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THE EFFECT OF BREAST MILK INSUFFICIENCY PERCEPTION ON EXCLUSIVE BREASTFEEDING AMONG NURSING MOTHERS AT KETU SOUTH MUNICIPAL HOSPITAL

BY

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DECLARATION

I, Vivian Afi Nutassey declare that except for references to other people's investigations which have been duly acknowledged, this dissertation is the result of my own investigation. I also declare that this work has not been presented to any other institution for the award of another degree.

…… ……

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(**Supervisor**)

DEDICATION

I dedicate this work to my lovely family for their immense contributions:

Delanyo, Woelinam, Elorm and Xorse.

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LIST OF ACRONYMS

ANC	Ante Natal Care
BFHI	Baby Friendly Hospital Initiative
BM	Breast Milk
CHPS	Community Based Health Planning and Services
CWC	Child Welfare Clinic
EBF	Exclusive Breastfeeding
FHU	Family Health Unit
GDHS	Ghana Demographic Health Survey
GSS	Ghana Statistical Service
KSMH	Ketu South Municipal Hospital
OPD	Out Patient Department
PNC	Post Natal Care
RCH	Reproductive and Child Health
UNICEF	United Nations Children's Fund
WHO	World Health Organization

ABSTRACT

Background

Inadequate breastfeeding of infants leads to poor nutrition among them, which adversely affect their development. The perception that breast milk alone is insufficient for growth and development of infants presents a major challenge to the practice of exclusive breastfeeding for six months by nursing mothers.

Objective

To assess the effect of mothers perception of insufficient breast milk as insufficient food on exclusive breast feeding among mothers of infants aged 6-12 months attending CWC in Ketu South Municipal Hospital

Methods

The study was a facility based cross-sectional design and quantitative data collection approach using structured questionnaire. Nursing mothers with infants aged 6-12 months were interviewed using structured questionnaire and a consecutive sampling technique at the Ketu South Municipal Hospital. The prevalence of exclusive breastfeeding and mothers' perception of insufficient breast milk among the nursing mothers were also determined. Descriptive statistics such as means ± SD, frequency and percentages were used to describe demographic characteristics of the study population. Logistic regression analysis was conducted to determine the association between the independent and dependent variables. Odds Ratio (OR) was calculated for each of the independent variables and statistical significance was accepted at a 5% probability level ($p \leq 0.05$).

RESULTS

Binary logistic regression models showed that the effect of mother's perception of insufficient breast milk was significantly predictive of exclusive breastfeeding ($p<0.001$).The odds of nursing mother practicing exclusive breast feeding was 5.9 times

higher among those with the view that breast milk is sufficient for EBF than those who have the insufficiency perception.

Also, the prevalence of exclusive breastfeeding practice among mothers of infants aged 6-12 months attending the CWC in Ketu South Municipal Hospital was 75%, though higher than national average of 52% was less than the expected WHO target of 80%. The level of mother's perception of insufficient breast milk was 34.5% and 73.5% of the participants had adequate knowledge of exclusive breastfeeding.

Conclusion

The study revealed a high rate of EBF practice among mothers of infants aged 6-12 months attending CWC at Ketu South Municipal Hospital, which however, was lower than the 80% target set by the WHO.

The prevalence of EBF among participant mothers with high perception of breast milk as insufficient food for EBF was lower compared to that of mothers with low perception of breast milk as insufficient food.

Additionally, though a high proportion of nursing mothers in this study have adequate knowledge about exclusive breastfeeding the proportion was lower than the 80% target set by the WHO. Finally, the high level of perception of breast milk as insufficient food for EBF among the study participants must be reduced if the country is to achieve the 80% WHO-EBF target by 2020. More education is therefore needed to change the mothers' perception about breast milk as insufficient food for the first six months of life.

CHAPTER ONE

INTRODUCTION

1.1. Background

Exclusive Breastfeeding as defined by World Health Organization (WHO) is when infants are given breast milk alone from birth to six months of age without addition of water or other foods (WHO, 2015). Exclusive Breastfeeding for six months has many benefits to both the infant and mother. To the infant, breast milk gives protection against gastrointestinal infections, thus reducing infant mortality. It is also an important source of energy and nutrients for optimum growth of the baby and creates mother and child bonding. Infants who are breastfed exclusively for not less than six months are less likely to be overweight or obese in adolescence and also perform better in intelligence tests. Some of the benefits to the mothers are early involution of the uterus, less risk of ovarian and breast cancers. Exclusive Breastfeeding for 6 months also acts as a natural method of birth control (WHO, 2016).

World Health Organization in collaboration with UNICEF have policies and guidelines to help protect, promote and support breastfeeding. Key among them is the Baby-Friendly Hospital Initiative (BFHI) which specifies the Ten Steps to Successful Breastfeeding. Some of these steps include; help mothers initiate breast feeding immediately after birth; show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants; give newborn infants no food or drink other than breast milk unless medically indicated and foster the establishment of breastfeeding support groups as well as refer mothers to them on discharge from hospital or clinic (WHO, 2011).

Despite all the benefits and the efforts to promote breastfeeding, Exclusive Breastfeeding (EBF) rates dropped drastically from 63.7 percent in 2008 to 46 percent in 2011 and 40 percent in 2017 according to the 2008 Ghana Demographic & Health Survey and 2011 and 2017 Multiple Indicator Cluster Surveys (GSS, 2011, 2018; GSS, GHS, MACRO, & ICF, 2015) This study therefore sought to evaluate mother's perception of insufficient breast milk, one of the maternal factors that make it difficult for nursing mothers to exclusively breastfeed their infants for six months before introducing complementary foods as prescribed by the World Health Organization(WHO, 2015). Maternal factors that influencing exclusive breastfeeding of babies up to six months of age include, age, parity, socio-economic status, education, mother's knowledge level of EBF and mother's perception of insufficient breast milk.

Mother's perception of insufficient breast milk is an opinion of some mothers that breast milk alone is insufficient for the growth of their babies during the period they are supposed to exclusively breastfeed their babies. Most mothers are known to start exclusive breastfeeding of their babies, but soon after, EBF practice is abandoned before the baby attains the six months recommended age. Studies have been conducted on the effects of socio-economic, cultural, health system, infant related and other maternal factors on the practice of exclusive breastfeeding (EBF) in the general but little is known about the effect of mother's perception of insufficient breast milk on EBF. This study sought to bridge the knowledge gap on the effect of breastmilk insufficiency perception and EBF.

1.2. Problem Statement

In Ghana, though 99% of infants below 6 months are breastfed, only 52% are breastfed exclusively as recommended by WHO. Seven percent (7%) receive other milk in addition

to the breast milk, 18% are given water, 4% receive other liquids and 19% are given solid or mushed foods (GSS, 2011, 2018; GSS et al., 2015). Anecdotal evidence suggests that majority of mothers who start EBF and are not able to complete is due to the general perception that breast milk alone is insufficient to exclusively breastfeed babies for 6 months. The low rate of EBF was attributed to challenges such as the misconceptions about exclusive breastfeeding which compel some of these mothers to introduce food supplements during the ages of 0 – 6 months of their babies when they are supposed to be observing EBF (GhanaWeb, 2014). This study therefore sought to answer the question "What is the effect of mother's perception of insufficient breast milk on exclusive breastfeeding of newborns for first 6 months by nursing mothers attending Ketu South Municipal Hospital?

Breastfeeding of infants continuously for two years or more with the first six months being exclusively on breast milk gives the child a good start of life. Throughout the world, in developed and developing countries alike, inappropriate feeding of infants leading to their poor nutrition is a significant problem affecting socio- economic progress of nations in general. Also, it has been established that breastfeeding has short and long-term benefits for infants, mothers, environment, economy and the entire society, especially, in developing countries, such that infants exclusively breastfed for six months present fewer infectious episodes of Acute Respiratory Infections, acute otitis media and gastroenteritis than their partially breast fed or non-breastfed peers (Nafee Elsayed & Al-Dossary, 2016).

Nursing mothers who deliver in almost all the Public health facilities within the Ketu South Municipality are discharged exclusively breastfeeding but soon after, this practice is abandoned before the baby attains the six months recommended age for EBF by WHO. Personal interactions with some of these mothers revealed their belief that breast milk alone

is insufficient for their babies' growth within the period and therefore need additional feeds. A number of studies have been conducted on the influence of nursing mother's profession, income, education etc. on exclusive breastfeeding, but not much has been done on the perception of mothers that breast milk alone is insufficient to exclusively breastfeed for six months. This study therefore sought to measure the effect of mother's perception of insufficient breast milk on Exclusive Breastfeeding among nursing mothers attending the Child Welfare Clinic (CWC) at the Ketu South municipal hospital.

1.3. Justification

The perception that breast milk alone is insufficient for exclusive breastfeeding of newborns to be exclusively breastfed for six months is a challenge that denies infants of the full benefits of breastfeeding. The early introduction of other feeds before the recommended period, have debilitating effects on infants leading to high infant morbidity and mortality. However, successful breastfeeding can be achieved by addressing some factors which are maternal, infant, health facility support and cultural beliefs that influence breast feeding.

The findings of the study will fill the knowledge gap of what the mothers attending the CWC at the Ketu South Municipal hospital are expected to know about EBF. It will also help to improve upon the health promotional messages to mothers at ANC, Delivery and at Post Natal Care (PNC). These will consequently increase the rate of EBF prevalence in the Municipality and enable both mother and child enjoy the full benefits of EBF.

1.4. Study Objectives

1.4.1. General Objective

To assess the effect of mothers' perception of breast milk as insufficient food for exclusive breast feeding by nursing mothers with infants aged 6-12 months attending CWC in Ketu South Municipal Hospital (KSMH).

