

KNOWLEDGE, ATTITUDE AND PRACTICE OF EXCLUSIVE  
BREASTFEEDING AMONG MOTHERS IN TECHIMAN, GHANA

Mavis Fosuaa Boateng  
Master's thesis  
Public Health  
School of Medicine  
Faculty of Health Sciences  
University of Eastern Finland  
May 2018

UNIVERSITY OF EASTERN FINLAND, Faculty of Health Sciences

Public Health

BOATENG, MAVIS F.: Knowledge, attitude and practice of exclusive breastfeeding among mothers in Techiman, Ghana

Master's thesis, 73 pages, 2 attachments (8 pages)

Instructors: Sohaib Khan, PhD and Arja Erkkilä, PhD

May 2018

---

Key words: Knowledge, attitude, practice, exclusive breastfeeding, mother

## KNOWLEDGE, ATTITUDE AND PRACTICE OF EXCLUSIVE BREASTFEEDING AMONG MOTHERS IN TECHIMAN, GHANA

Exclusive breastfeeding is certainly an important child feeding practice, which promotes the well-being and survival of children especially in poor and developing countries. This feeding practice not only safeguards the survival of a child but contributes to maternal health and provides protection against some non-communicable diseases. It is recommended by WHO/UNICEF that an infant should be fed with only breastmilk for the first 6 months of life. Globally, the exclusive breastfeeding rate is 38%, however the World Health Assembly in 2012 set a target to increase the rate of exclusive breastfeeding by at least 50% by 2025. Exclusive breastfeeding among children less than six months in Ghana is 52.3%. Hence there is need for improvement.

This study was to explore mothers' knowledge and attitude towards exclusive breastfeeding and how they influence its practice. Using a mixed method approach, data collected in the form of multiple choice and open-ended questions were analyzed using quantitative and qualitative data analysis techniques. Quantitative data was analyzed and presented in frequencies and percentages, while content analysis was used to categorize qualitative data into themes for analyzes. The study was conducted in Techiman Municipality in the Brong Ahafo Region of Ghana with 120 mothers selected based on a convenient sampling method. The inclusion criteria for selection were mothers with children aged 6 to 18 months, who were residents of the study area and could read and write in English language.

Most mothers (92.4 %) knew the meaning of exclusive breastfeeding with 78.3% aware of the recommended duration of exclusive breastfeeding. 67 (55.8 %) practiced exclusive breastfeeding for six months. Results showed a significant association between mother's level of education and their knowledge of the concept ( $p$ -value = 0.001). Healthcare providers were identified as the key advocates in promoting information on breastfeeding. Social and religious influences played significant roles in shaping the attitude towards baby feeding practices especially the perception about exclusive breastfeeding. Enabling factors such as spousal, family and social support rendered to lactating mothers promote the efficiency in practicing exclusive breastfeeding. Faced with challenges such as short maternity leaves for working mothers and discomfort during breastfeeding, gaining confidence in breastfeeding through education and self-motivation were identified as driving forces to a successful practice of six months period of exclusive breastfeeding. There is a need for policies which will promote exclusive breastfeeding, encourage mothers and facilitate the practice of breastfeeding.

“Breastfeeding is natural”  
(A mother in Techiman, Ghana)

## **ACKNOWLEDGEMENT**

I wish to express my profound gratitude to my wonderful supervisors, Arja Erkkilä and Sohaib Khan who took great interest in this research work from the onset and assisted me through every step of this work. I cannot thank you enough for your devoted assistance and influence. I am also grateful to the entire staff of University of Eastern Finland, Institute of Public Health and Clinical Nutrition for your assistance throughout my education in this university, for providing such a conducive and an enriching environment for studies.

Again, I wish to thank University of Eastern Finland International Mobility Services for granting financial assistance through the free mover scholarship to undertake data collection in Ghana. A sincere appreciation to the staff and management of Holy Family Hospital for their help during the data collection. I wish to thank all study participants who willingly took time out of their numerous schedules to participate in this research.

I am ever grateful to God for my wonderful mother Mrs. Dorcas Yeboah, my family and friends for their support and encouragements. My sincere thanks to everyone who directly or indirectly supported this research work.

**Mavis Fosuaa Boateng**

**May 2018**

**Kuopio, Finland.**

# Contents

<b>1. INTRODUCTION</b> .....	6
<b>2. LITERATURE REVIEW</b> .....	8
<b>2.1 General issues about breastfeeding</b> .....	8
<b>2.1.1 Breast milk – Composition, nutritional value and storage</b> .....	8
<b>2.1.2 Breastfeeding Recommendation</b> .....	10
<b>2.1.3 Benefits</b> .....	11
<b>2.1.4 Maternal knowledge in exclusive breastfeeding</b> .....	13
<b>2.2 Attitude</b> .....	13
<b>2.2.1 Cultural influence</b> .....	13
<b>2.2.2 Religious influence</b> .....	14
<b>2.2.3 Personal motivation and confidence</b> .....	14
<b>2.3 Practice</b> .....	15
<b>2.3.1 Child feeding practices in Ghana</b> .....	15
<b>2.3.2 The effect of maternal age on the practice of exclusive breastfeeding</b> .....	17
<b>2.3.3 The effect of maternal education</b> .....	17
<b>2.3.4 Maternal employment status and duration of maternity leave</b> .....	17
<b>2.3.5 Place of giving birth</b> .....	18
<b>2.3.6 Mode of delivery</b> .....	19
<b>2.3.7 Support</b> .....	19
<b>2.3.8 Breastfeeding campaigns and support groups in Ghana</b> .....	20
<b>2.4 Logical Framework of the study</b> .....	24
<b>3. AIMS OF THE STUDY</b> .....	25
<b>4. METHODOLOGY</b> .....	26
<b>4. 1 Study design</b> .....	26
<b>4.2 Study setting</b> .....	26

4.3 Study participants .....	27
4.4 Data collection .....	28
4.4.1 Questionnaire structure.....	28
4.4.2 Data collection process.....	29
4.5 Data Analysis.....	29
4.6 Ethical Considerations.....	30
5. RESULTS .....	31
5.1. Descriptive analysis.....	31
5.1.1 Socio-demographic characteristics of mothers.....	31
5.1.2 Knowledge on exclusive breastfeeding according to age and education .....	32
5.1.3 Knowledge on recommended length of exclusive breastfeeding, sources of information and breast milk storage.....	33
5.1.4. Confidence to breastfeed .....	33
5.1.5 Practicing Breastfeeding.....	33
5.1.6 Support and advice on breastfeeding .....	34
5.1.7 Disapproval in breastfeeding .....	34
5.2 Qualitative analysis.....	35
5.2.1 Perception about the ideal food for babies less than six months old .....	35
5.2.2 Benefits of breastfeeding .....	36
5.2.3 Challenges encountered in practicing exclusive breastfeeding .....	37
5.2.4 Factors which influence attitude towards breastfeeding.....	38
5.2.5 Complementary feed after exclusive breastfeeding – Choice and reasoning .....	41
6. DISCUSSION .....	43
6.1 Knowledge .....	43
6.2 Attitude (Socio-cultural and religious influences).....	45
6.3 Practice (Support, self-determination).....	46

<b>6.4 Strength and limitations of the study .....</b>	<b>47</b>
<b>6.5 Implications of study.....</b>	<b>48</b>
<b>7. CONCLUSION .....</b>	<b>50</b>
<b>8. REFERENCES.....</b>	<b>51</b>
<b>9. APPENDICES .....</b>	<b>63</b>

## **ABBREVIATIONS**

AAP	-	American Academy of Pediatrics
BFHI	-	Baby Friendly Hospital Initiative
CBR	-	Crude Birth Rate
CDC	-	Centers for Disease Control and Prevention
CWC	-	Child Welfare Clinic
ENAP	-	Every Newborn Action Plan
GCHP	-	Ghana Child Health Policy
GDHS	-	Ghana Demographic and Health Survey
GFR	-	General Fertility Rate
GHS	-	Ghana Health Service
GINAN	-	Ghana Infant Nutrition Action Network
GMP	-	Growth Monitoring and Promotion
GNNHSAP	-	Ghana National Newborn Health Strategy and Action Plan
GSS	-	Ghana Statistical Service
ICMBMS	-	International Code of Marketing of Breast Milk Substitutes
MDG	-	Millennium Development Goals
MOH	-	Ministry of health
NHMRC	-	National Health and Medical Research Council
ORS	-	Oral Rehydration Salt
PSG	-	Project Share Ghana
USDHHS	-	United States Department of Health and Human Services
UN	-	United Nations
UNAIDS	-	Joint United Nations Programme on HIV/AIDS
UNICEF	-	United Nations Children's Fund
WHA	-	World Health Assembly
WHO	-	World Health Organization



## 1. INTRODUCTION

According to a statement by the World Health Organization (WHO), “Breastfeeding is the cornerstone for an infant’s survival, nutrition and development” (WHO 2015). Early initiation of breastfeeding and exclusive breastfeeding help in child survival, it accounts for healthy brain development, promotes cognitive and sensory performance and is noted for enhancing intelligence and academic performance in children (Isaacs et al. 2010, AAP 2012, UNICEF 2015). Feeding an infant with only breast milk is advocated by stakeholders in health, is one of the most important practices in an infant’s life and the best way a mother can invest into the wellbeing of her child. Among the numerous benefits of breastfeeding, UNICEF in a breastfeeding Campaign in 2013, termed the essence of breastfeeding as a “first immunization and an inexpensive life saver”.

Mortality among newborns accounts for almost half of child deaths in the world. However, previous studies have shown that placing a newborn to the mother’s breast shortly after delivery help reduce mortality to a very large extent (UNICEF 2015, WHO 2016). Breastfeeding promotes the health of mothers as well. At current breastfeeding rates, WHO, in 2016, had reported that “close to 20,000 breast cancer deaths can be prevented and an additional 20,000 will be saved if breastfeeding conditions are improved”. It reduces the risk of post-partum hemorrhage, protects mothers against the risks of ovarian and breast cancer and increases the bond between a mother and child (NHMRC 2012).

In low income and developing countries, due to poor sanitation conditions, high disease burden and limitedness in the availability of clean drinking water, it is more necessary to practice exclusive breastfeeding in the initial stages in life (first six months of the child’s life). This practice of exclusive breastfeeding is more safe, hygienic and the most economical way of providing food for the newborn (UNICEF 2013). It has been reported in several articles on breastfeeding that proper practice of breastfeeding can save about 800,000 infant lives in the developing world alone (UNICEF 2015, WHO 2016).

In spite of these recommendations, it has been documented over the years that the practice of exclusive breastfeeding has not been adopted universally, most mothers embrace the idea but fail to breastfeed exclusively few weeks after giving birth to their baby. A lot of factors ranging from

cultural, social and economic conditions have been identified as possible hindrances to an effective practice of exclusive breastfeeding (Tampah-Naah & Kumi-Kyereme 2013, Fosu-Brefo & Arthur 2015.).

Breastfeeding exclusively will be much easier and attractive to mothers if the right health education, support and motivation are given (Mogre et al. 2016). An idea about the level of knowledge, attitude and practice of exclusive breastfeeding and the social support system available to mothers are very imperative for improvement in breastfeeding practices. It helps in reducing child mortality, promotes growth and immunity (AAP 2012, NHMRC 2012, WHO/UNICEF 2017). This study aims to explore the knowledge and attitude of mothers towards exclusive breastfeeding and their willingness to practice it, in a developing country setting, Ghana.

## **2. LITERATURE REVIEW**

### **2.1 General issues about breastfeeding**

According to WHO's Convention on the Rights of a Child (2016), every infant born into this world has a right to food and nutrition, however, only few children meet their nutritional requirements appropriate for their age. Poor nutrition is responsible for almost half of child mortalities in the world. Per WHO fact sheets (2016) on infant and young child feeding, malnutrition accounts for 2.7 million infant mortalities yearly and more than 800,000 infants are likely to survive annually if all children aged 0-23 months are breastfed adequately.

#### **2.1.1 Breast milk – Composition, nutritional value and storage**

Breast milk is a natural food and nourishment for newborns; it forms the main source of nutrients, energy and vitality for an infant. It is considered as the most convenient and safest means of feeding an infant because it is ready made, at the right temperature and usually available when needed (AAP 2012, UNICEF 2013). Additionally, breast milk contains antibodies needed for protection of the newborn, hence a perfect food for babies (Munblit et al. 2017). The quantity, quality and production of breast milk varies to meet the nutritional and fluid needs of an infant; it is evident that mother's poor feeding habits, high intake of caffeine and other products can affect the production and quality of breast milk (Ballard & Morrow 2013).

A yellowish, sticky milk called colostrum produced during the latter part of pregnancy through to delivery; is highly recommended by WHO to be given to babies within the initial hours following delivery. Colostrum is very definite in volume, appearance and composition, it contains an elevated level of immunologic components like secretory immunoglobulin A (IgA), lactoferrin, leukocytes and epidermal growth factor for development. After the first days of postpartum, this process of breast milk (colostrum) transformation continues into a transition milk, which lasts for eight to twenty days until it transforms into a mature milk. Each stage of breast milk composition contains nutrients, which are needed for the nourishment and growth of a baby (Mondker et al. 2009, Ballard & Morrow 2013, Munblit et al. 2017.).

Hormones within the human body enhance the growth of breast milk duct; progesterone, estrogen, prolactin and others promote lactation before birth. However, the level of hormones reduces to enable the flow of milk. Nutrients contained in human breast milk include water, protein, fats, carbohydrates, minerals and vitamins (Ballard & Morrow 2013, Infant Nutrition Council 2016). Each nutrient in breastmilk plays a role in nourishing the baby, a breastfed child is protected against diseases through a chain of biomedical reactions which enable enzymes, hormones and immunologic substances to protect the baby against diseases while enhancing the survival of the newborn (Ballard & Morrow 2013, UNICEF 2015).

Breast milk has a unique and dynamic composition, which unlike formula milk with a constant nutritional composition, is usually affected by the routine of feeding, and differs per mother and even population (Ballard & Morrow 2013). Table 1 below illustrates the average composition of nutrients in breast milk.

Table 1. Composition of some key nutrients found in mature breast milk (NHMRC Dietary Guidelines for children 2003, Infant Nutrition Council 2016).

Component	Mean value for mature breastmilk (per 100 ml)
Energy (kj)	280
Energy (kcal)	67
Protein (g)	1.3
Fat (g)	4.2
Carbohydrate (g)	7.0
Sodium (mg)	15
Calcium (mg)	35
Phosphorus (mg)	15
Iron (mcg)	76
Vitamin A (mcg)	60
Vitamin C (mg)	3.8
Vitamin D (mcg)	0.01

Previously, breast milk when expressed was intended to feed preterm and sick babies who could not breastfeed directly from their mothers' breast. Of late, due to the trend of women in active service, the act of expressing breast milk by lactating mothers for future use has become a frequent practice (Stevens 2009). It is very vital that care is taken in how breastmilk is expressed, handled and stored since it may get contaminated with viruses and bacteria or its nutritional content may be reduced (Chang et al. 2010).

