

UNIVERSITY OF EDUCATION, WINNEBA

**INFANT AND YOUNG CHILD FEEDING PRACTICES ADOPTED BY
MOTHERS AT DADÉASE AND EFFIDUASE**



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MOTHERS AT DADÉASE AND EFFIDUASE**



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**A THESIS IN THE DEPARTMENT OF HOME ECONOMICS, FACULTY OF
SCIENCE EDUCATION, SUBMITTED TO THE SCHOOL OF GRADUATE
STUDIES, UNIVERSITY OF EDUCATION, WINNEBA, IN PARTIAL
FULFILMENT OF THE REQUIREMENTS FOR AWARD OF THE
MASTERS OF PHILOSOPHY (HOME ECONOMICS) DEGREE**

JULY, 2018

DECLARATIONS

Student's Declaration

I hereby declare that except for references to other people's work which have been duly acknowledged, this work is the result of the original research work taken by me under supervision. It has, neither in part nor whole been submitted for a degree elsewhere.

Martha Serwaa Wiredu

(Name of student)

.....

.....

Signature

Date

Supervisor's Declaration

I hereby declare that the preparation and presentation of this work was supervised by me in accordance with the guidelines for supervision of Thesis/Dissertation as laid down by the University of Education, Winneba, Ghana

Professor Veronica Obatolu

(Name of Supervisor)

.....

.....

Signature

Date

DEDICATION

To the Almighty God who has been my strength and provider. Everything I am today is Your making. My Lord and my God, words cannot say it all. I am forever grateful.



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ABBREVIATIONS

AAP	American Academy of Paediatrics
ADFNS	Food and Nutrition Security
ADR	Annual District Report
BF	Breastfeeding
CDC	Centres for Disease Control
CF	Complementary feeding
CI	Confidence Interval
DHD	District Health Directorate
EBF	Exclusive Breastfeeding
EDHS	Demographic and Health Survey
ERS	Economic Research Service
EPI	Expanded Programme on Immunization
FAO	United State Food and Agricultural Organization
GDHS	Ghana Demographic and Health Survey
GDHS	Ghana Demographic and Health Survey
GHS	Ghana Health Service
H ₀	Null Hypothesis
H _a	Research/ Alternate Hypothesis
IDD	Iodine Deficiency Disorders
IQ	Intelligent Quotients
IYCF	Infant and Young Child Feeding
MDG	Millennium Development Goals
MGMP	Monthly Growth Monitoring Promotion
MOH	Ministry of Health



NCFN	National Council for Food and Nutrition
NCHS	National Centre for Health Statistics
NHMRC	National Health and Medical Research Council of Australia
NICHD	National Institute of Child Health and Human Development
PAHO	Pan American Health Organization
PEM	Protein Energy Malnutrition
RDAs	Recommended Daily Allowance
SD	Standard Deviation
SDG	Sustainable Development Goals
SUN	Sealing Up Nutrition
UNCHS	United States Centre for Health Statistics
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nation Fund for Population Activities
UNICEF	United Nations Children's Fund
USDHHS	United State Department of Health and Human Services
WFP	World Food Programme
WHO	World Health Organization

ABSTRACT

Optimal feeding during infancy and early childhood is fundamental to the makeup of a child's full human potential. This study aimed at infant and young child feeding practices of mothers and the effect on nutritional status of their children at Dadease and Effiduase in the Sekyere-Kumawu and Sekyere-East Districts respectively. A cross sectional design was used for the study using a sample size of 122 mothers and their young children within the age range of 0-24 months old. Multistage sampling technique was employed. Weight-for-Age, Height-for-Weight, Height-for-Age and Body Mass Index (BMI) were used in assessing infants and young child' nutritional status using EPI-version 7 anthropometric calculator. The relationship of mothers' nutritional knowledge and type of feeding practices adopted for their young children was examined using spearman's correlation at 0.01 significant level. The result showed a weak negative insignificant ($r = -.141$, $p > 0.01$) relationship. Similarly, educational level of mothers and age did not influence choice of infants' feeding practices, ($p > 0.05$). Rather, factors such as work situation, culture, post-natal clinic services, family and friends influenced mother's choice of infant and young children feeding practices ($p < 0.05$). About 37% mothers confirmed that they introduced other foods to their infants below 4 months while generally, 95% mothers were noted for introducing supplementary foods to infants below the 6th month. Also, only 7% mothers actually gave supplementary foods after the 6th month. This finding indicated that feeding practices adopted by most mothers was not in line with WHO recommendation for infant feeding, hence the high prevalence of severe underweight in Effiduase (72%) and Dadease (78%) communities. The study concluded that high risk of malnourishment found in both towns is as a result of poor infant feeding practices by mothers hence the need for promotion on best infant and young child feeding practices in the Sekyere-Kumawu and Sekyere-East districts through Effective Health Education and counselling routine as well as young children dieting guide to be enforced at Dadease and Effiduase to foster optimal childhood feeding practices among mothers. Again, Health Officers should capitalise on mothers' first source of nutrition information and make strong impact on them through exemplary practices by nurses in the communities.

CHAPTER ONE

INTRODUCTION

1.0 Overview

Chapter one describes the core concept of the study. Sections in this chapter includes; background to the study, statement of the problem, purpose of the study, research objectives, research questions, significance of the study, delimitation, limitations to the study, definition of terms and abbreviations and organisation of the study.

1.1 Background to the Study

Infant and young child feeding is key to promoting healthy growth and development, particularly during the first two years of a child's life. A child who has adequate nutrition performs better in school, grows into a healthy adult and in turn gives his/her children a better start in life. For a child to have adequate nutrition basically depends on the feeding practices offered by mothers or caregivers at the early stages of life. Infant and young child feeding practice is suboptimal throughout the world, especially late initiation of breastfeeding, Pre-lacteal feeding, early or late introduction of optimal complementary foods, giving poor quality, quantity and unhygienic complementary foods. Decision of using a bottle to feed the child is now a common practice in developing countries (Caetano, Ortiz, da Silva, de Souza & Sarni, 2010; Safari, Kimambo & Lwelamira, 2013). However, breast-feeding practices is widely campaigned over bottle-feeding for healthy and effective infants' growth.

These issues of substandard feeding in young infants across the globe are due to disparities in the initiation of breastfeeding and duration, timely introduction of complementary foods among others (Michigan State University, 2012). The growth and development of children in the rural areas where mothers are not greatly

enlightened about proper feeding and hygienic practices are deeply affected. Similarly, mothers living in slum areas of urban communities' face problems such as substandard housing, lack of reliable sanitation services, lack of clean water and food security that consequently affect the growth and development of children within that community. Residents of such areas are poor and less educated. These further compromise sub-optimal infant and young children feeding practices and are most of the times responsible for the high rate of neonates and young children' mortality in our societies. Some of these causes of child mortality, at least to some degree, are related to diets of children and also to water quality, and sterilization of objects (Demilew, Tafere & Abitew, 2017). Hitherto, the Millennium Development Goal (MDG) targeted at reducing under-nutrition by half. However, 146 million children under-5 in the developing countries suffer from under-nutrition, which is one of the main factors that cause malnutrition which stands out for the main cause of neonatal mortality. In Sub-Saharan Africa, four million children die from preventable diseases annually, of which 60% is as a result of malnutrition (Awogobenja & Ugwuona, 2010). The Sustainable Development Goal (SDG) on the other hand sought to end hunger, achieve food security, improve nutrition and promote sustainable agriculture. The SDG 2 movement also sought to ensure healthy lives and promote well-being for all ages of life. This new agenda, builds on the Millennium Development Goals, which aims to be relevant to all countries and focuses on improving equity to meet the needs of women, children and the poorest, most disadvantaged people (WHO, 2018).

Despite the fact that breastfeeding is known to be the best way to feed infant by providing the psychological and health benefits to both the mother and child, globally there has been a general decline in the practice of breastfeeding both in terms of prevalence and duration in the past few decades (Singh, 2010). The possible reasons

for declining breastfeeding as highlighted by Daba, Beyene, Garoma and Habtamu (2013) included:

- a. lack of confidence that the child is getting enough;
- b. Increased urban women work load demand that makes them to be separated from their babies for longer hours;
- c. Decline in social support;
- d. Discomfort on breastfeeding in public; and
- e. Intense promotion of commercial milk formulae.

Factors associated with the problem of malnutrition among young children vary from place to place in the world and Ghana is no exception. Among these factors are inappropriate dietary intake, infectious diseases, socioeconomic factors, lack of mothers' nutritional knowledge and negligent/distraction due to other mothers' activities (Daba *et al.*, 2013).

Cognizant of the high prevalence of inappropriate child feeding practice, the Ethiopian government adapted the Infant and Young Child Feeding (IYCF) guideline in 2004 to improve infant and young child feeding practice. However, the IYCF practice remains inappropriate and likely to be a major cause of under nutrition (Disha, Rawat, Subandoro & Menon, 2012). According to the 2016 Ethiopian Demographic and Health Survey (EDHS), infant and young child feeding practices are not as recommended by the World Health Organization [WHO] (2008). Only 58% of young children less than six months of age were exclusively breastfed and the optimal complementary feeding practice was 7%. Contrary to the recommendation made by WHO (2008) 9% of young children less than six months of age used a bottle

with a teat, a practice that is discouraged because of the high risk of infection to the child (Central Statistical Agency, 2016).

In Ghana, 98% of infants are ever breastfed but are fed with prelacteal feed contrary to World Health Organization recommendation that young infants must be fed only breast milk for the first six months of life. Therefore, 76% of young children age 6-9 months in Ghana are breastfed and at the same time receive complementary foods. Again according to the Ghana Demographics and Health Survey (2015), young children age 0-35 month breastfeed until 20.9 months and are exclusively breastfed for only 2.5 months instead of six months. Much is done in Ghana to overcome poor young child feeding practices that are the roots of malnourishment among children but some children are still victims (CIA World Fact book, 2018)

Gyampoh, Otoo and Aryeetey (2014) also confirmed that children should be introduced to complementary foods at 6 months as directed by WHO and UNICEF (2003). The food given should be safe, adequate and appropriate to prevent growth faltering in under-five children thereby reducing childhood deaths. Some school of thought has however indicated that complementary feeding can be introduced at 4 months (Awogobenja & Ugwuona, 2010). Moreover, a new Norwegian study showed a link between vitamin B₁₂ deficiency and the delayed development of young children's brains and nervous systems regarding how long young children in Norway should be fed breast milk exclusively, and when the weaning process should commence with an introduction to solid foods with immediate effect (Graven, 2013).

Under nutrition is estimated to be associated with 2.7 million child deaths annually or 45% of all child deaths. The first 2 years of a child's life are particularly important, as optimal nutrition during this period lowers morbidity and mortality, reduces the risk

of chronic disease, and fosters better overall development. Optimal breastfeeding is so critical that it could save the lives of over 820 000 children under the age of 5 years each year (WHO/UNICEF/World Bank, 2017).

It is noted clearly that one major cause of malnutrition in young children in developing countries is poor feeding practices such as: introducing complementary foods at an early stage, restriction in food selection due to cultural beliefs and giving children poor quality and insufficient amounts of complementary foods. Therefore, it is argued that poor feeding practices are as a result of poor nutrition knowledge of mothers (caregivers) and restrictions due to traditional beliefs (Central Statistical Agency, 2016). Also, with poverty, caregivers tend to feed young children the food available to the family regardless of the child's development level (Guldan, Fan, Ma, Ni, Xiang & Tang, 2000). Improving infant feeding practices especially for children younger than two years of age should therefore be a global priority (UNICEF, 2012). Therefore, there should be a critical check into Childs' nutrition in the first two years of life to curb any nutritional disorder in the young children through proper structures. WHO and UNICEF jointly developed the Global Strategy for Infant and Young Child Feeding whose aim is to improve through optimal feeding the nutritional status, growth and development, health, and thus the very survival of young children and young children (WHO & UNICEF, 2003; Gyampoh, Otoo & Aryeetey, 2014; WHO & UNICEF, 2017). The strategy recommends: early initiation of breastfeeding within one (1) hour of birth, exclusive breastfeeding for the first 6 months of life, introduction of nutritionally-adequate and safe complementary (solid) foods at 6 months together with continued breastfeeding up to 2years of age or beyond. Based on these recommendations, malnutrition and its consequences are likely to be ameliorated (WHO, 2010).

Between 2000 and 2016, the number of stunted children under 5 years worldwide declined from 198 million to 155 million. At the same time, numbers have increased at an alarming rate in West and Central Africa - from 23.0 million to 28.1 million (UNICEF/WHO/World Bank, 2017). Specifically, more than half of young children death in Ghana happens within the first month of life, and the new-born death rate has not improved in recent years. Malnutrition is a significant indirect cause of child mortality, contributing to one-third of all childhood deaths. Although levels of malnutrition in Ghana have dropped yet, 23% of children are stunted and 57% are anaemic (UNICEF/WHO/World Bank, 2017).

In Ghana, the former Director General of Health, Akosa (2016) on CitiFMonline.com at the 7th Africa Day for Food and Nutrition Security (ADFNS) stated that, “Ghana is currently facing a nutrition crisis, recording a double burden of malnutrition, according to a new nutrition report”. The then Health Director in his presentation at the ‘Scaling Up Nutrition (SUN) movement in Ghana’, made it clear that although Ghana has performed creditably well in reducing the rate of malnutrition, it has to do more to improve the gains made. According to him, many children in Ghana have short attention spans because of malnutrition, and this could be translated to the academic performance of most Ghanaian students. Also, a Professor at the Department of Nutrition and Food Science of the University of Ghana, Steiner-Asiedu (2016) also in an interview on citifmonline.com lamented that recent trends suggested an increasing phenomenon of wrong food choices leading to obesity. She therefore concluded that all food and nutrition problems are due to wrong food choices and the quality of food eaten.

A study conducted by Appoh and Krekling (2005) in the Volta Region of Ghana, found out that mothers’ nutritional knowledge is more important than mothers’

schooling in determining child weight-for-age. This might be due to reasons that, most well-educated women do not personally have ample time for appropriate feeding practices of young children due to their professional and work schedules. This means that, additional knowledge achieved through schooling is not a guarantee for a complete adherence to nutrition advice from health providers over mothers who do not have any classroom experience. Resuming work from three months' maternity leave for most working mothers is another key reason why a well-educated mother may skip optimal feeding of the young children. This is likely to force mothers to either stop exclusive breastfeeding or enrol babies early at the crèche. Some Ghanaian mothers are also compelled to introduce supplementary foods based on the available food to the family, which might not be appropriate at that crucial developmental stage of the child.

1.2 Statement of the Problem

Breastfeeding is widely recognized as the means of providing young children with the best source of nutrition during the first six months of life. Combining child care and mothers' workload have not been an easy task despite the fact that they contribute income to supplement that of their partners to fix the home. Grievances of these mothers have made them fail optimal young children feeding. Also, despite numerous awareness created by various stakeholders, breastfeeding is still low among mothers at Dadease and Effiduase due to reasons as health issues, notion of maintaining physical appearance after childbirth, work pressures, and many others.

Interactions with a Community Health Nurse and some mothers at Effiduase and Dadease revealed that most infants and young children brought to the health centres are mostly low weighted (post-natal weight) which is a possible sign of malnutrition.

Revelations from these nurses could be possible signs of young children suffering from a number of nutritional disorders. Prior to this declaration, malnutrition cases recorded at the Sekyere-kumawu District Health Directorate revealed hundred (100) malnutrition cases in 2016 while 105 cases out of 393 children were also recorded in the year 2017 with 38 (9.7%) underweight, 36 (9.2%) stunted and 31 (7.8%) wasted. There may be the likelihood that, Effiduase in the Sekyere-East District also have same malnutrition history since it is a sister district to Sekyere-Kumawu district. This therefore drew my attention to undertake this study because the probability of increasing rate of malnutrition can remain high and very alarming in the districts.

1.3 Purpose of the Study

The study aimed at investigating child feeding practices by mothers and the effect on children at Dadease and Effiduase in the Sekyere-Kumawu and Sekyere-East districts respectively.

1.4 Research Objectives

The study sought to achieve the following specific objectives. To:

- a. ascertain feeding practices by mothers for infants and young children at Dadease and Effiduase;
- b. determine mothers' nutritional knowledge on young children feeding;
- c. assess the influence of some socio-economic factors on the choice of young children feeding practices by mothers; and
- d. measure the nutritional status of children at Dadease and Effiduase as influenced by the mothers' infants and young children feeding practices.

1.5 Research Questions

The study sought to answer the following questions:

- a. What are the infant and young children feeding practices by mothers at Dadease and Effiduase?
- b. What are mothers' nutrition knowledge and how does it influence type of feeding practices adopted for infants and young children feeding?
- c. What are the socio-economic factors that influence the selection of infant and young child feeding practices by mothers?
- d. What is the nutritional status of the young children at Dadease and Effiduase as influenced by mothers' infant and young children feeding practices?

Hypotheses

The study sought to test the following null hypotheses in answering research questions 2 and 3.

H₀₁. There is no relationship between nutritional knowledge of mothers and choice of feeding practices for their infant and young children.

H_{A1}. There is a relationship between nutritional knowledge of mothers and choice of feeding practices for their infant and young children.

H₀₂. There is no significant influence of socio-economic factors on mothers' choice of infant and young children feeding practices.

H_{A2}. There is a significant influence of socio-economic factors on mothers' choice of infant and young children feeding practices.

1.6 Significance of the Study

- a. This study's outcome would build strong insight in mothers' choice of young children feeding practices at Dadease and Effiduase.

- b. Also, an effective health education programmes can be drawn with much considerations of local conditions, including culture and availability of local foods to be fully implemented.
- c. Moreover, outcome of the study would be useful to health, international organisations (WHO, UNICEF) and Non-Governmental Organisations, Ministry of Health and District Assemblies who would want to develop a feeding practice guide for mothers to follow to improve nutritional status of infants and young children.
- d. Findings of this study would prompt follow up research on nutrition of infants and young children feeding thereby widening mothers' nutritional knowledge and practices.

1.7 Delimitation of the Study

The study was conceptually delimited to feeding practices of infant and young children by mothers, mothers' nutrition knowledge level, the influence of socioeconomic factors on young children feeding practices, and assessing nutritional status of young children at Dadease and Effiduase in the Sekyere-Kumawu and Sekyere- East Districts respectively in the Ashanti Region of Ghana. Mothers and their 0-24 month old young children were only considered to be part of this study. The study falls within the quantitative approach underpinned by survey design.

1.8 Limitations to the Study

The study could not capture all mothers in the Ashanti Region of Ghana, so in this regard, results of the study would be generalised to mothers and young children at Sekyere-East and Sekyere-Kumawu Districts only.

More so, mothers were emotionally sensitive and reluctant in releasing personal information about themselves and that of their young children. Again, it was difficult getting infantometer to measure children's length due to its shortage but I did achieve my aim with the use of tailor's tape measure to measure the length of infants and young children on a table with no shoes on. It was a difficult task using this means due to the fact that some of these children were not stable when laid on the table and can cause some errors in their weight measures that may affect data analysis.

Fortunately, these limitations did not significantly affect the outcome of the study since data gathered adequately supported achievement of the objectives of the study.

1.9 Definition of Terms and Abbreviations

- a. **Infant:** It refers to a baby born on day one to the twelve (12) month.
- b. **Young children:** It refers to children above 12 months old in this study.
- c. **Knowledge:** In this study, knowledge is said to be ideas on good nutritional practices for healthy living.
- d. **Feeding Practice:** Practice in this study is the ways or means through which mothers feed their children.
- e. **Exclusive breastfeeding:** A child receiving only breast milk directly from the breast or expressed breast milk for six months after birth, but the child might be given vitamins and mineral supplements.
- f. **Formulae-feeding:** Feeding the child with liquid or semi-solid food from a bottle with a nipple/teat/spoon. This term implies supplementing breast milk with liquid or semi-solid food at calculated amounts and times.

- g. Complementary feeding: Complementary feeding means the introduction of liquids and semi-solid foods after six months of age when the breast milk is longer adequate to correct the nutrients needs of the child.

1.10 Organization of the Study

The study is made up of six chapters. The first chapter is the introductory chapter to the study which consists of background to the study, statement of the problem, purpose of the study, research objectives, research questions, hypotheses, and significance of the study, delimitation, limitation to the study, organization of the study and definition of terms. Chapter two deals with review of related literature, and it presents theoretical framework and conceptual framework. Chapter three, being the methodology, includes the study area, research design, population, sample and sampling procedure, data collection instruments and data analysis. Chapter four has analyses of data that collected from the study. The fifth chapter covers discussion of findings while chapter six cover summary of findings, conclusions, recommendations, suggestions for future research, references and appendices.

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter reviews related literature on infant and young children feeding practices among mothers. The literatures reviewed in this study were structured under the following sub-headings:

- a. Young children feeding Practices
- b. Nutritional Knowledge and experience of mothers
- c. Nutritional Requirement
- d. Socio-economic factors that influence young children feeding
- e. Nutritional status of young children
- f. Nutritional status of the Ghanaian child
- g. Malnutrition
- h. Consequences of malnutrition
- i. Theoretical framework
- j. Conceptual framework
- k. Empirical framework

2.1 Young Children Feeding Practices

Appropriate young children feeding practices are fundamental to a child growth, health and development during the first 2 years of life. In Africa, suboptimal young children feeding practices and poor nutrient density for key micronutrients are the major determinants that contribute to the high mortality among young children and young children (Lartey, 2008; Faber, Laubscher & Berti, 2014). Poverty, insufficient

knowledge on young children feeding and cultural practices may affect the adequacy of the complementary diet (Du Plessis, Kruger & Sweet, 2013).