1.4.2. Specific objectives

1. To determine the proportion of mothers with infants aged 6-12 months who practiced Exclusive Breast Feeding at the KSMH.
2. To determine the level of mothers' perception of breast milk as insufficient food for EBF among nursing mothers at KSMH.
3. To assess maternal knowledge about EBF among nursing mothers attending CWC at Ketu KSMH.
4. To assess the effect of mothers' perception of breast milk as insufficient food on EBF among mothers at the CWC at Ketu South Municipal Hospital.

1.5. Research questions

1. What is the proportion of mothers of infants aged 6-12 months in Ketu South Municipal Hospital who practice Exclusive Breastfeeding?
2. What is the level of mothers' perception of insufficient breast milk among CWC attendants in Ketu South Municipal Hospital?
3. What is the level of maternal knowledge on Exclusive Breastfeeding in Ketu South Municipal Hospital?
4. What is the effect mother's perception of insufficient breast milk on EBF of infants aged 6-12 months by their mothers in Ketu South Municipal Hospital

1.6. Explanation of conceptual framework

Figure 1 illustrates self-designed conceptual framework of maternal and other factors that influence the practice of exclusive breastfeeding by mothers for the first six months of their infants' lives.

Studies have shown that age significantly influences the willingness of nursing mother to do exclusive breastfeeding. Young mothers or adolescents tend not to breastfeed as some feel embarrassed feeding in public places, or fear that breastfeeding for a long time might lead to sagging or distortion of the breasts. Samayam and Krishna (2017), have investigated the effects of maternal age and parity on EBF practice and indicated that the success rates of EBF initiation both at discharge and at one month after delivery were the lowest in primiparous mothers aged 35 years or older and maternal age and parity have combined effect on EBF initiation.

A study conducted on the knowledge and practice of exclusive breastfeeding among mothers in the Tamale metropolis of Ghana associated low maternal education to the risk of EBF (Nukpezah, Nuvor, & Ninnoni, 2018). Maternal education level has long been associated with child feeding practices (Adnan & Muniandy, 2012). Higher education of women enables them to access more information on the benefits of exclusive breastfeeding for at least, six months which could make them more receptive to its practice.

The influence of mother's income on EBF has been mixed. While some studies indicated that women with a higher family income level were more likely to exclusively breastfeed their infants than their lower income counterparts (Health & Services, 2011), inversely, other studies found that higher family income was associated with a reduced probability of initiation and duration of breastfeeding (UNICEF, 2010). Non-maternal factors that equally influence EBF rate include knowledge and skills of health staff about breastfeeding, home visits by nurses, Mother Support Groups in the communities etc. Socio-cultural beliefs and perceptions such as "EBF for six months interfere with the infants acceptance to complimentary feeds (Aryeetey & Goh, 2013).

Some mothers have this general perception that breast milk alone is insufficient to exclusively breastfeed their babies for 6 months (GhanaWeb, 2014). As a result they are compelled to introduce other milk in addition to the breast milk, water, and other liquids and give solid or mushed foods their babies, and the coverage of EBF remains sub-optimal. This current study sought to evaluate this perception on EBF among mothers attending CWC in Ketu South Municipal Hospital.

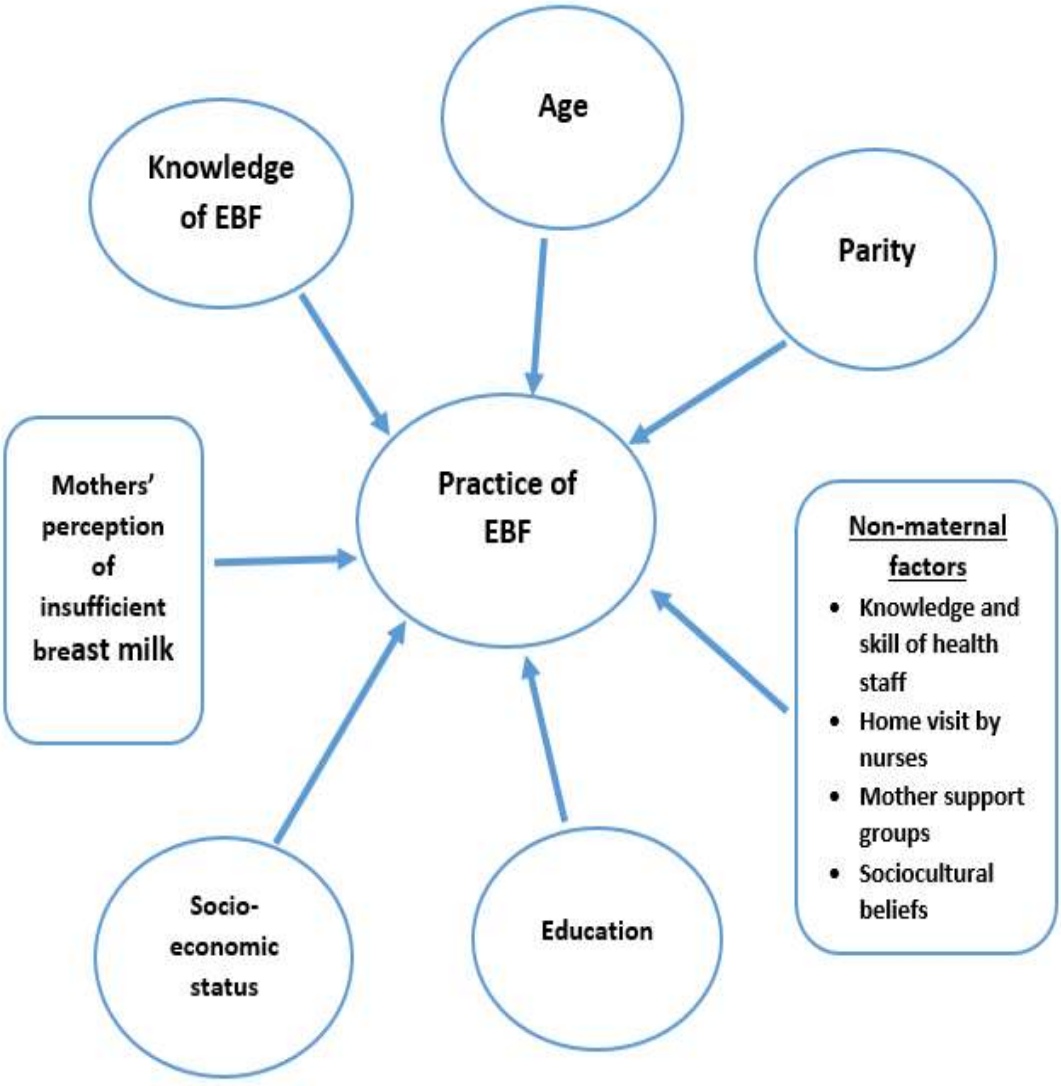

Figure 1: Self-designed Conceptual framework showing maternal and other factors that influence the rate of exclusive breastfeeding.

CHAPTER TWO

LITERATURE REVIEW

2.1. Definition of Breastfeeding

Breastfeeding according to WHO is the normal way of providing young infants with the nutrients they need for healthy growth and development, using milk produced from the mother's mammary glands. Establishing good breastfeeding practices in the first day after birth is critical in successful breastfeeding. This can be achieved if mother is physically and psychologically prepared for birth, is informed, supported and confident that she can exclusively breastfeed for six months and thereafter for two years or more(Chaudhary, Shah, & Raja, 2011). The Innocenti Declaration of August, 1990, in Florence, Italy, presents breastfeeding as a global goal for optimal maternal and child health nutrition and that all women should be enabled to practice exclusive breastfeeding and all infants should be fed exclusively on the breast milk from birth to six months of age(Joshi et al., 2014).

2.2. Exclusive Breastfeeding

Exclusive Breastfeeding (EBF) as defined by World Health Organization (WHO) is the feeding of infants on breast milk alone from birth to six months without the addition of water or other foods, be it solid or liquid (WHO, 2015). The health of the newborn depends on the feeding practice adopted by the mother and family. Exclusive Breast Feeding for the first six months is the optimal and if continued for two years or more, gives the child a good start of life. Throughout the world, in developed and developing countries alike, inappropriate feeding leading to poor infant nutrition is a significant problem affecting socio- economic progress in general (Joshi et al., 2014).

2.3 Benefits of Exclusive Breastfeeding

Breastfeeding continues to serve as an appropriate method through which newborns are offered essential nutrients necessary for optimal growth and intellectual development. Breast milk is regarded as a perfect, natural and protective food for newborns. Exclusive breastfeeding helps reduce mortality and morbidity which significantly improve public health (Brülde & Dawson, 2011). In a study byVennemann et al. (2009), breastfeeding was found to be protective against sudden infant death syndrome by reducing the risk by 50% at all ages during infancy; this benefit has been reported to exhibit dose-response relationship, where health gained increases with increase in duration and exclusivity.

Infants when exclusively breastfed for the optimal duration of six months are significantly protected against the major childhood disease conditions such as diarrhoea, gastrointestinal tract infection, allergic diseases, diabetes, obesity, childhood leukemia and lymphoma, inflammatory and bowel disease (Eidelman, 2012). Brülde and Dawson (2011), also reported that the risk of hospitalization for lower respiratory tract infections during the first year of life of infants is reduced by 72% when they are exclusively breastfed.

Finally, EBF is regarded as imperative for infants' survival. The WHO reported that out of the 6.9 million under five children who were reported dead globally in 2011, an estimated 1 million lives could have been saved by practices including exclusive breastfeeding (Eidelman, 2012). Consequently, the WHO and UNICEF in 1990 have recommended exclusive breastfeeding for six months, followed by introduction of complementary foods and continued breastfeeding for 24 months or more(WHO, 2015)

2.4 Importance of colostrum to the baby

Colostrum is the first milk for a baby during the first seventy-two hours of life. It contains immune and growth factors which help in the development of immunity in the newborn. These growth factors act as natural anti-microbial agents to actively stimulate the maturation of the baby's immune system ((Uruakpa Ismond and Akobundu, 2002; Kumar et al 2016). In addition to immune support provision, it has a significant muscular and skeletal repair and growth factors that are essential for muscle and cartilage repair (Uruakpa Ismond and Akobundu, 2002; Kumar et al 2016). Furthermore, colostrum growth factors aid in wound healing with practical effects on the healing of the umbilical cord after detachment from the mother (Uruakpa Ismond and Akobundu, 2002; Kumar et al 2016). Finally, colostrum growth factors have multiple regenerative effects that extend to all structural body cells, such as the gut and also help in reducing inflammation and illness in a baby..

