have challenges improving child nutrition in your CWC sessions?.....
.....

6.Can you discuss some of the challenges?.....
.....
.....
.....
.....

7. What policies available for improving child nutrition in CWC sessions?.....
.....
.....
.....

8. Can you discuss the policies?.....
.....
.....

9. What did you think should be added in the CWC sessions to improve child nutrition?.....
.....
.....

10. How did you identify a child with malnutrition during CWC sessions?.....
.....

11. How is the child nutritional status asses during CWC sessions?.....

12. How are health educations/talks regarding complementary feeding plan and deliver?.....
.....
.....
.....
.....
.....
.....

SECTION F: PARTICIPANT OBSERVATION CHECKLISTS

1. Was the mother's knowledge on complementary practices assessed? .....
2. Has the child been observed and assessed for both breast feeding and other complementary feeding problems?
   .....
3. Has the mother been taught on appropriate complementary feeding practices? .....
4. How was the child's weight assessed?
   .....
5. Was the weight interpreted to the mother? .....
6. Was she advised on what action to take to either maintain or improve the situation? ....
7. Was the children's height taken? .....
8. Do they have standardized weight and height recording equipment? .....
9. Are the staff mothers follow the weight and height taking procedures/techniques? .....
10. Was the children's screen for disease conditions either presently or previously? .....
11. Was the child immunized?
    .....
12. Does the mother look happy after the service? .....
13. Does the attitude of health workers towards mothers been well? .....
14. Do mothers allow to ask questions about the service? .....
15. Do mothers been giving chances to ask questions concerning the services? .....
16. Are there enough staff members for the session? .....
17. Are clients pay for some services? .....
18. Was there any health talk? .....
19. Was the topic chosen by the health worker's own discretion or based on individual client's needs? .....
20. Was it addressing individual client needs? .....
21. Do they educate clients on their next visiting days? .....