2.2 Breastfeeding and Exclusive Feeding

During the stage of 6 months through to 1-2 years of life, it is almost all about the milk whether it is breast milk, formula (artificial milk), or a combination of the two. Breast milk or formula will provide practically every nutrient a baby needs for the first year of life (American Academy of Paediatrics, 2017). A new-born should be given to the mother immediately after birth, and breastfeeding should be initiated within one hour (WHO & UNICEF, 2009). These organisations recommend breast feeding to be started immediately following delivery (WHO & UNICEF, 2009), for the baby to get colostrum (Petit, 2008).

The young children should thereafter be exclusively breastfed for the first 4 to 6 months of life on child's demand with no other fluids including water, and breastfeeding should continue together with weaning food up to and beyond second year of life. Children who are been initiated with breastfeeding within the first one hour are considerably more likely to survive the first two days of life than those who started later (Edmond *et al.*, 2006). Optimal breastfeeding of young children and young children is a foundation to good nutrition, and it also supports healthy brain development, improves cognitive performance and is associated with better educational achievement at age 6 and beyond (Bhutta, Das, Rizvi, Gaffey, Walker, Horton & Black, 2013). Exclusive breastfeeding is a cornerstone of child survival and child health because it provides essential, irreplaceable nutrition for a child's growth and development. It serves as a child's first immunization, providing protection from

respiratory infections, diarrhoeal and other potentially life-threatening ailments (Horta & Victora, 2013).

A study conducted by Clive and Inas (2010) on the benefits of breastfeeding across the early years of childhood among mothers of Massachusetts reported that Children of mothers who have ever breastfed them were 4.7-8.8 percentage points less likely to be obese, and those of mothers who formula-fed them at birth were 2.8-5.4 percentage points more likely to be obese. They further concerted that, if there was to be an increase in breastfeeding from 67% to 75%, in line with Healthy People 2010 goals, this would imply obesity among two-year-olds to decrease by 0.38-0.70 percentage points.

2.3 Nutritional Component of Breast Milk

Breast milk is ultimately the best source of nutrition for a new baby due to the many components found in the human milk, which helps protect babies against infection and disease. Moreover, proteins in breast milk are more easily digested than in formula or cow's milk, as well as calcium and iron in breast milk is also more easily absorbed (Nowak, 2015). Meanwhile, some food nutrient needs of the child are directly related to the mothers' food intake, which is transferred to the baby through breastfeeding. This is why it is essential that mothers get adequate nutrition, including vitamins, fat-soluble vitamins, including vitamins A, D, E, and K, are vital to the young children's health (Rolfes & Whitney, 2006).

2.4 Role Breast Feeding plays in Child Development

Breast-feeding is the standard way of feeding all young children. It also enhances sensory and cognitive development and is one the most cost-effective ways to reduce young children morbidity and mortality from diarrhoea disease, respiratory disease

and other infections. Later in life, breastfeeding brings continuing benefits in terms of lower rates of obesity and reduced risk of chronic diseases. Breast-feeding also offers health advantages for the breastfeeding mother, including an earlier return to pre-pregnancy weight (Kramer & Kakuma, 2002), reduced risk of breast cancer and ovarian cancer and helps to space pregnancies (Hurst, 2011). There are also significant social, environmental and economic benefits. It is also an environmentally safe method of feeding. Early initiation of breast-feeding can reduce neonatal mortality by 22% and thereby decrease the young children Mortality Rate and contribute to the attainment of the millennium development goals (Millennium Development Goals, Human Rights and World Ethics, 2008).

A study conducted by Wondu (2013) found that educational level has some amount of influence on the attitude of mothers towards child feeding (colostrum). Approximately about 72% of mothers accepts colostrums nutritious for young children, while significant proportion of 41% have no idea about what colostrum could provide to their child at all. Moreover, relatively few (21%) mother's also think that colostrum is nutritionally useless.

2.4.1 Nutritional Role

Breastfeeding protects against weight loss due to diarrhoea. Exclusive breastfeeding often means that babies will breastfeed more, which helps keep up the milk production so they get more nutrition. Breastfeeding plays a role in reduction of stunting and infectious diseases in young children. However, breastfed children will become stunted if they do not receive an adequate quantity and quality of complementary foods from the age of six months onward (Oddy, 2010).

2.4.2 Safety Role

There is growing evidence that early initiation of breastfeeding has a significant impact on reducing overall neonatal mortality. Recent studies from Ghana and Nepal shows that early initiation of breast-feeding within the first hour of life could prevent around 20 percent of neonatal deaths (Centers for Disease Control and Prevention, 2010). Breastfeeding protects young children against diarrhoea through three mechanisms:

- a. Reduced risk of bacteria from contaminated formulae, other liquids and complementary foods
- b. The transfer of maternal antibodies through breast milk.
- c. In emergencies, breastfeeding saves lives among the most vulnerable young children under six months by providing all required nutrients and sufficient fluid to prevent dehydration (Oddy, 2010).

2.4.3 Social Role

Breast feeding plays the social role of enhancing the bond between the mother and the child most often giving the child the feeling of love and security. Most often during breast feeding, the child is kept close to the mother after birth and offered the breast frequently on demand (WHO & UNICEF, 2009). Frequent sucking also stimulates milk production and ensures that the child has enough.

2.5 Benefits of Exclusive Breastfeeding (EBF)

Exclusive Breastfeeding (EBF) is known to be most effective preventive intervention to reduce early-childhood mortality. Breastfeeding has profound benefits for young children that extend beyond childhood, numerous benefits for mothers and benefits for the family. Beyond these well-documented positive aspects for long-term health

and wellbeing, breastfeeding has a beneficial impact on the workplace, the health care system and the larger society, as described by categories below according to (Oddy, 2010).

2.5.1 Reducing Risk of Chronic Conditions

Breastfeeding lowers young children' risk of chronic conditions later in life compared with formula-fed young children, including asthma, overweight and obesity, diabetes, heart disease and cardiac risk factors such as hypertension and high cholesterol levels, and cancers such as childhood leukaemia and breast cancer later in life.

2.5.2 Infant and Young Child Intellectual, Motor and Emotional Development

Many studies confirm that children who are breastfed do better on tests of cognitive and motor development, as well as academic outcomes than children who are not breastfed, and young children who are fed breast milk tend to have higher Intelligent Quotients (IQ) scores. Young children who are breastfed for more than six months have a lower risk of mental health problems as they enter their teenage years. Other aspects of exclusive breastfeeding are harder to quantify but profoundly beneficial. These include the additional opportunities for bonding of mother and young children through more time together with skin-to-skin contact.

2.5.3 Maternal Health

Initiation of breastfeeding immediately after delivery helps to contract the uterus, expel the placenta and reduce bleeding. Breastfeeding may lead to a more rapid return to pre-pregnancy weight. Exclusive breastfeeding in the first six months may delay the return of fertility, thus reducing exposure to the maternal health risks associated with short birth intervals. In the longer term, mothers who breastfeed tend to be at lower risk of pre-menopausal breast cancer and ovarian cancer.

2.5.4 Economic and Social Benefits

Breastfeeding is the least expensive method of young children feeding. For many poor households, the high cost of breast-milk substitutes, feeding and sterilizing equipment and fuel represents a substantial drain on scarce household resources. Added to this are the costs of health care for the sick young children exposed to contaminants from mixed feeding or water in addition to breast milk. When mothers miss job to care for sick young children, employers and the economy are also affected. Moreover, as previously stated, breastfeeding is a basic human right, so effective EBF practices should become available to all young children. Breastfeeding can help bridge economic and social gaps.

2.6 Demerits of Breastfeeding

Despite the many benefits of Exclusive Breastfeeding (EBF), sound breastfeeding practices are not the norm in many countries, and large differences exist in the EBF rates between regions and among countries. The promotion, support and protection of optimum breastfeeding take a different type of engagement from the health system, because breastfeeding is a social behaviour and not a medical practice (Oddy, 2010).

In developing countries, the rate of exclusive breastfeeding for young children less than six months is only 37 percent, and there has been in very little progress since the early 1990s according to UNICEF (2009). UNICEF (2009) has the following challenges to be improved:

- a. Complacency, which may be one of the biggest threats to optimal young children feeding.
- b. Widespread promotion of breast-milk substitutes.
- c. Belief that young children need water in addition to breast milk.

- d. The issue of breastfeeding and HIV transmission.
- e. Lack of support for breastfeeding at workplaces (e.g., policies for maternity leave and worksite facilities for breastfeeding), linked to the perception that behaviour change is difficult or even impossible.
- f. Lack of commitment and resources for behaviour change programmes needed to support optimum breastfeeding.
- g. Poor understanding of the role of breastfeeding in advancing human and health rights

2.7 Bottle Feeding

According to Inge-Lise (2013), bottle feeding is a necessity to some parents due to problems with breast feeding. He said that, all babies need food, comfort and close contact with their parents especially the mother. He also complimented breast feeding method over bottle feeding since the former is given a worldwide attention as a valuable method for feeding the new-born. But on the contrary, if there are genuine health problems, however, it may be necessary to give up breastfeeding for a formula feeding. Mothers indicated in the study that complementary liquids were given to their young children when they went to the garden, returned to work or went to the market and had to leave their child in the care of somebody else. One in four mothers started giving their child complementary liquids and foods because they perceived their child was hungry (Proulx, UNICEF & the Ministry of Education and Human Resource, 2014).

As pointed out in the American Medical Association's Family Medical Guide, some people prefer the convenience of bottle-feeding because other people can help out with feedings. It also gives the father and older siblings the opportunity to participate

in feedings that form their own attachment to babies (American Medical Association, 2004). Malnutrition remains a pertinent problem among mothers and young children due to substandard nutritional practices (International Council for Science & ISSC, 2015). This worrying situation occurs because of suboptimal complementary feeding practices as a result of inappropriate introduction of complementary foods (CFs), inadequate quantities and quality of diets coupled with inappropriate breastfeeding practices. To reach goal of the SDG, successful infant and young child feeding practices are crucial for preventing malnutrition.

2.8 Consequences of Bottle Feeding; Contamination and Low Nutrients

A study in Laue by Daba *et al.* (2013) recorded 36.4% infants who were bottle-fed undernourished (Acute and Chronic), and 29.9% of them were reported over nourished. On the other hand, in mixed fed infants, 33.3% of the children were undernourished (severe, moderate and mild cases) and 40% of them over nourished. Therefore, children who were exclusively breast fed were more undernourished than those who were mixed fed and the later were more over nourished than those who were exclusively fed. This could be explained by the fact that the children who were exclusively breast fed were not introduced to complementary feeding at the appropriate time. On the other hand, the fact that most mixed fed children were overweight than exclusively breast-fed children might also be because the former tend to ingest greater volume of artificial milk or food and since the concentration of some nutrients are greater in infant formulae than in breast milk (Agostino *et al.*, 2008), and may tend to gain weight. For most babies, breast milk is easier to digest than preferring formula feeding using bottle. Formulae feeding your baby might also result in an increased risk of obesity during infancy. Formulae milk does not contain the

immunity-boosting elements of breast milk. Formulae-fed babies can develop certain illnesses such as diarrhoea, or a chest, ear, or urine infection (McCormick, 2017).

2.9 Complementary Feeding

At about six months, most babies are ready to start solid foods like iron-fortified infant cereal and strained fruits, Vegetables, and pureed meats. Because breast milk may not provide enough iron and zinc when babies are around six to nine months, fortified cereals and meats can help breastfed babies in particular (American Academy of Paediatrics, 2017). The human body undergoes its most rapid phase of growth in the first year of life. Most healthy infants and toddlers double their birth weight in the first six (6) months and also triple in the first year and at the same time body composition changes dramatically. As the baby gets older, bigger and more active, however, nutritional requirement can no longer be met by breast milk alone. This is where special transitional foods known as complementary foods must be duly introduced to meet a particular nutritional and physiological needs of the child. This does not mean cessation of breastfeeding due to the fact that complementary foods are to provide additional energy and nutrients to compliment breastfeeding but not to displace the breast milk in the first 12-24 months (WHO, 1998).

Complementary foods are required on the continuum of breastfeeding to provide 5-30% of vitamin A, 20-45% of proteins, 50-80% of thiamine, 50-65% of riboflavin, 60% of calcium, 85% of zinc and almost 100% of iron. The estimates suggest that almost no vitamin B₆, B₁₂, vitamin C or folate should be needed from complementary foods because human milk has a sufficient content of these micronutrients (O'Connor, 1994). In a study undertaken by Wondu (2013) on Knowledge, Perception and Practice of Mothers/Care givers and Family's regarding Child Nutrition (under 5

years of age) in Nekemte in Ethiopia, about 55.4% of mothers had introduced additional food within the age duration of 6 to 12 months. Wondu's (2013) study also showed that a considerably significant proportion of mothers (42.1%) had introduced complementary food within 4-6 months and even about 2.1% of mothers did before 4 months of baby's life. This could be the fact that some mothers did not have any option than to introduce complementary food to their babies because they had to resume their normal job schedule which do not support young children feeding at work time therefore proximately about 62.4% (n=154) of respondents had used cow milk, porridge and gruel as complementary food for their children (Wondu, 2013). Moreover, Wambach and Cohen's (2009) study have as well stated that, many mothers reported problems that led to their decision to wean, such as, sore nipples, problems pumping, and work or school demands.

2.10 Nutrition Knowledge of Mothers

The fundamental knowledge about nutrition can make tremendous contribution to the level of wellness, as it will help make appropriate food choices that enhance the overall wellbeing and vitality (Wardlaw & Smith, 2009). Nutritional knowledge, according to Carter (2002), is the information and understanding about food and liquid requirement of human beings and animals for normal physiological function including energy need, maintenance, growth activity, reproduction and lactation. Therefore, it can be said that, maternal nutritional knowledge indicates the information available to a mother/caregiver concerning nutrition and childcare practices.

Food and nutrition play important role in human life, so it is very vital to attach importance to knowledge about foods, as well as the varieties, nutritional relevance

and alternative of staple food (National Nutrition Foods Association, 2012). Also, Wardlaw and Kessel (2004) found out that there is greater association between parental knowledge on nutrition and its prevalence effects on children nutritional status. A survey in England found men to have poorer knowledge than women, and knowledge declining with lower educational level and socio-economic status. In the same survey, 41% were unaware of a link between low intake and health problems. Only 42% correctly thought that eating more fruits and Vegetables can help reduce the risk of cancer and 47% knew that it could also reduce the chances of heart disease (Fowles, 2008).

There is evidence suggesting that families of parents with high level of education stand a better chance of having good nutrition as a result of how diet is utilised for proper functioning of the body by providing the family with nutritious food as reported by Ivanovic, Castro and Ivanovic (2004). The implication here is that parents can teach children at home to eat a well-balanced diet which can help them to live a longer healthy life. Cheung, Dart, Kalin and Gortmaker (2007) also assured that when children are taught the difference between nutritional food and junk food, they are more likely to make healthy choices as they grow older.

Fowles (2008) in comparing pregnant women's nutritional knowledge to their actual dietary intake, found that most women had inadequate general nutritional knowledge, and their dietary intake did not meet all the nutritional requirements of pregnancy. A study conducted in La pal and Bolivia made it clear that considerably more than half of the deaths in children occurring in the community could be ascribed to inadequate knowledge, or incorrect behaviour or both (Claeson & Waldman, 2000).

The African Nutrition Chart Books (2005) states that, in urban Ghanaian children whose mothers had poor child care practices were up to three times more likely to be stunted (indicating malnutrition) compared to those whose mothers had good care practices. Optimal feeding practices during the first six months contribute to the prevention of growth faltering among infants and young children in Accra and the benefits may linger beyond the first year of life. According to the African Nutrition Chart Books (2005), education was found to be the factor most strongly associated with good childcare practices. It is expected that when women are knowledgeable about nutrition, it will translate to better childcare practices. Positive food habit has a link with knowledge acquired in nutrition (Asbridge, Veugelers & Florence, 2008).

A study conducted on mothers' nutritional knowledge and children's dietary intakes by Variyam *et al.* (1999), examined if children's diets are influenced by their mothers' stock of nutritional knowledge and diet health awareness. According to the study, relatively little was identified about the relationship between a child's diet and the nutritional literacy of the person responsible for meal planning and preparations, often the mother. This may be especially significant for pre-schoolers since their diets are largely dependent on foods supplied by parents and other adults and can have a negative effect on their nutritional status. Among the potential determinants of child's health, the mother's education has been a major component. The effect of maternal nutritional knowledge therefore is wide spread as studies show that good nutritional knowledge of a mother often translates into appropriate good health for both the child and the family at large. This is because more educated mothers could have healthier behaviours and provide more sanitary and safe environments for themselves and their children (Vijayalakshmi, Amirthaveni & Devadas, 2001).

In another study by Christiansen and Alderman (2001), household resources, parental education, food prices and maternal nutritional knowledge are key determinants of growth faltering. This study however suggested that, to reduce child growth faltering in Ethiopia in a significant and timely manner, targeted child growth monitoring and maternal nutritional education programs will be needed to promote growth. Since dietary behaviours and life choices are developed while the child is with the mother, a mother's nutritional knowledge therefore, is a very important determinant of child's nutritional status at this young and crucial age (Carter, 2002).

The relationship between maternal nutritional knowledge, maternal education and child nutritional status (weight-for-age) was also investigated in Ghana by Appoh and Krekling (2005), who stated a significant association between child nutritional status and the maternal knowledge on colostrum, initiation of breastfeeding, age of introduction of complementary foods and mother's knowledge on kwashiorkor. Appoh and Krekling (2005) therefore concluded that, the results entailed maternal practical knowledge about nutrition to be more important than formal maternal education for child's nutritional outcome. According to the African Nutrition Chart Book (2005), 40% of all child deaths that occur in Ghana before age five are related to malnutrition (including severe and moderate malnutrition). Most studies have found a significant association between low maternal literacy and poor nutrition status of young children in many developing countries.

However, Wahl and Richard (1999) were quick to acknowledge that knowledge alone does not necessarily translate into healthful eating behaviours. Knowledge may provide the information to implement a behaviour change, but it is the individual's attitude or belief that ultimately determines whether or not this knowledge will be translated into actual behaviour.

2.11 Nutritional Requirements during Infancy

Nutrition can be defined as all the processes used by the adult or child to take in food and to digest, absorb, transport, utilize and excrete food substances (Cordou & Hampl, 2011). The Food is essential for life; what children and adults eat affects their nutritional status and health. Food supplies essential nutrients that the body requires for: energy, growth and development, resistance to illness and infection as well as tissue repair.

Lynn (1989) and Claeson and Waldman (2000), noted that a daily intake of essential nutrients depends on eating a variety of foods in adequate amounts. However, the availability of food is often determined by one's environment the availability of money, geographic location, cultural preferences and consumer knowledge of good nutrition. Good nutrition, according to Wennberg (1988), simply means having a nutritional status that enables us to grow well and enjoy good health. Nutritional balance is something that is built up day by day right from the very first minute of life or from the point where the embryo starts to form in the mother's womb. Moreover, Al-Salem (2014) proposed carbohydrates, proteins, Fats and oils, Minerals, Vitamins and Water needs of young children and young children, a vital aspect in caring and providing for healthful diet for growth and development.

Ekpo (1982) cited in Claeson and Waldman (2000), posits that nutrition is influenced by such factors as culture, economy, education, and religion. He noted that the cultural food pattern of any community depends on two factors: (a) The success of its agricultural system measured by the extent to which it provides full and balanced diet for physical fitness and greater productivity and (b) Marketable products for exchange economy. This is of great concern to Nigeria where available medical evidence points to widespread incidence of protein calorie malnutrition. Ekpo (1982) attributed the

nutritional problems of rural communities to ignorance in the choice of foods or individual poverty in wage earning. It is important to supply children with food that meet their nutritional needs. This can be done by providing children with the nutrients their bodies need to grow and are just able to develop them and also help them reach their physical and mental potential. Alternatively, poor food choices and unhealthy eating habits adopted during childhood can lead to a range of diseases and health related problems in later life.

2.11.1 Protein Requirement

The International Food Information Council Foundation [IFICF] (2016) explained that When it becomes a struggle to just get your little one to eat, sometimes serving a nutritious meal is not the highest priority but adding protein throughout the day, including snacks, is a great way to make sure your kids eat enough while enjoying a nutritious diet. According to the Food Foundation, protein is the only nutrient that supplies body cells with what they need to grow, build muscle and stay healthy foods high in protein also provide other essential vitamins and minerals that can support strong bones, a healthy immune system, and help gain energy from food. By eating protein-rich foods throughout the day, your kids will feel fuller between meals; this could result in less snacking (International Food Information Council Foundation, 2016).

High quality proteins (milk) in complementary, supplementary and rehabilitation food products have been found to be effective for good growth. Also, Individual amino acids such as lysine and arginine have been found to be factors linked to growth hormone release in young children (Uauy, Kurpad, Tano-Debrah, Otoo, Aaron, Toride & Ghosh, 2015).