2.5 Exclusive breastfeeding in the developing world

In recognition of the essential role of exclusive breastfeeding in the health and growth of children, a lot of effort has gone into scaling up the rates in developing countries where incidence of child malnutrition and mortality is still high. The successes in increasing the levels of EBF have rather been modest. In an analysis of data on EBF from 38 developing countries between 1990 and 2000, Labbok, Wardlaw, Blanc, Clark, and Terreri (2006) reported an increase EBF rate from 46% to 53% among infants younger than 4 months and from 34% to 39% for those younger than 6 months. Higher increment is often found in urban areas (30% to 46%) than rural ones (42% to 48%). Although there were increases in all the regions studied, the Middle East and North Africa (29% to 34%), South Asia (49% to 56%), East Asia/Pacific (57% to 65%); the most significant increment, however, was found in Sub Saharan Africa where the rate doubled from 18% in 1990 to 38% in the year 2000.

2.6. Factors influencing the practice of Exclusive Breastfeeding

Determinants of EBF are the factors or conditions that could lead to changes in the practice, encourage or impede successful implementation of EBF. The extent to which these determinants or factors affect EBF is fairly complex and varies from one country to another and/or between different groups in the same country (Monebenimp et al., 2013) Some are biological and beyond women's control such as breast engorgement and nipple problems while others are combinations of economic, environmental, cultural and social. Variables and factors that may influence successful initiation and continuation are different and include the social and demographic background of the mother, individual characteristics, insufficient milk supply, infant and maternal health problems, parity, method of delivery, maternal interest towards breastfeeding and previous lactation experience(Nafee Elsayed & Al-Dossary, 2016)

Factors affecting exclusive breastfeeding among Women in Muheza District Tanga was investigated in Northeastern Tanzania, The results showed that the prevalence of exclusive breast feeding was 24.1%. The perception that mothers' breast milk is insufficient for child's growth, child being thirsty and the need to introduce herbal medicine for cultural purposes were among the important factors for early mixed feeding. The results further revealed that advanced maternal age (OR 2.6; 95 % CI 1.18-5.59) and knowledge on EBF duration and advantages (OR 2.2; 95 % CI 1.2-3.8) remained significantly associated with Exclusive Brestfeeding (Mgongo, Mosha, Uriyo, Msuya, & Stray-Pedersen, 2013)

Another study conducted in Ibadan, Nigeria revealed that older mothers aged 35-49 years and women with good knowledge on Exclusive Breastfeeding had higher prevalence of EBF practice. This study also showed that the nursing mothers had a strong belief that breast milk

alone for the first 6 months of infant life was not enough for child growth (Nkala & Msuya, 2011).

Furthermore, a study conducted among nursing mothers in India, also revealed that nursing mothers with good knowledge about the required duration and advantages of EBF had increased odds of practicing EBF of infants compared to those with low knowledge(Shirima, Greiner, Kylberg, & Gebre-Medhin, 2001).

The findings of these studies are indications that, innovative strategies to increase women's awareness and knowledge on exclusive breastfeeding in general are needed outside the usual facility channel. One effective strategy that can be considered would be the use of EBF promotion peer counselors in a community or forming women's groups to educate the nursing mothers on the importance of exclusive breastfeeding.

2.6.1 Demographic Factors

One significant demographic characteristic that influences exclusive breastfeeding in infants is maternal age. Most studies have found significant association with EBF among young mothers than older nursing mothers (Monebenimp et al., 2013). However, other findings also had a contrary view that showed that maternal age was not associated with EBF practice (Nafee Elsayed & Al-Dossary, 2016).Therefore more effort should be targeted to both young and older mothers during intervention to promote EBF. Other socio demographic characteristics such as marital status and maternal level of education have also shown association with EBF practice in Tanzania, Uganda and Norway(Aarts et al., 2000).

A study by Pérez-Escamilla and Bermúdez (2012) also revealed that planning on EBF

duration, maternal unemployment, hospital delivery facilities that had breastfeeding promotion services were positively associated with Exclusive breast feeding in three Latin American countries. A similar study to assess factors associated with EBF in Accra, Ghana, by Aidam, Perez-Escamilla, Lartey, and Aidam (2005), reported delivery at hospital/polyclinic, prior intention or planned EBF at birth, higher education, socioeconomic status, and positive attitudes towards EBF as the most essential support factors for exclusive breastfeeding.

2.6.2 Cultural Factors

It is important to realize that not all traditional beliefs and practices are harmful to exclusive breast feeding. While some religious and cultural beliefs about breastfeeding seem entrenched, important family actors and religious leaders if properly educated about EBF could be used to modify and/or discourage such practices that involve feeding newborns with herbal teas and ritual concoctions. One of the cultural believes about breastfeeding among nursing mothers is the belief that a drop of breast milk on a baby's penis will lead to impotency if it happens before the baby's seven birth day(Aborigo et al., 2012).

2.6.3 Perceived Insufficiency of Breast Milk as complete food

The perception of the inability to produce adequate amounts of breast milk especially in the case of multiple births is a major challenge in the quest to improve EBF rates. Some mothers find it difficult to believe that it is possible for their babies to survive on only breast milk in the first 6 months of life without supplementing it with any other food or drink including water. Persistent crying of the babies even after they have been breastfed usually suggests to them that the babies are still hungry (Ukegbu, Ukegbu, Onyeonoro, & Ubajaka, 2011). This perception of breast milk insufficiency which could frustrate the mother or caregiver

and even other members of the family is likely to contribute to early breastfeeding cessation or shorter EBF duration (Fjeld et al., 2008) A study among peri urban women in Ghana to identify perceived incentives and barriers to exclusive breastfeeding reported that perceived milk insufficiency was one of the main factors preventing the achievement of optimum EBF rates (Otoo, Lartey, & Pérez-Escamilla, 2009). In a related study in nearby Nigeria, results of focus group discussions among women with infants between one and six months revealed that many of the participants reported inadequate production of breast milk as a justification for introducing other complementary foods (Ukegbu et al., 2011).

2.7 Mother's perception of insufficient breast milk

Over the last couple of decades, there has been an increasing interest in the promotion of EBF as the best feeding method for newborns. This, to a large extent, has been inspired by mounting scientific evidence on the importance of exclusive breastfeeding in reducing infant morbidity and mortality (Sokol, Clark, & Aguayo, 2008). However, efforts to promote EBF to save the lives of millions of children all over the world have not been smooth. In Ghana, EBF rates dropped drastically from 63.7 percent in 2008 to 46 percent in 2011 and continue to drop to 40 percent in 2017(GSS, 2011, 2018; G. GSS, MACRO, ICF, 2009). A lot of factors have been associated with generally low rate of EBF as explained in Section 2.5. In a research to examine the perceived incentives and barriers to EBF among peri-urban Ghanaian women, Otoo et al. (2009) found that supposed milk insufficiency, family pressure, breast and nipple problems, and maternal employment were the factors that were serving as barriers to Exclusive Breastfeeding. The impact of mother's perception of insufficient breast milk and others on EBF though has been studied by some researchers but has not received much attention like other challenges (Mnyani et al., 2016; Radwan & Sapsford, 2016; Zvinavashe, Haruzivishe, & Ndaimani). Anecdotal evidence has

shown that the impact of these perceptions on EBF have been enormous. Gatti (2008), found that a lot of women discontinue breastfeeding during the first few weeks of the post- partum period because of perception of insufficient breast milk and approximately 35% of all women who wean early report insufficient breast milk as the primary reason. Schluter, Carter, and Percival (2006) Indicated in their study that the rates of perceived insufficient breastmilk was 30 percent among women who wean their babies early.

CHAPTER THREE

METHODOLOGY

3.1 Study Design

The research was a facility based cross sectional study that employed quantitative techniques to determine the effect of mother's perception of insufficient breast milk on exclusive breastfeeding of mothers of infants aged 6-12 months attending CWC at Ketu South Municipal Hospital.

3.2 Study Location/Area

The study was conducted at the Ketu South Municipal Hospital in the Volta Region of Ghana. Ketu South Municipality is one of the 25 Administrative districts in the Volta Region. It is located on 6º 03 - 6º 10 North and longitude 1º 6 - 1º 11 East in the South-Eastern part of Ghana and shares boundaries with the Republic of Togo on the East, Ketu North on the North-West, Keta in the South-West and the Gulf of Guinea (Atlantic Ocean) in the South.

The municipality is sub divided into six sub-municipalities with 28 health facilities comprising CHPS zones, Health Centres, private hospitals and clinics and one public hospital known as the Ketu South Municipal Hospital (KSMH) which is located in Aflao. There are about 229 communities in the municipality with an estimated population of 189,213 projected from 2010 Population census with a population growth rate of 2.5% per anum (GSS, 2010). The Ketu South Municipal Hospital is a 112 bed hospital with an average monthly Out Patient attendance of 800 patients. The facility has a Medical Superintendent as the head supported by other core managers with 5 medical officers and 70 nurses and other paramedical staff. The hospital has the following departments; Out Patient Department

(OPD), Maternity, Family Health Unit (FHU), Eye Department, In-patient, laundry and Mortuary

3.3 Study population

The study population was nursing mothers attending Child Welfare Clinic (CWC) at the Ketu Municipal hospital within the study period.