For safety and preservation of nutrients in breastmilk, breast milk can be stored at a room temperature (no more than 25-degree Celsius) for a maximum period of six hours, and for a maximum of four hours at a hot temperature of 30 to 38 degrees Celsius. It can also be stored at a temperature of 4 degrees in the refrigerator to be used within 72 hours or stored in a freezer at -20 degrees to be used within a duration of up to six months (Canadian Agency for Drugs and Technologies in Health 2016, Igumbor et al. 2000.). To ensure safety, refreezing or reheating of expressed breast milk is not recommended. A study by Peters et al in 2016 reported that even though freezing is a safe method of storing breast milk, it reduces the immunological components in the expressed breast milk.

### **2.1.2 Breastfeeding Recommendation**

Breastfeeding is an act of lactation whereby a baby is fed from a female breast, it can be done directly by putting the baby to the mother's breast or indirectly by expressing the milk using breast pump and giving it to baby through bottle feed (WHO 2017). Health care agencies advocate an early initiation of breastfeeding during which infants should be fed on demand unless for exceptional reasons (Fosu-Brefo & Arthur 2015). It is very necessary to feed directly from the breast to avoid the transfer of contaminants to baby, however busy or working mothers can express breast milk for use in future ensuring that breast milk is kept clean and stored depending on the length of time intended for its use.

Exclusive breastfeeding is defined by UNICEF (2015) as an act of feeding whereby "infant receives only breast milk (includes breast milk which has been expressed or from a wet nurse) and nothing else except for Oral Rehydration Salt (ORS), medicines, vitamins and minerals". UNICEF and WHO (2016) recommend that babies should be given only breast milk for the first six months

of their lives, after which breastfeeding should be continued in addition to appropriate complementary food until the baby is 24 months old. Although breastfeeding for six months is a desirable goal, breastfeeding in general is a very important exercise.

HIV/AIDS is a prevalent issue in Ghana. In 2015, the Joint United Nations Programme on HIV/AIDS (UNAIDS) reported that 270,000 people were living with HIV/AIDS of which 19000 were children aged 0 to 14 years. Due to improved research about the effectiveness of exclusive breastfeeding; WHO recommends that with continuous intake of antiretroviral drugs during pregnancy, after birth and during breastfeeding, an HIV- infected mother can breastfeed her baby. In such condition, the baby should be breastfed exclusively for six months after which there should be a continual feed in addition to complementary food till twelve months (WHO 2010). This practice is likely to reduce the risk of mother-child infection by 42% (Siegfried 2011, White et al. 2014).

### **2.1.3 Benefits**

It is inarguably true that breastfeeding has a positive impact in the lives of both baby and mother. Breast milk is easy to digest, contains the right proportion of nutrient such as carbohydrates, fatty acids, water and protein necessary for baby's growth and development. Exclusive breastfeeding is a very necessary and important practice recommended to mother and child during the first six months of the baby's life due to its numerous benefits. This practice serves as a growth- monitoring tool which not only support the growth and development of an infant but also monitor the weight as well. During the first year of childhood development, breastfed babies are leaner and healthier than formula fed babies (Ziegler 2006, Gale et al. 2012).

Global health departments advocate the practice of exclusively breastfeeding at the initial stages of an infant's life since it helps stimulate and enhance the development of the mouth and jaws cells in babies and ensures the growth of major organs in newborns. It aids in brain development and enhances the intellectual capacity of the child. This feeding practice helps build the immune system and protects the baby against diseases (Dieterich et al. 2013). There is a heightened proof that exclusive breastfeeding reduces the risk of gastrointestinal infections in children (Szajewska 2012). There is usually an elevated risk of diarrhea among children who are partially breastfed or

not giving breastmilk. Practicing exclusive breastfeeding within an hour after birth protects new babies from infection and death. Breastfeeding a baby helps reduce fevers, which occur after child immunization (AAP 2012, NHMRC 2012, WHO/UNICEF 2017.). Under 5 mortality rates per every 1000 births in Ghana as of 2015 was 61.6% (World Bank Group 2016). When exclusive breastfeeding is practiced effectively, it can prevent 13% of under 5 mortalities since it minimizes the severity of infectious diseases (UNICEF 2016).

Practicing exclusive breastfeeding is not only beneficial to infants but nursing mothers too. Results from a cohort study conducted by Saxton and colleagues in 2015 proved that the risk of post-partum hemorrhage can be lowered through the practice of breastfeeding. Continual breastfeeding postpones the menstrual cycle of a lactating mother hence reducing the risk of pregnancy (Gebreselassie et al. 2008). It protects mother from the risk of type 2 diabetes, breast, uterine and ovarian cancers. Breastfeeding helps control post-natal depression in mothers (Swarna 2009).

In emergency situations, such as of food shortage or an outbreak of a water borne disease, breastfeeding serves as the most cost-effective means of meeting the nutritional requirement of infants and a life-saver. Exclusive breastfeeding is an effective means of minimizing child malnutrition, it provides food security for infants in deprived and poor communities, hence highly recommended in low and middle-income countries (UNICEF 2015, WHO 2016, Nkrumah 2017).

In addition, breastfeeding increases the connection and love between mother and child. Skin to skin contact create warmth, closure and help reduces neonatal deaths. Nevertheless, fathers are encouraged to support mothers during the period of breastfeeding. Supportive fathers also win a stronger bond with their infants as well through bottle-feeding and spending quality time with baby (Anderzén-Carlsson et al. 2014.).

There are numerous advantages of breast milk over formula milk. Formula milk given to babies as a breast milk alternative is expensive and poses a lot of risk to an infant's life especially in developing countries. This form of feeding is quite challenging since it needs to be measured adequately, mixed well with clean water at the right temperature for the baby, while ensuring that feeding bottles are kept clean; failure to perform this practice right can lead to contamination and

diarrhea. In the developing countries, the contamination risk during formula feed is high and challenging (Mead 2008, UNICEF 2015.).

#### **2.1.4 Maternal knowledge in exclusive breastfeeding**

Several studies conducted on exclusive breastfeeding in the past years have shown progressive rates in maternal knowledge in exclusive breastfeeding among mothers (Oche et al. 2011, Mogre et al.2016, Dun-Dery & Laar 2016). A study by Oche et al. in 2011 reported a rate of 54 % of knowledge in exclusive breastfeeding among mothers. In 2016, a study conducted by Mogre et al. among rural lactating mothers in Ghana reported that 74 % of mothers who took part in the study had general knowledge in exclusive breastfeeding. Also, a study conducted among professional mothers in Ghana by Dun-Dery & Laar in 2016 reported that almost all mothers (98 %) who took part in the study had adequate knowledge about exclusive breastfeeding. Information on exclusive breastfeeding according to mothers were gained through their healthcare providers during prenatal and postnatal lessons (Mogre et al. 2016).

## **2.2 Attitude**

Society and individuals have a two-way relationship, while individuals make up a society, society influences the lives of individuals. Society shapes up the attitudes and behaviors of the individuals (Hossain & Ali 2014). Traditions, norms, lifestyles and shared values such as culture, religion, education, economics and politics influence the quality of life and individual choices (UNESCO 2010).

### **2.2.1 Cultural influence**

The Ghanaian society is highly imbedded with various culturally oriented perceptions. These are among the leading factors, which influence a mother's decision to breastfeed exclusively (Fosu-Brefo & Arthur 2015). One paramount feature is a common myth that babies do not get enough nutrients from breast milk hence the need to add other food substitutes such as porridge and other soft food. This popular perception is likely to influence the attitude of most lactating mothers in the choice to breastfeeding exclusively. Due to the warm climatic conditions in Ghana, there is the believe that babies need water in addition to breast milk which tend to interfere with the rationale behind the decision to exclusively breastfeed (Zhang et al. 2015, Mensah et al. 2017).



Contrary, results from another study conducted in Atwima Nwabiagya District of Ghana showed evidence of cultural approval of exclusive breastfeeding (Ayawine & Ae-Ngibise 2015). This shows the effect of cultural diversity and dynamism within a given society and how they impact an individual's behavior.

### **2.2.2 Religious influence**

Religiosity is an important concept in the lives of people, it is well represented in the less developed and developing countries hence the role played by religious leaders in harnessing a behavior either positive or negative cannot go unnoticed (Pew Research Center 2008, Page et al. 2009, Aldashev & Platteau 2014). Religious leaders are usually accorded much respect within the society, they mainly play the role of an advocate, educator, promotor, healer, counselor and much more (Nicklas 2011, Lumpkins et al. 2013). Studies conducted in the role of religiosity in health behavioral choices have shown an association between religion and health (Shaikh 2006, Burdette 2012). A study conducted by Burdette in 2012 proved an association between church attendance and the perception about breastfeeding. The role played by church leaders in advocating the importance of breastfeeding was identified as the force behind the high prevalence in breastfeeding since it ignites a positive attitude towards breastfeeding. Likewise, a study by Shaikh in 2006 reported that Islamic religion supports breastfeeding and recognizes it as a natural and divine responsibility of a mother to her child. This positive reinforcement influences mother's attitude towards breastfeeding.

### **2.2.3 Personal motivation and confidence**

According to the English Oxford Living Dictionary, "Self-motivation is one's own enthusiasm or willingness to achieve a goal without any external pressure". It is the force that drives an individual to embark on an activity aimed at reaching a goal. Self-motivation promotes confidence in an individual's action, confidence in one's ability to perform a task and promotes the inner will to do more (Benabou & Tirole 2001). Although majority of mothers breastfeed their child during their infant life, the decision to attain an optimum breastfeeding target is highly influenced by an intrinsic desire to breastfeed. Having adequate knowledge about the importance of breastmilk, making initial breastfeeding plans, self-efficacy and anxiety heightens the confidence of a lactating mother (O'Brien et al. 2008). Mothers who exhibited positive energy and attitude towards breastfeeding are most likely to decide to breastfeed their infants for a lengthy period and are more

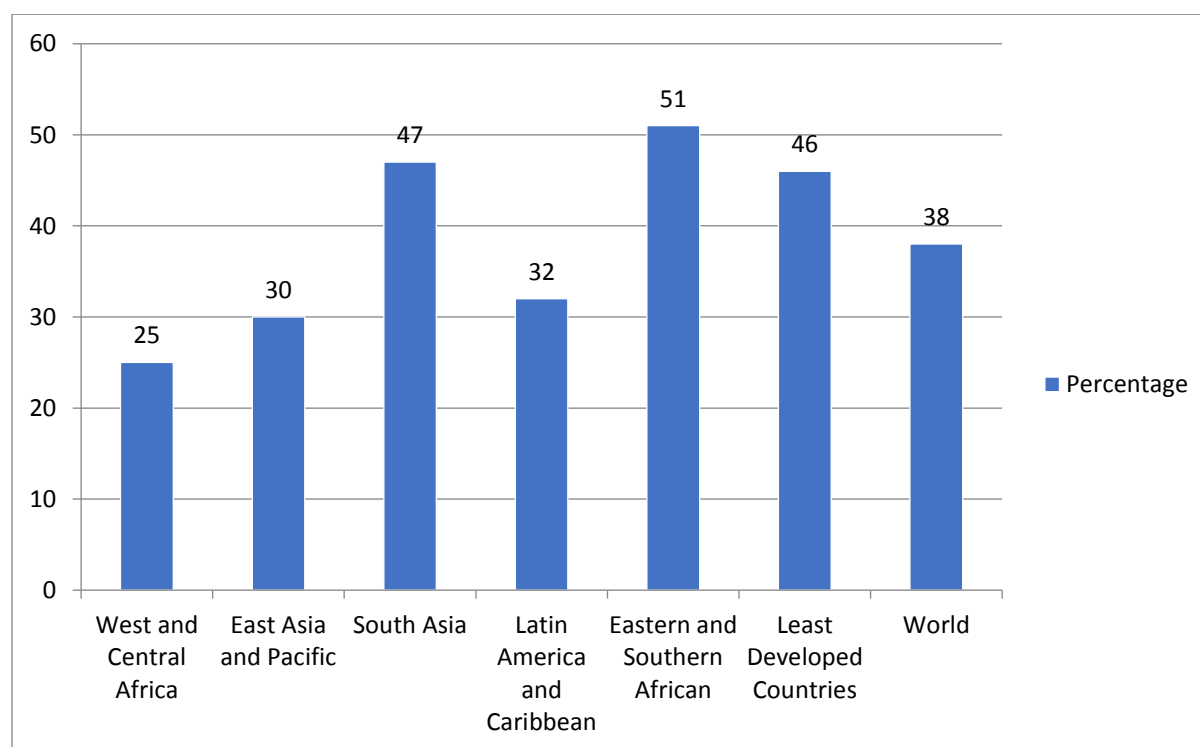
likely to breastfeed exclusively (Glassman et al. 2014, Minas & Ganga-Limando 2016). A study by Mogre et al. (2016) revealed that 92.6 % of mothers who participated in the study had a positive attitude towards exclusive breastfeeding.

## 2.3 Practice

The global exclusive breastfeeding rate is 38 %, however the World Health Assembly in 2012 set a target to increase the rate of exclusive breastfeeding by at least 50 % by 2025 (WHO 2017b).

Figure 1 illustrates the percentage of infants under six months who were breastfed exclusively around the globe.

Figure 1. Percentage of children under 6 months of age who are exclusively breastfed by region (UNICEF Global Database 2015 (modified)).



### 2.3.1 Child feeding practices in Ghana

The perception of breast milk as an ideal food for babies is farfetched within the Ghanaian society. It used to be a very common practice for mothers to breastfeed their babies from birth until the child is two or more years, however due to barriers faced in breastfeeding, the need to perform

other duties, coupled with advertisements airing on national television about infant commercial food products, most mothers have given in to feeding baby with breast milk substitutes (Fosu-Brefo & Arthur 2015). Lack of knowledge about the right way to breastfeed a child, the option of bottle feeding a child with expressed breast milk in the mother's absence and the lack of knowledge of the benefits of breastfeeding especially during the first six months of an infant's life are also among the reasons for reduced rates in breastfeeding (Gyampoh et al. 2014, Arthur et al. 2015, Mogre et al. 2016).

According to reports from the 2014 Ghana Demographic and health survey, exclusive breastfeeding rate among children less than 6 months was 52 % with 4 months mean duration. This portrays the country's slow growth in reaching the target of achieving a total national coverage as set by WHO/UNICEF. The demographic and health survey indicated a high rate of child malnutrition which accounted for 66 % anemic rate among children under 5 years which could very well be prevented through proper child feeding practices including breastfeeding. Reports from a study conducted by Dun-Dery and Laar in 2016 showed that 99 % of Ghanaian children who are under 6 months were breastfed. However, 63 % of these children were given only breastmilk within this period. For those who give supplementary food to their babies before their sixth month, the distribution of complementary food added to breast milk were, 7 % of other milk, 18 % water, 4 % other liquids and 19 % of mashed meals (GDHS 2014). This early introduction of breast milk substitutes, water and food usually increases the baby's risk of infections leading to high incidences of diarrhea and child mortality (Popokin et al. 1990, Arifeen et al. 2001, Aidam et al. 2005). Poor nutrition has been identified as one of the leading causes of under five deaths in the country. Insufficient food nutrients and poor feeding habits reduce the body's immunity to diseases, causing impaired physical and mental development (Arthur et al. 2015).