2.11.2 Carbohydrate Requirement

Szalay (2017) describes carbohydrate as the sugars, starches and fibres found in fruits, grains, Vegetables and milk products. Though often maligned in trendy diets, carbohydrate remains one of the basic food groups that are important to a healthy life. The American Diabetes Association notes that carbohydrates are the body's main source of energy. They are called carbohydrates because, at the chemical level, they contain carbon, hydrogen and oxygen (Szalay, 2017).

According to Coleman (2016), digestible carbohydrates are one of the main sources of dietary energy in infancy and childhood and are essential for growth and development. Coleman explained that carbohydrates are an infant's main fuel source, and essential for proper growth and development. He further convinced mothers and care givers to offer considerable amount of caloric foods to their children due to the fact that, offering your young children with a healthy, nutrient-dense carbohydrates will help optimize his growth and maintain a healthy body weight. Carbohydrates are present in a variety of young children foods, including breast milk and young children formulas (Coleman, 2016). Meanwhile, the Academy of Nutrition and Dietetics recommends young children exclusively breastfeed for the first six months of life. Carbohydrate Recommended Daily Allowance (RDAs) has not been established for young children. However, according to the Institute of Medicine, adequate intake levels equal 60 grams of carbohydrates per day for infants aged 0 to 6 months and 95 grams per day for 7 to 12 months old infants (Alles, Stephen & Gil, 2012).

Sources of carbohydrates for young children older than 6 months of age include strained or soft fruits, strained or cooked Vegetables, young children cereals, milk, whole-milk yogurt, cooked or strained legumes, cooked pasta, crackers, oats, fresh

and dried fruits such as apples, stone fruits, banana, and starchy Vegetables like squash, sweet potato and peas and toast (Rolfes & Whitney, 2006)

2.11.3 Mineral and Vitamin Requirements

According to Burcher and Loewenfeld (2000) Vitamins and minerals are the micro-nutrients that must form part of our diet to prevent their deficiencies especially in children's diet. Anaemia in young children is a serious concern, because it can result in increased morbidity from infectious diseases and impairments. They further asserted that minerals and vitamins needs are responsible for cognitive performance, behavioural and motor development, coordination, language development, and school achievement. Vitamin A is essential for a well-functioning immune system; its deficiency increases the risk of mortality. When Vitamin A is supplemented twice in a year, it reduces the risk of blindness, infection, under nutrition and death as a result of vitamin A deficiency, particularly among children. Iodized salt consumed as Table salt also (used in food processing) improves brain development; prevents motor and hearing deficits. Zinc given as part of Oral Rehydration Therapy for the treatments for diarrhoea reduces duration and severity of diarrhoea and subsequent episodes.

2.11.4 Water

The National Health and Medical Research Council (NHMRC) recommends that plenty water be drunk throughout the day and make water the preferred drink or refreshment. Choice of snacks must also be done appropriately for healthy snacks to help maintain their energy level (Owen, 2008). According to the American Academy of Paediatrics (2017), water makes up more than half of kids' body weight and is needed to keep all parts of the body functioning properly. They stated that there is no

specific amount of water recommended for toddlers and children, but it is a good idea to give them water throughout the day not just when they are thirsty.

Meanwhile, it is confirmed by Rolfes and Whitney (2006) that, children aged 1-3 need 1.3 litres/day (US fluid ounces) of water coming from water itself, the water in milk, and the water contained in food. However, the American Academy of Paediatrics (2017) has confirmed that babies generally do not need water during the first at (6) six months of life. Fruits and Vegetables are very good sources of water when the child starts to eat (American Academy of Paediatrics, 2017). According to The Child and Adolescent Health Services (2014), babies must be given plenty of fluid in hot weather to prevent dehydration. By their view, the mother may need to breastfeed or offer infant formulae more often in order for the child to receive more water.

2.11.5 Fibre (Fruits, Legumes and Vegetables)

Fibre is another important focus. Toddlers start to say "no" more and pre-schoolers can be especially opinionated about what they eat. Young children are noted sticking to a lot of junk starchy diet such as nodules, macaroni, and snack dishes (turn-over, biscuits, etc.) but this is really the time to encourage fruits, Vegetables, whole grains, and beans, which all provide fibre. Not only does fibre prevent heart disease and other conditions, but it also helps aid digestion and prevents constipation, something you and your child will be thankful for. Fibre is an important nutrient that most children (and parents) are not getting enough of each day. Parents need to do the best to feed their family with healthy foods, but they also need help with choosing good sources of fibre (American Academy of Paediatrics, 2017). Fibre helps make us full and keeps things moving in the digestive tract. A diet that includes good sources of fibre may

help prevent constipation. These foods also are good sources of nutrients and vitamins that may help reduce the risk of heart disease, certain types of cancer, and obesity. Good sources of fibre include: Vegetables, Fruit, Beans, Peas, Nuts and Fibre-rich whole-grain breads and cereals (American Academy of Paediatrics, 2017).

The role of fruits and Vegetables in infants and young children diet is functional, and they are recommended as ideal first foods. Introducing fruits and Vegetables in the young children' diet facilitates dietary balance as well as diversification. A similar trend in the introduction of fruits and Vegetables, earlier than the recommended age has been reported in studies of Mexican-American and African - American mothers (American Academy of Paediatrics, 2017).

2.12 Socio-Economic Factors that Influence Children' Feeding

Socio-economic factors as defined by the Business Dictionary (2018) is a known characteristic that examine social and economic factors to better understand how combination of both influences something. Socio-economic factors are lifestyle components and measurements of both financial viability and social privilege and levels of financial independence (McLeod, 2017). McLeod (2017) suggested factors such as education, health, income and environment as socio-economic factors that affect human behaviour and circumstances. Some external factors influence the length of time a mother is able to breastfeed and care efficiently for her child. Among these is the maternity leave and breastfeeding rights of a working (employed) mother are the great setbacks to optimal breastfeeding. Women represent a significant number of the workforce in most European countries. For many women economic constraints will mean they must return to work while still breastfeeding. On the contrary, their return to workplaces forces both the mother and the child to conform to schedules that

are likely to constrain the flexibility required for breastfeeding on demand (WHO, 1993).

According to Szwajcer, Hiddink, Koelen and Woerkum (2008), individuals have relatively stable lifestyle patterns. These are shaped and formed over time from infants and young children and are influenced by many factors such as cultural factors (for example, gender and race), contextual factors (for example, socio-economic status and living conditions) and social factors (for example, being a member of a church or being married). Chen, Wen, Fleming, Dernissie, Rhoads and Walker (2007) stated that the socio-demographic risk factors known to be more prevalent in pregnant teenagers were poverty, low education level, inadequate prenatal care and unmarried status. Some investigators believed that the adverse outcomes observed in teenage pregnancies might have been attributable to these socio-demographic factors.

Cultural practices including nutritional taboos result in pregnant women being deprived of essential nutrients, and as a result they tend to suffer from iron and protein deficiencies. Poor health could be improved by a more balanced diet. The choice of food for consumption is determined by a number of factors including availability of natural resources, economics, religious beliefs, social status and traditional taboos. Because these factors place limits in one way or another on the intake of food, communities and individuals are deprived of essential nutrients and as a result, physical and mental development is impaired (Chen *et al.*, 2007).

McCloskey and Chee (2006) identified various factors that affect the nutritional practices of pregnant women as poverty rates, high levels of unemployment, single motherhood and extended family residence patterns.

Caulfield (2005) asserted that, barriers based on beliefs, knowledge, attitudes, lifestyles, pregnancy unplanned or when viewed negatively or both, unmarried and less-than-high-school education affects women's food choices when they become pregnant. More-over, paying reference plays a role in the choice of young children feeding practices among mothers. 'Reference groups' are social groups, with which people identify themselves, that are capable of influencing them. Family, friends, peers, neighbourhood and workplace groups might become such reference groups for expectant mothers (Scott & Mostyn, 2005).

Laurel, Christelle, Bilkha, Desire and Julius (2014) further investigated into the effects of educational prospects of women and found out that mothers with a primary education had children who were the most undernourished; followed by those who had secondary education, then mothers who had been to the university and lastly illiterate mothers who had the highest prevalence of over nourished male children. This could be explained by the fact that illiterate mothers do not go to school and thus have time to take care of their children. These results were contrary to studies in Libya (Popkin & Bisgrove, 1988) and Uganda (Statistics Department of Uganda & Macro International Inc., 1996) which showed a decreased incidence of malnutrition among young children with an increase in the level of mother's education.

In the same study, Laurel *et al.* (2014) found that children having parents who were both civil servants and those who had one parent being a civil servant and the other unemployed were the most undernourished followed by children with both parents doing odd jobs and lastly, children with one parent doing an odd job and the other a civil servant. The highest prevalence of over nutrition (55%) was observed among children who had one parent as civil servant and the other unemployed. The reason could probably be because those who are civil servants though have enough income to

raise their children, devote little or no time to child care. In the case of one parent doing an odd job and the other being a civil servant, the children had the lowest percentage of being undernourished. This might surely be because those who did odd jobs, created time for their babies. Moreover, some women feel discomfort when breastfeeding in public (Boyer & Geographies of Care, 2011) while according to Wolf (2008), others may object to the practice.

Poor understanding of local practices and existing myths is also another issue with cultures that interferes during breastfeeding (Wolf, 2008). Sometimes the challenge is simply giving women accurate information about how to position the baby and how to breastfeed effectively. For example, Ghana identified a problem in “breastfeeding on the run” a common situation in which mothers gave a little bit of milk from both breasts, so children were not sucking enough to get the rich hind milk. Because of this practice, mothers thought their babies were hungry and were tempted to feed these young children other foods. The standard message to give the breast at least 10 times a day was thus inappropriate for Ghana, because mothers were already giving the breast as often as 20 times a day (Ghana Health Report, 2013). The reasons or myths obtained from mothers for disregarding colostrum are outlined below by (Lahori, 2013). They reported that:

- a. Colostrum is dirty.
- b. It should be discarded.
- c. Colostrum is yellow because it has been in the breast for long and has gone bad.
- d. A baby should not be suckled until the “white milk” comes in.
- e. Breast milk is too thin.
- f. Breast milk is not enough and therefore babies need other foods and milk.

- g. Babies need water because they seem to have dry mouths (thirsty).
- h. A mother who is pregnant should not breastfeed.

Social and environmental factors such as work demands also determines the mothers' choice of effective breastfeeding as manifested in a study by Wondu (2013) who found 36.2% and 28.5% of mothers who claimed job and insufficient breast milk as their main reason for not following EBF practices respectively during the early life of the baby. Moreover, the highest proportions of mothers (50.0%) had low breastfeeding frequency and duration, and this was associated with work place where babies not allowed or no privacy for breastfeeding. In effect, Wondu's study has indicated about 44.2% of mothers who had introduced additional foods to their infants before 6 months (Wondu, 2013). It is more likely for educated women to breastfeed their infants but are always been struck to discontinue breastfeeding at a point in time which might be due to work situations. Although return to work is associated with early discontinuation of breastfeeding, a supportive work environment may encourage mothers to continue (Breastfeeding Legislation in the United States, 2005). Wondu also stressed on the fact that 39.0% of health and feeding information had reached mothers through outlets such as Television, Radio, friends and culturally through experience from their family. About 41.6% of information on the importance of breastfeeding had been obtained from Hospital Health Workers (Wondu, 2013).

2.13 Nutritional Status of Young Children

Nutritional status of a person is the condition of the body in those respects influenced by the diet: the levels of nutrients in the body and the ability of those levels (Wardlaw & Smith, 2009). Nutritional status is the current body status, of a person or a population group, related to their state of nourishment (the consumption and

utilization of nutrients). Wardlaw and Smith (2009) continued to state that nutritional status can be determined by a complex interaction between internal/constitutional factors and external environmental factors: Internal or constitutional factors like: age, sex, nutrition, behaviour, physical activity and diseases. External factors like: food safety, cultural, social and economic circumstances. They also proposed an ideal nutritional status can be built when the supply of nutrients conforms to the nutritional requirements or needs.

Early nutritional status has been shown to have an effect on child and adult health and development. Obtaining the necessary micronutrients and macronutrients essential for optimal health and development may depend on the method of feeding practice to which the young children is exposed to (Agostini *et al.*, 2008).

In judging the nutritional status of a child, Lynn (1989) believes that there are many factors to look for. Besides a steady gain in height and weight in conformity with individual patterns, there should be good bone and tooth development, good posture, shiny hair, firm muscle turgor, clear skin and eyes, plus alertness and curiosity all indications of good health and proper nutrition. Well-nourished children are more alert and attentive and are better able to benefit from physical activity and learning experiences (Lynn, 1989). Poorly-nourished children may be quiet and withdrawn, or hyperactive and disruptive during class activities.

Guthrie (1986) opines that children's resistance to infection and illness is also definitely influenced by their nutritional status. Children who are well-nourished are less likely to become ill; they also recover more quickly when they are sick. Poorly-nourished children are more susceptible to infections and illness. Similarly, it has

been demonstrated that socio-economic factors are more significant causes of poor growth than ethnic or geographical differences.

2.13.1 Nutritional Status of Young Children in Ghana

One of the major issues the world is facing today is malnutrition. This problem is especially acute as well as chronic in the developing countries, especially among young children world-wide and it is estimated that one in six children are born underweight reported by Takyi (1999) in a study conducted in Saboba in the Northern Region of Ghana. Generally, he found a poor nutrients status in children in this age bracket. Stunting was found to be 27%, wasting 4.4% and a combination of stunting and wasting to be 1.9%. Though most children (90%) met their RDA for iron. A total of about 92% were found to be anaemic while only 26.5% of children met their total daily caloric intake. Intake of most other nutrients assessed were inadequate. This study however did not cover the whole of Ghana but may be representative of a typical poor Ghanaian setting.

The Ghana Demographic and Health Survey [GDHS] (2008) on nutrition also carried out a study to assess levels of malnutrition in the 10 regions of Ghana. The findings showed that 28% of children less than 5 years were stunted, 9% were wasted and 14% are overweight. According to Ayaya, Esamai, Rotich & Olwambula (2004), malnutrition is one of the leading causes of morbidity and mortality in the preschool age. Since the feeding practices and care of mothers or caregivers come into play as young children generally do not have the ability to choose a balanced nutritious diet. Thus, parents, caregivers and other adults are responsible for offering them a variety of nutritious and developmentally appropriate foods and emphasis must be placed on development of good eating and care practices.

According to Przyrembel (2008), the young children and pre-school children are most vulnerable to retardation in growth as a result of malnutrition particularly under-nutrition. The age range 1-12 years includes different phases of development that is also very important. With increasing motor skills in toddlers, some of them are still partly breastfed and an increasing variety of foods. Food preferences developed in the first year of life continue to persist but are modified under the influence of parents, siblings and playmates.

According to Christiansen and Alderman (2001), nutritional status of children is a manifestation of a host of factors including household access to food and the distribution of this food within the household, availability and utilization of health services, and the care provided to the child. This mostly rest on the mothers or caregivers. Under nutrition encompasses stunting, wasting, and deficiencies of essential minerals (collectively referred to as micronutrients) as one form of the condition known as malnutrition, with obesity or over-consumption of specific nutrients as another form (Whitney & Rolfes, 2005).

Christiansen and Alderman (2001) explained that, the health and wellbeing of a child is mostly regulated by nutrition. They further reported that malnutrition is particularly prevalent in developing countries, where it affects one out of every three preschool-age children although it cannot be totally true to say that malnutrition always arises as a result of inadequate food intake or poor maternal care as superstitions, beliefs taboos and poor maternal nutritional knowledge also come into play. The most prevalent type of malnutrition worldwide is Protein-Energy Malnutrition [PEM] (Wennberg, 1988). One out of every three children under five in developing countries is malnourished (Gulati, 2010). Malnutrition is one of the major killers of children in developing countries.

According to Amar-Klemensu, Ruel, Morris, & Ahiadeke (2000), malnourished children are mainly found in sub-Saharan Africa. Data reported clearly shows that the worst affected region is not Africa but South Asia where 46% of children under five are moderately or severely underweight, whereas in sub-Saharan Africa it is 28% (Gulati, 2010).

2.14 Nutritional Assessment

The nutritional status of an individual can only be known by carrying out a nutritional assessment. This was defined by Smolin and Grosvenor (2003) as process of determining the nutritional status of an individual for the purpose of identifying nutritional needs and planning strategies to meet these needs. Nutritional status of children can be assessed by using both direct and indirect methods. The assessment of nutritional status is the evaluation of the outcome of nutrient intake, requirement and utilization. The direct methods deal with the individual and measure objectives criteria, while indirect methods use health indices that reflect nutritional influences.

The definition of a nutritional assessment is an evaluation of nutritional status of individuals or populations through measurements of food and nutrient intake as well as evaluation of nutrition related health indicators (Lee & Nieman, 1996). Growth assessment, does not only serve as a means for evaluating the health and nutritional status of children but also provides an indirect measurement of the quality of life of an entire population (WHO, 2003). Assessment of nutritional status in the paediatric population is useful to estimate growth patterns and identify signs and symptoms associated with malnutrition or excessive nutritional intake. Nutritional status is determined from a nutritional assessment of anthropometric, biochemical, clinical,

dietary, socioeconomic, and drug-nutrient interaction effects (Amar-Klemensu, Ruel, Morris & Ahiadeke, 2000).

To get a measure of malnutrition in a population, young children can be weighed and measured and the results compared to those of the 'reference population' known to have grown well. Measuring weight and height is the most common way of assessing malnutrition in populations (Graham, 2000).

2.14.1 Components of Nutritional Assessment

According to Latham (1997), the methods for assessing nutritional status of a person include the anthropometry, biochemical, clinical and dietary methods.

Anthropometry methods: Anthropometry is the measurement of the body parameters of weight, height or length usually relative to age to indicate nutritional status (Young & Jasper, 2006). The following are some of the indices:

- a. **Wasting** which is determined by **Weight-for-Height**. This is weight of a child compared to median weight of reference (healthy) children of the same height (UNICEF, 2009). A child with low weight-for height is wasted or too thin. Wasting is a result of serious underfeeding and /or illness (United State of Food and Agricultural Organisation [FAO] (2004).
- b. **Stunting** which is determined by **Height-for-Age**. This is the height (length) of a child compared to the median height of a reference (healthy) child of the same age. A child with a low height-for-age is stunted. Stunting is as a result of poor growth over a period of several months and is usually caused by chronic underfeeding and ill health (Nokuthula, 2009).
- c. **Underweight** which is determined by **weight-for-age**. Weight-for-age is the weight of a child compared to the median weight of reference (healthy)

children of the same age. A child with a low weight- for-age is underweight. An underweight child may be wasted, stunted, or both (FAO, 2004). Weight and skin fold thickness reflect present nutritional status and are used to assess energy reserves both as fat and as protein (FAO, 2004). Weight in children is a sensitive measure of growth which gives immediate nutritional history and can be an early clue to growth problems and nutritional inadequacy (Nokuthula, 2009).

2.15 Child Malnutrition

Malnutrition is a general term that encompasses under-nutrition, over-nutrition and micronutrient deficiency diseases, such as vitamin A deficiency, iron deficiency anaemia, iodine deficiency disorders, and vitamin C deficiency or scurvy (Young & Jasper, 2006). Malnutrition is a term that usually refers to a number of diseases, each with a specific cause related to one or more nutrients (WHO, 2003). The term malnutrition generally refers both to under nutrition and over nutrition, but in this work the term refers solely to a deficiency of nutrients.

2.16 Classification of Malnutrition

2.16.1 Acute (Severe) Malnutrition

It is generally associated with failure to gain weight or loss of weight (thinness or wasting). Two indicators can measure this issue of low weight for height or weight for age. Children whose weight for height or weight for age below three standard deviation (-3 SD) from the median of the reference population are considered to have acute malnutrition (WHO, 1986).

2.16.2 Chronic (Moderate) Malnutrition

Low height for age is considered as an indicator of chronic malnutrition (shortness or stunting) which is frequently associated with a poor overall economic condition and/or repeated exposure to adverse conditions. Children whose height for age is below (-2 SD) from the median of the reference population are considered to have chronic malnutrition (WHO, 1986).

2.16.3 Under Nutrition

Under-nutrition is an imbalance between the body's supply of nutrients, vitamins, minerals, as well as energy and the body's demand for them. From the above discussion, it can be concluded that under nutrition is failing to eat adequate foods that contain the correct dietary nutrients that the body requires at a particular period of life and at the stages of growth. Children aged 6 to 36 months receiving four or less meal per day were more likely to have acute under-nutrition than children of the same age receiving five or more meals per day (Young & Jasper, 2006). Usually from birth to 1 year of age, young children require roughly 100-200 kcal/kg body weight per day and this requirement decreases by about 10-15 kcal/kg/year for the next two years as indicated by WHO (2003).

2.17 Nutritional Diseases

2.17.1 Obesity

It refers to the accumulation of excess fat tissue relative to lean body mass. For measurement of body fatness is difficult and complex, anthropometry is readily used as a proxy for body fatness (WHO, 1995).

2.17.2 Protein Energy Malnutrition (PEM)

Protein energy malnutrition is a broad term that encompasses “*kwashiorkor*” and *marasmus* together with milder stages of these social diseases. Inadequate calories in a child’s diet results PEM. According to studies conducted by Young and Jasper (2006) on millions of young children and young children reported high victims of malnutrition in Asia, Africa, Central America, the West Indies and South America, Protein-energy malnutrition (PEM) is by far the most lethal form of malnutrition. Children are the most visible victims.