3.3.1. Inclusion criteria

Mothers with infants from 6 months to 12 months and were attending the Child Welfare Clinic

3.3.2 Exclusion criteria

Mothers with infants below 6 months and mothers with infants above 12 months

3.4 Sampling

3.4.1. Sample Size Determination

A minimum sample size of 384 was derived using the Cochran's formula

$$n = \frac{Z_{\alpha/2}{}^2 \, P \, (1-P)}{d^2}$$

Where:

- $Z_{\alpha/2}$ = Z-score at 5% significance level=1.96
- P= prevalence of exclusive breastfeeding= 52% (National EBF Prevalence)
- D= margin of error =5%

With 10% non-response rate making the total sample size of 422

3.4.2. Sampling Procedure

Every week, an average of 200 nursing mothers attended the CWC at the Family Health Unit of the hospital. A total of 4 weeks was used for the data collection. Consecutive sampling approach was adopted. This sampling procedure was very similar to convenience sampling except that it seeks to include all accessible subjects as part of the sample. Due to challenges associated with getting a reliable sampling frame, this non-probability sampling technique has been be considered as the best for this study because it included all mothers of infants aged 6-12 months attending CWC in Ketu South Municipal Hospital which makes the sample a better representation of the entire population. Where a mother did not give consent, the next available mother who fall within the inclusion criteria was selected. This technique was used to recruit 20 participants per day on the average with a total of 411 participants recruited at the end of the 4 consecutive weeks. . Although 422 questionnaires were administered data from 411 were reliable for analysis making a turn out rate of 97.3%

3.5 Variables

3.5.1. Dependent variable

The dependent variable of the study was exclusive breastfeeding (EBF). Exclusive breastfeeding means babies are given only breast milk and nothing else: no other milk, food, drink, not even water for the first six (6) months after birth. This variable has a binary measurement i.e. whether a mother exclusively fed the baby or not (Yes=1 or No=0).

3.5.2. Independent variables

The measurement of the level of mother's perception of insufficient breast milk was based on a likert scale scoring from 0 to 4, of a statement "Breast milk alone is insufficient for the child during the first six months" with the responses Strongly Disagree = 0, Disagree = 1,

Don't know = 2, Agree = 3, and Strongly Agree = 4. A mother who scored zero (0) has very low perception of insufficient breast milk whiles a mother who scored 4 has a very high perception of insufficient breast milk.

Knowledge level of mothers on EBF was considered as secondary independent variable which was measured by asking four questions which included: (a) "What is the recommended infant feeding practice during the first 6 months?" (b) "In breastfeeding, one breast should be emptied before offering the second breast" (c) "Did you breastfeed baby with first yellow milk (colostrum)?" (d) "During the first three days after delivery, before milk started flowing regularly was baby given anything to drink other than breastmilk?". An incorrect response was scored zero (0) and a correct response was scored (1). The responses to the four (4) questions by each mother was combined to form a composite scores which was used to determine the knowledge level of the mothers on EBF. Other independent variables measured were participants age in years, sex, income, education, educational level of husband were taken, and distance to health facility.

3.6 Data collection Methods and tools

Face-to-face interview using a structured questionnaire was used to collect data from the nursing mothers. Their demographic information comprising age, sex, income, education, educational level of husband were taken. Data were also collected on mothers' knowledge of exclusive breast feeding, their perception and barriers to EBF as well as other food types the infants were fed on apart from breast milk.

3.7 Quality control

Quality assurance procedures and precautions were used to ensure the reliability and validity of the data. The questionnaire was pre-tested at Klikor Health Centre which has similar facility and service characteristics as the in Ketu South Municipal Hospital. .Research assistants with public health background were recruited and given adequate training. The content of the training involved; the purpose and objectives of the study, data collection techniques and tools to be used, translation of questionnaires into various local languages, data collection ethical guidelines. The principal investigator was part of the research team during the interviews to ensure that relevant information in line with the objectives of the study was collected. The questionnaires were checked for mistakes and completeness before final entry into appropriate software for statistical analysis. Errors and omissions detected were discussed with the respective Research Assistants and corrected appropriately.

3.8 Data Processing

The questionnaire was used to develop a data entry form in Microsoft excel spreadsheet windows 10. Items of each questionnaire were entered into the form. Random frequencies were run for some of the variables to check for errors and outliers. The identified errors were corrected and outliers were investigated to determine their accuracy or not. No outlier was found that required that the data element be dropped. Data was finally imported onto STATA software version 15 for statistical analysis.

3.9 Data Analysis

Basic descriptive statistics were run and the results were presented using tables depicting frequencies, and percentages on maternal age, parity, and marital status, level of education, occupation, religion, and distance from health facility.

Proportion of mothers with infants aged 6-12 months in Ketu South Municipal Hospital who practiced Exclusive Breast Feeding was calculated as "number of mothers with infants aged 6-12 months attending CWC at Ketu South Municipal Hospital interviewed who practiced EBF, divided by the total number of mothers with infants aged 6-12 months attending CWC at Ketu South Municipal Hospital interviewed". This can be expressed mathematically as:

$$\% \text{ of mothers who practice EBF} = \frac{\text{number of mothers with infants aged 6–12 interviewed who practice EBF}}{\textit{total number of mothers of infants aged 6–12 months interviwed}} \text{ x } 100\ \%$$

The mother's perception of insufficient breast milk level was determined by the response category she chose as explained in Section 3.3.3. A mother who scored zero (0) has a very low perception of insufficient breast milk whiles a mother who scored 4 has a very high perception of insufficient breast milk.

In order to assess maternal knowledge of EBF among mothers with infants aged 6-12 months attending CWC at Ketu South Municipal Hospital, the composite scores generated from the 4 knowledge questions as explained in section 3.3.3 were re-categorized with Zero (0) score indicating no knowledge, a score of 1 or 2 indicating moderate knowledge and a score of 3 or 4 indicating high knowledge.

To assess the effect of the levels of mother's perception of insufficient breast milk on EBF, two levels of analysis were performed. With the first level, Bi-variate analysis - Chi-square test of independence was used to test for association between the categorical independent variables which are mother's perception of insufficient breast milk, knowledge of EB, age, parity, education, place of delivery, income and the dependent variable (EBF). Binary logistic regression was used to assess the effect of mother's perception of insufficient breast milk on EBF. Adjusted and crude Odds Ratio (OR) with their confidence interval for the

independent variable were reported. All statistical tests of association were done at 5% significance level.

3.10 Ethical considerations

3. 10.1. Ethical clearance and other permissions sought

Ethical clearance was obtained from the Ghana Health Service Ethical Review Board. Permission was sought from the Ketu South Municipal Health Directorate and informed consent was also sought from the participants before the study was carried out. The principal investigator visited the study area personally to notify the management of the Municipal hospital about the intention to conduct the study. An introductory letter was obtained from the Head of Department, School of Public Health, College of Health Science and University of Ghana and sent to the head of the hospital for permission to conduct the study. Subsequently, a copy of the approval letter from the Ghana Health Service Ethical Review Committee was submitted to each of the respective authorities for consideration.

3.10.2. Privacy and confidentiality

In order to ensure privacy and confidentiality, the questionnaires were coded and names of the respondents were not required in filling out the questionnaire. The interviews were conducted in an isolated area with individual respondents alone so as to guarantee their privacy. Participants' names were also not mentioned in the report of the study and information gathered on participants were being kept strictly confidential between the principal investigator and the study participants.

3.10.3. Compensation

Study participants were not given any compensation for participating in the study. This was made known to them before they chose to take part in the study. However, participants were given refreshment or snacks after administering the questionnaires.

3.10.4. Risks and Benefits

The study did not involve invasive risks. However, the questions were slightly time consuming, some of them, such as questions about age and marital status were intrusive and might cause uneasiness and some minimal loss of confidentiality**.** Participants did not gain any direct benefits. However, it was expected that the results of the study would contribute towards health policy on exclusive breastfeeding that would be beneficial to both the study participants and the nation at large in the near future**.**

3.10.5. Voluntary withdrawal

Participation in the study was entirely voluntary and participants could choose not to answer any individual question or all the questions. Participants were at liberty to withdraw from the study at any point in time. However, participants were admonished and encouraged to fully participate to ensure that findings of the study were a true reflection of the factors under investigation in the study area. In the event of any withdrawal by a participant, all data gathered on the participant were deleted and destroyed.

3.10.6. Informed Consent and Consenting process

Informed consent was obtained from participants before commencement of the study. Respondents of the study were approached individually to explain the objectives of the study to them and their consent sought. The decision to take part in the study was absolutely

voluntary and refusal to take part did not affect the relationship between the participant(s) and the researcher. In addition, respondents were made to sign a written consent form after a detailed explanation of the study to them before commencement of the study.

3.10.7. Data storage and usage

Data collected in this study were strictly for research purposes. They were be stored with passwords on electronic media and safely locked boxes. Anonymity was ensured in dissemination of findings from this study since participants were not identified by their names.

3.10.8. Declaration of conflict of interest

The researcher as the principal investigator hereby declared no conflict of interest in this study.

3.10.9. Funding of the study

This study was in partial fulfillment of requirements for the award of a Master of Public Health (MPH) degree at the School of Public Health, College of Health Sciences, University of Ghana, Legon. There was no funding from any other source apart from the principal investigator.

CHAPTER FOUR

RESULTS

4.1. Background Characteristics of Study Participants

Table 1 below, summarizes the socio-demographic characteristics of the nursing mothers who were recruited in the study to assess the effect of mother's perception of insufficient breast milk on exclusive breastfeeding of infants aged 6-12 months in the Ketu South Municipal Hospital. Of the four hundred and eleven (411) breastfeeding mothers who participated in the study, majority were within the ages of 20-29 years 181(44.04%), and nursing mothers aged 40 to 49 years represented the least participating age group (6.81%, 28/411). Most of the participants had some formal education 378 (91.7%) with only few (8.03%, 33/411) of them not having any formal education. About thirty nine percent (39.17%, 161/411) of them had were educated up to the primary level. Majority of the participants (82.64%, n=338) were Christians followed by traditionalist (11.49%, 338/411) and then Muslims (4.65%, 19/411).