A study by Gyampoh et al. (2014) reported that 13 % of children less than 5 years are underweight in Ghana. The country recorded a slow decrease in neonatal deaths compared to under five mortalities over the past years (Ghana Health Service 2016). A study conducted in Northern Ghana proved that children who are introduced to complementary foods after their sixth month of life are protected from chronic malnutrition (Saaka et al. 2015). A study by Dun-Dery and Laar in 2016 also reviewed that professional mothers are very much aware of the concept of exclusive

breastfeeding and its recommendations; however, its practice was low (10.3 %). Notwithstanding these current trends, the Ghana Child Health Policy regarding recommendations by WHO and UNICEF encourages lactating mothers to breastfeed exclusively for the first six months of their babies' life (GHS 2015).

### **2.3.2 The effect of maternal age on the practice of exclusive breastfeeding**

Maternal age reportedly has a link with infant feeding choices and practices (Kitano et al. 2016, Fosu- Brefo 2015). A study by Mensah et al. in 2017 found a relationship between the age of a mother and the practice of exclusive breastfeeding, however, the study identified that other factors come to play in the choice of practicing exclusive breastfeeding. The work by Mangrio et al. in 2017 reported a similar assertion but found a low level of evidence in the connection between maternal age and the practice of exclusive breastfeeding. A study conducted in Ghana reported that mothers aged between 25 years to 49 years were more likely to breastfeed their babies for longer periods than younger mothers (Owusuaa 2015).

### **2.3.3 The effect of maternal education**

It is evident that the higher the level of education of a nursing mother the higher, the chances of her breastfeeding her child for a longer duration (Thu et al. 2012). Several studies conducted within Ghana have reported that mothers' level of education is a major determinant to the practice of exclusive breastfeeding (Aidam et al. 2005, Gyampoh et al. 2014, Arthur et al. 2015, Mogre et al. 2016). It is noted that women with secondary and tertiary education are more likely to be educated on exclusive breastfeeding, they are aware of its benefits to both babies and mothers, hence they are well motivated to breastfeed exclusively. In dealing with the effect of lack of education on exclusive breastfeeding, health care personnel, facilitators and counselors are encouraged to pay much attention to the uneducated or less educated mothers and child care givers when providing education on breastfeeding (Mogre et al. 2016).

### **2.3.4 Maternal employment status and duration of maternity leave**

According to a study conducted by Dun-Dery & Laar in 2016, the rate of exclusive breastfeeding among working mothers at six months is 10.3 % although early initiation and practice of exclusive breastfeeding soon after delivery was 91 %. The study results prove that the length of maternity

leave granted to a working mother affects her choice of infant feeding and the rate of practicing exclusive breastfeeding. The longer the period of maternity leave offered to a working mother the longer the practice of exclusive breastfeeding and vice versa (Februhartarty et al. 2012, Dun-Dery & Laar 2016, Mangrio et al. 2017). Longer leave period gives the mother an opportunity to spend more time with her baby, hence the higher the chance of practicing exclusive breastfeeding. Maternity leave period varies in Ghana, depending on one's occupational status, however, the official maternity leave period is twelve weeks (84 days) with full pay including two weeks extension for mothers who go through caesarian section or an abnormal delivery (Dun-Dery & Laar 2016).

The study by Mensah et al. in 2017 revealed much disparities between self-employed mothers and mothers who are employed by a private or public organization in terms of the duration and practice of exclusive breastfeeding. Reasons for this assertion is because independent mothers work according to their schedule and therefore determine when to resume work and when to take breaks at work to feed their babies; babies are usually taken to the workplace and a place is apportioned for feeding the baby. Whereas mothers employed by others choose baby feeding options according their work schedule. Exclusive breastfeeding rates among public-private sector working mothers is usually low (Mensah et al. 2017). Due to short duration of maternity leave, nursing mothers are faced with the challenge of breastfeeding their children at the work place which is usually not baby friendly hence it discourages the practice of exclusive breastfeeding while promoting the use of breast milk substitutes. These challenges require legislation, which will encourage and support working mothers to breastfeed for a longer period.

### **2.3.5 Place of giving birth**

Place of delivery and the number of antenatal and postnatal attendance during and after pregnancy are high predictors of the knowledge and practice of exclusive breastfeeding. Women who live in the urban centers, with available and accessible health care centers and health personnel are more likely to initiate breastfeeding early and are willing to practice exclusive breastfeeding than women who deliver at home and assisted by unskilled traditional birth attendance, family or friends (Tawiah-Agyemang et al. 2008.).

According to Ghana Demographic and Health Survey (GDHS 2008), 57 % of deliveries took place in health facilities with 48 % in government own facilities. Out of the 42 % births, which took place at home, 58 % of these cases occurred in the rural settings while 17 % took place in the urban centers. More than half of delivery cases were attended to by health personnel, with 30 % assisted by traditional birth attendant and 8 % by close relatives. A study conducted in Kintampo in the Brong Ahafo Region of Ghana on Early-Initiation of Breastfeeding reported that mothers who breastfeed their babies within an hour to 12 hours of having their baby are more likely to breastfeed exclusively than mothers who breastfeed later after 12 hours of birth (Tawiah-Agyemang et al. 2008). It is also noted that women who attend prenatal classes and deliver at a health care center are more likely to breastfeed their newborns early enough through health education and assistance from health care providers (USDHHS 2011).

### **2.3.6 Mode of delivery**

Reports from earlier studies have shown that the mode of delivery and the weight of baby are closely linked with the practice of exclusive breastfeeding. Women who go through normal delivery with normal baby weight are more likely to practice exclusive breastfeeding than women who give birth through a caesarian section with preterm babies (Tampah-Naah & Kumi-Kyereme 2013, Andy 2015, Dun-Dery & Laar 2016). Tampah-Naah & Kumi-Kyereme (2013) in their work on the determinants of exclusive breastfeeding acknowledged the high tendency of a mother to breastfeed her average size baby exclusively than overweight or preterm baby due to complacency or anxiety.

### **2.3.7 Support**

Assistance received by lactating mothers during the period of breastfeeding is vital in achieving the recommended period of exclusive breastfeeding (Flacking et al. 2010, Rempel & Rempel 2011, Mithani et al. 2015). This assistance can range from emotional support through encouragement and positive enforcement, support through education or informative programmes on breastfeeding, instrumental support such as creating an environment of comfort to facilitate breastfeeding among busy or working mothers (Ratnasari et al. 2017).

The traditional role played by husbands especially in developing countries during decision making within a family, as well as the contributions of close relatives play a key role in influencing a behavior (United Nations 2001). When fathers are aware of the essence of breastfeeding and have positive attitude towards it, they are more likely to influence their spouses to breastfeed exclusively and for longer duration of time. The significant other and close relative most often represent the support system to a nursing mother, they provide emotional and material support as well as assistance in performing chores at home and other duties pertaining to child care to make time for the mother to breastfeed (Flacking et al. 2010, Rempel& Rempel 2011, Mithani et al. 2015).

Just as an approval from the significant others increases the practice of exclusive breastfeeding, studies have reviewed that disapproval from close relatives and friends can as well hinder the practice of exclusive breastfeeding (Zhang et al. 2015, Ratnasari 2017, Mensah et al. 2017). Support received from the workplace can also influence mother's child feeding choices as well as the duration of exclusive breastfeeding. Exclusive breastfeeding when practiced effectively promotes organizational growth, productivity and efficiency since when workers have healthy children, they take less frequent sick leaves, hence there is the need for employers to provide opportunities which will facilitate breastfeeding (UNICEF 2010).

### **2.3.8 Breastfeeding campaigns and support groups in Ghana**

Early and substantial knowledge about breastfeeding, building confidence to breastfeed and the support during breastfeeding immensely contribute to the practice of exclusive breastfeeding (Idris et al. 2012). Intervention programmes and campaigns are avenues for providing education, assistance in answering questions about challenges faced during breastfeeding. These programmes usually involves the joint effort of a body of health workers, mothers at various community levels and other health advocates performing the key role of awareness creation about the health benefits of breastfeeding.

There are a lot of health programmes which are on-going in Ghana geared towards promoting child health and survival. For instance, Baby Friendly Hospital Initiatives (BFHI) was introduced in Ghana in 1995 as an approach to help minimize the rate of infant deaths in Ghana. This initiative supported by WHO and UNICEF was to promote the level of understanding concerning

breastfeeding practices and to create awareness about the ten-steps to successful breastfeeding (Tampah-Naah & Kumi-Kyereme 2013, Kakrani et al. 2015, Mogre et al. 2016). This initiative supports and train health workers, equipping them with resources needed for education on breastfeeding. With the adoption of this initiative, the Ghana Health Service took an active role in overseeing the development, implementation and the promotion of exclusive breastfeeding during the first six months of life.

Every Newborn Action Plan (ENAP) led by WHO and UNICEF, is a policy set to address the problem of high neonatal mortality rates which has been hindering the achievement of the Millennium Development Goals (MDG) 4 and 5 in reducing maternal and infant death rates in Ghana. It is a roadmap for change to end preventable child deaths. Focus areas included reproductive care, maternal, newborn and child health (ENAP 2014-2020).

As a means of regulating the sale of inappropriate breast milk substitutes, International Code of Marketing of Breast Milk Substitutes was implemented in 1981 by World Health Assembly (WHO 2017). The trend in the sale of excessive milk substitutes has caused a decline in breastfeeding worldwide, coupled with infant malnutrition and increased mortality (UNICEF 2007) hence the need to abolish it. Similar to this initiative is the Ghana Breastfeeding Promotion Regulation also known as the Legislative Instrument was enacted in 2000 by the government of Ghana to prevent excessive sale of breast milk substitutes, this aimed at promoting exclusive breastfeeding in the country (Tampah-Naah & Kumi-Kyereme 2013, Mogre et al. 2016).

Another policy, which seeks to support the legislations above in collaboration with the Ghana Food and drugs board is Ghana Child Health Policy. It promotes exclusive breastfeeding from birth to 180 days of life (GHS 2015). Education, communication and informative materials designed to promote the campaign on exclusive breastfeeding has been instituted nationwide, available to be used by both health workers and public (Tampah-Naah & Kumi-Kyereme 2013). High Impact Rapid Delivery (HIRD) approach is a national initiative to minimize infant and maternal deaths. It includes mainly of health and nutritional interventive education at the community levels by informing mothers about ways to minimize childhood diseases, the use of ORS during diarrhea, vaccination, vitamin A supplementation, advocates the need for first six months exclusive



breastfeeding, appropriate complementary feed after six months, proper care for new born, regular deworming, family planning among others (Fosu-Brefo & Arthur 2015, MOH 2017).

Community based infant and young child feeding is a UNICEF incorporated programme, adopted in Ghana, which aims at promoting child growth, wellbeing and development through community level education to mothers, caregivers providing counselling, practical assistance and improving baby feeding practices. This programme ensures ground level access to health care, making healthcare accessible to vulnerable groups. This package also includes training tools for health personnel involved in community work (UNICEF 2016).

As a comprehensive child healthcare programme, the GHS's Child Welfare Clinic (CWC) provides child care services to promote the health of infants in the country. Among the numerous services provided include immunization against infectious diseases, growth monitoring, health promotion and nutrient supplementation. Much of its activities are directed towards the education on breastfeeding and proper care for newborns (Gyampoh et al. 2014). This clinic teaches mothers especially the young ones the act of breastfeeding a baby.

As a branch in the CWC, the Growth Monitoring and Promotion (GMP) is a programme embarked on to empower mothers to take proper care of their children, it provides educational campaigns on childcare, feeding and healthcare. It promotes a cordial relationship between public health workers and mothers (Gyampoh et al. 2014). With the help of qualified health personnel, mothers are enlightened about the activities that come to play in caring for a baby and proper ways of feeding a baby. Project Share Ghana, a non-governmental organization located in the Northern part of the country is an example of breastfeeding support groups which provide initial breastfeeding training to young mothers in various communities within the region. In addition to its focus areas of primary health care, education and agriculture, facilitators encourage mothers on the importance of breastfeeding and train working mothers on how to effectively incorporate breastfeeding into the corporate life (PSG 2008).

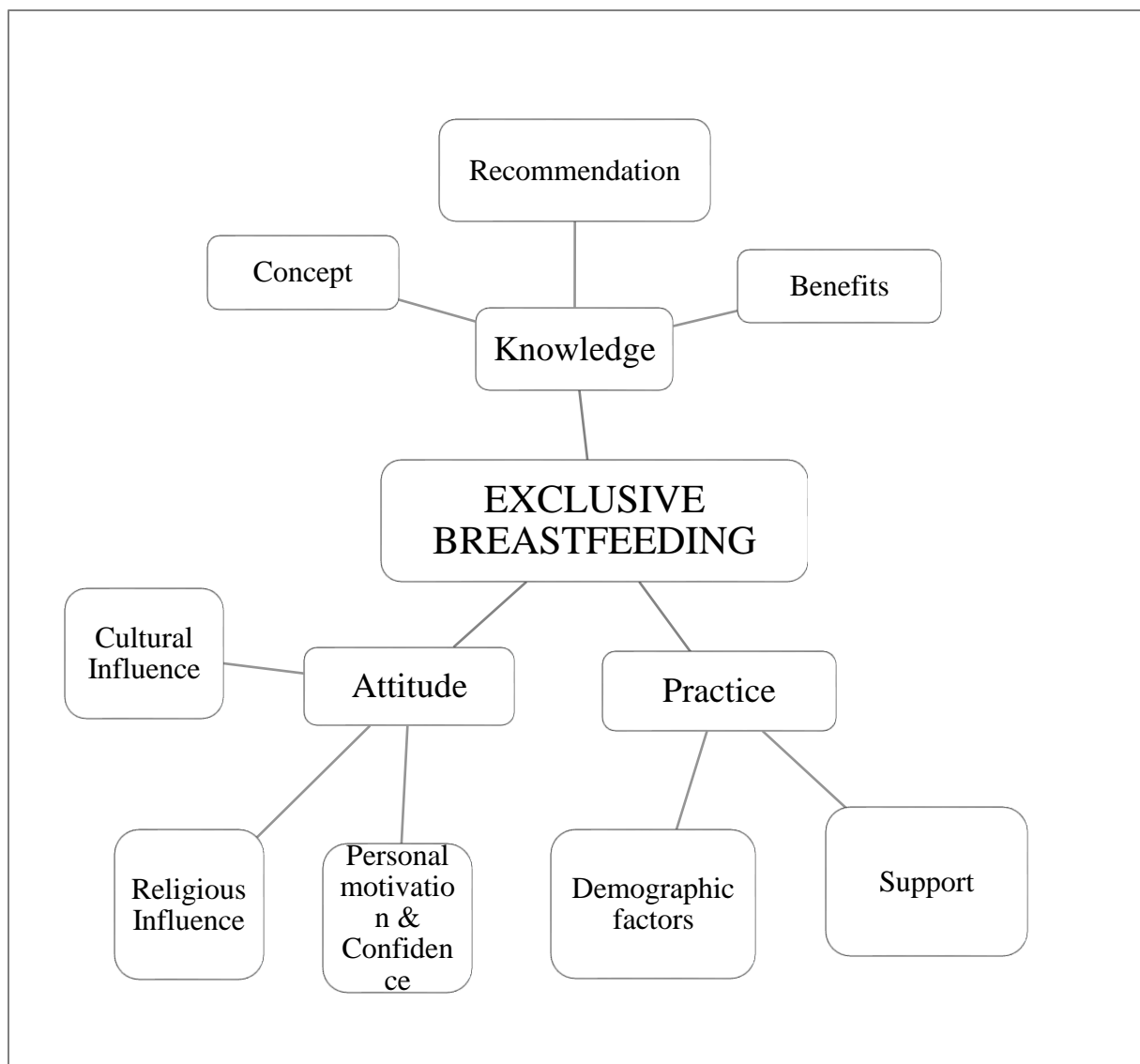
Promoting breastfeeding among traders and market women in Ghana (in Ghanaian society, market-women is a term commonly and casually used for all the women who work in several aspects of a

market setting), the Ghana Infant Nutrition Action Network (GINAN), an organization which focuses on infant feeding and nutrition issues provide peer counseling to market women whilst promoting a baby-friendly market environment. Market women are often unable to attend post-natal health services, and because of high illiteracy rate, most of these women lack adequate education about the enormous benefits of breastfeeding a baby. GINAN focuses on empowering them.