2.17.3 Kwashiorkor

Kwashiorkor has increased risk of mortality and is more severe than marasmus and appears among young children who are still breast-fed (Cheung & Dart, Kalin & Gortmaker, 2007), but such children have probably been receiving only a little breast milk in recent weeks. Breast milk acts as a nutritional source for young infants less than one year of age. Choosing how and what to feed a baby is a personal decision that involves the socioeconomic status of the mother (WHO, 2003). Kwashiorkor is a Ghanaian word, which means the illness that an older baby contracts when he or she is weaned as a result of the mother falling pregnant again (Williams, 2005). A paediatrician who observed this syndrome in young children and pre-school children introduced this term. Children who were weaned and fed on a diet high in carbohydrates, but low in protein typical of a diet of staple food such as maize, were usually the victims of kwashiorkor. Kwashiorkor is far more common among poor communities and the depressed social classes than among privileged people. No one has recorded a contrary view (Nall, 2018). Even those who have doubted whether kwashiorkor is a nutritional disease have not found cases in wealthy families, unless

the feeding was exceptionally poor. In all rural areas the incidence of kwashiorkor depends mostly on the type of foods grown than on the amount of monetary income.

2.17.4 Marasmus

Marasmus is the other form of malnutrition in which the child is a low-birth weight baby who remains chronically malnourished. As a result, fat and muscle tissues are depleted and the skin hangs in loose folds with the bones clearly visible beneath. Hyper-alert and ravenously hungry, the child's severe wasting makes him look like a wrinkled old man long before his time (WHO, 2003).

Marasmus usually occurs in infancy, characterized by severe weight reduction, grossly wasting of muscle and subcutaneous tissue, and no detectable oedema. It is both inadequate energy and inadequate protein intake. It occurs from prolonged starvation often associated with chronic infections. It presents together with severe wasting of fat and muscle, making the child appear very thin (Young & Jasper, 2006).

Although people still refer to growth failure as "Protein-Energy- Malnutrition" (PEM), it is now recognized that poor growth in children results not only from a deficiency of protein and energy but also from an inadequate intake of vital minerals such as iron, zinc and iodine) as well as vitamins such as vitamin A, and often essential fatty acid as well. These minerals are needed in tiny quantities, in the order of a few thousand of a gram or less each day (Graham, 2000).

2.17.5 Vitamin A Deficiency

A significant problem in Ghana is Vitamin A deficiency, which affects about 7 in 10 children under 5 years of age. Estimates show that Vitamin A deficiency contributes to 1 in 13 deaths of children 6–59 months of age. This means that between 2011 and

2020, the number of deaths attributable to vitamin A deficiency will total 110,000. If nothing is done (Ghana Demographic and Health Survey, 2008).

Vitamin A deficiency can cause night blindness and reduces the body's resistance to disease. In children, Vitamin A deficiency can also cause growth retardation. Between 100 and 140 million children are vitamins A deficient. An estimated 250,000 to 500 000 vitamin A-deficient children develop poor vision (xerophthalmia) or become blind every year and half of them dying within 12 months of losing their sight (World Health Organization, 1998). Clinically, mild to moderate Vitamin A deficiency is recognized as a critical factor in child health and survival.

The implication of vitamin A deficiency, however, varies with the group at risk. In pre-school children vitamin A deficiency can lead to increased risk of morbidity or mortality and to blindness in pregnant and lactating women. It can also lead to night blindness and appears to have implications for maternal mortality and morbidity, while the immediate health consequences for school children and adolescents are not completely known; they are not probably less dramatic (Schofield, 1979). It usually affects young children and is often combined with kwashiorkor and marasmus.

2.17.6 Vitamin D Deficiency

A deficiency of vitamin D leads to inadequate absorption of calcium and phosphorus from the intestine tract and to faulty mineralization of bone and tooth structure. In South Africa rickets is commonly found among African young children under the age of one year (Pollit, 1993). Delayed dentition and dental caries may also be due to a deficiency of vitamin D.

2.17.7 Iron Deficiency

Iron deficiency is a principal cause of anaemia. Two billion people over 30 percent of the world's population are anaemic, mainly due to iron deficiency, and, in developing countries, frequently exacerbated by malaria and worm infections. For children, health consequences include premature birth, low birth weight, infections, and elevated risk of death. Later, physical and cognitive developments are impaired, resulting in lower school performance. For pregnant women, anaemia contributes to twenty percent (20%) of all maternal deaths (WHO, 1998).

A national survey among school children showed that about 4 in 10 children were anaemic (GHS, 2007). These rates are high by any standard, greatly reducing the cost effectiveness of investment in education and the contribution of these children to Ghana's economy.

2.17.8 Iodine Deficiency

Iodine is essential for the development in the brain during the foetal and young infancy stages. Children who suffer iodine deficiency are prone to mental retardation. Iodine Deficiency Disorders [IDD] jeopardize children's mental health often their very lives. Serious iodine deficiency during pregnancy may result in stillbirths, abortions and congenital abnormalities such as cretinism, a grave, irreversible form of mental retardation that affects people living in iodine-deficient areas of Africa and Asia. IDD also causes mental impairment that lowers intellectual prowess at home, at school, and at work. IDD affects over 740 million people, thirteen percent (13%) of the world's population. Fifty million people have some degree of mental impairment caused by IDD (WHO, 1998).

Cluston, Dunn, Stanbery and Hetzel (1987) indicated that 3% of all babies born to iodine deficient mothers will have cretinism; 10% will be severely mentally disabled and 87% will present some degree of intellectual deficit – all permanent yet preventable disabilities. Iodine deficiency accounts for an average loss of about 13.5 intelligent quotient [IQ] points in communities (Cluston, *et al.*, 1987). If investment in nutrition is not made now, almost 1.5 million children will be affected by mild to severe irreversible brain damage due to iodine deficiency. The mental impairment resulting from iodine deficiency is permanent, having considerable impact on children's ability to learn and on school dropout rates (Cluston, *et al.*, 1987).

2.18 Theoretical Framework

This study is underpinned by the Social theory of practice and feeding by Bourdieu (1999) as cited by Mir (2011) which states that, meanings and experiences influenced by the social circumstances in which people live, is considered a more useful concept than 'attitudes' or 'beliefs', as it acknowledges that individuals exist within a social environment (Coveney, 2005, pp. 290-297). This theory relates people's actions and behaviours to what exist among them socially in the environment. More importantly, the trend a mother is exposed to in the environment where she lives drives her to take that unconscious decision. Bourdieu proposed three core theoretical concepts: habitus, capital, and field disposition, in explaining social practices. These theoretical concepts are discussed below.

2.18.1 Concept of Habitus

This concept indicates that dialectic relationships among habitus, fields, and capitals produce an agent known as social practices as Bourdieu illustrated mathematically in an equation: $(\text{Habitus} \times \text{Capital}) + \text{Field} = \text{Practice}$. In view of Bourdieu (1999), an

individual's mental framework is shaped by his or her past experiences and social environment.

2.18.2 Concept of Disposition

Bourdieu's concept of disposition shows that most of our daily lives are accomplished in a practical, unreflective fashion. This relates to preferences, the tendency to take up a collective way of behaving or knowing. Cultural norms are passed on to the next generation through unconscious memories of attitudes and practices.

The theory of social practice and feeding is strongly grounded in this study because mothers strongly influenced the diet of their babies and families base on a lot of factors experienced in the environment. The reason been that she is the family's food preparer and most of her likes and dislikes in food affect the whole family. For instance, her intake of fruit and Vegetables predicts family members' fruit/Vegetable intake. Moreover, most women know breastfeeding is "better" for the baby; however, knowledge does not translate into action in Bourdieu's concept of habitus and disposition. Again, if women have grown up in communities where formula feeding is the norm, according to Bourdieu these norms of attitude and practices form unconscious memories and will be characterized by anti-breastfeeding discourses hence they are likely to abandon breastfeeding and adopt formulae feeding to protect their physical, social and emotional wellbeing. Hence, social theory of practice and feeding is adopted due to its useful principles for grounded in the study of feeding practices adopted by mothers for children of 0-24 months old.

2.19 Conceptual Framework

Figure 2.1 shows the description of the conceptual framework adapted to underpin this study. The diagram suggests that maternal nutritional knowledge and the socio-

economic factors influence each other. These factors include income (availability of food, food choice), job situation (employment status), family/friends, culture, and mothers' experience (Age and number of births). These factors are likely to influence a mother's knowledge acquired to play a role by influencing the choice of Feeding Practices (FP) for the child. This influence between nutritional knowledge of mothers and the socio-economic factors lead mothers to choose a particular young children feeding practice. The type of FP a mother or care giver chooses depends on the types of foods or milk she decides to feed the child with, based on her past experiences and the practices of the people around her (family and friends, and culture). This would in effect influence the child's nutritional status that is manifested through health and growth of the child, either positive or negative. The concept designed is a replica of the disposition of a practical unreflective fashion that happens among mothers and care givers in the environment described in the theory of habitus and disposition.

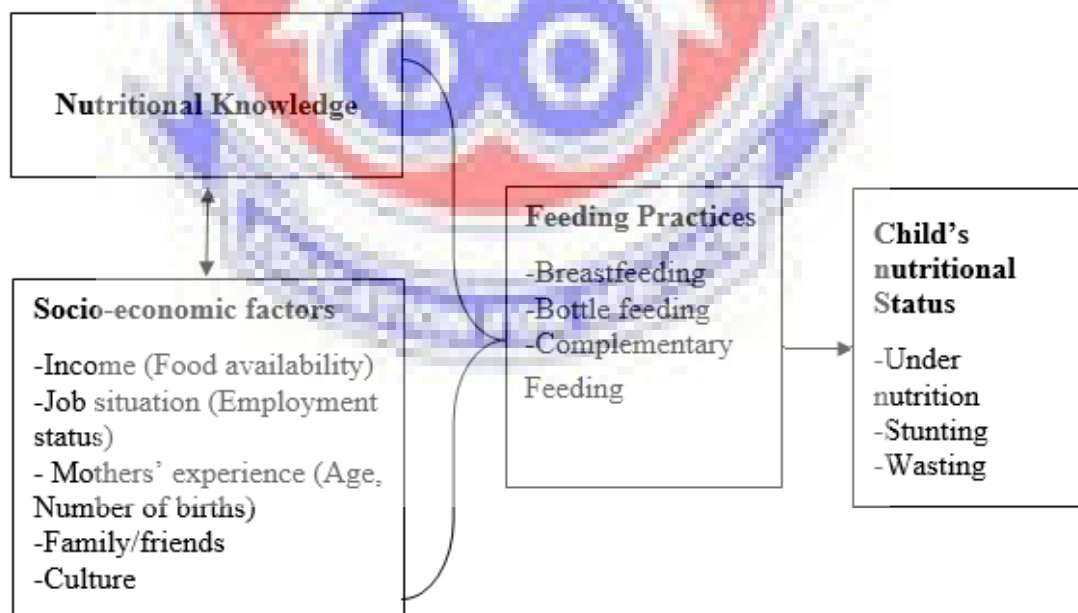


Figure 2.1: Conceptual Framework

Source: *Researcher's own construction (2017)*

2.20 Empirical Framework

The empirical framework was structured according to the themes in the various research objectives of the study. It comprises the feeding practices of mothers for the infants and young children, the effects of mothers' nutritional knowledge on feeding practices for their 0-24 months old young children, the influence of some socio-economic factors on young children feeding practices by mothers their 0-24 months old, and the nutritional status of infant and young children in investigating their nutritional status.



CHAPTER THREE

METHODOLOGY

3.0 Overview

This chapter covers an overview of the methodology used for data collection in this study. The discussions in this chapter is structured around the research design, study setting, population of the study, sample and sampling procedure, instrument for data collection, validity and reliability of the instruments, data collection procedures, data analysis and ethical consideration.

3.1 Setting

The study was conducted in two (2) towns: Dadease and Effiduase in the Sekyere-Kumawu and Sekyere-East district respectively. Sekyere-Kumawu District had a total population of 77,710 while Sekyere-East had 66,023 populations (2010 Population Census). Both districts are within the Ashanti Region of Ghana. Natives of both towns do more of crop farming to feed the family and also add up to national productivity. Meanwhile, Effiduase is a busy town in commercial activities and also have high rate of 'white collar' jobs as compared to Dadease in the Sekyere-Kumawu district.

3.2 Research Design

This study is a survey design, which used the quantitative research approach. Specifically, the study adopted cross-sectional survey design. This design has the advantage of measuring current attitudes or practices. It is also capable to receive data in a short period of time. Cross sectional survey design fits well with this study because the researcher obtained data from a section of mothers whose children were within the ages of 0-24 months old at the time of data collection.

3.3 Population of the study

Population for the study comprised mothers who had 0-24 months old children in the two towns. Target population was 1220 mothers who had 0-24 months old young children at Dadease and Effiduase in the Sekyere-Kumawu and Sekyere-East Districts respectively. This represented 717 mothers from Effiduase and 503 mothers from Dadease. This figure comprised the list of mothers with 0-24 months old young children and have attended Post-Natal Clinic and also had their names in the attendants register for the past two years (February, 2016 to February, 2018). Accessible population was made up of mothers who had children aged 0-24 months old and attended Post-Natal Clinic at Dadease and Effiduase in the months of February and March, 2018. Accessible population of this study was realistic because it involved research participants who were available at the time of data collection. Accessible population of mothers and young children for both towns were 62 mothers from Dadease and 100 mothers from Effiduase, summing up to 162 mothers and their young children (Annual District Report, 2017).

3.4 Sample and Sampling Techniques

Sample size used for this study consisted of 122 mothers with 72 from Effiduase and 50 from Dadease. The sample of 122 represented 10% of the target population. The choice of 10% of the target population is based on Dornyei's (2007) assertion that between 1-10% of a study population gives a magic sampling fraction. Multistage sampling procedure that combined both probability and non- probability sampling techniques was used to arrive at the sample size of 122 mothers and their young children.

3.4.1 Stage One of Sampling Procedure

One thousand, two hundred and twenty (1220) mothers and their 0-24 month old babies were sampled purposively during Post-Natal clinic (PNC) attendance; popularly known as weighing at four Child Care (CC) centres at Dadease and Effiduase from the attendant register. Mothers having 0-24-month old infants and children were only selected purposively because such children possessed characteristics identified useful for this study. Though, this technique may breed biases and may not lead to getting the right representation of the population, it was considered very useful since in-depth information was derived from mothers who were in the position to provide the required data.

3.4.2 Stage Two of Sampling Procedure

Centres visited were categorised into four clusters (C) in order to sample respondents fairly across the towns; Clusters were Effiduase Government Hospital being cluster one (C1) which had 60 respondents, Divine Grace Medical Centre being cluster two (C2) which also had 40 respondents, both at Effiduase in the Sekyere-East District.

Dadease central was cluster three (C3) which had 32 respondents and Dadease Akotosu was cluster four (C4) also had 30 respondents at Dadease also in the Sekyere-Kumawu District. In all, 162 mothers having 0-24-month old infants and young children were used in the four clusters who happened to have their names registered in the PNC attendants register and still attend PNC. This is because some mothers had their names in the register, but do not more visit the centres again.

3.4.3 Stage Three of Sampling Procedure

Mothers were then regrouped into sixteen (16) strata from the clusters according to their level of formal education: (No school at all, basic, Senior High School (SHS),

and tertiary education). Breakdown of samples from individual stratum is illustrated on Table 3.1. Twenty-two (22) mothers and their young children were selected from Stratum one (S1) as mothers whose education level was at the basic school, seven (7) mothers whose education level was at SHS from Stratum two (S2) and tertiary level for Stratum three (S3) respectively. Only one (1) mother who had no education at all was selected for Stratum four (S4). Therefore 37 mothers and their babies were selected from cluster one at Effiduase government hospital.

Twenty-two (22) mothers were selected for Stratum five (S5) as mothers whose educational level was at the basic school, six (6) mothers whose level of education was at SHS and tertiary respectively for Strata six and seven (S6, S7) and only one (1) mother who had no education at all with her child for Stratum eight (S8). Stratification from Divine Grace Medical Centre which was cluster two (C2) had 35 samples also at Effiduase.

From cluster three (C3), Dadease central, 16 mothers and their babies were conveniently selected as mothers with basic school education for Stratum nine (S9), seven (7) mothers who had Senior High School education for Stratum ten (S10) and only one (1) mother with tertiary education for stratum eleven (S11). Also, only one mother who had no classroom education was conveniently selected for Stratum twelve (S12). A sample of 25 mothers with their young children was selected from Dadease central (C3). Same number of respondents were selected from cluster four (C4) being Dadease Akotosu which consisted of strata (13, 14, 15 and 16). Total sample from Dadease was 50 mothers and their young children. In a nutshell, 122 mothers representing 10% of the target population of the study based on the rule of thumb that between 1-10% of a study population gives a magic sampling fraction as asserted by Donyei (2007).

3.4.4 Stage Four of Sampling Procedure

Finally, convenience sampling was employed to select sample size for this study. Conveniently, 72 mothers and their children were sampled from Effiduase in the Sekyere-East District while 50 mothers and babies were also sampled from Dadease in the Sekyere-Kumawu District. Convenience sampling is a non-probability sampling technique where subjects are selected because of their convenience, accessibility and proximity to the researcher (Saunders, Lewis & Thornhill, 2012). This procedure relies on data collection from the characters that were conveniently available to participate in the study. Convenience sampling was considered because only mothers who were available and willing to provide information about their choice of feeding practices for their young children were accessed. It was also convenient to reach the mothers because of proximity of the towns to the researcher.

Table 3.1: Distribution of the Study Population

Clusters (C)	Target Population	Accessible	Educ. level	Sample
C1. Effiduase Govt. hospital	602	60	Basic	22
			SHS	7
			Tertiary	7
			No Education	1
C2. Divine Grace Med. Centre	115	40	Basic	22
			SHS	6
			Tertiary	6
			No Education	1
C3. Dadease Central	320	32	Basic	16
			SHS	7
			Tertiary	1
			No Education	1
C4. Dadease Akotosu	183	30	Basic	16
			SHS	7
			Tertiary	1
			No Education	1
Total	1220	162		122

Key: Educ. Level = Educational level

3.5 Data Collection Instruments

Instruments employed for this study were questionnaire, weighing scale, weighing cards and infantometre or tape measure which enhanced triangulation and close gaps in collected data where false and misleading information can be detected (Greeff, 2002).

3.5.1 Questionnaire

Structured questionnaire was used to aid data collection from mothers in line with the research objectives for this study. It included close ended questions with list of options for respondents to choose from as a means of creating an atmosphere of uniformity in responses to aid easy analysis. Some of the questions for this survey contained five point Likert scale items: strongly agree (SA = 4), agree (A = 3), Neutral (N = 2), Disagree (D = 1) and strongly disagree (SD = 0); statistics was made easy by combining strongly disagree and disagree responses together to represent disagree for point 1 (D+SD), strongly agree and agree responses were also put together to represent agree for point 2 (SA+A), and neutral was on its own to represent no point (0). A 6-point rating scale and yes (Y) or (No) questions (dichotomous questions) were also used. Items were structured to reflect the key themes in the research questions. It consisted of sections: A, B, C, D and E.

Section 'A' had 8 closed-ended questions on demographic characteristics of the mothers and children. The demographic attributes of the mothers included: community of residence, age, marital status, level of education, employment status, and income level, as well as baby's birth order and child's age in months. Section 'B' had 6 questions comprising 5 closed-ended items and one (1) open-ended item on the opinion of mothers feeding practices choice adopted for their children. Section 'C'

contained 23 closed-ended items to review nutritional knowledge level of the mothers in relation to choice of feeding practices for their young children (questions 14 to 36). Section 'C' had two multiple responses questions (Question 14 and 15) where mothers source of nutrition and feeding information was captured and also the frequency of their hand washing practices (personal hygiene) in feeding their babies. Again, a dietary practice of mothers for babies was captured through a dietary recall in questions 28 to 36 in measuring their nutritional knowledge. Section 'D', had 6 closed-ended questions on socio-economic factors that are likely to influence young children feeding practices of mothers. The last section 'E' had 4 items on the nutritional status of the child. It contained information on sex, age/month, weight (kg) and length (cm) of the children. In all, the questionnaire had 39 items. Questionnaire is widely used as a very useful instrument for collecting survey information, providing structured outline and it is being able to be administered without the presence of the researcher if respondents can read and write.

In order to collect data efficiently and conveniently, two research assistants were trained to help administer the questionnaire to collect data. Their help made it possible for the research data collection to be done within the last week of February and first two weeks of March, 2018.

3.5.2 Hospital Records

Documentary data on nutritional status of the young children were further obtained from the weighing cards of young children. These documents provided the following information: weight (kg) of the young children, which were used by nurses to reflect immediate nutritional status of young children'. The data was to further crosscheck

responses from the questionnaire. It also shows the validity and reliability of growth and nutritional records on the children.

3.5.3 Anthropometry

Anthropometry measures of young children used to assess their nutritional status included weight and length or height. A hanging weighing scale and the fitness scale were used to measure weights of 0-15-month old children and 18.1-24 months old children respectively. An infantometre was used to measure children's length without their shoes in a laying down mood. At a point in time infantometre was not available, so the young children were laid down straight on a table with no shoes on and measured with tailor's tape measure. Young children's weight-for-age was used to assess underweight, length-for-age for stunting, weight-for-length for wasting and Body Mass Index (BMI).