Furthermore, 397 nursing mothers representing 96.83% were married. Majority of them (79.81%) were self-employed, 58(14.11%) were unemployed 19(4.62%) of participants were government employees and the minority (1.46% n=6) were employed in the private sector. Those with monthly income below GHC 1000 represented 85.40% of the respondents.

Table 1: Background Characteristics of Study Participants

Characteristics	Frequency(N)	Percentage(%)
Age		
Below 20yrs	47	11.44
20-29yrs	181	44.04
30-39yrs	155	37.71
40-49yrs	28	6.81
Education		
None	33	8.03
Primary	161	39.17
JHS/MSLC	151	36.74
SHS/Vocational	54	13.14
Tertiary	12	2.94
Religion		
Christian	338	82.64
Muslim	19	4.65
Traditional	47	11.49
Others	5	1.22
Marital Status		
Unmarried	14	3.41
Married	397	96.83
Employment		
Unemployed	58	14.11
Government Employee	19	4.62
Self employed	328	79.81
Parity		
None	49	11.92
One	102	24.82
Two	79	19.22
Three or more	181	18.49
Income Level		
Below GHC 1000	351	85.40
GHC 1000 and above	60	14.60

4.2. Prevalence of Exclusive Breastfeeding and Breastfeeding Practices

4.2.1. Prevalence of Exclusive Breastfeeding

Among the four hundred and eleven (411) nursing mothers who participated in the study, three hundred and nine (309) of them representing 75% [95% CI = 70.76 - 79.14%] practiced exclusive breastfeeding as shown in Figure 1

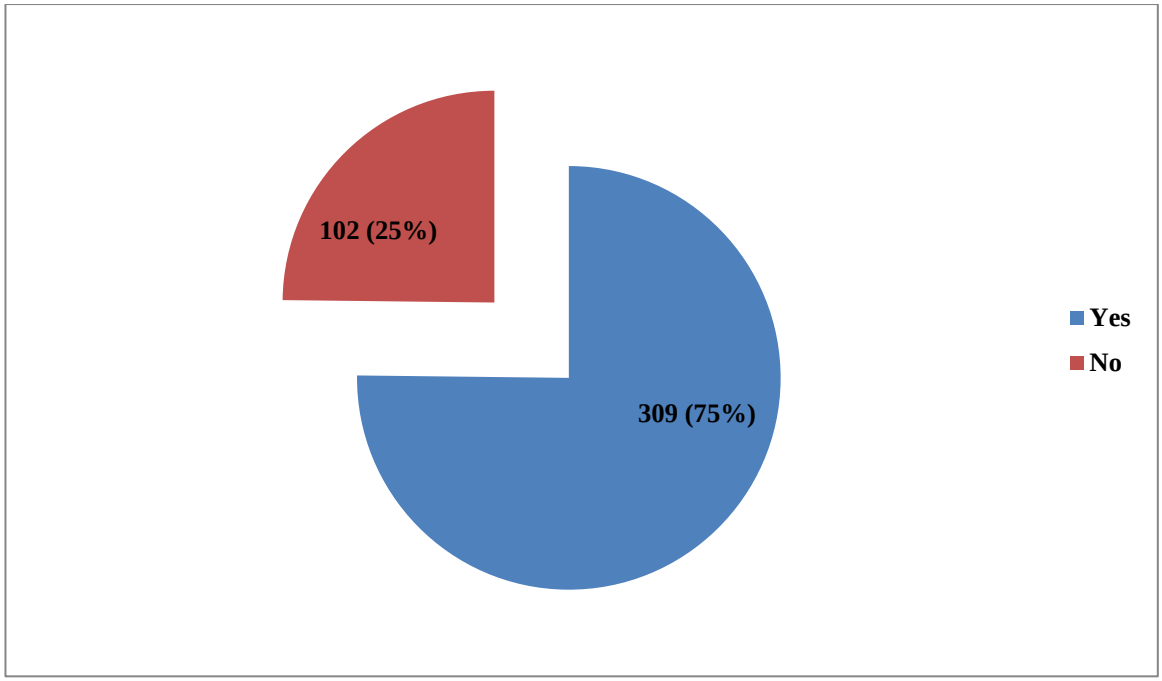

Figure 2: Prevalence of Exclusive Breastfeeding

4.2.2. Breast feeding practices adopted by nursing mothers surveyed in the study

Table 2 presents the breast feeding practices adopted by nursing mothers in the KSMH. After delivery, most mothers reported to have started breastfeeding their children within an hour from birth (72.5%, n=298). Majority (93.9%) also reported that they fed their babies with colostrum. However, about two of every ten (18.5%, n=76) selected mothers gave their children other foods in the first three days after delivery. Some of the other foods given were water, koko, and tea. Generally, mothers breast fed their child as often as the children wanted (99.0%, n=407) but expressing breast milk to feed children was the practice of about just a quarter of the mothers (26.3%, n=108).

With regards to feeding pattern of nursing mothers studied, about nine in every ten (86%, n=355) selected nursing mothers fed their babies with one breast until empty before offering the other breast.

Table 2: Breast feeding practices adopted by nursing mothers

	Frequency	Percentage
Time interval between delivery and first breast feeding (hours)		
Within one hour	298	72.51
Day one	107	26.03
Day two	1	0.24
Day three	3	0.73
Day four and above	2	0.49
Feed child with Colostrum		
Yes	387	93.92
No	24	6.08
Gave child another food in first 3 days after delivery		
No	335	81.51
Yes	76	18.49
Other food given to child[a]		
Water	62	81.58
Tea	2	2.63
Koko	12	15.79
Times baby was breast fed		
as often as child wants	407	99.03
during the day and at night	4	0.97
Ever express breast milk to feed baby		
No	303	73.72
Yes	108	26.28
One Breast should be emptied before offering the second breast		
Yes	355	86.37
No	56	13.63

a: For only those who fed their children with other foods in the first 3 days after delivery.

4.3. Level of mother's perception of insufficient breast milk among CWC attendants at KSMH

In assessment of the level of mother's perception of insufficient breast milk as a reason for not practicing exclusive breast feeding (Table 3), majority (64.5%, n=265) of the mothers disagreed to the view that breast milk was insufficient for EBF of the infants and therefore has low perception of the notion that breast milk was insufficient for the child during the six months of exclusive breast feeding.

Table 3: Level Mother's perception of insufficient breast milk

	Frequency	Percent
Mother's perception of insufficient breast milk		
Low perception of insufficient breast milk	265	64.48
High perception of insufficient breast milk	146	35.52

4.4. Maternal knowledge about EBF among CWC attendants in KSMH

Table 4 below, summarizes the results of the assessment of the level of knowledge of the nursing mothers about exclusive breast feeding.

In all, the average knowledge score on EBF was 2.18 (± 0.63). Additionally, the results show that more than two-thirds (73.48%, n=302) of nursing mothers had adequate knowledge about EBF.

Table 4: Knowledge Level of Mothers on EBF

	Frequency	Percent
Knowledge level		
Mean ± SD	2.18 ± 0.63	
Inadequate	109	26.52
Adequate	302	73.48

SD: Standard Deviation

4.5. Maternal and Non-maternal Characteristics distribution by Exclusive Breastfeeding status

4.5.1. Maternal Characteristics by Exclusive Breast Feeding status

Women within the age range of 40-49 years had the highest number of mothers practicing exclusive breastfeeding. This was followed by 20-29 years and then 30-39 years. Mothers below the ages of 20 years had the least proportion of exclusive breastfeeding.

Educational level of mothers showed almost direct pattern with proportion of exclusive breast feeding mothers. As level of education increased, the proportion of exclusive

breastfeeding also increased except at the tertiary level where 50% of women practiced EBF and the other half did not.

Regarding religion, the proportion of Muslim mothers who practiced EBF was about 79.0%, Christians 76.6% while those of other religions recorded 80.0% of Exclusive breastfeeding whilst those belonging to the traditional religion performed it least with reference to Christians. Furthermore, for employment status of mothers, Government employees performed exclusive breast feeding the most. Details distribution of Maternal Characteristics by Exclusive Breast Feeding status are shown in Table 5. Additionally, the results show that the prevalence of EBF among study participants with high mother's perception of insufficient milk was 56.85% and 85.28% among participants with low mother's perception of insufficient milk.

Table 5: Maternal Characteristics by Exclusive Breast Feeding status

	Exclusive Breast Feeding	
	No	**Yes**
Age		
Below 20yrs	13(27.66)	34(72.34)
20-29yrs	24(13.26)	157(86.74)
30-39yrs	45(29.03)	110(70.97)
40-49yrs	20(71.43)	8(28.57)
Education		
none	11(33.33)	22(66.67)
primary	43(26.71)	118(73.29)
JHS/MSLC	31(20.53)	120(79.47)
SHS/Vocational	11(20.37)	43(79.63)
Tertiary	6(50)	6(50)
Religion		
Christian	79(23.37)	259(76.63)
Muslim	4(21.05)	15(78.95)
traditional	17(36.17)	30(63.83)
others	1(20)	4(80)
Marital Status		
unmarried	4(28.57)	10(71.43)
Married	98(24.69)	299(75.31)
Employment		
Unemployed	16(27.59)	42(72.41)
Government Employee	4(16)	21(84)
Self employed	82(25)	246(75)
Parity		
None	15(30.61)	34(69.39)
One	14(13.73)	88(86.27)
Two	8(10.13)	71(89.87)
>=3	65(35.91)	116(64.09)
Knowledge level		
Inadequate	60(55.05)	49(44.95)
Adequate	42(13.91)	260(86.09)
Mother's perception of insufficient breast milk		
High	63(43.15)	83(56.85)
Low	39(14.72)	226(85.28)

%: row percentage.