## 2.4 Logical Framework of the study

Figure 2 gives an overview of the main themes in this study; Knowledge, Attitude and Practice of exclusive breastfeeding.

Figure 2. Knowledge, attitude, practice of Exclusive Breastfeeding.



### **3. AIMS OF THE STUDY**

The main objective of this research was to find out the knowledge and attitude of mothers towards exclusive breastfeeding and how it is practiced in Techiman-Ghana.

Specifically, the study aims were:

- To investigate the knowledge about the concepts, recommendations and benefits of exclusive breastfeeding.
- To understand the social, cultural and religious influences on their outlook of exclusive breastfeeding.
- To explore their confidence, satisfaction and social support a mother receives towards practicing exclusive breastfeeding and the associated challenges.

## 4. METHODOLOGY

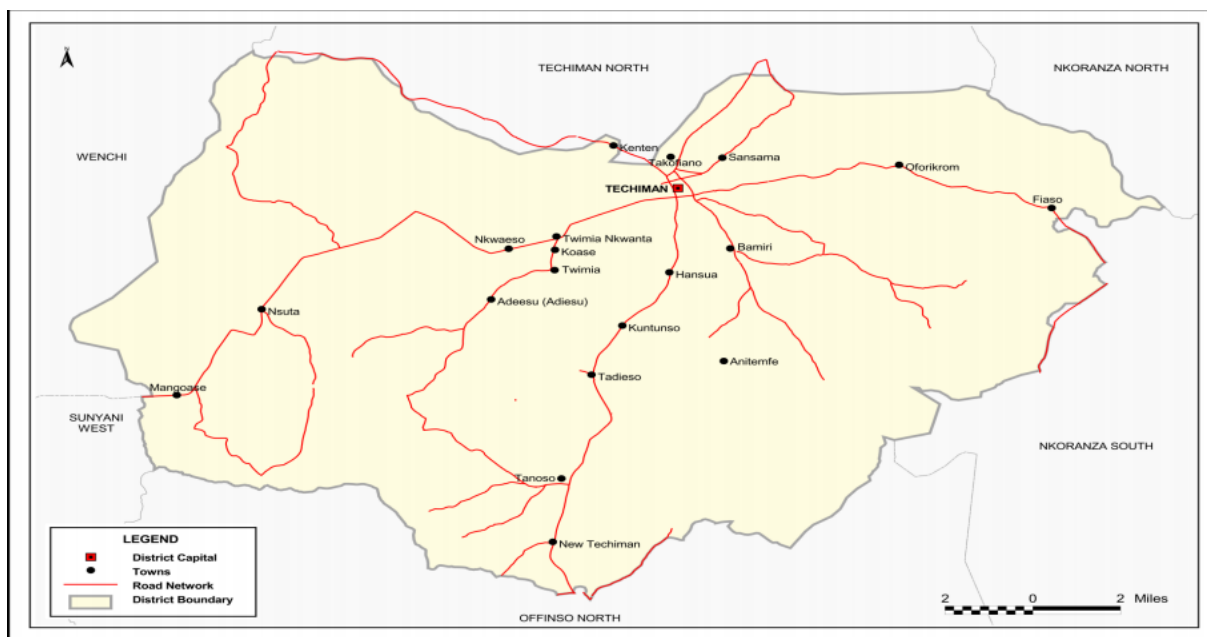
### 4.1 Study design

This study is a non-experimental study based on a mixed method approach using both quantitative and qualitative data. Primary data was collected from the study setting within a period of five weeks during the month of June and July 2016 in Techiman, Ghana.

### 4.2 Study setting

The study setting; Techiman municipality is situated in the central part of Ghana in the Brong Ahafo Region, the municipality has a total population of about 147,788 people with the ratio of 51.5 % and 48.5 % to females and males, respectively. The municipality has a land area coverage of 669.7 km<sup>2</sup> of which 64.5 % of the population lives in the urban areas while 35.5 % are rural residents (Population Census 2010, Anafo 2011, Ghana Statistical Service 2014).

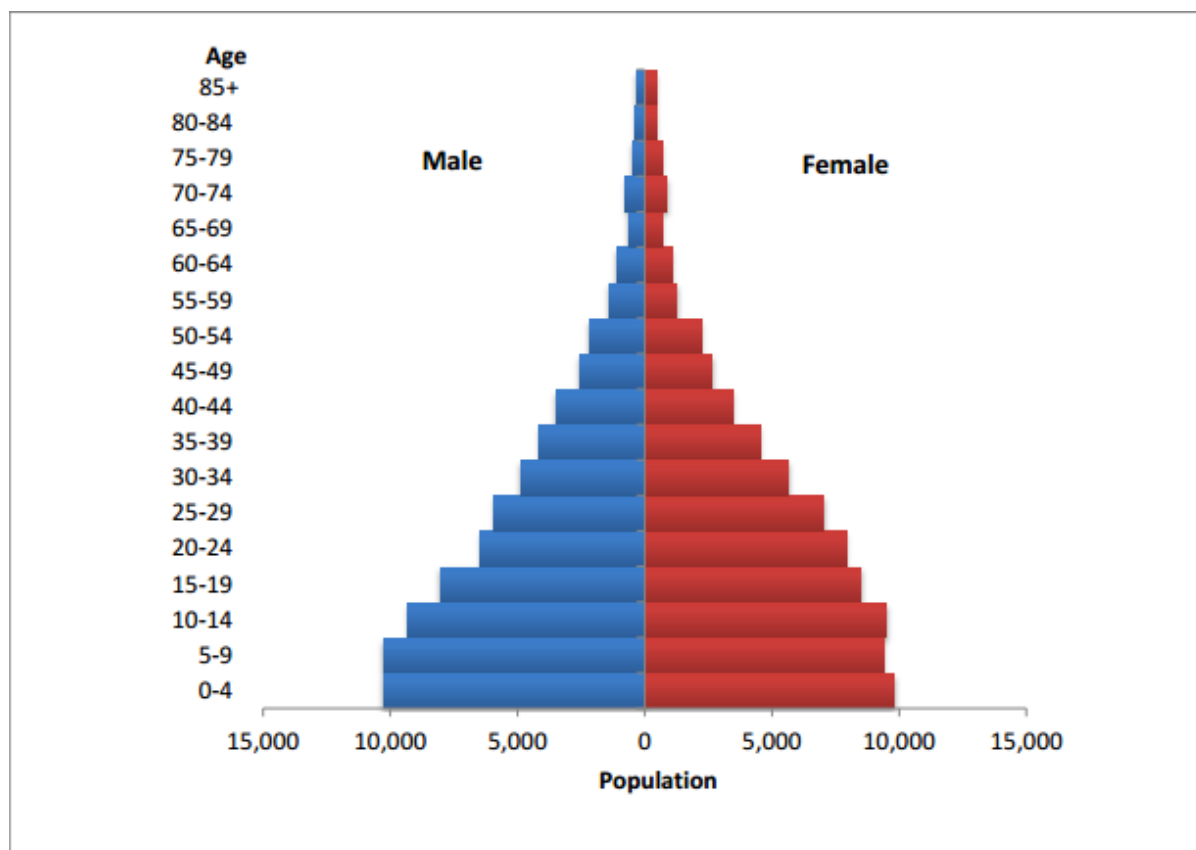
Figure 3. Map of Techiman Municipal Assembly (Ghana Statistical Service 2014).



The municipality has a population of 64.4 % aged below 40 years and 35.6 % are between 40 years to 64 years. Out of a total of 39718 (26.9 %) women aged 15 to 49, the municipality recorded a General Fertility Rate (GFR) of 102.7 live births per 1000 women and Crude Birth Rate (CBR) of

27.6 live births per 1000 population. The main economic activity in the municipality is agriculture and its related trade. It provides one of the largest markets in Ghana (Ghana Statistical Service 2014).

Figure 4. Age-sex structure, sex ratios and population pyramid of Techiman (Ghana Statistical Service 2014).



### 4.3 Study participants

Participants were selected based on a convenience sampling method. With reference to previous studies conducted on breastfeeding (Aidam et al 2005, Ayawine & Ngibise 2015), these criteria were used in choosing respondents to participate in the study. The inclusion criteria for choosing mothers eligibility required a mother who has been living in Techiman municipality for at least three years, who can speak and write in English. She should be a mother who has at least one child who is aged six to eighteen months (Birth time frame was chosen with much consideration on mothers who have passed through the period recommended for exclusive breastfeeding of children

and their ability to recall this information). The selection criteria also involved mothers who upon qualifying to be included in the study willingly agreed to take part in the study and had enough time to answer the questionnaire.

#### **4.4 Data collection**

##### **4.4.1 Questionnaire structure**

Structured and semi- structured questionnaires were used for the data collection in a form of closed-ended (multiple choice) and open-ended question style. The questionnaire comprised of questions with suggested answer options for a participant to choose from and questions which require a participant to fill in her own response to a question in detail using her own word choice in English (Farrell 2016). Based on the study objectives, sample questions were adopted from a KAP study on breastfeeding practice among Ghanaian rural lactating mothers (Mogre et al. 2016) and a study conducted in Minnesota on breastfeeding support system (Jaakola 2015).

The questionnaire included a set of 40 questions organized under five main sections with each section comprising of sub questions aimed at gathering information from mothers about exclusive breastfeeding. The first sections of the questionnaire included a set of variables which targeted information about mothers social and demographic characteristics namely age, number of children, place of residence, family setting, marital status, level of education, employment, family income, religion, place of delivery of the youngest child and proximity to a healthcare center. The proceeding sections centered around the independent variables of the study which were formulated to retrieve information from mothers about their knowledge in breastfeeding and exclusive breastfeeding, attitude towards breastfeeding and exclusive breastfeeding, how they practiced it when they had their babies and the support they received during this period. Questions relating to mother knowledge included the ideal food, meaning of exclusive breastfeeding, duration of exclusive breastfeeding, benefits of feeding a baby with breastmilk, challenges faced during breastfeeding and sources of information.

Questions on mothers' attitude towards exclusive breastfeeding included their perception about the concept which is been studied, their feelings and emotions, confidence, reasons for introducing complementary feed, societal perception, religious perception and spousal or family reaction. On

practicing exclusive breastfeeding, questions to identify factors, which surrounded the child's birth that promoted or hindered breastfeeding were asked. These included a question about complications likely to hinder breastfeeding initiation, duration of breastfeeding, duration of exclusive breastfeeding, infant feeding choices and decisions and challenges encountered. The section on support comprised of sources of child feeding information, sources of physical and emotional support rendered to the lactating mother during the period of breastfeeding.

#### **4.4.2 Data collection process**

Five women who matched the inclusion criteria were selected to answer questionnaires for piloting. Questionnaires were pretested for purposes of comprehension, readability, and easiness of administration. After piloting, there were no major corrections needed since according to their responses the questions were clear and understandable.

In the data collection process, questionnaires were administered among subjects in three different settings. These were; Techiman Holy Family Hospital, Roman Catholic Church, and a Muslim community within the study setting. Eligible mothers were those who were available at the venue during the time of administration and who willingly accepted to participate in the study after reading through the consent form. These mothers were women who lived or worked at these venues, mothers who had come to the hospital with their children for routine medical checkups and those who are available to worship at the church. The purpose of this study was discussed with participants including the instructions on how to answer the questionnaire. All participants were handed with equal set of questions in English language. Questionnaires were answered unassisted and returned to the researcher on same day after completion in English. Completing a questionnaire on average took about 7 to 10 minutes. Altogether, 120 women agreed to participate the study.

#### **4.5 Data Analysis**

Since the questionnaire included closed and opened questions, both qualitative and quantitative data analysis techniques were used. Quantitative analysis focused on descriptive analysis of variables using SPSS version 21. Frequencies and percentages were used to describe demographic characteristics and knowledge and practice of breastfeeding. Mothers age were categorized into age groups, "20-29", "30-39", "40-49" years.



Using content analysis (a tool in qualitative analysis which involved categorizing repetitive concepts into specific themes (Bryman 2004)), direct quotations which best represent an answer to a question were identified in themes. These themes with similar elements were categorized together. Categorization, which answers to a specific research question were clustered together. The main categories identified were perceptions about the food choices for babies, benefits of breastfeeding, social, cultural and religious influences on their outlook of exclusive breastfeeding, social support mothers receive towards practicing exclusive breastfeeding and the associated challenges.

#### **4.6 Ethical Considerations**

A written permission to carry out this research was given by Holy Family Hospital-Techiman; the main municipal and research hospital within the study area, verbal consent was also received from leaders within the other two venues. The purpose of the study was read to participants by the primary researcher in English language, giving the mothers a fair understanding into the study aims and the chance to freely choose to participate in the study. The research was conducted with much consideration in ensuring subject's anonymity and dignity hence participants were allowed not to respond to questions they were not comfortable with. The anonymity of participants was ensured by non-disclosure of identification details such as name or address. Mothers who participated in this study were literate in English language and filled out questionnaires unassisted, therefore some degree of privacy was secured.

## 5. RESULTS

### 5.1. Descriptive analysis

#### 5.1.1 Socio-demographic characteristics of mothers

A total of 120 mothers answered the questionnaire of which the minimum age of a mother was 20 years and the maximum age was 48 years with an overall mean age of 32.9 years (Table 2). Most of the mothers were married (104 (86.7 %)), with more than 80 % (104 respondents) living in the urban area. A larger proportion of mothers (98 (81.7 %)) were Christians. Almost all the women had some level of formal education. Majority of mothers (47.5 %) did not give an answer to the question on average monthly income of their family meanwhile of those who responded, 54 (45.0 %) were from low and middle-income families.

Table 2. Socio-demographic characteristics of mothers.