3.6 Validity of Instrument

Face validity was done by giving the instruments to colleagues of Masters' of Philosophy, Home Economics Education of the University of Education, Winneba (UEW) for scrutiny and peer-review. Indeed, their comments were considered for review of the questions.

Content validity of the instruments was also granted by means of review from the research supervisor who scrutinized the items for their suitability before pre-test. All the necessary corrections in the items were made and declared valid by the supervisor. Construct validity was ensured by employing accepted definitions and constructions of concepts and terms; operationalizing the research and its measures.

3.7 Reliability of Instrument

To ensure reliability of the questionnaire used, a pilot test was conducted on 20 mothers conveniently sampled at Oyoko, a nearby town in between the two towns where the study was conducted. Validity and reliability of the study's questionnaire was tested using Cronbach alpha of the Statistical Package for Social Sciences (SPSS) version 20. This yielded a reliability coefficient (r) of 0.879, which was deemed an acceptable measure of reliability because it was above 0.70 threshold value of acceptability as a measure of reliability by Dornyei and Taguchi (2010). All corrections were made in the questionnaire before the main study was done.

3.8 Data Collection Procedure

An introductory letter was obtained from the Head of Department of Home Economics Education in the University of Education, Winneba. This letter provided the details of the study and issues of confidentiality and anonymity. The letter was used to obtain permission from the District Assemblies, Ghana Health Service and relevant stakeholders in the two districts. An approval/ request letter was then issued from the districts before data collection commenced. The questionnaires were hand-delivered by the researcher and two research assistants to the respondents. For respondents who could not read and write, the researcher read and interpreted the questions to them using Asante Twi as the medium of communication, and their responses were recorded. Questionnaire was completed within 25 minutes. Completed questionnaires were collected on the same day to be coded for analysis. Each questionnaire was identified with counting numbers on top which served as a reminder on the total sample to gather data from.

The two research assistants were taken through a two days training sections. I organized a meeting with them on the first day where we I read and explained the main themes in the questions to their understanding. They were also made to know what exactly was accepted of each question so they can assist mothers who may need assistance. I went to the field with them on the second day to collect data from some mothers at Oyoko between Effiduase and Dadease for my pilot study. This gave the two research assistants a thorough understanding of the data collection procedure.

3.9 Data Analysis

Responses from respondents were tallied in order to formulate frequencies and percentages presented on tables with the use of the Statistical Package for Social Sciences (SPSS) version 20 software. Independent variables such as nutritional knowledge of mothers, socio-economic factors (mother's age, job situation, total income, culture, etc.) and dependent variable such as infants' and young children feeding practices was used for inferential statistics. Spearman's correlation analysis was used to analyse hypothesis of relationship between mothers' nutritional knowledge and the choice of young children feeding practices because data gathered were nominal data while linear regression analysis was also used to determine the hypothesis of influence between socio-economic factors and young children feeding practices at 0.05 significance level with a confidence interval (CI) of 95. Regression analysis was adopted to predict the influence of young children feeding practice, exclusive breastfeeding precisely and some selected independent variables (mothers' level of education, age, Post Natal Clinic Services, Culture, household income, etc.). Interpretation of correlation coefficients of inferential statistics was based on Cohen, Cohen, West and Aikens' (2003) interpretations. EPI INFO version 7 (anthropometric

calculator) was used to analyse babies weight (kg) and height (cm) in assessing their nutritional status.

3.10 Ethical Considerations

As a way of dealing with ethical issues in this study, ethical clearance for this research was obtained from the Department of Home Economics Education, University of Education, Winneba. This letter was used to obtain clearance and permission from the two District Assemblies and District Health Directorates. Mothers were allowed to choose to participate or not in the research. Confidentiality was one of the obligations of the researcher; mothers were assured of using their data for solely academic purpose. Hence, they were asked not to indicate their names or that of their children in order to meet the principle of anonymity. Mothers were enlightened about the need to participate in the programme due to the fact that their involvement, indulgence and assistance would provide the needed information for the study. The mothers were made to understand the need to be able to identify young children' nutritional disorders, which are rooted in the genesis of feeding. Again, mothers would improve their nutritional knowledge level to meet the nutritional needs of their young children in the selection, preparation and the adoption of proper pattern of feeding their infants and young children. They would also understand the need to change their primitive myths in connected to breastfeeding babies.

CHAPTER FOUR

RESULTS

4.0 Overview

This study investigated the feeding practices adopted by mothers for 0-24 months old young children at Dadease and Effiduase. The results were organized under three main sections: demographic data of respondents and their children, the research questions and two null research hypotheses:

- a. What are the infants and young children feeding practices by mothers at Dadease and Effiduase?
- b. What nutrition knowledge of mothers' influence type of young children feeding practices?
- c. What are the socio-economic factors that influence the selection of young children feeding practices by mothers?
- d. What is the nutritional status of the infants and young children at Dadease and Effiduase as influenced by mothers' young children feeding practices?

4.1 Demographic Characteristics of Respondents

Table 4.1 shows the demographic characteristics of respondents in the study. Majority of mothers, 72 (59%) in this study were from Effiduase, which was more than half of the study sample, while the remaining 50 (41%) came from Dadease. It was noted from Table 4.1 that, majority of mothers, 96 (79%) were within the age range of 20-35. Only 16 (13%) were above 35 years. However, the study captured 10 (8%) teenage mothers who were within the age range of 15-19 years. Again, 81 (60%) of the mothers were married, with 40 (33%) single mothers and only one (1%) was a widow.

Findings from Table 4.1 shows that, almost every mother had an education except 4 (3%) of them who had no formal education. Results from Table 4.1 revealed that 76 (62%) had basic education, 27 (22%) mothers also had Senior High School (SHS)/Vocational/Technical education. Moreover, 15 (12%) mothers only, had tertiary level education. Employment status of mothers from Table 4.1 reveals that, more than half of the mothers 65 (52%) were self-employed and 28 (23%) were housewives with no job outside the home. Again, about 16 (13%) of the respondents were government workers, 8 (7%) were apprentices while 5 (4%) were apprentices and at the same time employee with a one-man business establishment.

Most respondents 45 (37%) received no monthly salary, 31 (25%) mothers were received monthly salary below GHC 200, 29 (24%) mothers also received salary between GHC 200-GHC 600, 4(3%) mothers received monthly salary between GHC 601-GHC 1000 and more than GHC 2000 respectively, 8 (7%) received GHC 1001-GHC 1500 while only one respondent 1(1%) received GHC 1501- GHC 2000.

Young children's' demographic characteristics presented in Table 4.2 shows infants and young children age in months, gender and their order of birth. It was found from Table 4.2 that 49% of the infants fell within the age range of 0-6 months, 24% infants were within the age range of 6.1-12 months old. Meanwhile, 15% fell within the age range of 12.1-18 and 18.1-24 months old respectively. Female young children were 55% and male young children were 45%. As much as 27% young children were found to be first born, 25.4% were second born, 18.9 were third born. Also, 11.5% young children were fourth born, 6.6% were fifth born, 4.9% were sixth born, and least of 2.4% were seventh and eighth born respectively in Table 4.2.

Table 4.1: Demographic Characteristics of Mothers

Variable	Variable category	F	%
Community	Dadease	50	41
	Effiduase	72	59
Age range	15-19	10	8
	20-24	25	21
	25-29	31	25
	30-35	40	33
	Above 35	16	13
Marital status	Married	81	66
	Divorced	0	0
	Widow	1	1
	Single mother	40	33
Lev. of Educ.	No formal education	4	3.3
	Basic	76	62.3
	SHS	27	22.1
	Tertiary	15	12.3
Employment status	Government worker	16	13
	Self-employed	65	53
	Housewife	28	23
	Working for somebody	5	4
	Apprentice	8	7
Level of Income	No Income	45	37
	< GHC 200	31	25
	GHC 200-600	29	24
	GHC601-GHC1000	4	3
	GHC1,001-GHC1,500	8	7
	GHC1,501- GHC2000	1	1
>GHC2000	4	3	

Key: F= Frequency; %= Percentages, Lev. Of Educ. = level of education; (n=122) = sample size

Table 4.2: Age, Gender and Birth Order of Respondents' Infants and Young Children

Variable	Variable category	F	%
Age in months	0-6	60	49
	6.1-12	29	24
	12.1-18	18	15
	18.1-24	15	12
Gender	Female	67	55
	Male	55	45
Baby birth order	1 st	34	27.9
	2 nd	31	25.4
	3 rd	23	18.9
	4 th	14	11.5
	5 th	8	6.6
	6 th	6	4.9
	7 th	3	2.5
	8 th	3	2.5

Key: F = Frequency; % = Percentage; n= 122

4.2 Mothers Educational Level within Communities, Marital Status and Exclusive Breastfeeding

Cross tabulation of mothers' educational level attained between the two communities is represented in Tables 4.3 and 4.4. Most respondents, 44 (61%) at Effiduase had basic education and 32 (64%) mothers at Dadease also had basic education, 14 (28%) mothers had Senior High School education at Dadease and 13(18%) from Effiduase. Table 4.3 found 2 (4%) mothers who had tertiary education at Dadease and 13 (18%) mothers also had tertiary education at Effiduase.

Table 4.3: Level of Education of Mothers in Dadease and Effiduase

Education level	Dadease		Effiduase	
	F	%	F	%
No education	2	4	2	3
Basic	32	64	44	61
SHS	14	28	13	18
Tertiary	2	4	13	18
Total	50	100	72	100

Key: F = Frequency; % = Percentage; n = Sample size (n=122)

Source: Field data (2018)

Table 4.4, describes a cross tabulation analyses of mother's educational levels, marital status, time of introducing supplementary foods and exclusive breastfeeding. This analysis revealed that mothers' marital status, time of introducing supplementary foods and educational level did not statistically influence them to do exclusive breastfeeding ($p = 1.00, 0.178$ and 0.474 respectively). It was confirmed clearly in Table 4.4 that 80% of mothers who obtained up to tertiary level of education responded positively that they did exclusive breast feeding while 20% did not, followed by 75% mothers who had no education at all while 25% of these categories of mothers did not. Sixty-four percent mothers with basic school level of education reported that they did exclusive breastfeeding and 36% did not. Also 63% Senior High School leavers (mothers) reported that they did exclusive while 37% did not.

Mothers' marital status did not statistically influence exclusive breastfeeding ($p = 1.000, p > 0.05$) as 67.5% single mothers testified that they did exclusive breastfeeding while 32.5% did not, a close percentage of 67 married mothers agreed they did exclusive breastfeeding and 33% of the same category did not practice exclusive breastfeeding.

Table 4.4: Influence of Mothers' Educational Level and Marital Status on Exclusive Breastfeeding

EBF	No Formal Education	Basic	SHS	Tertiary	r	p
Level of Education						
No	1 (25)	27 (36)	10 (37)	3 (20)	0.065	0.474
Yes	3 (75)	49 (64)	17 (63)	12 (80)		
Total	4 (100)	76 (100)	27 (100)	15 (100)		
Marital Status						
	Married	Widow	Single			
No	27 (33)	1 (100)	13 (32.5)		0.000	1.000
Yes	54 (67)	00	27 (67.5)			
Total	81 (100)	1 (00)	40 (100)			
Young children Month						
	0-6	6.1-12	12.1-18	18.1-24		
No	21 (35)	9 (31)	6 (33)	5 (33)	0.594	0.000
Yes	39 (65)	20 (69)	12 (67)	10 (67)		
Total	60 (100)	29 (100)	18 (100)	15 (100)		
TS						
<3	12 (20)	1 (3)	1 (6)	3 (20)		
3	17 (28)	6 (21)	2 (11)	4 (27)		
4-6	28 (47)	19 (66)	11 (61)	6 (40)	-0.123	0.178
7-9	2 (3)	3 (10)	3 (17)	0 (.00)		
10-12	1 (2)	0 (.00)	1 (6)	2 (13)		
Total	60 (100)	29 (100)	18 (100)	15 (100)		

Keys: r= Correlation coefficient; p= alpha value; EBF= Exclusive Breastfeeding; SHS= Senior High School; TS= Time of introducing other foods/supplementary foods.

Source: SPSS Data Analysis of field data (2018)

Note: All figures in brackets are percentages

In cross tabulation of young children' age and exclusive breastfeeding, result reported in Table 4.4 shows that only 39 (65%) young children' aged 0-6 months were exclusively breastfed, 69% young children who were 6.1-12 months old were also

exclusively breastfed than 67% young children aged 12.1-18 and 18.1-24 months old respectively were exclusively breastfed. Moreover, young children's' age in months was highly significant ($p = 0.000$) with exclusive breastfeeding when mothers were asked whether they did exclusive breastfeeding.

Report on mothers' time of introducing other foods/water apart from the breast milk revealed that 95% of the mothers had introduced other foods/water to their 0-6 month old infants while only 3% of the 0-6 months old infants were exclusively breastfed after the sixth month recommended by WHO and UNICEF (2009). There was also no statistical relationship between mothers' time of introducing supplementary foods and exclusive breastfeeding ($p= 0.178$).

4.3 Research Question 1: What are the infants and young children feeding practices by mothers at Dadease and Effiduase?

Results obtained on the type of feeding practices mothers adopted for their infants and young children (0-24 months old) are presented in Tables 4.5, 4.6, 4.7, 4.8 and 4.9. Table 4.5 shows that 53% mothers used three feeding practices (breast feeding, formulae feeding and water) at the same time irrespective of the age (month) of the child (0-24 months). Only 22% mothers used breastfeeding only when their babies were below the age of 6 months, 14% fed their young children with household food available and 9% used breastfeeding and water at the same time. It was also noticed that 2% of the mothers had introduced complementary foods. Table 4.5 revealed only one mother who used artificial feeding.

Responses on whether mothers did exclusive breastfeeding or not indicated that, as much as 66% mothers did exclusive breastfeeding and the remaining 34% claim they did not do exclusive breast feeding (Table 4.5).

Frequency of feeding infants and young children with other foods in a day depicted that 30% and 26% mothers fed their young children 4-6 times and 10-12 times respectively in a day, 21% fed their young children 7-9 times and 17% mothers also fed their young children 3 times a day. However, only 6% fed their young children less than three times in a day (Table 4.5).

Mother's responses on the month they introduced other foods to their infants and young children apart from breast milk revealed that, 53% mothers introduced other foods to their infants in their 4th to 6th months. Also, 37% mothers had given other foods to infants below 4 months while 24% of mothers and 13% mothers also gave other foods to their young children when they were three months and less than three months old. Table 4.5 recorded 7% of the mothers who gave other foods to their young children in the seventh month, which is immediately after the sixth month preferred to be the month to feed any young children other foods to supplement the breast milk. Few respondents (3%) fed their young children with other foods at 10-12 months. Only 1% of the mothers did not respond to the question.

When mothers were asked when they stopped complete breastfeeding, their responses in Table 4.5 indicated that, 49% and 37% mothers had stopped complete breast feeding at 24 and 18 months respectively, 8% mothers also indicated they stopped complete breastfeeding at 10-12 month. Meanwhile, 3%, 2% and 1% mothers ceased complete breastfeeding within 7-9 months, 4-6 months and less than three months respectively.

Table 4.6 shows mothers' reasons why they did exclusive breastfeeding. From Table 4.6, 45 (55.5%) mothers indicated that they did exclusive breast feeding because "they knew the health benefits of exclusively breast feeding", 36 (44.4%) mothers

also indicated that they did exclusive breast feeding due to the fact that they had teachings from their nurses.

Table 4.5: Mothers' feeding practices for Infants and young children

Variable	Variable category	F	%
Feeding practices	Breastfeeding only	27	22
	Breastfeeding and water	11	9
	Artificial milk feeding	1	1
	Breastfeeding, formulae feeding and water	64	53
	Complementary feeding	2	2
	Household foods	17	14
Frequency of feeding infants and young children with supplementary foods in a day	<3 times	7	6
	3 times	21	17
	4-6 times	36	30
	7-9 times	26	21
	10-12 times	32	26
	Others	0	0
Responses of whether a mother did Exclusive or not	No	41	34
	Yes	81	66
Age/month to start giving other foods apart from breast milk	No response	1	1
	<3months	16	13
	3 months	29	24
	4-6 months	64	53
	7-9 months	8	7
	10-12 months	4	3
Month to stop complete breastfeeding of young children	<3months	1	1
	3 months	0	0
	4-6 months	2	2
	7-9 months	4	3
	10-12 times	10	8
	18 months	45	37
	24 months	60	49

Key: F= Frequency; %= Percentage

Source: *Field Data (2018)*

However, 17 (41.4%) mothers did not do exclusive breastfeeding with the reason that, “they did not have enough breast milk to satisfy infants”. Again, 7 (17%) of the mothers also did not do exclusive breastfeeding due to the fact that, “infants had dry mouths, cried a lot, did not get enough breast milk to suck and medical issues” respectively. Few mothers, 3 (2%) also indicated work demands as a barrier to do exclusive breastfeeding. These are presented on Table 4.7.

Table 4.6: Mothers’ Reasons for doing exclusive breastfeeding

Response	F	(%)
Teachings from nurses	36	44.4
Child grows well and protects child against infections/diseases	45	55.5
Total	81	100

Key: F = Frequency; % = Percentage, n= Sample size
Source: *Fieldwork data (2018)*

Table 4.7: Mothers’ Reasons for not doing exclusive breastfeeding

Response	F	(%)
Not enough breast milk to satisfy them	17	41.4
Child cries much and does not suck enough breast milk	7	17.0
Medical condition	7	17.0
Child had dry mouth	7	17.0
Work/job demands	3	7.3
Total	41	100

Key: F = Frequency; % = Percentage, n= Sample size
Source: *Fieldwork data (2018)*

Table 4.8 compares young children feeding practices mothers adopted in the two studied communities. About 29.1% and 12% of respondents from Effiduase and Dadease respectively breastfed their babies without water nor food while 10% mothers from Dadease and 8.3% mothers from Effiduase gave water in addition to breastfeeding before the sixth month. Only 2% mothers from Dadease did artificial feeding while none did artificial feeding at Effiduase, 2.7% respondents from

Effiduase fed their young children with complementary foods while none did complementary feeding at Dadease. Meanwhile, 44% mothers from both Effiduase and Dadease did mixed feeding, that is, breastfeeding, supplementary feeding and water.

Table 4.7: Feeding practices adopted by Mothers in Effiduase and Dadease

Com	BF only	BF & W	BF, S & W	A F	C F	HF	Total
Dadease	6 (12)	5 (10)	32 (64)	1 (2)	0 (0)	6 (12)	50 (100)
Effiduase	21 (29.1)	6 (8.3)	32 (44.4)	0 (0)	2 (2.7)	11 (15.2)	72 (100)
Total	27 (22)	11 (9.0)	64 (52.4)	1 (0.8)	2 (1.6)	17 (13.9)	122 (100)

Key: n= Sample size, BF= Breastfeeding, S= Supplementary feeding, W= Water, AF= Artificial milk Feeding, CF= Complementary Feeding, HF= Household Food

Source: *Field data (2018)*.

Note: Figures in brackets are in percentages

Table 4.9 compares mothers' reasons why they did or did not do exclusive breastfeeding in both communities. 21 (42%) and 15 (30%) mothers from Dadease did exclusive breastfeeding with the reason that; they knew the health benefits of breast milk and had enough teachings from their nurses respectively. Again, 15 (20.8%) and thirty (41.6%) mothers also from Effiduase did exclusive breastfeeding due to the same above. However, 16 (32%) mothers at Dadease and 27 (38%) at Effiduase did not do exclusive breastfeeding due to insufficient breast milk that made the child cry a lot, medical issues, child had dry mouth and work demands/ pressures.

Table 4.8: Comparing Mothers Reasons for doing or not doing exclusive breastfeeding within both Communities.

a. Reasons why mothers did Exclusive breastfeeding

Reasons	Communities			
	Dadease		Effiduase	
	F	%	F	%
Teachings from Nurses	21	42	15	20.8
Knew health benefits	15	30	30	41.6

b. Reasons mothers did not do Exclusive breastfeeding

Not enough breast milk	5	10	12	16.6
Child cries a lot	1	2	6	8.3
Medical reasons	5	10	2	2.7
Child had dry mouth	3	6	4	5.5
Work demands/pressure	0	0.0	3	4.1
Total	50	100	72	100

Keys: %= Percentages; F= Frequency; n= sample size

4.4 Research Question 2: What nutrition knowledge of mothers' influence type of infants and young children feeding practices?

Mothers' nutrition knowledge was assessed based on their sources of nutritional information, knowledge on breast milk, type of feeding practices adopted for feeding their infants and young children, as well as dietary practices of the infants and young children offered by mothers through a dietary recall. These are presented in Tables 4.10, 4.11, 4.12 and 4.13.

Table 4.10 depicts sources of nutrition information for mothers to care for their young children. From Table 4.10, it was reported that, 116 (42%) mothers had nutrition information from Hospitals/clinics, 73 (26%) of the mothers had nutrition information from family and friends, 57 (21%) and 31 (11%) mothers had their nutrition information from the electronic media (radio, television and newsprint) and organisations (clubs, churches etc.) respectively.