4.5.2. Distribution of Non-maternal factors Associated with Exclusive Breastfeeding Practice

Table 6 shows distribution of non-maternal factors Associated with Exclusive Breastfeeding Practice. Regarding Nursing mothers' antenatal care visits before delivery, it was observed that high number of antenatal care visits was associated with increased proportion of

exclusive breast feeding. With regards to place where education on exclusive breastfeeding was done, the proportion of Mothers who had their education at private hospitals practiced more exclusive breast feeding followed by those who had their education from government hospitals and home. Also, mothers with support groups had higher proportion of exclusive breastfeeding compared to those who were not members of any mother support group.

Table 6: Distribution of Non-maternal factors Associated with Exclusive Breastfeeding Practice

Characteristics	Exclusive Breastfeeding	
	No	Yes
ANC Attendance before delivery		
Less than three	19(38.78)	30(61.22)
Three and above	83(22.93)	279(77.07)
Personnel who Educated		
Midwife/Nurse	71(22.05)	251(77.95)
TBA	0(0)	1(100)
Mother-in-law	2(28.57)	5(71.43)
Mother	19(76)	6(24)
Place of Education		
Government health center	68(24.03)	215(75.97)
Private health center	7(13.46)	45(86.54)
Home	17(85)	3(15)
Mother Support Groups		
No	97(26.65)	267(73.35)
Yes	5(10.64)	42(89.36)

4.6. Effect of Mother's perception of insufficient breast milk on EBF practice

Table 7 below, summarizes the results of logistic regression analysis to determine the effect of mother's perception of insufficient breast milk on EBF. According to the results, mother's perception of insufficient breast milk was significantly predictive of EBF ($P<0.001$) among the nursing mothers. After adjusting for all other covariates, the odds of mother practicing EBF was 5.9 times higher among those with the view that breast milk is sufficient for EBF compared to those with the opposite view.

Table 7: Effect of Breast Milk Insufficiency Perception on EBF as determined by logistic regression

	Unadjusted			Adjusted		
	uOR	**95% CI**	**P-value**	**aOR**	**95% CI**	**P-value**
Breast Milk Insufficiency			<0.001			<0.001
High perception of insufficient breast milk	ref			ref		
Low perception of insufficient breast milk	4.40	2.74 - 7.05		5.87	2.86 – 12.06	

uOR: Unadjusted odds ratio, aOR: Adjusted odds ratio, CI: Confidence interval, Variables adjusted for in the multiple binary logistic regression model were: Age of mother, educational level of mother, marital status, employment status, parity before last child ,ANC attendance, Mother support group membership and knowledge level on EBF

CHAPTER FIVE

DISCUSSION

The study sought to assess the effect of mothers' perception of insufficient breast milk on exclusive breastfeeding among nursing mothers with children aged 6-12 months at the Ketu South Municipal Hospital.

The findings of the study showed that the proportion of nursing mothers who practiced exclusive breastfeeding was 75.18 % [95% CI = 70.76 - 79.14%]. This result is consistent with those of related studies by Nkrumah (2016) and (Aryeetey & Goh, 2013; Asare, Preko, Baafi, & Dwumfour-Asare, 2018), in which 72% and 66% of nursing mothers in Effutu Municipality and Tema and Legon respectively, in Ghana, were reported to practice exclusive breastfeeding. The observed results however contrasted sharply with the lower prevalence of 27.7% from a similar work in Northern Ghana (Nukpezah, Nuvor, & Ninnoni, 2018) and a much lower proportion of 8.1% in another Ghanaian study (Gyasi, 2008). Additionally the 75% level of exclusive breast feeding practice that was observed in this study was significantly higher (P-value < 0.05) than the 52% obtained in the 2014 Ghana Demographic and Health Survey report (GSS et al., 2015). The observed increase in EBF prevalence of 52% in 2014 to 75% in 2018 could be attributed to intensified education and support of nursing mothers from 2014 to 2018 leading to change of perception and consequent increase in the level of practice of EBF among the nursing mothers. Alternatively, this study was conducted among a limited sample size of 411 participants in just one health facility compared to the countrywide survey conducted in 2014 by GSS, Since, the results of this current study cannot be generalized to those obtained in the countrywide survey, it could have been the reason for the disparity in the prevalence of EBF obtained in the previous study and the current one. In spite of this, WHO global nutrition

targets 2025 to improve maternal, infant and young child nutrition as endorsed by member states requires that the rate of exclusive breastfeeding in the first six (6) months should be increased by at least 50% margin. Since a 50% margin of increase from the 52% national level would yield at least 80% level of EBF practice among the nursing mothers, the 75% observed in this study could not be regarded as adequate. More aggressive efforts through activities such as health outreach programmes to educate community members and maternal support for breastfeeding mothers should be employed to increase the proportion of nursing mothers practicing EBF above the 75% obtained in this current study.

Breastfeeding knowledge and practices investigated revealed that about 94% of nursing mothers who were studied practiced colostrum feeding. The consumption of colostrum by babies is especially important as it prevents renal overload and promotes kidney health among neonates (Hoddinott, Tappin, & Wright, 2008). Since the decision to feed baby with colostr have been suggested to be dependent on delivery location (Aborigo et al.2012), the role of health facilities in ensuring the practice of exclusive breastfeeding by nursing mothers should therefore not be overemphasized.

Additionally, more than half (72%) of the study participants gave their babies their first breastfeed within one hour after delivery. Though the results obtained indicated an impressive knowledge and understanding of the benefits of early breastfeeding a lot more could be done to increase the proportion of nursing mothers who practice early initial breastfeeding after delivery. Indeed, Karim et al. (2018) pointed out that early initiation of breastfeeding reduces the likelihood of neonatal infections such as diarrhea, sepsis, pneumonia, meningitis and reduces newborn deaths by more than 20%. It is therefore, of

utmost importance that nursing mothers are impressed upon to adopt such a practice and rigidly adhere to it.

Furthermore, feeding babies with one breast until it has been entirely emptied out has been recommended for practice among mothers. According to Chaudhary et al. (2011), it provides the babies with hind milk, which is essential for brain development. Approximately 86% of the nursing mothers engaged in this breastfeeding practice, which was a right step in averting neonatal mortality. Findings from this study indicated that 35.52% of women had perceived that breastmilk alone is insufficient for the baby and that has resulted to some of them not practicing exclusive breastfeeding.

It has been established that knowledge is an important factor that influences perception and practice of exclusive breastfeeding as greater knowledge of exclusive breastfeeding has been associated with increased likelihood of exclusive breastfeeding. Although World Health Organization recommends 90% adequate knowledge on EBF, this study found 73.48% which is consistent with the findings of a study conducted in Mbarara Hospital in Uganda where 73.3% of women (Petit, 2010) attending ANC and PNC were knowledgeable about EBF and 69.8% in Dabat, Northwest Ethiopia (Alamirew, Bayu, Birhan Tebeje, & Kassa, 2017). Contrary to these, others recorded higher findings such as 80% in Calabar, Nigeria, 87.3% in Bedele town in Ethiopia. These differences may be attributed to variations in study participants, sampling techniques, sociocultural status of study participants, health care delivery systems, and their economic status.

Finally, the study revealed that mothers with low perception were about six times in a higher position to practice EBF than those with high perception of insufficient breast milk. The

prevalence of EBF among study participants with high mother's perception of insufficient milk was 56.85% and 85.28% among participants with low mother's perception of insufficient milk. This accession was supported by a number of studies that also reported similar findings from their study (Lisa G. 2008). Also, the above finding was supported by a study carried out by Schluter, Carter, & Percival, (2006) and Lewallen et al., (2006). The finding of their study indicated that 30% and 35% of women respectively wean their babies early due to perceived insufficient breastmilk.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

The main objective of this study was to assess the effect of mother's perception of breast milk as insufficient food for exclusive breast feeding among mothers of infants aged 6-12 months at the Child Welfare Clinic (CWC) in Ketu South Municipal Hospital.

The prevalence of EBF among participant mothers with high perception of breast milk as insufficient food for EBF was lower compared to mothers with low perception of breast milk as insufficient food. The study also revealed a high rate of EBF practice among mothers of infants aged 6-12 months attending CWC at Ketu South Municipal Hospital, which however, was lower than the 80% target set by the WHO.

Additionally, the high level of perception of insufficiency of breast milk among the study participants must be reduced if the country is to achieve the 80% EBF target by 2020. More education is therefore needed to change the mothers' perception about breast milk as insufficient food for EBF.

Furthermore, a high proportion of nursing mothers have a high level of knowledge about EBF, however, it was lower than the 80% knowledge level set by WHO.

Finally, though a high proportion of nursing mothers in this study have adequate knowledge about exclusive breastfeeding the proportion was lower than the target set by the WHO, which suggests that more effort needs to be put in place to educate mothers on EBF.

6.2 Limitations of the study

1. **Recall bias**

The study is limited by recall bias since most of the respondents were almost at the end or have finished the EBF and might not be able to recall all events that took place in the past 6 or 12 months prior to commencement of the study.

2. Study Design

The cross- sectional study design used might not have allowed the cause effect relationship among the variables to be determined.

6.3 Recommendations

Based on the findings of the study though the proportion of mothers who practiced EBF was a bit higher than the previous studies it was less than required which is a reflection on the way the women received the knowledge about Exclusive Breast Feeding therefore the following are recommended so as to improve upon exclusive breastfeeding.

1. Intensive health education on exclusive breastfeeding given at the health facilities by nurses and other health workers should be encouraged in a way to give detailed information on EBF, its short and long term benefits and involve areas that will disabuse the minds of pregnant and nursing mothers that breast milk alone is insufficient for the infant for the first six months.