Characteristics	Frequency (%)
AGE	
20-29 years	32(26.7)
30-39 years	70(58.3)
40-49 years	18(15.0)
MARITAL STATUS	
Married	104(86.7)
Unmarried/Single	10(8.3)
Divorced/Widowed	5(4.2)
PLACE OF RESIDENCE	
Rural	16(13.3)
Urban	104(86.7)
RELIGIOUS BELIEFS	
Christianity	98(81.7)
Islam	21(17.5)
Traditional	1(0.8)
LEVEL OF EDUCATION	
No education	3(2.5)
Primary	8(6.7)
Secondary	27(22.5)
Tertiary	81(67.5)
AVERAGE MONTHLY INCOME OF FAMILY	
100-2000cedis (22- 445euros)	54(45.0)
2001-4000cedis (446-890euros)	6(5.0)
4001-6000cedis(891- 1336euros)	3(2.5)

### 5.1.2 Knowledge on exclusive breastfeeding according to age and education

Among the mothers who selected the correct definition of exclusive breastfeeding, 65 were within the ages of 30-39 years, 30 mothers within 20-29 years and 15 mothers within 40-49 years. Almost all mothers especially those with secondary or tertiary education were aware of the definition of exclusive breastfeeding, of which they defined it as feeding baby with only breastmilk. There was a significant association between the educational level of a mother and their knowledge in exclusive breastfeeding with a p-value of 0.001. Table 3 illustrates the distribution of mothers' responses in relation to the definition of exclusive breastfeeding according to their age and level of education.

Table 3. Age, level of education and knowledge of exclusive breastfeeding.

	Giving only Breast milk	Giving Breast milk and Formula	Giving Breast milk and water	Giving Breast milk, Water and Food supplement	Do not know the definition of Exclusive breastfeeding
<b>AGE(years)</b>					
20-29	30(93.75 %)	-	1(3.1 %)	-	1(3.1 %)
30-39	65(93 %)	1(1.4 %)	2(3 %)	-	2(3 %)
40-49	15(83.3 %)	-	-	1(6 %)	2(11.1 %)
<b>EDUCATION</b>					
No education	2(66.7 %)	-	-	-	1(33.3 %)
Primary	4(50 %)	-	1(12.5 %)	-	3(37.5 %)
Secondary	25(93 %)	1 (3.7 %)	1(3.7 %)	-	-
Tertiary	78(96.3 %)	-	1(1.2 %)	1(1.2 %)	1(1.2 %)

### **5.1.3 Knowledge on recommended length of exclusive breastfeeding, sources of information and breast milk storage**

Out of 115 mothers who answered the questionnaire, 90 (78.26 %) mothers answered that a baby should be breastfed exclusively for six months, 12 (10.43 %) mothers responded that the duration of exclusive breastfeeding should be more than six months and 13 (11.30 %) mothers indicated that babies should be breastfed for less than six months. Five mothers did not answer this question. Majority of mothers (104) with a percentage margin of 90.4 reported that they received information about the recommended length of breastfeeding from their healthcare providers. A mother failed to respond to this question. According to 93(80.9 %) of mothers, breast milk can be expressed and stored for future use. 23 (20%) mothers opposed the idea that breast milk can be stored, and 4 mothers did not respond to this question.

### **5.1.4. Confidence to breastfeed**

A total of 117 mothers answered this question, 92 (78.6 %) of mothers strongly agreed to the idea that they had the confidence to breastfeed after the birth of their baby, with 12 (10.3 %) also agreeing to this assertion. 5 (4.3 %) of them were neutral, with 2 (1.7 %) disagreeing and 6 (5.1 %) strongly disagreeing to this statement. 3 mothers did not attempt the question.

### **5.1.5 Practicing Breastfeeding**

All mothers who participated in this study breastfed their babies for either a shorter or longer period. A total of 67 (55.8 %) breastfed their babies exclusively for six months or more, while 53 (44.2 %) mothers reported that they breastfed their babies exclusively for less than six months. In assessing whether other women in their family practice breastfeeding, 110 (91.7 %) of these mothers answered that other women in their family breastfeed their babies, however a mother (0.83 %) answered that women in her family do not breastfeed their children. 4 (3.3 %) mothers responded that they were not aware of this information, while 5 mothers failed to respond to this question.

### 5.1.6 Support and advice on breastfeeding

Some mothers 47 (39.2 %) reported that assistance needed at home during the period of breastfeeding were offered by their partners. However, healthcare providers and friends were the two main sources of advice during the period of breastfeeding.

Table 4. Sources of support and advice on breastfeeding.

Sources	Support	Advice
Partner	47 (39.2 %)	7 (5.83 %)
Friends	4 (3.33 %)	28 (23.33 %)
Relatives	28 (23.33 %)	17 (14.2 %)
Workmates	3 (2.5 %)	7 (5.83 %)
Doctor/Midwife/Nurse	13 (10.83 %)	35 (29.2 %)
Childcare Provider	2 (1.7 %)	2 (1.7 %)
Community group	1 (0.83 %)	3 (2.5 %)
Media/Internet	-	-
More than one answer	16 (13.3 %)	15 (12.5 %)
None of the above	6 (5. %)	6 (5 %)

When asked about the role played by spouse's family in decision making concerning breastfeeding, 110 (91.7 %) recorded that their spouse's family were supportive during the period of breastfeeding, with 4 (3.3) mothers stating that their spouse's family were not in support. 6 (5.0 %) mothers did not attempt this question.

### 5.1.7 Disapproval in breastfeeding

9 (22 %) of mothers believe their friends were not in support of breastfeeding, 8 (19.5 %) mothers answered that their families were not in support of breastfeeding, 8 (19.5 %) respondents believed they did not get approval from their workplace, with 8 (19.5%) receiving disapproval from community and 4 (9.8%) from the media. Also partners of 4 (7.3 %) mothers were against

breastfeeding. However, majority of these mothers (79) who answered the questionnaire did not respond to this question.

## **5.2 Qualitative analysis**

Participants described their knowledge in breastfeeding which focused on their perception about the ideal food for babies who are less than six months old, the importance of practicing exclusive breastfeeding and challenges encountered during breastfeeding. According to most of these mothers, their perception about exclusive breastfeeding were shaped by societal influences, religion, and other sources of motivation. In addition to the above-mentioned variables, the choice of complementary feed after the period of exclusive breastfeeding and reasons for introducing food were discussed.

### **5.2.1 Perception about the ideal food for babies less than six months old**

Mothers presented a two-sided view concerning breastmilk as the right food for babies who are less than six months old, with reference to the UNICEF/WHO recommendations (UNICEF 2015, WHO 2016). Many mothers perceived that breastmilk is the ideal food for babies less than six months. This is evident through their responses provided below:

“Breastmilk alone can supply the baby with enough nutrients for proper growth, it contains all the nutrients the baby needs during first six months.”

A mother stated:

“Six months exclusive breastfeeding is recommended, that is the education at Antenatal Clinic.”

Other mothers explained the possible reasons behind the need to feed an infant with only breast milk for six-months by stating that:

“The digestive system is not strong and ready to digest other foods.”

“Because any additional feed would dilute the nutrients in the breastmilk. It can also introduce contaminants into the baby.”

“Complementary food may either be contaminants or not having the right proportion of food nutrients necessary for the child growth at that level.”

On the other hand, a mother expressed her view that even though breastmilk is the recommended food for babies (WHO 2016), other supplements should be added to breastfeeding.

She stated:

“Yes, water should be added to breastmilk, also porridge, formula milk, cereal should be given to babies when they need it.”

### **5.2.2 Benefits of breastfeeding**

Mothers perceived that breastfeeding promotes growth and development of baby, breast milk serves as a first immunization for the baby, it provides natural food for baby which is safe, readily available, and economical. It promotes the bond between mother and baby, it serves as a natural family planning method, prevents breast cancer and aid in brain development.

A mother who participated in this study responded to the advantages of breastmilk, stating:

“It is already made food; it is germ free; it is always available at any point in time; it is always in a warm state.”

Another responded that:

“Breastfeeding makes a child heathy and strong and prevents the baby from getting sick regularly and opens the mind of the baby.”

Likewise, this mother stated:

“It gives the child its first immunity.”

As stated earlier, these women were of the views that, not only is breastfeeding helpful to the baby but also to the mother. This practice was perceived as a birth control method and reduces the risk of breast cancer. For instance, a mother stated:

“It prevents breast cancer and is a natural family planning.”

Another mother explained this birth control element achieved during breastfeeding in detail that:

“It suppresses ovulation thereby delaying subsequent pregnancy.”

Another mother explains the importance of breastfeeding in bond creation by stating that:

“Breastfeeding enables the child to know the mother very well and love her.”

### 5.2.3 Challenges encountered in practicing exclusive breastfeeding

According to these mothers, problems encountered during breastfeeding ranges from physical discomforts such as nipple and waist pains, breastfeeding in public, difficulties experienced during the weaning period and managing one's daily activities while breastfeeding.

For instance, a mother expressed her concerns by writing that:

“The early breastfeeding is not easy. The nipple becomes sore. When breastfeeding your dress can become wet. It is time wasting.”

Similarly, another mother stated:

“Breastfeeding causes frequent urine, mother not free from the baby to undertake development projects, mother's sleeping time is always interrupted.”

Through breastfeeding, serious infectious diseases such as HIV/AIDS, active tuberculosis, human T-cell lymphotropic virus type I or type II, can be transmitted from an infected mother to her child (AAP 2017). A mother answered in relation to the perceived problems which hinder the effectiveness of practicing exclusive breastfeeding by stating that:

“When a mother is having disease like HIV/AIDS it can affect the baby.”

Another mother raised a concern that exclusive breastfeeding prolongs or affects the period of weaning. She explained this notion by stating that:

“After the six months, the babies find it not easy to eat any food the mother will provide, only the breastmilk they want.”

Also, a mother shared her concerns about how breastfeeding affects the natural aesthetics of a woman's body. She stated:

“Mother if not properly fed could fall sick and grow lean and some women complain that breastfeeding can make the breast to fall, loose shape.”

Likewise, a mother shared her experience:

“Breastfeeding makes mother feel uncomfortable by showing the breast especially at public places or gatherings.”

From the view point of working mothers on the challenges encountered by combining work and breastfeeding, a mother who is a banker stated:

“As a working mother, I do not get enough time to breastfeed my baby.”

Others responded that breastfeeding is:



“Very stressful when you are in a hurry to go to work but cannot get enough breastmilk to express down for your baby.”

“As a mother, I have to be always available and close to baby and therefore has less time for other activities.”

When mothers were asked if it was easy to seek advice concerning problems encountered during breastfeeding, they shared different views. A participant responded that:

“Sometimes it is difficult to complain about sensitive issues as such nipple pain.”

Another stated:

“Yes, it is easy, but sometimes mothers do not get support on breastfeeding when they talk to people.”

Likewise, this mother responded:

“Sometimes they discourage us, for the fact that baby is grown we have to stop breastfeeding.”

#### **5.2.4 Factors which influence attitude towards breastfeeding**

While probing into the elements which influence mothers’ behavior and attitude in making breastfeeding choices for their babies, factors that came to light included societal views and rumors on breastfeeding, religious views, self-motivation, support and encouragement from healthcare providers, spouse and family.

##### **5.2.4.1 Societal Influences**

Society influences a behavior and lifestyle of individual. Breastfeeding in general is perceived as a natural practice and is highly encouraged by the Ghanaian society.

A participant stated:

“My community believes in breastfeeding, they say it is a good practice.”

This participant stated in detail:

“They are in support because they know that as a mother to your child having the knowledge of exclusive breastfeeding helps your child in many ways for both the child and mother. The reason is that because you as the mother do the exact exclusive breastfeeding which were recommended by Doctor, Nurse or Midwives, your baby or child will not be sick often to bring any pressure on you the mother.”

However, not all the mothers perceived that this positive view of the society towards breast feeding also extends to exclusive breastfeeding, as given in the following quote:

“Our society believes that breastfeeding is good and child be fed for two years but should be added with water and other foods. Secondly my society do not believe in exclusive breastfeeding because they believe is a punishment to the baby not been given water.”

Likewise, a respondent confirmed this claim by stating:

“People think I am being too strict with my exclusive breastfeeding and that I should at least give my child water.”

Mothers are encouraged to add water and other complementary foods to breastfeeding for numerous reasons. Some of these reasons came out in following responses:

“They always advice mothers to support food and drink to breastfeed with our baby because they think feeding your baby only with breastmilk will make your baby become weak and sick continuously because there is no enough food in breastmilk which will help your baby.”

“They say you are primitive when your breastfeeding goes on for more done six months.”

“Some think when you don’t have money to buy your baby those foods, breastfeeding becomes your only option.”

Speculations and rumors surrounding breastfeeding practices among people reflect their impact on how mothers perceive breastfeeding especially exclusive breastfeeding, however, the magnitude of this impact is not measurable in these results. Below are some rumors shared by participants:

“Most people have the perception that exclusive breastfeeding is a foreign culture.”

“Breastfeeding alone can’t feed a baby up to expectation or satisfy the baby, also breastmilk alone will make a baby thirsty when given only breastmilk without water to your baby.”

“The perception that when mother breastfeed the baby it serves as family planning for mother.”

“Some people are of the view that when babies are breastfed for long time it makes their teeth decay.”

#### **5.2.4.2 Religious influences**

Christianity, Islam and Traditional religion are the three main religious groups in the country (Ghana Statistical service 2012). However, results of this study revealed that Christians and Muslims are the two dominant religious groups in the study area. Responses of the study subjects clearly indicate that both religious groups share a positive view towards breastfeeding practice, support the practice and even give recommendations. Religions play a key role in educating its members to conform to this practice.

“My religion talks of breastfeeding as the normal way of feeding the child and that it is a pre-requisite for every child to be fed with breastmilk for about two years.”

Likewise, this respondent affirms this support stating:

“My religion says it is safe for me to breastfeed my baby, it gave me the zeal to continue breastfeeding my baby.”

This respondent in relation to exclusive breastfeeding stated that:

“Islam believes in exclusive breastfeeding as it teaches us how important it is to the baby in the first six months, that it prevents the baby from illness.”

Another mother stated:

“My religion embraces health programs and therefore accepts my practice.”

#### **5.2.4.3 Personal motivation**

Self-motivation is presumed as the driving force in breastfeeding. For instance, a mother stated that it was her own decision to breastfeed her child.

“It was my own decision and self-motivation to breastfeed my son.”

Another summed up her feelings by saying:

“Breastfeeding is natural.”

#### **5.2.4.4 Support and encouragement from Health care providers, spouse and family**

However, many responded that they were motivated to breastfeed their babies because of the support and encouragement from their nurses and midwives.

“It was my nurse and midwife who advised me to breastfeed.”

“No, it wasn't my own decision to breastfeed baby, it was an advice from Midwives”

Spouse and/or the family was reported as another source of motivation.

For instance, a mother responded:

“My husband was very interested in breast feeding so he motivated me.”

Similarly, another mother stated:

“It was a decision from I and family.”

### **5.2.5 Complementary feed after exclusive breastfeeding – Choice and reasoning**

When mothers were asked about the kinds and types of food to be given to baby after the recommended period of breastfeeding, their response showed a trend of gradual introduction of softer foods in small portions. These foods are not new but are the everyday foods of the society. Complementary feeds given to babies range from commercial baby foods to homemade soft foods like rice porridge, mashed yam, soya beans diet and green leafy vegetable meals.

“I carefully select foods from various food groups as told by my nurse to prepare a nutritious diet for my child.”

When mothers were asked about the reasons for the introduction of complementary food, a mother said:

“After six months, only breastmilk couldn’t satisfy the child. Also, the nutrients the child needed were more than what is in the breastmilk.”

Likewise, a mother confirmed this statement by giving a more detailed explanation:

“My reason was after the exclusive breastfeeding for the six months I the mother notice that because my child was growing the breastmilk was not enough for her so the child needed an extra food or addition food and water or drink to make her satisfy.”