Table 4.9: Sources of Nutrition Information for Mothers (Multiple Responses)

Source	Multiple Response		
	F	%	Rank
Clinic/Hospital	116	42	1 st
Friends and relations	73	26	2 nd
Electronic & print media (TV, Radio, Newsprint, Magazine)	57	21	3 rd
Organisations (Clubs, Associations, Churches, etc.)	31	11	4 th
Total	277	100	

Key: F = Frequency; % = Percentage; n = sample

Source: *Fieldwork data (2018)*.

Table 4.11 shows mothers' frequency of hand washing before feeding their infants and young children. It was revealed that, 79 (29%), 73 (26%), and 70 (25%) mothers washed their hands before handling food, washed hands only before and after eating and washed hands only after visiting toilet respectively. More so, 36 (13%) mothers disclosed they observed personal hygiene by washing their hands whenever they were dirty. Again, 15 (5%) mothers disclosed that they also washed their hands whenever they felt like doing so. However, four (1%) of the mothers disclosed that they hardly (never) washed their hands when handling their young children.

Table 4.10: Frequency of hands washing before feeding young children

Hand washing practice	Multiple response		
	Freq	%	Rank
Wash hands before handling food	79	29	1 st
Wash hands only before and after eating	73	26	2 nd
Wash hands after toilet	70	25	3 rd
Wash hands whenever they are dirty	36	13	4 th
Wash hands when I feel like doing so	15	5	5 th
Never	4	1	6 th
Total	277	100	

Key: % = Percentages, n = sample

Source: *Fieldwork data (2018)*

Response of mothers on some facts about breast milk presented in Table 4.12 clearly shows that almost all the mothers 120 (98%) agreed on the statement, “Breast milk is the best for babies of 0-6 months old”, one (1%) was neutral and disagreed respectively. Majority of mothers 86 (70%) agreed to the fact that, “porridges are appropriate for a 0-6 month’s old young children”, with 33 (27%) mothers who disagreed and 3 (2%) ended up to be neutral on the statement. “First breast milk secretion after birth is best for babies”, was agreed by 81 (66%) mothers with 40 (33%) mothers who neither agreed nor disagreed. Only one (1%) mother disagreed on the statement (Table 4.12). Meanwhile 93 (76%) mothers disagreed that “First breast milk is yellowish in colour”, while 25 (20%) were neutral and only 4 (3%) agreed on the stated statement. 87 (71%) were neutral and 31 (25%) of them disagreed on the statement, “Lack of growth relates to inadequacy of food nutrients in the child’s diet”, but nine (3%) agreed. The statement, “Protein foods build the child’s body” was disagreed by 25 (20%) mothers, agreed by three (2%) mothers and 94 (77%) mothers neither agreed nor disagreed. Again nine (7%) mothers agreed that, “Carbohydrate foods provide bulk in the child’s diet”, 17(14%) disagreed, meanwhile, 96 (79%) neither agreed nor disagreed on the statement (Table 4.12).

A hundred and twelve mothers (92%) agreed that “Fats and oils prolong hunger”, six (5%) disagreed, 4 (3%) were neutral. Moreover, 116 (96%) agreed that “minerals and vitamins protect the body”, three (2%) were neutral and the remaining three (2%) disagreed to the stated statement. Majority of mothers 118 (97%) agreed that, “the child’s diet should contain two or more food nutrients in their required proportions”, four (3%) mothers were neutral and none disagreed on this statement. More so, 110 (90%) mothers agreed on the statement that, “Fruits and Vegetables provide more

water in the child's diet", eight (7%) decided on neutral while four (3%) mothers disagreed (Table 4.12).

Table 4.11: Nutritional knowledge of mothers' on positive nutritional statements

Statement	Agree		Neutral		Disagree	
	F	%	F	%	F	%
Breast milk is the best for babies of 0-6 months old.	120	98	1	1	1	1
Porridges are appropriate for 0-6 month's old babies.	86	70	3	2	33	27
First breast milk after birth is best for babies.	81	66	40	33	1	1
First breast milk is yellowish in colour.	4	3	25	20	93	76
Lack of growth relates to inadequate nutrients in diet.	4	3	87	71	31	25
Protein foods build the child's body (growth).	3	2	94	77	25	20
Carbohydrate foods provide bulk in the child's diet.	9	7	96	79	17	14
Fats and oil prolongs hunger.	112	92	4	3	6	5
Minerals and Vitamins protect the body.	116	96	3	2	3	2
A child's diet should contain two or more food nutrients listed above in their right proportions.	118	97	4	3	0	0
Fruits and Vegetables provide water in a child's diet	110	90	8	7	4	3

Key: F = Frequency; % = Percentage; (n =122) = sample
Source: *Field data (2018)*

With young children dietary recall, mothers' responses presented in Table 4.13 on types of foods they fed their infants and young children in the last 24 hours before data collection shows that, a number of 34 of the infants between 0-6 months old were fed with carbohydrate foods like bread, yam and rice while 26 infants in that same age category were not fed with carbohydrate foods in the last 24 hours. Twenty-one young children within the age group of 6.1-12 months were also fed with carbohydrate foods while eight (8) were not fed with carbohydrate foods. Again, (31) of the young children found within the ages of 12.1-24months old were fed with carbohydrate foods while only two (2) were not. Infants and young children of 53 within 0-6 months, 15 within the ages of 6.1-12 months and ten (10) within the ages of 12.1-24 months old were fed with animals and animal products such as meat, fish, milk and

offals in the previous 24 hours. Young children of about seven (7), (14), and (23) were also not fed with animals and animal products. Legumes such as beans and groundnut was given to 53 infants within ages of 0-6 months, 22 within the ages of 6.1-12 months and 14 within the ages of 12.1-24 months old to eat in the last 24 hours. On the other hand, 31 infants and young children were not fed with legumes in the last 24 hours.

Table 4.12: Dietary Practices of Infants and Young children (Dietary Recall)

Food types	Responses	Ages		
		0-6 F	6.1-12 F	12-24 F
Bread, Rice, Maize foods, cassava foods, Plantain, Yam etc.	Yes	34	21	2
	No	26	8	31
Animals and animal products (Meat, Fish, Milk, Offals, Yoghurt etc.	Yes	53	15	10
	No	7	14	23
Legumes (Beans, Soya beans, Groundnut, 'Agushie', 'Neri' etc.	Yes	53	22	14
	No	7	7	17
	Never	0	0	2
Fruits and Vegetables (Banana, Watermelon, Orange, Cabbage, carrot etc.	Yes	56	15	14
	No	4	14	19
	Never	0	0	0
Oily foods: Palm oil, Shear butter, Vegetable oil etc.	Yes	55	13	27
	No	4	16	6
Sugary foods and fizzy drinks: Biscuits, pancakes, cakes, coke, sobolo drink etc.	Yes	58	19	15.5
	No	2	10	17.5
	Never	0	0	0

Key: F = Frequency; % = Percentage; n = sample

Source: *Field data (2018)*.

It is also clear from Table 4.13 that 56, 15 and 14 infants and young children within the age range of 0-24 months old were fed with fruits and vegetables in the last 24 hours while four (4), 14 and 19 infants and young children were not fed with fruits and vegetables. Moreover, 55, 13 and 27 infants and young children found within the ages of 0-24 months old were fed with oily foods while four (4), 16 and 6 of them

within the same age range were not fed with oily foods in the last 24 hours. Table 4.13 also have the report of 58, 19 and 16 infants and young children within the age range of 0-24 months were fed with sugary foods and fizzy drinks and two (2), 10 and 18 of the children were not fed with sugary foods in the last 24 hours.

4.5 Research Question 3: What are the socio-economic factors that influence the selection of infants and young children feeding practices by mothers?

Item 35 of the questionnaire rated selected social and economic factors from the score of 1-6, where 1 was interpreted as an excellent influence, 2 was a very good influence, 3 was a good influence, 4 was an average influence, 5 was a fair influence and 6 was a poor influence. To make analysis easy, 1 and 2 (excellent and very good) scores were combined to form Highly Influence (HI), scores 3 and 4 were also put together to form Moderately Influence (MI) and 5 and 6 were put together for Not Influential (NI) as presented on Table 4.14. From Table 4.14, about 75% of the mothers were highly influenced by post-natal services offered by health providers, 11% mothers were moderately influenced by post-natal services and 13% were not influenced by post-natal services. No significant association was found between post-natal clinic services and exclusive breastfeeding ($r = 0.062$, $p = 0.496$) at 0.05 significant level.

A record of 30% mothers were highly influenced by family and friends on their choice of infants and young children feeding practices, 49% mothers also were moderately influenced by family and friends, while 21% mothers found family and friends not influential at all in Table 4.14. It was again observed in Table 4.13 that mother's age highly influenced 13.1% mothers, moderately influenced 25.4% mothers' while 61.4% mothers were not influential by their age. Mothers age had no statistical significant influence on exclusive breastfeeding ($r = -0.059$, $p = 0.519$).

Table 4.14 also clearly reported 11% mothers who were highly influenced by work demands, 23% moderately influenced, and 66% mothers were not influenced by work demands/situations. But the table reported work demands/situations, statistically significant ($r = -0.202$, $p = 0.026$).

Table 4.14 also reported 3% and 6% mothers who were highly influenced by income and culture respectively, 15% and 51% mothers were also moderately influenced by income and culture respectively. Again, majority of mothers (79%) and 46% were not influenced by income and culture respectively. Culture, work demands and income were statistically significant with exclusive breastfeeding [$(r = 0.338$, $p = 0.000)$, ($r = -0.202$, $p = 0.026$), and ($r = 0.225$, $p = 0.013$)].

Table 4.13: Influence of selected socio-economic factors on Infants' and young Children feeding practices of Mothers.

Factor		HI	MI	NI	Total	R	p
Mother's age	Freq	16	31	75	122	-.059	0.519
	%	13.1	25.4	61.4	100		
Family and friends	Freq	36	60	26	122	.149	0.101
	%	30	49	21	100		
Cultural practices	Freq	4	62	56	122	.338	0.000
	%	3	51	46	100		
Work/job/demands	Freq	14	28	80	122	-.202	0.026
	%	11	23	66	100		
Post-natal clinic services	Freq	92	14	16	122	.062	0.496
	%	75	11	13	100		
Household Income	Freq	7	18	79	122	.225	0.013
	%	6	15	97	100		

Key: HI= highly influential; MI= moderately influential; NI= Not influential; n= Sample;

Freq= Frequency; % = Percentage; r= Correlation coefficient; p= alpha value

Source: *Fieldwork data (2018)*

4.6 Research Question 4: What is the nutritional status of the infants and young children at Dadease and Effiduase as influenced by mothers' infants and young children feeding practices?

Results on infants and young children' anthropometric measurements are presented in Tables 4.15, 4.16, 4.17, 4.18 and 4.19.

Table 4.15 gives report on infants and young children weight (kg). Four (3%) young children weighed between 2 and 4 kilograms, 33 (27%) weighed 4.1-6kg, and 58 (48%) weighed 6.1-8kg. Again, 22 (18%) young children weighed 8.1-10kg while 5 (4%) weighed 10.1-13kg.

Table 4.14: Weights of Infants and young Children

Weight (cm)	Freq	(%)
2-4	4	3
4.1-6	33	27
6.1-8	54	48
8.1-10	22	18
10.1-13	5	4
Total	122	100

Key: Freq= Frequency; Kg = Kilogram

Source: *SPSS Analysis of field data (2018)*

Table 4.16 reported 6 (5%) of the young children who were 41-50cm long, 43 (35%) were 51-60cm long, 46 (38%) were 61-70cm long, 18 (15%) were 71-80 cm long, and 9 (7%) were 81-90 cm long.

Table 4.17 gives report on the nutritional status of young children. It is clearly seen from this table that, 52 (42.6%) were severely wasted. More than quarter of the infants and young children 45 (36.9%) were moderately wasted and 25 (20.5%) were normal without any risk of wasting (weight-for-height).

Table 4.17 also reported 60 (49.2%) of the young children who were moderately at risk of weight-for-age (Underweight), 31 (25.4%) were severely underweight and normal respectively.

Table 4.15: Length of Infants and young Children

Height (cm)	Freq	(%)
31-40	0	0
41-50	6	5
51-60	43	35
61-70	46	38
71-80	18	15
81-90	9	7
Total	122	100

Key; Cm= Centimetre, Freq= Frequency, %= Percentage

Source: Field Data (2018)

Report from Table 4.17 clearly revealed 65 (53.3%) of the young children severely stunted (Height-for-age), again, 38 (31.1%) were moderately stunted, while less than a quarter young children 19 (15.6%) were normal without risk (Height-for-age). These categories measured the length at which young children were malnourished.

Table 4.16: Nutritional Status of the Infants and young Children

Categories	Wasting		Under Weight		Stunting	
	(F)	(%)	(F)	(%)	(F)	(%)
< ± 0.50 (Normal)	25	20.5	31	25.4	19	15.6
< ± 2 (Moderate)	45	36.9	60	49.2	38	31.1
> ± 2 (Severe)	52	42.6	31	25.4	65	53.3
Total	122	100	122	100	122	100

Key: %= percentage, F= Frequency

Source: Field Data (2018)

Table 4.18 recorded Body Mass Index of the young children. It was reported that 61 (50%) of them were underweight with BMI <18.5 and an average score of 3.34, 33 (27%) were overweight with BMI between 25.0-29.9 and an average score of 3.52, six (5%) and three (3%) young children were obese at first and second phase of obesity with mean scores 3.00 and 2.33 respectively. However, only 19 (16%) of the young children with mean score of 3.95 were normal with BMI range (18.5-24.9).

Table 4.17: Body mass indexes (BMI) of Infants and young children

BMI	F	%	Mean
<18.5	61	50	3.34
18.5-24.9	19	16	3.95
25-29.9	33	27	3.52
30-34.9	6	5	3.00
35-40	3	2	2.33
Total	122	100	2.44

Key; F= Frequency, %= Percentages
 Source: Field Data (2018)

Table 4.19 presented severity of malnutrition among young children at Dadease and Effiduase. In Effiduase, 29% of the young children were severely malnourished, 43% moderately malnourished and 28% were within the normal weight-for-age. On the other hand, in Dadease 20% of them were severely malnourished, 58% moderately malnourished and 22% were within the normal weight-for-age. However, when height-for-age was used to measure malnutrition level of the children, 84% and 85% were either severely or moderately malnourished in Dadease and Effiduase respectively. Also when weight-for-age was used to measure malnutrition among the children, it was found that (78 and 72%) were moderately and severely at risk of Underweight.

Table 4.18: Comparison of malnutrition Cases among Infants and young children in Dadease and Effiduase

Weight-for-Age	Communities			
	Dadease		Effiduase	
	F	%	F	%
> ± 2 (Severe)	10	20	21	29
<± 2 (Moderate)	29	58	31	43
<± 0.5 (Normal)	11	22	20	28
Height-for-Age				
> ± 2 (Severe)	25	50	40	56
<± 2 (Moderate)	17	34	21	29
<± 0.50 (Normal)	8	16	11	15

Key: F= Frequency; %= Percentage
Source: Field Data (2018)

4.7 Testing of Hypotheses

4.7.1 Hypothesis One

H₀₁: There is no relationship between nutritional knowledge of mothers and choice of feeding practices for their young children.

H_{A1}: There is a relationship between nutritional knowledge of mothers and choice of feeding practices for their young children.

Table 4.20 shows the correlation that existed between infants and young children's feeding practices and nutritional knowledge of mothers. The correlation is presented in block matrix form. Each matrix entry is made up of a correlated value and its significant value in brackets. From Table 4.20, the study recorded a negative insignificant relationship between mothers' nutritional knowledge and choice of young children feeding practices ($r = -0.141$; $p = 0.120$). The negative correlated value implies that, when nutritional knowledge of mothers improved, their choice of young children feeding practices did not. Also, the significant value implies that

mother's level of education was an insignificant factor on young children feeding practices hence, null hypothesis which states that “there is no significant relationship between nutritional knowledge level of mothers and choice of infants and young children feeding practices,” was not rejected.

Table 4.19: Spearman’s Correlation Matrix for Relationship between nutritional knowledge of Mothers and choice of young children feeding practices

Spearman’s Correlation	Feeding Practices	Nutrition Knowledge
Feeding Practices	1.00	-0.141 (0.120)
Nutrition Knowledge	-.141 (0.120)	1.00

Sig= Significant level (P values)

Source: *SPSS Data Analysis (2018)*

4.7.2 Hypothesis Two

H₀₂: There is no significant influence of selected socio-economic factors on mothers’ choice of young children feeding practices.

H_{A2}: There is a significant influence of selected socio-economic factors on mothers’ choice of young children feeding practices.

This hypothesis made use of linear regression analysis shown in Table 4.20. Eight independent variables regressed on young children feeding practices (FP). Result of the regression analysis is presented in Table 4.20. It is observed that the p-value from the F-test (0.004), shows that the model is statistically significant (adequate). The R² indicates that (0.175) 17.5% of the total variability of feeding practices is accounted for by the model which is above the minimum R² value of (0.08) 8% considered to be statistically significant (Hair, Black, Babin & Anderson, 2013). Six out of the eight independent variables had negative correlated values but were significant at a level of 0.05, which was an indication of how each variable contributed significantly to choice

of feeding practices by mothers for their young children [Availability of food ($t = -2.622$, $p = 0.01$); Family and friends ($t = -2.895$, $p = 0.005$); culture ($t = -2.888$, $p = 0.005$); work demands ($t = -2.879$, $p = 0.005$); Post-natal Clinic services ($t = -3.008$, $p = 0.003$); household income ($t = -12.516$, $p = 0.013$); and mothers' choice of feeding practices for their younger children at 95% confidence interval (CI). Their significant values were less than 0.05 ($p < 0.05$), hence, null hypothesis of these socioeconomic factors was rejected. Mother's age and level of education had no significant influence on choice of young children feeding practices adopted by mothers ($t = 0.604$, $p = 0.547$, $t = -0.862$, $p > 0.05$). Hence, null hypothesis of these socio-economic factors were not rejected.

Table 4.20: Linear Regression Analysis of selected Socio-Economic Factors on Mothers' choice of young Children Feeding Practices

Model	Unstandardized Coefficients		Standardized Coefficients	t-Values	Sig.
	Parameter Estimate	Std. Error	Beta		
(Constant)	87.146	24.440		3.566	0.001
Mother' Age	0.113	0.186	0.055	0.604	0.547
Availability of food	-3.130	1.194	-1.917	-2.622	0.010
Family and friends	-3.382	1.168	-2.012	-2.895	0.005
Culture	-3.393	1.175	-1.917	-2.888	0.005
Work demands	-3.350	1.164	-2.454	-2.879	0.005
PNC services	-3.530	1.174	-2.255	-3.008	0.003
Household Income	-2.939	1.168	-1.757	-12.516	0.013
Level of Education	-0.252	0.293	-0.079	-0.862	0.391

Predictors: (Constant), family & friends, culture, work demand, PNC services, household income, mothers' age and mother's level of education.

F-value = 2.299 (0.004), $R^2 = 0.175$

Key: Sig. = Significant value; Std. Error= Standard Error;
Dependant Variable: Young children feeding practices

Source: *SPSS Data Analysis (2018)*

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.0 Overview

This chapter discusses the results presented in chapter four, with references made from reviewed literature that supports and disputes results obtained. The discussion is done under themes formulated from the research questions and the two research hypotheses as follows:

- a. Demographic data of mothers and infants and young children;
- b. Infant and young child feeding practices of mothers;
- c. Mother's (maternal) nutritional knowledge and its influence on the adoption of young children feeding practices;
- d. The influence of selected socio-economic factors on the choice of infants and young children feeding practices by mothers;
- e. Nutritional status of the infants and young children;
- f. Null hypotheses

5.1 Demographic Characteristics of Mothers, Infants and Young Children

Results on demographic characteristics of mothers shows that, a percentage of 33 mothers were within the age range of 30-35 years and were highly represented group among mothers in this study and their age was not associated with optimum feeding practices such as exclusive breastfeeding and timely introduction of supplementary foods ($r = 0.094$, $p = 0.303$). About 54% married mothers did exclusive breastfeeding more than 27% single mothers. A study of infant feeding practices and nutritional knowledge of nursing mothers in Apam in the central region of Ghana established that

single mothers do not exclusively breast feed their infants (Adigbo, 2016). Another study of infants feeding practices in North Ontario also found single, divorced and widowed mothers were less likely to do exclusive breastfeeding than married mothers (Sinclair, Houston, Shields & Snelling, 2003). There is a clear indication in this study among mothers in Dadease and Effiduase that married mothers settled in their homes were more comfortable at exclusive breastfeeding than single mothers with no husbands. This may also probably mean that husbands of the married mothers might have interest in breastfeeding infants and contributed to champion the breastfeeding practice among their wives.