2. Health workers should promote and encourage mother support groups in their catchment areas of operations.

3. Education of young girls at all levels of education through health science by the Ghana Education Service as lessons acquired while young have a high tendency to become part of life style or character.

4. Education of older women with inadequate knowledge of the benefits of exclusive breast feeding and the rest of the community through public seminars in local dialects about EBF practices by the media will improve the chances of practicing EBF.

5. Encouragement of mothers to deliver at health facilities where midwives and nurses will assist them to put their babies to the breast soon after delivery – early initiation for successful exclusive breast feeding.

6. Government should make provisions that will support nursing mothers to practice exclusive breastfeeding whilst at work.

REFERENCES

Aarts, C., Kylberg, E., Hörnell, A., Hofvander, Y., Gebre-Medhin, M., & Greiner, T. (2000). How exclusive is exclusive breastfeeding? A comparison of data since birth with current status data. *International Journal of epidemiology, 29*(6), 1041-1046.

Aborigo, R. A., Moyer, C. A., Rominski, S., Adongo, P., Williams, J., Logonia, G., . . . Engmann, C. (2012). Infant nutrition in the first seven days of life in rural northern Ghana. *BMC Pregnancy and Childbirth, 12*(1), 76.

Adnan, N., & Muniandy, N. D. (2012). The relationship between mothers' educational level and feeding practices among children in selected kindergartens in Selangor, Malaysia: A cross-sectional study. *Asian J Clin Nutr, 4*(2), 39.

Aidam, B. A., Perez-Escamilla, R., Lartey, A., & Aidam, J. (2005). Factors associated with exclusive breastfeeding in Accra, Ghana. *European journal of clinical nutrition, 59*(6), 789.

Alamirew, M. W., Bayu, N. H., Birhan Tebeje, N., & Kassa, S. F. (2017). Knowledge and attitude towards exclusive breast feeding among mothers attending antenatal and immunization clinic at Dabat Health Center, Northwest Ethiopia: a cross-sectional institution based study. *Nursing research and practice, 2017*.

Aryeetey, R., & Goh, Y. (2013). Duration of exclusive breastfeeding and subsequent child feeding adequacy. *Ghana medical journal, 47*(1), 24-29.

Brülde, B., & Dawson, A. (2011). Health, disease and the goal of public health.

Chaudhary, R., Shah, T., & Raja, S. (2011). Knowledge and practice of mothers regarding breast feeding: a hospital based study. *Health Renaissance, 9*(3), 194-200.

Eidelman, A. I. (2012). Breastfeeding and the use of human milk: an analysis of the American Academy of Pediatrics 2012 Breastfeeding Policy Statement. *Breastfeeding Medicine, 7*(5), 323-324.

Fjeld, E., Siziya, S., Katepa-Bwalya, M., Kankasa, C., Moland, K. M., & Tylleskär, T. (2008). 'No sister, the breast alone is not enough for my baby'a qualitative assessment of potentials and barriers in the promotion of exclusive breastfeeding in southern Zambia. *International breastfeeding journal, 3*(1), 26.

Gatti, L. (2008). Maternal perceptions of insufficient milk supply in breastfeeding. *Journal of Nursing Scholarship, 40*(4), 355-363.

GhanaWeb. (2014). Health News - Ghana's Exclusive Breastfeeding rates drops, *GhanaWeb*.

GSS. (2011). Ghana multiple indicator cluster survey with an enhanced malaria module and biomarker. *Final Report*.

GSS. (2018). Multiple Indicator Cluster Survey (MICS 2017/18), .. *Survey Findings Report*. Accra, Ghana: GSS.

GSS, GHS, MACRO, & ICF. (2015). Ghana Demographic and Health Survey 2014. : GSS, GHS, and ICF International. Rockville, Maryland, USA.

GSS, G., MACRO, ICF. (2009). Ghana Demographic and Health Survey 2008. *Accra, Ghana: Ghana Statistical Service, Ghana Health Service, and ICF Macro*.

Health, U. D. o., & Services, H. (2011). Executive Summary The Surgeon General's Call to action to support breastfeeding, . *Breastfeeding Medicine, 6*(1), 3-5.

Joshi, P. C., Angdembe, M. R., Das, S. K., Ahmed, S., Faruque, A. S. G., & Ahmed, T. (2014). Prevalence of exclusive breastfeeding and associated factors among mothers in rural Bangladesh: a cross-sectional study. *International breastfeeding journal, 9*(1), 7.

Kumar H, Kumar N, Kumar S, Kumar K, Kumar R and Seth R. (2016). Colostrum and Its Health Benefits. Conference Paper: Conference: National conference on Technologies in Sustainable Food System; Department of Food Engineering and Technology, Sant longowal Institute of engineering and Technology, Longowal, Sangrur.

Labbok, M. H., Wardlaw, T., Blanc, A., Clark, D., & Terreri, N. (2006). Trends in exclusive breastfeeding: findings from the 1990s. *Journal of Human Lactation, 22*(3), 272-276.

Mgongo, M., Mosha, M. V., Uriyo, J. G., Msuya, S. E., & Stray-Pedersen, B. (2013). Prevalence and predictors of exclusive breastfeeding among women in Kilimanjaro region, Northern Tanzania: a population based cross-sectional study. *International breastfeeding journal, 8*(1), 12.

Mnyani, C. N., Tait, C. L., Armstrong, J., Blaauw, D., Chersich, M. F., Buchmann, E. J., . . . McIntyre, J. A. (2016). Infant feeding knowledge, perceptions and practices among women with and without HIV in Johannesburg, South Africa: a survey in healthcare facilities. *International breastfeeding journal, 12*(1), 17.

Monebenimp, F., Mongo, M. E., Chelo, D., Foumane, P., Kamta, C., & Kuaban, C. (2013). Mothers'knowledge And Pratice On Essential Newborn Care At Health Facilities In Garoua City, Cameroon. *Health Sciences and Diseases, 14*(2).

Nafee Elsayed, H. M., & Al-Dossary, L. A. (2016). Exclusive Breastfeeding, Prevalence and Maternal Concerns: Saudi and Egyptian Mothers. *Journal of Education and Practice, 7*(3), 5-11.

Nkala, T. E., & Msuya, S. E. (2011). Prevalence and predictors of exclusive breastfeeding among women in Kigoma region, Western Tanzania: a community based cross-sectional study. *International breastfeeding journal, 6*(1), 17.

Nkrumah, J. (2016). Maternal work and exclusive breastfeeding practice: a community based cross-sectional study in Efutu Municipal, Ghana. *International breastfeeding journal, 12*(1), 10.

Nukpezah, R. N., Nuvor, S. V., & Ninnoni, J. (2018). Knowledge and practice of exclusive breastfeeding among mothers in the tamale metropolis of Ghana. *Reproductive health, 15*(1), 140.

Otoo, G. E., Lartey, A. A., & Pérez-Escamilla, R. (2009). Perceived incentives and barriers to exclusive breastfeeding among periurban Ghanaian women. *Journal of Human Lactation, 25*(1), 34-41.

Pérez-Escamilla, R., & Bermúdez, O. (2012). Early life nutrition disparities: where the problem begins? *Advances in Nutrition, 3*(1), 71-72.

Petit, A. I. (2010). Perception and knowledge on exclusive breastfeeding among women attending antenatal and postnatal clinics. a study from Mbarara hospital–Uganda, August 2008. *Dar Es Salaam Medical Students' Journal, 16*(1), 27-30.

Radwan, H., & Sapsford, R. (2016). Maternal perceptions and views about breastfeeding practices among Emirati mothers. *Food and nutrition bulletin, 37*(1), 73-84.

Samayam, P., & Krishna, P. (2017). Maternal factors influencing exclusive breastfeeding of babies at six weeks of age. *Int J Contemp Pediatr, 4*, 15-18.

Schluter, P. J., Carter, S., & Percival, T. (2006). Exclusive and any breast-feeding rates of Pacific infants in Auckland: data from the Pacific Islands Families First Two Years of Life Study. *Public Health Nutrition, 9*(6), 692-699.

Shirima, R., Greiner, T., Kylberg, E., & Gebre-Medhin, M. (2001). Exclusive breast-feeding is rarely practised in rural and urban Morogoro, Tanzania. *Public Health Nutrition, 4*(2), 147-154.

Sokol, E., Clark, D., & Aguayo, V. M. (2008). Protecting breastfeeding in West and Central Africa: over 25 years of implementation of the International Code of Marketing of Breastmilk Substitutes. *Food and nutrition bulletin, 29*(3), 159-162.

Ukegbu, A., Ukegbu, P., Onyeonoro, U., & Ubajaka, C. (2011). Determinants of breastfeeding patterns among mothers in Anambra State, Nigeria. *South African Journal of Child Health, 5*(4), 112-116.

UNICEF. (2010). Improving exclusive breastfeeding practices by using communication for development in Infant and Young Child Feeding programmes. *New York: UNICEF*, 16.

Uruakpa F O., Ismond MAH and Akobundu E.N.T (2002). Colostrum and its benefits: A review. *Nutrition Research* 22(6):755–767. DOI:10.1016/S0271-5317(02)00373-1

Vennemann, M., Bajanowski, T., Brinkmann, B., Jorch, G., Yücesan, K., Sauerland, C., & Mitchell, E. (2009). Does breastfeeding reduce the risk of sudden infant death syndrome? *Pediatrics, 123*(3), e406-e410.

WHO. (2011). Infant and young child feeding. *World Health, Organization 155 (May), A3929*.

WHO. (2015). Up to what age can a baby stay well nourished by just being breastfed? . *World Health Organization*.

WHO. (2016). Exclusive breastfeeding. *World Health Organization*.

Zvinavashe, M. M. F. M. M., Haruzivishe, C., & Ndaimani, D. M. A. Perceptions and Barriers to Exclusive Breastfeeding in Manicaland, Zimbabwe.