Another mother replied:

“Because as the mother I get weak when my baby sack continuously so adding foods and drinks in addition to breastmilk will help me the mother to reduce the quantity my baby sacks.”

Working mothers’ reasoning were:

“I stopped when I was unable to express enough breastmilk down for the baby before going to work.”

“I started giving my child food because of the pressure and demand of work”

And, a mother stated:

“It was a preparation towards weaning, to supplement breastmilk which is lighter”

Another also added that:

“An advice from the nurses after six months I should give my baby porridge that the breastmilk alone cannot be enough for the baby when he or she is more than 6 months and above.”

A mother attributed this action to the hot climatic conditions in Ghana, saying:

“I added water because the weather in Ghana is too hot especially during dry season”

To sum up, a mother explained that she introduced other foods to the baby’s feeding routine in order to develop an effective eating habit, to promote growth and provide a balanced diet.

“It will help the baby to develop well, have strong bones and teeth and other nutrients-balanced diet.”

## **6. DISCUSSION**

This cross-sectional study assessed the knowledge, attitude and practice of exclusive breastfeeding among mothers with children aged 6 to 18 months and the social support offered to them during breastfeeding. Findings are quite consistent with similar studies conducted on the concept of exclusive breastfeeding (Tampah- Naah & Kumi-Kyereme 2013, Mogre et al 2016, Akinyinka 2016, Tewabe 2017). A standard definition of exclusive breastfeeding and its recommendation was adopted from WHO. WHO defines exclusive breastfeeding as an act of feeding an infant with only breastmilk for the first six months of the child's life (WHO 2017). This definition was used as the basis for this study and a standard for data analysis.

120 mothers participated in this study, they were selected based on the inclusion criteria and their availability at the time of the survey. Socio-demographic characteristics of mothers were presented in a cross-tabulation. Qualitative data was used in assessing mother's level of understanding, reactions and practice in relation to the concept being studied.

### **6.1 Knowledge**

Similar to the earlier studies (Tampah-Naah & Kumi-Kyereme 2013, Mogre et al 2016), a greater number of mothers considered breastmilk as the best form of food and nutrition for infants, they agreed to the concept of six months exclusive breastfeeding of which most stated that they became aware of this information from their health care providers. The general rate of knowledge about exclusive breastfeeding was 92.4% which is almost the same as the results from a study by Dun-Dery & Laar (2016) which recorded 91.0% awareness in exclusive breastfeeding among respondents. In 2013, Tampah-Naah & Kumi-Kyereme recorded 64% rate in the knowledge in exclusive breastfeeding, this increase in the rate of awareness in exclusive breastfeeding with evidence from this study and that of Dun-Dery&Laar shows an appreciable growth in awareness over the years. Another reason for the difference in results may relate to the fact that most of this study subjects had secondary and tertiary education compared to the educational status of subjects from Tampah-Naah &Kumi-Kyereme study.

In reference to the response given by mothers, it was acknowledged that antenatal and postnatal hospital visits are great avenues where the right feeding knowledge is impacted into mothers

(Mogre et al 2016). This shows that healthcare providers play a key role in the dissemination of information about breastfeeding and other health practices.

Contrary to the result from the study by Mogre et al. in 2016 on exclusive breastfeeding among rural lactating mothers, which showed that most mothers did not know that breastmilk could be stored and used in future; for convenience or to be used in the absence of the nursing mother. It became evident from the result of this research that quite a sizeable number of mothers knew breast milk can be stored for future use. The difference in study subjects and setting; rural verse urban dwellers might be the reason behind the difference in results. If information on breast milk storage is communicated well enough to mothers especially working mothers and the work environment is made friendly enough to allow for breast milk storage, a private place to breastfeed or scheduled breaks to feed baby, the rate of exclusive breastfeeding among working mothers could be improved.

As a result of the inclusion criteria of this study, which enabled only literate mothers to participate in the study, almost all mothers who participated in this study have some level of formal education of which majority have tertiary level of education. In line with other studies (Oche et al 2011, Mogre et al 2016, Fosu-Brefo & Arthur 2015, Akinyinka et al 2016), this study shows that majority of mothers especially the highly-educated have a fair knowledge about the meaning of exclusive breastfeeding and its recommendation as proposed by WHO and UNICEF. Like the result from the work by Mohammed et al. on exclusive breastfeeding in Egypt in 2014, there was a significant relationship between maternal education and the knowledge in exclusive breastfeeding. Reasons for this result might be attributed to the perception that educated mothers are more likely to be susceptible to health information especially that which concern their children, therefore they are more likely to be aware of the importance of exclusive breastfeeding and are more willing to practice it.

In line with the work by Mohammed et al. (2014), mothers' age did not have much influence on the knowledge and practice of exclusive breastfeeding. Almost all mothers irrespective of their age at the time of giving birth were familiar with the concept, unlike the results from the study by Fosu-Brefo & Arthur 2015 which showed a significant relationship between maternal age and the

knowledge in exclusive breastfeeding. Majority of mothers showed prominent level of understanding about the essence of breastfeeding an infant. For instance, its role in protecting an infant from diseases, an ideal source of nutrients, family planning methods and its health benefits on lactating mothers. They also acknowledged to the fact that breastfeeding promotes the relationship between mother and child. Even though majority of mothers explained how safe, convenient and economical it is to breastfeed a baby, not every mother was able to practice it (Oche et al. 2011).

## **6.2 Attitude (Socio-cultural and religious influences)**

The role society plays in the perception and actions of individual within the society cannot go unnoticed. The study results show a positive role played by society in breastfeeding. Breastfeeding is a common act which has been practiced in ages, the traditional duty of the Ghanaian woman is to ensure that her children are been fed. Society play a communal role of ensuring that a new mother continually breastfeed her baby since breast milk is perceived as the main food for an infant. Due to this reason, social supports especially from close relatives are usually provided to a lactating mother in a form of assistance with domestic chores to make way for an adequate breastfeeding time (Ayawine & Ae-Ngibise 2015).

Although society appreciate the act of breastfeeding, there were evidence from responses by mothers that certain societal beliefs and culture undermine the importance of exclusive six months breastfeeding hence, contribute to the failure by most mothers to adhere to this practice (Tampah-Naah & Kumi-Kyereme 2013, Fosu-Brefo & Arthur 2015). For instance, concerns were raised that a baby needs to drink water and denying him or her of such privilege is perceived as an act of punishment. Another reason was that exclusive breastfeeding is perceived as a foreign culture which was invented by Western health advocates and was not practiced in the past.

Results from the study shows that religion play a key role in influencing the perceptions of mothers on breastfeeding. It advocates the promotion of exclusive breastfeeding and child health in general. Religious leaders acknowledge the divine responsibility of mothers in ensuring the growth and wellbeing of their children. Breastfeeding an infant is considered an ideal way of ensuring the nourishment of the child. During religious gatherings and activities, religious leaders use this



avenue to advocate the positive health implications of breastfeeding on both mother and child, while emphasizing on its cost-effectiveness (Burdette et al. 2012.).

### **6.3 Practice (Support, self-determination)**

Despite the widespread campaigns about exclusive breastfeeding, its practice is still low (Zhang et al 2015, Tewabe et al 2017). Results from this study recorded 55.8% practice of exclusive breastfeeding till the sixth month, this is quite low compared to the 92.4% rate of awareness in exclusive breastfeeding. Similarly, a study by Dun-Dery & Laar in 2016 showed that 91 % of participants knew about exclusive breastfeeding, but 10.3 % of them fed their child with only breastmilk till the sixth month. Like any other activity, breastfeeding can be quite challenging for mothers, especially for young and inexperienced mothers (Smith et al. 2012). Probing into the possible reasons for these results, findings of this study showed sentiments about the discomforts experienced in practicing breastfeeding. While some mothers expressed concerns about the physical challenges encountered during breastfeeding, others attributed their discontinuation to the lack of adequate support from the society and challenges faced at work. Again, the study conducted by Dun-Dery & Laar in 2016 and results from this study depict concerns about the unfriendly working environment and short maternity period available to nurse a newborn baby before returning to work. Hence, most working-class mothers are left with no choice than to feed their infants with breastmilk substitutes to be able to meet up with their job expectations.

There were concerns which showed lack of motivation to breastfeed due to mothers' quest to maintain the body or to avoid discomfort from cracked nipple as a result of breastfeeding, due to these reasons some mothers consciously stop breastfeeding (Aborigo 2012). This problem can be solved given adequate education on proper feeding methods. Again, the inadequacy of information was evident in concerns raised by some mothers about the fear of transferring diseases to an infant through breastfeeding.

Having the right knowledge about breastfeeding and the right way of doing it showed great confidence in majority of mothers. In line with findings from other studies, health care providers were identified as the main point of contact when there is a need for concrete answers to problems encountered during breastfeeding (Tampah-Naah & Kumi-Kyereme 2013, Mogre et al 2016).

Mothers whose partners assist them to breastfeed by encouraging them and aiding with house work had higher ability to breastfeed exclusively as compared to those whose spouses did not support breastfeeding (Aborigo et al 2012, Babakazo et al 2015). Likewise, family support or having other women in the family who breastfeed their infants. They provide an avenue for new mothers to learn about breastfeeding and seek help when faced with challenges.

The decision to successfully breastfeed exclusively and its successful practice is determined by other comparing factors which go beyond the support received from family and friends. For instance, responses from mothers showed that the motivation to breastfeed exclusively was personal, in the sense that practicing it becomes easier and less demanding. Confidence to breastfeed promote the desire to breastfeed exclusively amid challenges (Babakazo et al. 2015). In conclusion, it was deduced from this study that the main promoters of information about exclusive breastfeeding are health care providers, one's attitude towards exclusive breastfeeding is shaped by socio-cultural influences. However, the strongest determinant of a successful practice of exclusive breastfeeding is self-motivation and the dedication to breastfeed.

#### **6.4 Strength and limitations of the study**

Questionnaires from earlier studies (Jaakola 2015, Mogre et al. 2016) which are similar to this research work were adopted in designing questionnaire. It served as a baseline for the formulation of the questions. Using three different setting for data collection (Holy Family Hospital, Catholic church and a Muslim community) gave us an opportunity to work with a representation of mothers from the entire study area. Being a native of the study area, the primary researcher could understand and could relate to responses given by participants which facilitated in the analysis. Also, the study findings are similar to results from previous related studies, this made it easy to interpret the results.

The following are some limitations to this study. It became evident during the analysis that in-depth answers could have been derived from qualitative questions if interviews were used. Responses given to these questions were quite short. This might also be because of the space provided for answering such questions. It was identified after data collection that in answering the question on income level of respondents' family, most mothers could not calculate the average

income of the family as asked in the question hence left this question unanswered. Although this problem was not recognized during piloting, this question should have been clear. On the other hand, it is anticipated that income is a culturally sensitive issue, as such most respondents were not comfortable with disclosing their family income hence the reason for skipping this question.

Another problem identified was with the question on respondents' location, the use of the terms; "urban" and "rural setting". Urban could have been further classified to include urban slums since most inhabitants within this locality live in slums within the urban area. Nevertheless, reasons for failure to do this classification may be attributed to the homogeneity of the study setting.

### **6.5 Implications of study**

Health promotion role played by health care providers in delivering information on breastfeeding has been identified through the result of this study as an ultimate source of quality information to mothers. The ten steps to breastfeeding initiative should be enhanced to equip hospitals and health centers especially in deprived communities with necessary tools, skills and incentives required to motivate an effective participation of health workers in promoting exclusive breastfeeding. It is also necessary for healthcare providers to go beyond health education using other measures to motivate mothers to breastfeed. Health education received during antenatal visit is not enough, but postnatal and continual health education should be enhanced.

Responses from this study and other related studies acknowledge that three-month maternity leave in Ghana does not favor the desire to breastfeed. To promote exclusive breastfeeding, it is ideal that policy makers including Ghana health service and the ministry of labor and employment advocate for an extension of the duration of maternity leave from three months to at least six months of maternity period in Ghana while creating a work friendly environment for nursing working mothers.

Results from the study by Ballard & Morrow in 2013 shows that the quantity, quality and production of breastmilk varies among nursing mothers to meet the nutritional and fluid needs of an infant. Among the reasons for breastfeeding cessation in this study was the concerns raised about the perception that infants do not get enough from breastmilk. It is therefore recommended

that lactating mothers should be encouraged and educated on proper eating habits such as eating a balanced diet to be healthy for their infants. There is the need for improved education on breastmilk preservation and storage. Women, during community health programmes should be trained on the effective way of positioning a baby during breastfeeding to avoid discomfort, strain and physical injury. Continual feeding of baby during the day and night increases breast milk production and supply, this information should be made known during breastfeeding campaigns. It is evident that maternal education is a key determinant in the knowledge and practice of exclusive breastfeeding, hence the need for policies that will create opportunities to harness female education especially in this developing country setting.

## 7. CONCLUSION

The reflection of a child's general health condition is evident in his or her nutritional status (Benson & Shekar 2006). Quality diet minimizes diseases and increases growth. Exclusive breastfeeding is a well campaigned child feeding practice noted for child health and survival. This study presents data on mother's level of knowledge, attitude and practice of exclusive breastfeeding. This study results affirm a greater level of understanding about mothers' knowledge in the importance of exclusive breastfeeding. The general responses concerning breastfeeding were positive especially about knowledge in breastfeeding, its recommendation and benefits. Results showed a positive correlation between maternal education and knowledge in breastfeeding. Health advocates and health workers were identified as the main agents of information dissemination. This study acknowledges the support from health care providers.

However, it was identified that a lot of factors play a significant role in influencing the attitude of mothers towards breastfeeding and how it is practiced. An example is the vital role played by society in influencing the believes and attitude of individuals. Likewise, the positive reinforcement role played by religious leaders in advocating the need to breastfeed. Assistance received by mothers during the period of breastfeeding from close relatives promotes higher chances of practicing exclusive breastfeeding since mothers when relieved of household chores could focus more on the time spent with their baby. The study affirms the need for confidence and self-motivation. Again, health practitioners were identified as the key actors in harnessing confidence and self-motivation through education on breastfeeding practices.

## 8. REFERENCES

Abilla PR, Mawutor JE. 2010 Population and Housing Census, District Analytical Report, Techiman Municipality. Ghana Statistical Service 2014. (Accessed 29.05.2016).

[http://www.statsghana.gov.gh/docfiles/2010\\_District\\_Report/Brong%20Ahafo/TECHIMAN%20Municipal.pdf](http://www.statsghana.gov.gh/docfiles/2010_District_Report/Brong%20Ahafo/TECHIMAN%20Municipal.pdf).

Aborigo RA, Moyer CA, Rominski S, Adongo P, Williams J, Logonia G, Affah G, Hodgson A, Engman C. Infant nutrition in the first seven days of life in rural northern Ghana. *BMC Pregnancy and childbirth* 2012; 12:76.

Agency for Healthcare Research and Quality 2015. Primary Care Interventions to Promote Breastfeeding. (Accessed 22.02.2017) <https://www.ahrq.gov/professionals/prevention-chronic-care/healthier-pregnancy/preventive/breastfeeding.html>.

Aidan BA, Pérez-Escamilla R, Lartey A, Aidam J. Factors associated with Exclusive Breastfeeding in Accra-Ghana. *European Journal of Clinical Nutrition* 2005; 59:789-796.