There was an indication of 80% tertiary mothers who did exclusive breastfeeding followed by 75% mothers who had no formal education but did exclusive breastfeeding, and 64% basic school mothers who also practiced exclusive breastfeeding. In general, the study recorded (97%) high level of education among mothers in both communities which ranged from basic (62.3%) to senior high school (22.1%) education and (12.3%) mothers who had tertiary education. This conforms to Tugwete (2010) study who reported 90% high level education of mothers in Zimbabwe that ranged from basic school level, secondary school and tertiary level. There was also no significant association between mothers' educational level and exclusive breastfeeding. These findings from the study contradicted Tugwete's (2010) study who reported a negative significant influence between mothers' education and exclusive breastfeeding and other optimal young children feeding practices. That is, the higher the level of education of mothers, the less likely for mothers to follow WHO (2008) recommended guidelines for optimum young children feeding practices. Contrary to Tuqwete's (2010) study but similar to findings from Lawoyin and Olawuyi's (2011) study which shows that mothers with greater educational level were

more likely to be abreast of the overriding benefits of exclusive breastfeeding and will be more motivated to practice it. There is other evidence suggesting that young children of parents with high level of education stand a better chance of having good nutrition (Ivanovic, Castro and Ivanovic, 2004). Similarly, a study on maternal knowledge and attitude towards exclusive breast milk feeding in the first six months of young children's life in Mashhad by Hoseini, Vakili, Kiani, Khakshour and Saeidi (2014), revealed a significant relationship between mothers' education degree with exclusive breastfeeding. This implies that mothers with high educational level had more positive attitude towards exclusive breastfeeding.

Few mothers who had less educational level below basic school had established their own businesses mostly trade, tailoring or hairdressing which is not in conformity with Tugwete's (2010) study that reported higher educational level with lower unemployment status in Zimbabwe.

There was weak but positive insignificant relationship between mother's level of education and exclusive breastfeeding ($r = 0.065$, $p > 0.05$). This observation is not in conformity to a study by Wondu (2013) who found that educational level of mothers had some significant amount of influence on the attitude of mothers towards child feeding.

Appoh and Krekling (2005) reported 81% of uneducated mothers who did more of breastfeeding than their educated counterpart. Similarly, 75% mothers who had no formal education but did practiced exclusive breastfeeding than mothers who attained basic education (64%) and mothers who also attained SHS education (63%) which is close to Appoh and Krekling (2005) study. On the contrary, the result of mothers who had no formal education but practiced exclusive breastfeeding contradicts the views

of Ivanovic, Castro and Ivanovic (2004) who also found that families of parents with high level of education stand a better chance of having good nutritional practices.

In this study, marital status (Single, married or widowed) did not statistically affect exclusive breastfeeding. Though, approximately 68% single mothers and 67% married mothers did exclusive breastfeeding. However, the study of Anon (2003) in Ethiopia and Zambian Demography and Health survey (2004) in Zambia reported more exclusive breastfeeding among married mothers than single mothers. According to Anon (2004), the finding of his study could be linked to married mothers' family planning mechanism to delay pregnancy. There is also a probability that their husbands encouraged them to engage in exclusive breastfeeding or these mothers might have paid heed to the breastfeeding lessons offered by health givers at Post-Natal Clinic.

This study unfolded huge number of mothers who received low salary income, comprising those who earned not more than GHC 600 (49%) and mothers who received no salary income at all (37%). It is likely that those who were self-employed and/or were housewives might not experience pressures from work or job demands. Hence, they might have time to fully engage in exclusive breastfeeding and appropriate young children feeding practices. More so, low level of income may lower their status in the family. According to Smith, Tang and Nutbeam (2006), women with low status tend to have weaker control over household resources, tighter time constraints, less access to information and health services, poorer mental health and lower self-esteem. This may be closely linked to women's own nutritional status and the quality of care they give, and in turn, to children's birth weights and the quality of care they give. On the other hand, mothers who were engaged by other

people might experience pressure from work/job demands which might not permit them to have ample time to engage in exclusive breastfeeding and appropriate young children feeding practices. A positive and insignificant relationship ($r = 0.020$, $p = 0.829$) existed between mother's employment status and feeding practices adopted for their young children. Probably, self-employed mothers were not given much pressure from work since they managed their own businesses. This might give them enough time from their work to feed their babies well.

All the young children were 0-24 months old with few toddlers, of which among the 60 (49%) infants within 0-6 months old, 39(65%) were exclusively breastfed as their mothers said yes they did exclusive breastfeeding. This finding is in line with WHO (2003) and Gyampoh, Otoo and Aryeetey (2014) breastfeeding recommendations. This result validates the findings of a study by Boseley (2011) who advocates for breastfeeding and advises against weaning until six months. According to Boseley's report, an effective food and nutrition promotion programme is capable and substantially to cut the number of women who introduced solid foods to their young children before four months from 85% in 2000 to 51% in 2005 (Boseley, 2011). This observation echoes the views of Proulx, UNICEF and Ministry of Education (2014) that, 48% of young children were exclusively breastfed during the first 6 months. Therefore, other young children whose mothers did not do exclusive breastfeeding contradicted the above propositions. It is therefore believed that some of these mothers did not actually understand the concept of exclusive breastfeeding due to the fact that they thought the little breastfeeding they did for few months less than six months, can be called exclusive breastfeeding. Most mothers responded yes they did exclusive breastfeeding but when they were asked when they started supplementary feeding, their response conflicted the previous response.

It is also estimated globally that 38 percent of young children are breastfed exclusively for the first six months, and in the United States alone, that statistic drops to 13 percent as observed by Vitelli (2018). This study's findings on breastfeeding is an indication that, in an era where more alternatives are available, including commercial formulas advertised everywhere as a substitute of nourishing mother's milk, many women are encouraged to stop exclusive breastfeeding early, despite WHO (2003) recommended guidelines. It is clearly noticed that majority of 95% mothers had introduced semi-solid foods/supplementary foods below the sixth month of the infants and young children in this current study.

5.2 Main Research Questions

5.2.1 Infant and Young Children Feeding Practices adopted by Mothers at Dadease and Effiduase.

Results gathered indicated that more than half (53%) of the mothers engaged in mixed feeding practices (breast feeding, formulae feeding and water). Furthermore, the study found few mothers who did breastfeeding only without supplementary feeding. This observation is justified by WHO (2018) that children should be breastfed continuously for the first six months while being slowly weaned off after one to two years of age.

Findings from this study revealed more than half of the mothers who fed their young children with supplementary foods 4-8 times in a day. Few infants and young children were fed three times or less in a day. This accounted for a drop in exclusive breastfeeding. These categories of young children were ceased from the breast milk below two (2) years which contradicted the recommendations of WHO (2003) and Central Statistical Agency's (2012) report that one major cause of malnutrition in

young children in developing countries is poor feeding practices such as: introducing complementary foods at an early stage, restriction in food selection due to cultural beliefs and giving children poor quality and insufficient amounts of complementary foods.

A confirmation from the nurse at the Child Care Unit at Effiduase Government Hospital explained some possible reasons for the decline in breastfeeding as mothers being influenced by their grandmothers; elderly women and friends to practise what they think worked out for them. To some mother's pressures from work do not encourage them to continue breastfeeding exclusively for longer time, not even the recommended six months. The health worker also narrated that some mothers also follow the fashion of buying canned foods for the young children just because she sees other working mothers buy and give their young children.

The observation that one mother adopted young children formulae could be as a result of health issues, and this is congruent with the views of Dewey (2003) in a study done in Ghana where water and glucose solutions were widely given to young children, beginning in the first few months of life. A study conducted by Gyasi (2008) also confirmed this finding that most mothers introduced their children to some liquids before they turned 6 months. This again confirms Inge-Lise (2013) who found out that 8% of young children were given young children formulae primarily for medical reasons.

Few mothers (29%) adopted exclusive breastfeeding because they were taught by nurses during ante-natal and post-natal clinics. They did so because it promotes healthy growth and development of the young children as well as child protection against infections/diseases. Even though mothers at Effiduase engaged in

breastfeeding young children below 6 months more than mothers at Dadease, mothers in both communities indulged massively in giving the babies liquid or semi liquid foods below six (6) months which is also in conformity with Inge-Lise's (2013) study who found out that the mothers fed their young children with other foods before they turned 6 months old.

This study revealed a reasonable number of mothers (37%) who introduced semi solid foods too early from three months and below. This report is higher than 14% mothers recorded in a study conducted in the Manya Krobo district of Ghana of where the children at the age of 3 months were receiving complementary feeds (Nti & Larney, 2007). Generally, majority of mothers (95%) had also given complementary foods to their young children from less than 3 months to the sixth month when they were asked when they started given other foods apart from the breast milk to their young children. This report was not encouraging as compared to sixty percent (60%) of mothers who introduced other foods to infants and young children below 6 months in Northern Senegal in the study of Gupta and Stettler (2007). However, a previous study conducted in Mali revealed that many young children were not introduced to complementary feeds until they were 6 months, yet all of them already been given water. This practice does not make their style of breastfeeding, exclusive breastfeeding (Mozambique demographic and health survey, 2002). Moreover, it is a negative practice that is inconsistent with the strategic recommendations made by WHO and UNICEF (2003).

Most mothers in this study indicated stopping complete breastfeeding when the child was 18-24 months old and least of about 18% also indicated of stopping complete breast feeding which is against the recommendation of Gyampoh, Otoo and Aryeetey

(2014) to continue breast milk feeding alongside with supplementary/complementary foods till two years of life or beyond if the mother does not have any constraints.

5.2.2 Mothers' Nutritional knowledge, Infants and young Children Feeding Practices and Nutritional Status.

Almost all the mothers had nutrition information from various sources with majority obtained from hospitals and clinics followed by family and friends. Wondu (2013) reported about 39% of information that reached mothers through outlets such as television, radio, friends and culturally through experience from their family as compared to about 42% of mothers' who obtained information on the importance of breastfeeding from hospitals/clinics from this study. Wondu's (2013) study indicated a lesser information (39%) obtained from hospital/clinic on breastfeeding than the findings of this current study (42%) at Dadease and Effiduase. Similar to this current finding, Kabir and Maitrot's (2017) study in Dhakar recorded a significant knowledge of mothers about nutrition, breastfeeding, childcare, and early initiation to complementary food due to the fact that these mothers were informed through community-based interventions (routine counselling visits to young mothers). This is also consistent with a previous study conducted in Bangladesh by Afsana *et al.*, (2014) who found that nearly 68% of mothers had appropriate knowledge of micronutrients powder (MNP) in Bangladesh because of community-based message delivery through counselling by community health workers.

According to Coutsoudis (2005), literacy status had little effect on continuation of breast feeding. With Coutsoudis's (2005) study, 81.19% mothers had no knowledge regarding exclusive breast feeding and only 13.36% of these mothers practiced exclusive breast feeding just up to 4 months, which is a disheartening scenario. This is

in agreement with the outcome in this current study among mothers in Dadease and Effiduase where 75% mothers had no classroom education but practiced exclusive breastfeeding. In another study, Ram (2005) found that, despite health education messages in Mass media and various interventions launched under child care unit in the study, nearly 80% mothers told their source of information regarding breastfeeding practices and influencers for their decision making about exclusive breastfeeding were Elderly females in the family. This is unlike that of mothers at Dadease and Effiduase in this current study where 42% mothers had their first hand nutrition and feeding information from hospitals/clinics which was ranked first and highest source of nutrition and breastfeeding information for mothers in the two districts while family and friends was ranked the second source of information.

Mothers' nutritional knowledge did not statistically influence optimal young children feeding practices at Dadease and Effiduase in the Ashanti region ($-0.141, p > 0.01$). However, Obwogi (2017) contradicts this current finding by stating a significant influence between maternal nutritional knowledge and young children feeding practices adopted by the mothers ($r = 0.259, p < 0.05$). In Obwogi's study, as knowledge on young children good feeding practices increases, mothers' capability to follow recommended young children feeding practices improves. This was not so in this current study among mothers at Dadease and Effiduase.

Most mothers had the mind-set that carbohydrate foods such as porridge, sugary and fizzy drinks are appropriate for 0-6 month old young children due to a belief that they are good source of energy for their young children. Feeding young children aged, 0-6 months old with porridge is a negative young child feeding practice. Although Coleman (2016) and Szalay (2017) described digestible carbohydrates as one of the

main sources of dietary energy essential for growth and development, it is not appropriate for young children within 0-6 months of age.

Result from this study revealed that some of the mothers did not include fruits and vegetables in young children' diet. This can be attributed to mothers not knowing the nutritional benefits of feeding young children with fruits and vegetables as confirmed by Gyasi (2008). Again, most mothers practiced mono dieting mainly of porridge and sugary foods for their young children. This is contrary to Gibson and Holtz's (2001) view, who stated that the consumption of a varied diet is associated with increased intake of energy. Poor young children feeding practices can lead to child malnourishment as opined by the American Academy of Paediatrics (2017) that poor food choices and unhealthy eating habits adopted during childhood can lead to a range of diseases and health related problems in later life. This assertion confirms the high rate of malnutrition noticed among young children which might be as a result of mono-dieting. Some mothers also attributed it to lack of income to purchase protein foods which are most tagged expensive.

There was clear evidence that all the young children fell within the standard z-score weight for young children from birth to two years, which ranges from 2 to 17 kg as noted by the World Health Organization (2011). Similarly, all the children fell within the standard z-score length for young children from birth to two years, which ranges from 45 to 95cm as noted by the World Health Organization (2011). Nevertheless, severity of underweight, stunting and wasting was very high among the children. Revelation that most of the children had suffered wasting, stunting and underweight was a clear indication of poor feeding practices. About 64% of mothers claimed to feed their infant and young children with animal and animal products and legumes in this study. However, this claim could not justify the quantity/appropriateness of

protein foods claimed by these mothers to be included in the young children' diet as high level of wasting and other nutritional deficiencies were observed within the two communities. Possibility of mothers failing to provide protein foods for young children might be due to the fact that most of these mothers were low income earners who could not afford the high cost of most protein foods. This revelation affirms the position of International Food Council Foundation (IFICF, 2016) indicating that protein is the only nutrient that supplies body cells with what they need to grow, build muscle and stay healthy. Foods high in protein also provide other essential vitamins and minerals that can support strong bones, a healthy immune system, and help gain energy from food. By eating protein-rich foods throughout the day, kids will feel fuller between meals; this could result in less snacking (IFICF, 2016). The rate of stunting in this study is relatively close to 50% prevalence of stunting observed in Malawi (UNICEF, 2008) and 38.7% in Botswana (Mahgoub & Bandeke, 2006). Gillespie and Kadiyata (2004) have recorded poor nutrition to be the likelihood cause of malnutrition among children. UNICEF (2008) also has an observation that more than a quarter of children younger than five years in developing countries are moderately or severely underweight or stunted. This further supports Nokuthula's (2009) view that there are 226 million children under the age of five in developing countries who suffer from moderate or severe stunting.

Gyasi (2008) also revealed 18.3% children underweight, 17.0% stunted and 6.0% wasted as a result of suboptimal feeding practices within the Sefwi-Biabiani District. Furthermore, Adadia, Nartey and Koryo-Debarh (2017) also agree with this finding due to the fact, they have also recorded risk of stunting, wasting and overweight (41.5%, 9.4%, 17%) among children in Adabraka within Greater Accra region of Ghana. There is harmony between Mahgoub and Bandeke, (2006); Gyasi (2008);

Nokuthula's (2009); Adadia, Nartey and Koryo-Debarh (2017) and this current study's findings on child malnourishment. This is a clear indication that, optimum breastfeeding is truly in a decrease not only in Dadease and Effiduase but might be the case of other regions around the world. Therefore, susceptibility of chronic nutritional disorders such as korshiorkor, marasmus, diarrhoea and many others are highly possible to be on an increase in both districts which needs critical nutritional programme since good nutrition is the basic foundation of every child to perform better in school and also develops into a healthy adult (Caetano, Ortiz, da Silva, de Souza, & Sarni, 2010).

Few of the children (7%) were obese. This finding is in consistency with those of James (2001) and Ogden, Flegal, Carroll and Johnson (2002) in studies which demonstrated that 10-20% of children are considered overweight or obese in many developing countries. High risk of underweight was noted at Effiduase more than Dadease. However, when height-for-age was used to measure malnutrition, 84% and 85% of the young children were either severely or moderately malnourished in Dadease and Effiduase respectively. It can therefore be concluded from these findings that prevalence of malnutrition is on an increase and very alarming in both communities but a little higher in Effiduase which might be as a result of mothers' refusing to practice their diet and health lessons taught them by their health providers. It can also be as a result of nurses using only the child's weight in assessing young children nutritional status without comparing young children' weight with their height in assessing malnutrition.

5.2.3 Selected Socio-Economic Factors and their Influence on Feeding Practices adopted by Mothers' for Infants and Young children

The result (Table 4.20) obtained from this study shows that food availability, family and friends, cultural practices, job/work demand, post-natal clinic services and household income significantly influenced choice of young children feeding practices by the mothers ($p \leq 0.05$). McLeod (2017) had previously observed that factors such as education, health, income and environment affect feeding practices. Similar to this study, McLeod (2017) noted that women economic constraints require them to return to work while still breastfeeding. This practice forces both the mother and the child to conform to schedules that are likely to constrain the flexibility required for breastfeeding on demand as affirmed by WHO (2008). This observation further confirms the views of Goudet *et al.*, (2011) study that, income generating occupations are the main barriers to appropriate child feeding practices when no alternative childcare support was available either at home or work, and this combined with other distinctive factors creates an unfavourable situation for young children feeding.

In another study, socioeconomic and cultural factors that influenced feeding practices within different settings were analysed as work, food stability, environmental conditions and culture (Afsana *et al.*, 2014).

These observations confirm the views of Wondu (2013) who cited social and environmental factors such as mothers' workplace as reasons for no exclusive breastfeeding practices (EBF) among mothers in Nekemte town. Furthermore, Wondu (2013) concluded that, the highest proportions of mothers with low breastfeeding frequency and duration is due to the fact that their work places did not permit them to breastfeed, and that there was no privacy for breastfeeding. In his view, this compelled a lot of mothers to introduce additional foods to their children before 6

months (Wondu, 2013). This is a true manifestation in this current study; where 95% of the mothers had already introduced other foods and water to their children before the 6th month.



CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATIONS

6.0 Overview

This chapter summarises the research findings to draw conclusions, recommendations and suggestions for future studies.

6.1 Summary of Findings

The study's main aim was to determine the effectiveness of young children feeding practices mothers adopt by using 122 mothers and their 0-24 months old infants and young children. Infants and young children were sampled through both probability and non-probability sampling techniques, specifically multi-stage sampling technique that involved purposive, cluster, stratification based on educational level of the mothers (basic, SHS, tertiary and mothers who had no formal education) and convenience sampling. The study was a cross sectional study analysed quantitatively. Two sister towns by names Dadease and Effiduase in the Sekyere-Kumawu and Sekyere-East Districts respectively were used.

In this study, mothers were low income earners because most of them were either housewives, apprentices or work in someone's business and received low income rate below six hundred cedis (GHC 600). It was deduced from the study's findings that mothers' engaged in mixed feeding infants of 0-6 months old. Also mothers at Effiduase did more breastfeeding than those at Dadease. Again, mothers' nutritional knowledge did not influence optimal infant and young child feeding practices. More so, selected socio-economic factors such as mothers' household income, Post-natal Clinic services, family and friends, availability of food, culture and work demands influenced infant and young child feeding but mother's age and level of education did

not influence infant and young child feeding. There rate of underweight, stunting and wasting was high among infants and young children in Effiduase and Dadease in the study.

6.2 Conclusions

In conclusion, most mothers fed their infants with other liquid foods apart from breast milk below six months despite awareness created by various stakeholders including nurses and None governmental agencies. A lot of the mothers practised mixed feeding by combining breastfeeding, supplementary feeding and water when the young children were below six months. Also, maternal education level and mother's age were insignificant factors on the choices of infants and young children feeding practices ($p > 0.05$). Again, there was a significant influence between Post-Natal Clinic services, family and friends, culture, work demands, availability of food, household income and optimal infant and young children feeding practices ($p < 0.05$).

High prevalence of malnutrition among infants and young children can be attributed to fact that, nurses pay more attention to infants and young children's weight without height in assessing their nutritional status. It is however clear that the fallen standard of infants and young child feeding among mothers is as a result of poor nutrition knowledge of mothers in Dadease and Effiduase in the Sekyere-kumawu and Sekyere-East respectively.

6.3 Recommendations

The following recommendations were made

- a. The educational policy of Ghana should factor nutrition education programmes right from the basic/Junior High School levels where most

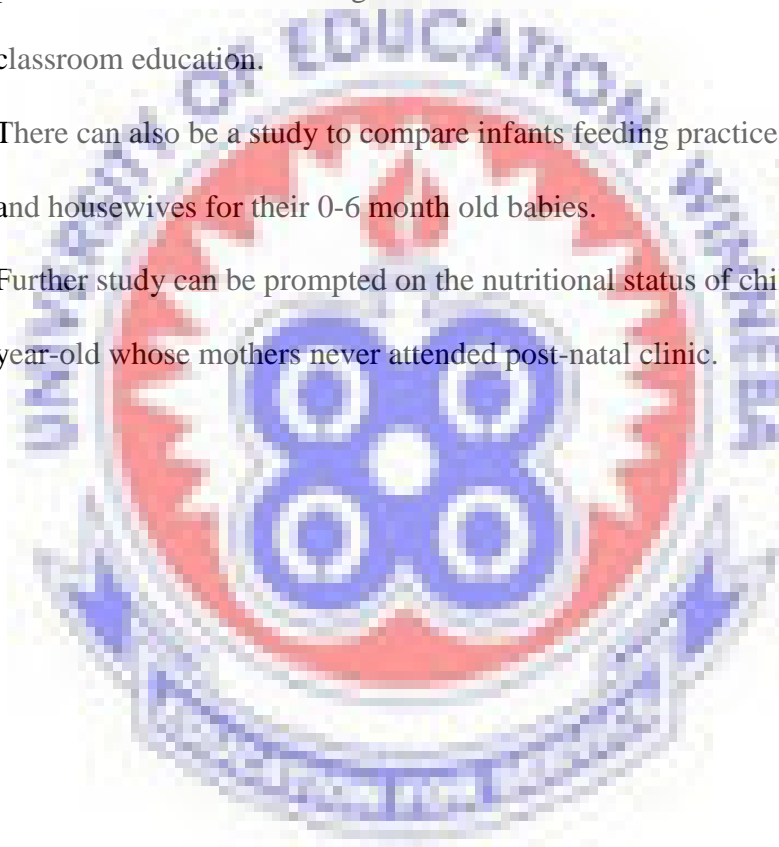
women reach on the education ladder. This will help build the minds of women towards optimal infants and young children feeding before they enter into motherhood. It would be useful to every female and active involvement can enhance better outcome of mothers-to-be.