APPENDICES

Appendix A: Participant's Consent Form

School of Public Health

College of Health Sciences

University of Ghana

Research Topic: The effect of Mother's perception of insufficient breast milkon Exclusive Breast Feeding among Nursing Mothers at the Ketu South Municipal Hospital

Introduction

My name is Vivian Afi Nutassey and I am a student pursuing a Master of Public Health programme in the School of Public Health, University of Ghana, Legon. I am the principal investigator and together with my research assistants we are conducting a study on the effect of Mother's perception of insufficient breast milk on Exclusive Breastfeeding among Nursing Mothers of the Ketu South Municipal Hospital. It will be very much appreciated if you could grant us some few minutes of your time to answer these questions. It will take about 15-20 minutes to complete. It is for academic purpose and all your responses will be treated confidential and private as much as possible. Also, your name will not be put on the questionnaire. Furthermore, we want to stress that your participation is voluntary and you can decide not to respond to any question that you are not sure of or do not understand. You may not have direct benefit from participating in this study, however, the information obtained would help in coming out with the true picture of the Perception on Exclusive Breast Feeding among Nursing Mothers at the Ketu South Municipal Hospital Ghana.

Confidentiality

Every single information you provide will be held in absolute confidence and data collected in this study are strictly for research purposes and will be stored with passwords on electronic media, and the hard/printed copies in safely locked boxes. Access to the data will be limited strictly to the researcher and supervisor. Anonymity will be ensured in dissemination of findings from this study since you will not be identified by your names.

Right to Withdraw

You have the right to withdraw from the study at any time. Your withdrawal may not cause you any harm, let you lose any privileges or services due you or interfere with any relationship you have with health care providers.

Ethical Approval

This study will be reviewed and approved by the Ghana Health Service Ethical Review Committee (GH-ERC). This committee is there to ensure that you are protected from harm and your rights are respected during participation in the research.

Participant's Consent Form

I have read the foregoing information/ the foregoing information has been read to me or translated to me in a language that I understand and I have fully understood it. I consent voluntarily to participate in this study.

(Name and signature of a witness should be provided in a case where the participant cannot speak or read English)

Signature/thumbprint: _____

Name of witness: _____

Signature/thumbprint of witness: _____

Interviewer's Statement

I, the undersigned (your name), have explained this consent form to the participant in simple language that she/he understands, clarified the purpose of the study, procedures to be followed as well as the risks and benefits involved. The participant has freely agreed to participate in the study.

Signature of interviewer ……..

Date ……. / …….. / …….

Address: ……

Telephone number: 0277113829 / 0205597954

Email address: nutasseyv@yahoo.com

Your rights as a Participant

If you have any questions about your rights as a research participant, you can contact the Administrator of the GHS Ethical Review Committee at the following address:

Hannah Frimpong:

GHS-Ethical Review Committee

Research and Development Division, Ghana Health Service

P. O. Box MB 190

Accra.

Office: 0302 681 109

Mobile: 024 323 5225 or 050 704 1223

Email: Hannah.Frimpong@ghsmail.org

Appendix B: Questionnaire

SCHOOL OF PUBLIC HEALTH

COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA- LEGON

TOPIC: THE EFFECT OF MOTHER'S PERCEPTION OF INSUFFICIENT BREAST MILKON EXCLSIVE BREASTFEEDING AMONG NURSING MOTHERS AT KETU SOUTH MUNICIPAL HOSPITAL OF THE VOLTA REGION OF GHANA

This questionnaire is part of a research by VIVIAN AFI NUTASSEY (MRS) towards the award of Masters in Public Health from the University of Ghana.

The research is aimed at determining whether breast milk insufficiency has effect on Exclusive Breast Feeding among infants aged 6-12 months in the Ketu South Municipality of the Volta Region of Ghana

Interview Date---------- District: Ketu South Municipal

Interviewer Name: ---------- Interviewer Code: ----------

(All information in this questionnaire is confidential).

NB: ONLY MOTHERS OF INFANTS AGED 6-12 MONTHS MUST BE INTERVIEWED. PLEASE DO NOT DISCARD THIS QUESTIONNAIRE. GIVE IT BACK TO THE COORDINATOR EVEN IF IT IS DAMAGED.

Facility: ---------- ☐☐☐ Questionnaire

INSTRUCTION: kindly [✓] in the spaces provided where applicable

Name of child…….. Age……..
Date of interview…….. Sex M / F

SN	ITEM / QUESTION	RESPONSE	[✓]
	SECTION A - MOTHERS BACKGROUND AND INFORMATION OF RESPONDENTS		
A1.	Age of Respondent	Below 20yrs	[ ]

		20 – 29 30 – 39 40 – 49 50 and Above	[ ] [ ] [ ] [ ]
A2.	What is your highest level of education	Never Attended Primary JHS / Middle SHS/Vocational Tertiary	[ ] [ ] [ ] [ ] [ ]
A3	Religion	Christian Muslim Traditional Others (Specify)	[ ] [ ] [ ] [ ] [ ]
A4.	Marital status	Single Married Divorced Widowed Separated	[ ] [ ] [ ] [ ] [ ]
A5.	If married or in a relationship, what is your partner's highest level of education?	Never Attended Primary JHS / Middle SHS/Vocational Tertiary Other (Specify)	[ ] [ ] [ ] [ ] [ ] ……
A6.	What is your occupation?	Farming Trader Gov't Employed Private Employed Self Employed Unemployed	[ ] [ ] [ ] [ ] [ ] [ ]
A7.	What is your partner's occupation	Farming Trader Gov't Employed Private Employed Self Employed Unemployed	[ ] [ ] [ ] [ ] [ ] [ ]
A8.	What is your income level? If unemployed, skip	Below GH¢1000 GH¢1000 and above	[ ] [ ]
A9.	How many children do you have?	1 2 3 4 5^{+}	[ ] [ ] [ ] [ ] [ ]
A10.	Were they breastfed?	YES NO	[ ] [ ]
SECTION B: BREASTFEEDING BEHAVIOR AND AWARENESS			

B1.	What is the recommended infant feeding practice during the first 6 months?	Exclusive Breast Feeding Mixed Feeding Other Don't know	[ ] [ ] [ ] [ ]
B2	Are you currently Breastfeeding (Name)	Yes No	[ ] [ ]
B3	How many times did you Breastfeed (Name) during the first 6 months?	As often as child wants. Scheduled times during the day and at night. Scheduled times during the day only.(No night feeds)	[ ] [ ] [ ]
B4	Did you ever express breast milk to feed (Name)?	Yes No	[ ] [ ]
B5	In Breastfeeding, one Breast should be emptied before offering the second breast.	Agree Do not agree Do not know	[ ] [ ] [ ]
B6.	How many times did you visit Antenatal Care before delivery?	None One (1) Two (2) Three (3) Four (4) Five (5)	[ ] [ ] [ ] [ ] [ ] [ ]
B7.	Were you given any advice or education on infant feeding?	YES NO	[ ] [ ]
B8.	If Yes, who does it most?	Midwife / Nurse TBA Mother-in-law Mother Other (Specify)	[ ] [ ] [ ] [ ] ……
B9.	Where were you given the advice mostly?	Gov't Hospital Private Hospital / Clinic Health Centre CHPs Compound TBA Home	[ ] [ ] [ ] [ ] [ ] [ ]
B10.	Where did you deliver (name)?	Home Maternity Home	[ ] [ ]

		Gov't Hospital / Clinic Private Hospital / Clinic Other (Specify)	[ ] [ ] …….

B11.	Who helped you to deliver (name)?	Midwife / Nurse TBA Family Member Neighbour Other (Specify)	[ ] [ ] [ ] [ ] …….
B12.	How long after delivery did you put (name) to the breast	Within 1hr Day One (1) Day Two (2) Day Three (3) Day Four (4) & above	[ ] [ ] [ ] [ ] [ ]
B13.	Did you feed baby with first yellow milk (Colostrum)?	YES NO	[ ] [ ]
B14.	During the first 3 days after delivery, before milk started flowing regularly was (name) given anything to drink other than breast milk?	YES NO	[ ] [ ]
B15.	If Yes, what was given (name) before milk began regularly? If No, Skip	Water Tea Koko Glucose Water Infant formulae	[ ] [ ] [ ] [ ] [ ]
SECTION C: MOTHER'S EXCLUSIVE BREAST FEEDING PERCEPTION			
C1.	Was (name) breast fed exclusively?	YES NO	[ ] [ ]
C2.	If Yes, how long was (name) breast fed exclusively? If 6 months, skip C4	2 – 3 Months 4 – 5 Months 6 Months Above 6 Months	[ ] [ ] [ ] [ ]
C3.	What is your main reason for not breast feeding exclusively for 6 months?	Breast Milk insufficiency Child was thirsty Difficult transition to complimentary feeds	[ ] [ ] [ ]

C4.	Do you sometimes have the notion that breast milk alone is insufficient for (name) for the first 6 months?	YES NO Don't Know	[ ] [ ] [ ]
C5.	Breastmilk alone is insufficient for the child during the first six months.	Strongly Disagree Disagree Don't know Agree Strongly agree	[ ] [ ] [ ] [ ] [ ]
C6.	Six (6) months exclusive breastfeeding has health benefits	Strongly Disagree Disagree Don't know Agree Strongly agree	[ ] [ ] [ ] [ ] [ ]
C7.	Select in order of priority the 3 most significant areas of difficulties / barriers to exclusive breastfeeding.	Breast milk insufficiency Had to start or resume work Influence by others	Please Indicate by 1, 2, 3 [ ] [ ] [ ]

C8.	At what age should other foods be introduced to baby?	At Birth 2 – 3 months 4 – 5 months 6 months Don't know	[ ] [ ] [ ] [ ] [ ]
C9.	Do you belong to any community group/association	YES NO	[ ] [ ]
C10.	If yes, does the group give information on breast feeding?	YES NO Don't Know	[ ] [ ] [ ]

THANK YOU