Aldashev G, Platteau JP. *Religion, Culture and Development*. Oxford: Oxford University Press 2014.

American Academy of Pediatrics. Breastfeeding and the use of human milk. *Pediatrics* 2012;129: 827-841.

Amir LH, Bearzatto A. Overcoming challenges faced by breastfeeding mothers. *Royal Australian College of General Practitioners* 2016;45(8):552-556.

Amugsi DA, Aborigo RA, Oduro AR, Asoala V, Amine T, Amenga-Etego. Socio-demographic and environmental determinants of infectious disease morbidity in children under 5 years in Ghana. *Global Health Action* 2015; 8:10.

Anafo D. The role of traditional Property Rights in the Sustainable use of rural lands in the Techiman Municipality. Kwame Nkrumah University of Science and Technology 2011. (Accessed 29.05.2016).

<http://ir.knust.edu.gh/bitstream/123456789/295/1/DAVID%20ANAAFO,%20MSC%20THESIS.pdf>.

Andy E. A Literature Review of the Factors That Influence Breastfeeding: An Application of the Health Believe Model. *International Journal of Nursing and Health Science* 2015; 2(3):28-36.

Anderzén-Carlsson A, Lamy ZC, Eriksson M. Parental experiences of providing skin-to-skin care to their newborn infant-Part 1: A qualitative systematic review. *International Journal of Qualitative Studies on Health and Well-being* 2014; 9:10.

Atindanbila S, Mwini-Nyaledzigbor PP, Abasimi E, Benneh CO, Avane MA. Attitudes and Practices Associated with Exclusive Breastfeeding of Nursing Mothers in Bolgatanga Municipality. *International Journal of Humanities, Social Sciences and Education* 2014; 1 (7):114-120.

Ayittey S. Ghana National Newborn Health Strategy and Action Plan 2014-2018. Ghana Health Service 2016. (Accessed 03.04.2016).

[http://www.ghanahealthservice.org/downloads/Ghana\\_National\\_Newborn\\_Strategy\\_Final\\_Version\\_March\\_27.pdf](http://www.ghanahealthservice.org/downloads/Ghana_National_Newborn_Strategy_Final_Version_March_27.pdf).

Ayawine A, Ae-Ngibise KA. Determinants of exclusive breastfeeding: a study of two sub-districts in the Atwima Nwabiagya District of Ghana. *The Pan African Medical Journal*. 2015; 22: 248.

Arthur SS, Nyide B, Soura AB, Kahn K, Weston M, Sankoh O. Tackling malnutrition: a systematic review of 15-year research evidence from in-depth health and demographic surveillance systems. *Global Health Action* 2015; 8:10.

Babakazo P, Donnen P, Akilimali P, Ali NMM, Okitolonda E. Predictors of discontinuing exclusive breastfeeding before six months among mothers in Kinshasa: a prospective study. *International Breastfeeding Journal* 2015; 10:19.

Ballard O, Morrow A L. Human Milk Composition: Nutrients and Bioactive Factors. *Pediatric Clinic North America* 2013; 60 (1):49-74.

Benabou R, Tirole J 2001. Self-confidence and personal motivation. (Accessed 28.10.2017)  
<http://www.princeton.edu/~rbenabou/papers/CONFQJE2.pdf>.

Benson T, Shekar M. Trends and Issues in Child Undernutrition. The international Bank for Reconstruction and Development/ The World Bank 2006 (Accessed: 25.10.2017).  
<https://www.ncbi.nlm.nih.gov/books/NBK2301/>.

Burdette AM, Pilkauskas NU. Maternal religious involvement and breastfeeding initiation and duration. *American Journal of Public Health* 2012; 102(10): 1865-1868.

Canadian Agency for Drugs and Technologies in Health 2016. Storage, Handling, and Administration of Expressed Human Breast Milk: A Review of Guidelines Ottawa (Accessed on 04.04.2018). <https://www.ncbi.nlm.nih.gov/books/NBK368230/>.

Chang, J.C., Chen, C.H., Fang, L.J., Tsai, C.R., Chang, Y.C., Wang, T.M. Influence of prolonged storage process, pasteurization, and heat treatment on biologically-active human milk proteins. *Pediatric Neonatal* 2013; 54:360–366.

Court A. Information relevant to the development of guidance material for the safe feeding of reconstituted powdered infant formula. Food safety authority of Ireland 2012. (Accessed 20.10.2017).  
<https://www.fsai.ie/gn6guidanceontheimplementationofeuropeancommunitiesinfantformulaeandfollowonformulaeregulations2007and2009revision1.html>.



Dieterich CM, Felice JP, O'Sullivan E, Rasmussen KM. Breastfeeding and Health Outcomes for the Mother-Infant Dyad. *Pediatric clinics of North America*. 2013;60(1):31-48.

Dun-Dery EJ, Laar AK. Exclusive breastfeeding among city-dwelling professional working mothers in Ghana. *International Breastfeeding Journal*. 2016;11(1):23.

Farrell S. Open- Ended vs Closed- Ended Questions in User Research. Nielsen Norman Group 2016. (Accessed on 24.10.2017).

<https://www.nngroup.com/articles/open-ended-questions/>.

Februhartanty J, Wibowo Y, Falimida U, Roshita A. Profiles of eight working mothers who practiced exclusive breastfeeding in Depok, Indonesia. *Breastfeeding Med* 2012;7(1):54-9.

Flacking R, Dykes F, Ewald U. The influence of father's socio-economic status and paternity leave on breastfeeding duration: a population-based cohort study. *Scandinavian Journal of Public Health* 2010; 38(4):337-43.

Fosu- Brefo R, Arthur Eric 2015. Effect of timely intervention of breastfeeding on child health in Ghana. *Health Economic Review*. 2015; 5:8.

Gale C, Logan KM, Santhakumaran S, Parkinson JRC, Hyde MJ, Modi N. Effects of breastfeeding compared with formula feeding on infant body composition: a systematic review and meta-analysis. *American Society for Nutrition* 2012; 95: 656-669.

Ganle JK, Obeng B, Segbefia AY, Mwinyuri V, Yeboah JY, Baatiema L. How intra-familial decision-making affects women's access to and use of maternal healthcare services in Ghana: a qualitative study. *BMC Pregnancy and Childbirth* 2015; 15:173.

Gebreselassie T, Rutstein SO, Mishra V. Contraceptive Use, Breastfeeding, Amenorrhea and Abstinence During the Postpartum Period: An Analysis of four countries. *DHS Analytical Studies* 2008(4). Calvarton, Maryland, USA: Macro International Inc.

Ghana Statistical Service(GSS) 2014. 2010 Population and Housing. (Accessed 12.08.2016).  
[http://www.statsghana.gov.gh/docfiles/2010\\_District\\_Report/Brong%20Ahafo/TECHIMAN%20Municipal.pdf](http://www.statsghana.gov.gh/docfiles/2010_District_Report/Brong%20Ahafo/TECHIMAN%20Municipal.pdf).

Ghana Statistical Service, Ghana Health Service 2015. Ghana Demographic and Health Survey 2014. (Accessed 18.06.2016).

<http://www.statsghana.gov.gh/docfiles/publications/Ghana%20DHS%202014%20-%20KIR%20-%206%20April%202015.pdf>.

Ghana Health Service. Ghana's National Newborn Health Strategy and Action Plan (2014-2018). (Accessed 07.04.2016).

[http://www.ghanahealthservice.org/downloads/Ghana\\_National\\_Newborn\\_Strategy\\_Final\\_Version\\_March\\_27.pdf](http://www.ghanahealthservice.org/downloads/Ghana_National_Newborn_Strategy_Final_Version_March_27.pdf).

Ghana Health Service 2015. Newborn Care Programme. (Accessed 28.03.2016).

<http://www.ghanahealthservice.org/programme-scat.php?ghs&ghssid=94&ghspid=3>.

Ghana Statistical Service, 2011. Ghana Multiple Indicator Cluster Survey with an Enhanced Malaria Module and Biomarker, 2011, Final Report. Accra, Ghana.

Glassman, M. E., McKearney, K., Saslaw, M., & Sirota, D. R. (2014). Impact of Breastfeeding Self-Efficacy and Sociocultural Factors on Early Breastfeeding in an Urban, Predominantly Dominican Community. *Breastfeeding Medicine*, 9(6), 301–307.

Gyampoh S, Otoo G E, Aryeetey O N. Child Feeding knowledge and practices among women participating in the growth monitoring and promotion in Accra, Ghana. *BMC Pregnancy and Childbirth BMC Series* 2014; 14:180.

Idris N S, Sastroasmoro S, Hidayati F, Sapriani I, Suradi R, Grobbee D E, Uiterwaal CSPM. Exclusive breastfeeding plan of pregnant South East Asian women; what encourages them? *Breastfeeding Medicine*; 2013, 8(3): 317-320.

Igumbor E O, Mukura RD, Makandiramba B, Chilota V. Storage of breastmilk: effect of temperature and storage duration on microbial growth. *Central African Journal Med.* 2000; 46(9): 247-51.

Infant Nutrition Council. Breastmilk Information (Accessed 17.06.2016).

<http://www.infantnutritioncouncil.com/resources/breastmilk-information/>.

Isaacs EB, Fischl BR, Quinn BT, Chong WK, Gadian DG, Lucas A. Impact of breast milk on IQ, brain size and white matter development. *Pediatric research* 2010; 67(4):357-362.

Jaakola T. Breastfeeding support across different socio-demographic groups of society: a study from Minnesota. University of Eastern Finland Publications 2015. Accessed on 10.10.2017).

[http://epublications.uef.fi/pub/urn\\_nbn\\_fi\\_uef-20150904/urn\\_nbn\\_fi\\_uef-20150904.pdf](http://epublications.uef.fi/pub/urn_nbn_fi_uef-20150904/urn_nbn_fi_uef-20150904.pdf).

Johns HM, Forster DA, Amir LH, McLachlan HL. Prevalence and outcomes of breast milk expressing in women with healthy term infants: a systematic review. *BMC Pregnancy and Childbirth* 2013; 13:212.

Joint United Nations Programme on HIV/AIDS 2015. HIV and AIDS estimates. (Accessed 11.04.2017). <http://www.unaids.org/en/regionscountries/countries/ghana>.

Kakrani VA, Waghela RHK, Mammulwar MS, Bhawalkar JS 2015. Awareness about "Ten Steps for Successful Breastfeeding" among medical and nursing Students. *International Journal of Preventive Medicine* 2015; 6:40.

Kitano, N., Nomura, K., Kido, M., Murakami, K., Ohkubo, T., Ueno, M., & Sugimoto, M. (2016). Combined effects of maternal age and parity on successful initiation of exclusive breastfeeding. *Preventive Medicine Reports*, 3, 121–126.

Kim T D, Chapman R S. Knowledge, Attitude and Practice about exclusive breastfeeding among women in Chililab in Chi Linh Town, Hai Duong Province, Vietman. College of Public Health Sciences Chulalongkorn University, Bangkok. (Accessed 25.06.2016).

[http://nckh.huph.edu.vn/sites/nckh.hsph.edu.vn/files/article/TuanManuscrip\\_final.pdf](http://nckh.huph.edu.vn/sites/nckh.hsph.edu.vn/files/article/TuanManuscrip_final.pdf).

Lumpkins CY, Greiner KA, Daley C, Mabachi NM, Neuhaus K. Promoting Healthy Behavior from the Pulpit: Clergy Share Their Perspectives on Effective Health Communication in the African American Church. *Journal of religion and health*. 2013;52(4):1093-1107.

MacCarthy TC, Dianbiir E, Serwah F, Amankwah H, Benin J. A study of the Perception of Exclusive Breastfeeding among Postnatal Mothers at Legon Hospital. *Health and Medicine Journal* 2014. (Accessed on 21.10.2017).

<https://www.slideshare.net/edianbiir/chapt-1-5publish>.

Mangrio E, Persson K, Bramhagen AC. Socio demographic, physical, mental and social factors in the cessation of breastfeeding before 6 months: a systematic review. *Scandinavian Journal of caring sciences* 2017; 10: 1471-6712.

Mead MN. Contaminants in Human Milk: Weighing the Risks against the Benefits of Breastfeeding. *Environmental Health Perspectives*. 2008;116(10): A426-A434.

Mensah, K. A., Acheampong, E., Anokye, F. O., Okyere, P., Appiah-Brempong, E., & Adjei, R. O. Factors influencing the practice of exclusive breastfeeding among nursing mothers in a peri-urban district of Ghana. *BMC Research Notes* 2017; 10:466.

Mithani, Y., Premani, Z. S., Kurji, Z., & Rashid, S. (2015). Exploring Fathers' Role in Breastfeeding Practices in the Urban and Semiurban Settings of Karachi, Pakistan. *The Journal of Perinatal Education*, 24(4): 249–260.

Ministry of Health Ghana. High Impact Rapid Delivery brochure. (Accessed on 08.03.2017).

<http://www.moh.gov.gh/wp-content/uploads/2016/02/HIRD.pdf>.

Minas, A. G., & Ganga-Limando, M. Social-Cognitive Predictors of Exclusive Breastfeeding among Primiparous Mothers in Addis Ababa, Ethiopia. *PLoS ONE* 2016;11(10) 0164128.

Mogre V, Dery M, Gaa PK. Knowledge, Attitudes and Determinants of exclusive breastfeeding practice among Ghanaian rural lactating mothers. *International Breastfeeding Journal* 2016; 11:12.

Mohammed ES, Ghazawy ER, Hassan EE. Knowledge, Attitude, and Practices of Breastfeeding and Weaning among Mothers of Children up to 2 Years Old in a Rural Area in El-Minia Governorate, Egypt. *Journal of Family Medicine and Primary Care*. 2014;3(2):136-140.

Mondker J, Fernandez A, Rao S. *Breastfeeding*. Universities Press India 2009.

Munblit D, Peroni DG, Boix-Amorós A, Hsu PS, Van't Land B, Gay MCL, Warner JO (2017). Human Milk and Allergic Diseases: An Unsolved Puzzle. *Nutrients* 9 (8): 894.

National Health and Medical Research Council (2012). *Infant Feeding Guidelines*. Canberra: National Health and Medical Research Council.

Ngoma- Hazemba A, Ncama BP. Analysis of experiences with exclusive breastfeeding among HIV- positive mothers in Lusaka Zambia. *Global Health Action* 2016; 9(1): 32362.

Nicklas T 2011. The role of religion and spirituality in counseling. (Accessed on 29.09.2017). <http://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1024&context=psychdsp>.

Nkrumah J. Maternal work and exclusive breastfeeding practice: a community based cross-sectional study in Efutu Municipal Ghana. *International Breastfeeding Journal* 2017; 12:10.

NSW Health 2010. *Maternity -breastmilk: Safe management*. (Accessed:25.09.2017). [http://www1.health.nsw.gov.au/pds/ActivePDSDocuments/PD2010\\_019.pdf](http://www1.health.nsw.gov.au/pds/ActivePDSDocuments/PD2010_019.pdf).

O'Brien M, Buikstra E, Hegney D. The influence of psychological factors on breastfeeding duration. *Journal of Advanced Nursing* 2008; 63(4): 1365-2648.