- b. Health workers should capitalise on the number of mothers who made the hospital and clinic their first point of recovering nutrition information as their first point of spreading nutrition information to more of these mothers, and making strong impact on them. The Community Health Nurses should be role models and duly practice certain health ideologies such as exclusive breastfeeding to motivate lactating mothers follow their examples.
- c. Health organizations and District Health Directorates should reinforce effective counselling routine and follow-up programmes offered by qualified nutrition officers in the communities of Dadease and Effiduase, especially the rural areas. Mothers might clearly understand the meaning of exclusive breastfeeding and its benefits if they are consistently visited and monitored especially in their first six months after birth.
- d. There should also be easy access to the necessary health tools and materials like infantometer to enable nurses facilitate effective health promotion programmes for the 0-24 month old infant and young children in Dadease and Effiduase.
- e. Furthermore, there is the need for an effective infant and young child dieting guide for all children under five years to be facilitated by mothers and monitored by health workers in the Sekyere-Kumawu and Sekyere-East Districts to help eradicate the increase rate of nutrition disorders detected in both communities especially, Effiduase.

- f. Outcomes in this study can also serve as the bases for further research on similar topics.

6.4 Suggestions for Further Studies

- a. Future research can consider the influence of other independent variables on young children feeding.
- b. Outcome from this study can prompt further study into young children feeding practices of mothers with high level of level of education and mothers with no classroom education.
- c. There can also be a study to compare infants feeding practices used by Nurses and housewives for their 0-6 month old babies.
- d. Further study can be prompted on the nutritional status of children under one-year-old whose mothers never attended post-natal clinic.



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APPENDICES

APPENDIX A: QUESTIONNAIRE FOR MOTHERS HAVING 0-24

MONTHS OLD INFANTS AND YOUNG CHILDREN

Introduction

This research looks into feeding practices adopted by mothers for children under 2 years at Dadease and Effiduase. I seek your concerns and involvement in providing relevant information on the subject. Your responses will be beneficial for this study which will impact young children feeding practices mothers adopted. Every information provided is strictly confidential for academic purposes only.

SECTION A: DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

Instruction: Please fill in the needed information by ticking like this (✓) in the appropriate box []

1. Community: Dadease [] Effiduase []
2. Mother's age (yrs.): Below 15 [] 15-19 [] 20-24 [] 25-29 [] 30-35 [] Above 35 []
3. Marital status: Married [] Divorced [] Widow [] Single mother []
4. Level of education: Basic [] S.H.S [] Tertiary [] None []
5. Employment status: Government worker [] Self-employed (Farmer, Trader, Seamstress etc). [] Housewife [] Working for somebody [] Apprentice []
6. Income level per month: < GHC200 [] GHC 200-600 [] GHC601-
GHC1000 [] GHC1,001-GHC1,500 [] GHC1,501- GHC 2000 [] >
GHC2000 [] None []

CHILD DEMOGRAPHIC CHARACTERISTICS

7. What is the position of baby in terms of birth order? First [] Second []
Third [] Fourth [] Fifth [] Sixth [] Seventh []
Eighth []

8. Child's age in months: 0-6 month [] 6.1-12 month [] 12.1-18 month []
18.1-24 month []

SECTION B: FEEDING PRACTICES ADOPTED BY MOTHERS FOR THEIR CHILDREN AGED 0-24 MONTHS

Instruction: Please fill in the needed information by ticking like this (✓) in the appropriate box []

9. Which of the following feeding practices do you currently use for your child?

- Breastfeeding alone []
Breastfeeding and water []
Artificial Milk feeding []
Breast feeding, artificial feeding and water []
Complementary feeding alone []
Feeding the child with what the family eats []

10. How many times do you feed your child in a day?

- < 3 times []
3 times []
4-6 times []
7-9 times []
10-12 times []

Others (Specify).....

11. Did you do exclusive breastfeeding? Yes [] No []

(a) If Yes, why?.....

(b) If No, why?.....

12. What age do you intend to/did you start to feed your child with other foods (Supplementary foods) apart from breast milk?

- < 3months []
3 months []
4-6 months []
7-9 months []

10-12 months []

13. Mothers should indicate the time they will stop/stopped complete breastfeeding the child?

< 3months []

3 months []

4-6 months []

7-9 months []

10-12 months []

> 12 months []

SECTION C: NUTRITIONAL KNOWLEDGE LEVEL OF MOTHERS ON THEIR CHOICE OF FEEDING PRACTICES FOR THEIR CHILDREN (0-24) MONTHS.

Instruction: Please fill in the needed information by ticking like this (√) in the appropriate boxes []

14. Please indicate where you get teachings on childhood feeding? (Multiple responses).

Clinic/Hospital []

Media (TV, Radio, Newsprint, Magazine, etc.) []

Organisations (Clubs, Associations, Churches, etc.) []

Friends and relations []

15. How often do you wash your hands in handling your child? (Multiple responses).

Whenever they are dirty []

Before handling food []

When I feel like doing so []

After toilet []

Before and after eating []

Never []

Instruction: Using the scale (Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D) and Strongly Disagree (SD), Please tick (√) appropriate your perception of the following statement.

SN	STATEMENT	SA	A	N	D	SD
16.	Breast milk is the best for babies of 0-6 months old.					
17.	Porridges are appropriate for 0-6 month old babies.					
18.	First breast milk secretion after birth is best for babies.					
19.	First breast milk is yellowish in colour.					
20.	Lack of growth in a child relates to inadequacy of food nutrients in the child's diet.					
21.	Protein foods are, fish, meat, egg, groundnut, Milk, Beans etc.					
22.	Carbohydrate foods are banku', 'fufu', 'kokonte', 'T.Z, 'Ampese' (Yam and Plantain) etc.					
23.	Fats and oil foods are Cooking oil, palm oil, palm kennel, Shea butter etc.					
24.	Vitamin Foods are found in Fruits like Oranges, Watermelon, Pineapple etc. and vegetables like 'Kontomire', Cabbage, Carrot, Green pepper, Tomatoes etc.					
25.	Minerals are found in bones, liver, Unpolished rice, wheat, Iodized salt, Water etc.					
26.	A child's diet should contain two or more of the food nutrients listed above in their right proportions.					
27.	Fruits and vegetables provide more water in a child's diet.					

Instruction: Please indicate the types of food groups you have fed your child in the last 24 hours. Tick (√) Y for Yes, N for No and NE for Never in the spaces provided.

SN	FOOD TYPES	Yes	No	NE
28.	Bread, rice, noodles, maize products (corn porridge), cassava and plantain products (fufu, 'ampesi'), Cerelac etc.			
29.	Animal and animal products (Meat, Fish, Eggs, Offal, Milk, Yoghurt etc)			
30.	Legumes (Beans, soya beans, groundnut, 'agushie', 'neri' etc.)			
31.	Fruits & vegetables (fruit juice, mashed fruits, cut banana, cut watermelon, oranges, cabbage, etc.)			
32.	Carbonated drinks (coke, fanta, malt etc.) and other beverages: chocolate, ovaltine, milo, 'sobolo', Kalypo etc.)			

33.	Foods with oil (palm oil, shear butter, cooking oil, palm kennel, Groundnut soup, Palm nut soup etc).			
34.	Sugary foods (biscuits, pancakes, cakes, steamed/ baked custard, Toffee, chocolate etc.)			

SECTION D: SOCIO-ECOOMIC FACTORS THAT MAY INFLUENCE FEEDING PRACTICES OF YOUNG CHILDREN AMONG MOTHERS.

Instruction: Please rate the following factors from (1-6) by writing the numbers in order of influence on your choice of feeding practices for your child.

35.

SN	Socio-economic Factors	Rate
a.	Mothers age	
b.	Friends/relatives/household	
c.	Culture/food taboos	
d.	Work situation	
e.	Post-natal clinic	
f.	Total household income	

SECTION E: ANTHROPOMETRY MEASURES OF THE CHILD

36. CHILD'S GENDER	37. AGE IN MONTHS	38. WEIGHT (kg)	39. HEIGHT (cm)

THANK YOU

**APPENDIX B: INTRODUCTORY LETTER FROM HOME
ECONOMICS EDUCATION DEPARTMENT**



UNIVERSITY OF EDUCATION, WINNEBA
FACULTY OF SCIENCE EDUCATION
DEPARTMENT OF HOME ECONOMICS EDUCATION

P. O. Box 25, Winneba, Ghana
+233 (03323) 21177

homeecons@uew.edu.gh

REF: HEC/L.3/VOL.2/192

11th October, 2017

The Head
District Health Directorate
Sekyere East District
Effiduase – Ashanti Region

Dear Sir/Madam,

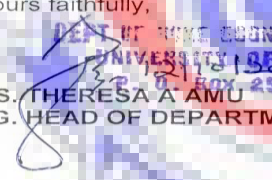
**INTRODUCTORY LETTER
MS. MARTHA SERWAA WIREDU**

We write to introduce, Ms. Martha Serwaa Wiredu an M.phil student with index number 8160100014 of the Department of Home Economics Education, University of Education, Winneba, who is conducting a research titled: **“Feeding Practices of Children at Early Childhood of (0-24) Month Old Among Mothers in Effiduase”**.

We would be very grateful if you could give her the assistance required.

Thank you.

Yours faithfully,


DEPT. OF HOME ECONOMICS EDUCATION
UNIVERSITY OF EDUCATION
P. O. BOX 25, WINNEBA
MS. THERESA A. AMU
AG. HEAD OF DEPARTMENT

APPENDIX C: GHANA HEALTH SERVICE DATA REQUEST FORM

APPENDIX 6 – DATA REQUEST FORM



NAME: MARTHA SERVA WUEFIM
INSTITUTION: UNIVERSITY OF EDUCATION, WINNEBA
TEL NO: 0206805932 DATE OF REQUEST: 06/02/18

SPECIFIC DATA REQUIRED:

CURRENT STATISTICS ON MALNUTRITION LEVEL OF CHILDREN IN THE DISTRICT.

PURPOSE OF DATA REQUEST:

FOR RESEARCH WORK

EMAIL: queenSer09915@gmail.com

SIGNATURE: [Signature]

FOR OFFICIAL USE ONLY

APPROVED BY: [Signature] OFFICER ASSIGNED: Adhomas Akle Akhassan

DATE ASSIGNED: [Signature] DATE COMPLETED: 06/02/18

REMARKS: Information should be used strictly for the intended purpose and should you wish to reuse this, it should be contacted for approval.

JUSTICE THOMAS SERVA
SECTOR OF HEALTH SERVICES
KUMAWU DIST.
P. O. BOX 40
KUMAWU

**APPENDIX D: ANTHROPOMETRIC MEASUREMENTS OF INFANTS
AND YOUNG CHILDREN**

Child	Comm.	Sex	Weight (kg)	Height (cm)	Weight-for-height	Weight-for-Age	Height-for-Age	BMI
1	Dadease	F	7	61	1.42	0.26	-1.15	28
2	Dadease	M	6.5	59	1.52	-1.13	-3.04	18.7
3	Dadease	F	5.5	50	5.44	3.26	-0.71	22
4	Dadease	F	5	53	2.27	-1.34	-3.36	17.8
5	Dadease	F	6.5	57	2.57	1.15	-0.93	20
6	Dadease	M	6	56	2.44	-0.63	-2.81	19.1
7	Dadease	M	8.5	65	1.85	0.06	-2.21	20.1
8	Dadease	M	6	54	3.79	-1.58	-5.07	20.6
9	Dadease	F	5	56	0.39	-3.14	-4.11	15.9
10	Dadease	F	6	59	0.72	-0.4	-1.22	17.2
11	Dadease	F	5.5	50	5.44	0.42	-3.61	22
12	Dadease	F	11	83	0.1	-0.33	-0.81	15.7
13	Dadease	M	11.9	84	0.49	-0.17	-0.99	16.6
14	Dadease	F	9	69	0.89	-0.67	-2.61	18.5
15	Dadease	F	5.7	63	-1.6	-0.95	0.44	14.4
16	Dadease	F	5.1	53	2.47	-1.18	-3.36	18.2
17	Dadease	M	6.5	63	-0.83	-2.95	-3.88	16
18	Dadease	M	7	56	4.22	0.87	-2.56	22.3
19	Dadease	F	8	62	2.38	2.57	1.14	20.8
20	Dadease	M	7	59	2.35	-1.05	-3.9	20.1
21	Dadease	F	4	53.1	-0.16	1.08	1.2	14.2
22	Dadease	M	6.5	64	-1.26	-2.59	-2.74	15.5
23	Dadease	M	5.5	58	0.18	-2.53	-3.43	16.3
24	Dadease	F	4	55	-1.45	-1.45	-0.52	13.2
25	Dadease	F	7.5	70	-1.15	-0.92	-0.12	15
26	Dadease	M	6	60	0.02	-2.21	-3.11	16.7
27	Dadease	M	6.7	69	-2.879	-1.04	-6.17	22.9
28	Dadease	F	9	69	3.31	-1.04	-3.76	18.5
29	Dadease	M	8	62	2.08	-2.78	-7.22	20.3
30	Dadease	F	8.5	64	2.27	1.85	0.24	20.8
31	Dadease	F	7.5	64	0.98	0.86	0.27	18.3
32	Dadease	M	10.5	64	4.81	1.49	-3.62	25.6
33	Dadease	F	8	54	6.59	-0.26	-6.45	26.7

34	Dadease	F	10.5	80	0.29	-0.16	-0.75	16.1
35	Dadease	F	12	81	1.51	0.23	-1.68	18.3
36	Dadease	F	7.5	67	-0.04	-0.67	-1.12	16.7
37	Dadease	M	10	69	2.41	2.07	0.53	21
38	Dadease	F	8.5	62	2.98	1.51	-1.21	22.1
39	Dadease	M	6	65	-1.88	-1.34	0.13	14.2
40	Dadease	F	10	83	-0.99	-0.59	0.17	14.3
41	Dadease	M	10	67	2.76	-0.14	-4.4	21.8
42	Dadease	F	7.5	69	-0.86	-0.85	-0.37	15.4
43	Dadease	F	5.5	57	0.85	-0.7	-1.61	16.9
44	Dadease	M	5	49	5	0.51	-3.21	20.8
45	Dadease	F	4	52	0.58	-1.16	-1.7	14.8
46	Dadease	F	7	64	0.24	3.12	4.31	17.1
47	Dadease	F	12.5	76	2.94	0.61	-3.12	21.6
48	Dadease	M	10.5	68	2.98	0.62	-3.27	22.2
49	Dadease	F	11	85	-0.4	-0.37	-0.27	15.2
50	Dadease	F	8	59	3.7	1.7	-1.53	23
51	Effiduase	M	6	51	6.11	-1.61	-6.53	23.1
52	Effiduase	F	8.6	71.5	-0.01	-2.48	-4.47	16.8
53	Effiduase	F	9.2	57.5	5.88	-0.17	-6.78	27.2
54	Effiduase	M	11	52	15.48	0.78	-10.24	39.6
55	Effiduase	F	5.6	62	-2.25	-4.74	-5.75	14.2
56	Effiduase	F	7	60	1.55	-0.1	-1.84	19
57	Effiduase	M	6.9	59	1.81	-2.57	-5.92	19.4
58	Effiduase	F	8	75	1.84	-1.66	-4.68	19.4
59	Effiduase	M	5.4	50	5.46	-1.22	-5.37	21.6
60	Effiduase	M	10.5	66	3.69	-1.33	-6.96	24.1
61	Effiduase	F	8	64	1.41	-3.05	-6.71	19.1
62	Effiduase	M	9.6	52	12.48	-1.09	-10.89	34.6
63	Effiduase	F	5.1	53.3	2.28	2.81	1.21	18
64	Effiduase	M	6.3	55	3.65	-0.21	-3.3	20.8
65	Effiduase	M	7	56	4.22	-0.67	-4.74	22.3
66	Effiduase	M	7	55	4.97	0.23	-3.94	23.1
67	Effiduase	M	9	66	1.9	-2.33	-6.56	20.2
68	Effiduase	F	11.8	85.5	0.27	0.95	1.46	15.9
69	Effiduase	M	4.3	55	-0.66	0.18	0.61	14.2
70	Effiduase	M	7.5	75	-3.16	-2.23	0.12	13.1
71	Effiduase	F	7.9	77	-2.31	-0.56	2.59	13.1

72	Effiduase	F	4.6	57	-11.12	-0.07	0.86	14.2
73	Effiduase	F	7	52	7.06	5.43	0.26	25.9
74	Effiduase	M	9	64	2.62	-0.69	-4.75	21.5
75	Effiduase	M	10.5	81	-0.31	-1.18	-1.83	15.7
76	Effiduase	F	8	73	-1.21	-0.44	0.98	14.7
77	Effiduase	M	10	71	1.51	0.09	-2.2	19.5
78	Effiduase	M	8	50	11.88	1.73	-5.93	32
79	Effiduase	M	6	58	1.19	-3.02	-5.32	17.8
80	Effiduase	M	7	65	-0.74	-3.86	-6.08	16.2
81	Effiduase	M	8	59	3.89	2.87	0.07	23
82	Effiduase	M	7.8	70	-0.48	-0.52	-0.18	16.5
83	Effiduase	F	7.9	73	-1.35	-1.58	-1.31	14.5
84	Effiduase	F	10.1	78	0.3	-0.12	-0.72	16.3
85	Effiduase	M	2.5	47	-1.17	-3.92	-3.94	11.3
86	Effiduase	F	12.5	88	0.32	1.19	1.8	15.9
87	Effiduase	F	5	60	-1.82	-0.28	1.33	13.9
88	Effiduase	F	7.8	69	-0.42	-0.38	-0.07	16.1
89	Effiduase	F	7.5	74.5	-2.17	-0.8	1.72	13.5
90	Effiduase	M	8.2	78	-2.1	-0.21	3.09	13.2
91	Effiduase	F	9.8	73	1.21	3.19	4.65	18.4
92	Effiduase	F	6.4	63	-0.36	0.7	1.49	16.1
93	Effiduase	M	5.3	65	-3.95	-2.49	0.42	12.5
94	Effiduase	F	9.5	76	0.04	1.03	2.37	16.1
95	Effiduase	F	4.2	60	-3.82	-2.68	-0.01	11.7
96	Effiduase	M	4.1	56	-1.99	-3.91	-3.12	13.1
97	Effiduase	M	6.2	65	-1.99	-1.02	0.6	14.7
98	Effiduase	F	7.3	66	-0.01	1.75	2.92	16.8
99	Effiduase	M	5.4	54	2.61	-2.08	-4.53	18.5
100	Effiduase	M	6.5	62.5	-0.28	-1.36	-1.72	16.6
101	Effiduase	F	6.6	65	-0.78	0.97	2.48	15.6
102	Effiduase	M	7	67	-1.24	0.31	1.98	15.6
103	Effiduase	F	5.3	62.6	-2.36	1	3.67	13.5
104	Effiduase	M	4.6	57	-1.3	0.69	1.64	14.2
105	Effiduase	M	8.1	69.7	-0.38	0.37	1.27	16.7
106	Effiduase	F	10	85.3	-1.58	-0.18	1.85	13.5
107	Effiduase	M	6.6	69.3	-2.85	-0.2	3.09	13.7
108	Effiduase	F	4.2	58	-3.15	0.25	2.25	12.5
109	Effiduase	F	8.8	80	-1.74	-1.22	0.05	13.5

110	Effiduase	M	8	73	-1.58	-0.92	0.58	15
111	Effiduase	F	48	60	-2.3	0.97	3.19	13.3
112	Effiduase	M	7	67	-1.5	-3.1	-3.79	15.3
113	Effiduase	F	10.6	75	1.44	1.14	0.13	18.5
114	Effiduase	M	7.3	53.2	7.1	4.68	-0.17	25.8
115	Effiduase	F	4.5	59	-2.53	2.06	4.51	12.9
116	Effiduase	F	8.9	73.5	-0.12	-1.07	-2.09	16.2
117	Effiduase	M	7.8	67	0.1	-1.07	-1.93	17.4
118	Effiduase	F	9.8	74	0.82	-1.13	-3.37	17.6
119	Effiduase	F	6.8	64	-0.08	-1.24	-1.91	16.6
120	Effiduase	M	8	66	0.77	-0.94	-2.59	18.4
121	Effiduase	F	9.1	70	0.99	0.41	-0.68	18.2
122	Effiduase	F	8.2	64	1.66	0.01	-2.19	19.6