Oche MO, Umar AS, Ahmed H. Knowledge and practice of exclusive breastfeeding in Kware, Negeria. *African Health Sciences* 2011; 11(3): 518-523.

Owusuaa AL 2015. Infant feeding practices and their relation to maternal health care utilization. A national cross-sectional study among Ghanaian women. (Accessed on 01.10.2017).  
<http://tampub.uta.fi/bitstream/handle/10024/97097/GRADU-1432120140.pdf;sequence=1>.

Page RL, Ellison CG, Lee J. Does religiosity affect health risk behaviors in pregnant and postpartum women? *Maternal Child Health Journal* 2009; 13(5): 621-32.

Pew Research Center 2008. Religiosity. (Accessed on 29.09.2017).  
<http://www.pewglobal.org/2008/09/17/chapter-2-religiosity/>.

Peters MD, McArthur A, Munn Z. Safe management of expressed breastmilk: A systematic review. *Women and birth: Journal of the Australian College of Midwives* 2016; 29(6):473-481.

Project Share Ghana, 2008. Mother Support Groups. (Accessed 16.09.2016).  
<http://www.projectshareghana.org/2008/11/mother-support-groups-1/>.

Ratnasari D, Paramashanti BA, Hadi H, Yugistyowati A, Astiti D, Nurhayati E. Family support and exclusive breastfeeding among Yogyakarta mothers in employment. *Asia Pacific Journal of Clinical Nutrition* 2017; 26(1):31-35.

Rempel LA, Rempel JK. The breastfeeding team: the role of involved fathers in the breastfeeding family. *Journal of Human Lactation* 2011; 27(2):115-121.

Saaka M, Wemakor A, Abizari A R, Aryee P. Child Feeding Knowledge and Practices among women participating in the growth monitoring and promotion in Accra, Ghana. *Bio Med Central Limited* 2014; 14:180.

Sachs HC & Committee on drugs. The transfer of Drugs and the therapeutics into human breastmilk: An update on selected topics. *Pediatrics* 2013; 132 (3): e796-809.

Saxton A, Faly K, Rolfe M, Skinner V, Hastie C. Does skin-to-skin contact and breastfeeding at birth affect the rate of primary postpartum hemorrhage: Results of a cohort study. *Midwifery* 2015; 31(11): 110-7.

Setegn T, Belachew T, Gerbaba M, Deride K, Deribew A, Biadgilign S. Factors associated with exclusive breastfeeding practices among mothers in Goba district, South East Ethiopia: a cross-sectional study. *International Breastfeeding Journal* 2012; 7:17.

Siegfried N, Vander Marwe L, Brocklehurst P, Sint T. Antiretroviral for reducing the risk of mother-to-child transmission of HIV infection 2011; 7: 1465-1858.

Smith PH, Coley SL, Labbok MH, Cupito S, Nwokah E. Early breastfeeding experiences of adolescent mothers: a qualitative prospective study. *International Breastfeeding Journal* 2012; 7:13.

Stevens EE, Patrick TE, Pickler R. A History of Infant Feeding. *The Journal of Perinatal Education*. 2009;18(2):32-39.

Swarna RB. *Achers Textbook of Pediatrics (4<sup>th</sup> Ed)*. University Press (India) 2009.

Szajewska H. Early nutritional strategies for preventing allergic disease. *Israeli Medical Association Journal* 2012; 14: 58-62.

Tampah-Naah MA, Kumi- Kyereme A. Determinants of exclusive breastfeeding among mothers in Ghana: a cross sectional study. *International Breastfeeding Journal* 2013; 8:13.

Thu HN, Eriksson B, Khanh TT, et al. Breastfeeding practices in urban and rural Vietnam. *BMC Public Health*. 2012; 12:964.

Unar- Munguia M, Torres- Mejia G, Colchero M A, González de Cosío T. Breastfeeding Mode and Risk of Breast Cancer-A Dose Response Meta- Analysis. *Journal of Human Lactation* 2017; 10: 0890-3344.

United Nations. *World Population Monitoring 2000: Population, Gender and Development*. New York 2001.

United Nations Children's Fund 2016. *Community based infant and young child feeding*. (Accessed 09.03.2017). [https://www.unicef.org/nutrition/index\\_58362.html](https://www.unicef.org/nutrition/index_58362.html).

United Nations Children's Fund, 2016. *Seventy years for every child*. (Accessed 28.03.2016). [http://www.unicef.org/nutrition/index\\_24824.html](http://www.unicef.org/nutrition/index_24824.html).

United Nations Children's Fund 2015 *Breastfeeding*. (Accessed 22.02.2017). [https://www.unicef.org/nutrition/index\\_24824.html](https://www.unicef.org/nutrition/index_24824.html).

United Nations Children's Fund, 2007. *Promoting and protecting breastfeeding*. (Accessed 18.06.2016). [http://www.unicef.org/wcaro/4501\\_5055.html](http://www.unicef.org/wcaro/4501_5055.html).

United States Department of Health and Human Services. *The Surgeon Generals Call to Action to Support Breastfeeding*. Washington, DC: U.S Department of Human and Human Services, Office of the Surgeon General; 2011.

(Accessed 14.04.2017) <https://www.ncbi.nlm.nih.gov/books/NBK52684/>.

Ward LP, Williamson S, Burke S, Crawford-Hemphill R, Thompson AM. *Improving Exclusive Breastfeeding in an Urban Academic Hospital*. *American Academy of Pediatrics* 2017; 139:2.

White AB, Mirjahangir JF, Horvath H, Anglemyer A, Read JS. *Antiretroviral intervention for preventing breastmilk transmission of HIV*. *Cochrane Database of Systematic Reviews* 2014; 10:1465-1858.



Woldegebriel A. Mother's knowledge on the beliefs on breastfeeding. *Ethiopian Medical Journal* 2002;40(4):365-74.

World Alliance for Breastfeeding Action 2016. Women and Work. (Accessed 16.09.2016).  
<http://www.waba.org.my/whatwedo/old-womenandwork/seedgrants/ginan.htm>.

World Health Organization. Breast is always the best, even for HIV-positive mothers. *WHO* 2010; 88:1-80.

World Health Organization 2016. Infant and Young Child Feeding. (Accessed 22.02.2017).  
<http://www.who.int/mediacentre/factsheets/fs342/en/>.

World Health Organization 2002. Essential Newborn Care and Breastfeeding. (Accessed 14.04.2017). [https://www.sbp.com.br/pdfs/who\\_essential\\_newborn\\_care\\_and\\_bf.pdf](https://www.sbp.com.br/pdfs/who_essential_newborn_care_and_bf.pdf).

World Health Organization. Exclusive Breastfeeding. (Accessed 31.03.2017).  
[http://www.who.int/nutrition/topics/exclusive\\_breastfeeding/en/](http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/).

World Health Organization, 2003. Protecting, promoting and supporting breast/feeding: the special role of maternity services. (Accessed 18.06.2016).  
<http://apps.who.int/iris/bitstream/10665/39679/1/9241561300.pdf?ua=1>.

World Bank Group 2016. Mortality rate, under - 5 (Per 1000 live births). (Accessed 07.03.2017). <http://data.worldbank.org/indicator/SH.DYN.MORT>.

Ziegler EE. Growth of breast-fed and formula-fed infants. *Nestle Nutrition Workshop Series Pediatric Program* 2006; 58: 51-9.

Zhang, K., Tang, L., Wang, H., Qiu, L.-Q., Binns, C. W., & Lee, A. H. (2015). Why Do Mothers of Young Infants Choose to Formula Feed in China? Perceptions of Mothers and Hospital Staff. *International Journal of Environmental Research and Public Health*, 12(5), 4520–4532.

## 9. APPENDICES

Appendix 1
------------

### QUESTIONNAIRE

**A study on knowledge, attitude and practice of breastfeeding among postnatal mothers. A Study in Techiman Municipality-Ghana.**

**Serial number:** .....

Dear Participant,

This questionnaire is about the knowledge, attitude and practice of exclusive breastfeeding. We wish to know your understanding of exclusive breastfeeding and how you feel about practicing it. Participation in this study is voluntary, we will ensure the anonymity of your response by not recording names and personal identification details. Results of this study will be used for a Master thesis at University of Eastern Finland, Institute of Public Health and Clinical nutrition in Finland. For further clarifications please contact researcher; Mavis Fosuaa Boateng ([mavisb@uef.fi](mailto:mavisb@uef.fi)).

We appreciate your participation and request that you fill the questions and give answers which are true and to the best of your knowledge. Circle the right answer and give further clarifications when needed. Thank you!

### **SECTION 1: SOCIO-DEMOGRAPHIC CHARACTERISTICS**

1. How old are you? .....

2. How many children do you have?      a. 1 to 2      b 3 to 4      c. 5 to 6      d. More than 6

3. Where do you live? .....

4. Is it a rural or urban setting?    a. Rural setting                      b. Urban setting

5. What best describe your family setting?      a. Nuclear Family    b. Extended Family

6. What is your level of education? a. No education b. Primary c. Secondary d. Tertiary

7. What is your employment status? a. Fully Employed b. Part-time c. Unemployed d. Student  
e. A stay at home mother

8. If employed, what type of work do you do?  
.....

9. What is the average monthly income of your family?  
.....

10. What is your marital status? a. Married b. Unmarried/Single c. Divorced/ Widowed

11. What is your religious belief? a. Christianity b. Islam c. African traditional religion

12. Where did you give birth to your youngest baby?  
a. Home b. Hospital/Health center c. Other (Specify).....

13. What is the distance from your home to the nearest hospital or health center?  
a. 1km to 3km b. More than 3km to 5km c. More than 6km to 8km d, More than 8km

## **SECTION 2: KNOWLEDGE ON EXCLUSIVE BREASTFEEDING:**

14. What should be the food for a baby?  
a. Water b. Breastmilk c. Formula Milk d. Solid food e. All the above

15. Do you think babies who are less than 6 months should be given any other food during breastfeeding? a. Yes (which other food) ..... b. No (why).....

16. What are the benefits of breastfeeding?

.....  
 .....  
 .....  
 .....

17. What are the disadvantages of breastfeeding?

.....  
 .....  
 .....  
 .....

18. **Exclusive** Breastfeeding means?

- a. Feeding baby with only breastmilk
- b. Feeding baby with breastmilk and water
- c. Feeding baby with breastmilk, water and solid foods.
- d. Feeding baby with breastmilk and formula milk.
- e. Don't know

19. How long should a baby be breastfed exclusively after birth?

- a. Less than 1 week
- b. 1 week to less than 1 month
- c. 1 month to less than 2 months
- d. 3 months to less than 4 months
- e. 4 months to less than 5 months
- f. 5 months to less than 6 months
- g. 6 months
- h. More than 6 months

20. From where did you hear about the length of recommended breastfeeding?

- a. Partner, Family                      b. Friends/Colleagues                      c. Doctor, Nurse, Midwives
- d. Internet/ Social Media                      e. TV, radio, newspapers                      f. Community support group
- g. Others, specify.....

21. Can breastmilk be expressed, stored and used later when mom is not around? a. Yes b. No

**SECTION 3: ATTITUDE TOWARDS EXCLUSIVE BREASTFEEDING**

22. Are you happy with breast feeding your baby?                      a. Yes                      b. No

23. After the birth of your baby, did you have the confidence to breastfeed?  
(Strongly disagree) 1   2   3   4   5 (strongly agree)

24. Have there been a change in your attitude and practice towards breast feeding?  
a. Yes    b. No                      If No why?.....

25. What were your reasons to start other foods or drinks in addition to breastmilk?  
.....  
.....  
.....  
.....

26. What does society and people think of breast feeding your child?  
.....  
.....  
.....  
.....

27. What does your religion say about breast feeding your child?

.....

.....

.....

.....

28. How do your spouse's family react towards breast feeding your child?

- a. supportive                      b. unsupportive                      c. do not know

#### **SECTION 4: THE PRACTICE OF EXCLUSIVE BREASTFEEDING**

29. Did you or your baby have medical complications that inhibited breastfeeding initiation?

- a. Yes      b. No

30. How long did your baby breastfeed or how long has your baby been breastfeeding?

- a. Did not breastfeed                      b. Less than 1 month  
 c. 1 month to less than 2 months      d. 2 months to less than 3 months  
 e. 3 months to less than 4 months      f. 4 months to less than 5 months  
 g. 5 months to less than 6 months      h. 6 months or longer

31. How long did your baby take only breastmilk?

- a. Did not breastfeed                      b. Less than 1 month  
 c. 1 month to less than 2 months      d. 2 months to less than 3 months  
 e. 3 months to less than 4 months      f. 4 months to less than 5 months  
 g. 5 months to less than 6 months      h. 6 months or longer

32. Which foods or drinks did you give to your baby when you stopped only breastfeeding?

.....

.....

.....  
.....  
33. Was it your own decision to breast feed your child? a. Yes                      b. No  
(Specify).....

34. Are there any problems which affected the practice of breast feeding? What are they?  
.....  
.....  
.....  
.....

35. Do the other women in your family breastfeed their children?    a. Yes    b. No    c. don't know

**SECTION 5: BREASTFEEDING SUPPORT**

36. Who do you talk to about breastfeeding?  
a. Partner    b. Friends    c. Family    d. Employer/ Co-workers  
e. Doctor/Midwife/Nurse    f. Childcare Provider    g. Community group    h. Media/Internet

37. Is it easy to talk to them about breastfeeding?                      a. Yes                      b. No

38. Is there any problem in talking about breastfeeding? What is the problem?  
.....  
.....  
.....  
.....

39. Who supports your breastfeeding? Circle ones which are applicable.

- a. Partner    b. Friends    c. Family    d. Employer/ Co-workers  
e. Doctor/Midwife/Nurse    f. Childcare Provider    g. Community group    h. Media/Internet

40. Which of the following people is against breastfeeding?

- a. Partner    b. Friends    c. Family    d. Employer/ Co-workers  
e. Doctor/Midwife/Nurse    f. Childcare Provider    g. Community group    h. Media/Internet

**Thank you for participating in the study!**



NEULAMÄENTIE 3 M87  
70150, KUOPIO  
FINLAND

5<sup>th</sup> July 2016

THE MEDICAL DIRECTOR  
HOLY FAMILY HOSPITAL  
P. O. BOX 36  
TECHIMAN - B/A

Dear Sir,

**PERMISSION TO CONDUCT A STUDY ON EXCLUSIVE BREASTFEEDING IN THE TECHIMAN MUNICIPALITY**

I write to seek permission and consent of the Holy family Hospital - Techiman to undertake a Research on Exclusive Breastfeeding. The aim of this study is to access the knowledge, attitude and practice of Exclusive Breastfeeding among mothers. The result of the study will be used for my Master's Thesis at the University of Eastern Finland.

About 100 to 150 questionnaires will be administered on mothers of children aged 6 to 18 months in the Techiman Municipality. Also, I would like to ask permission to use Holy Family Hospital - Techiman as one of the venues for data collection.

I hereby request your consent to proceed with the data collection process.

Attached to this letter is a sample questionnaire for your perusal. For further clarifications, please contact researcher, Mavis Fosuaa Boamah ([mavisb@uef.fi](mailto:mavisb@uef.fi)).

Thank you for your cooperation.

Yours sincerely,

  
MAVIS FOSUAA BOAMAH

Enc.

*Approved  
Ret file  
21/07/16*