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FEEDING PRACTICES AMONG MOTHERS OF INFANTS AND CHILDREN 0-24 MONTHS ATTENDING CWC AT TEMA NEW TOWN (MANHEAN) HEALTH CENTRE IN THE TEMA METROPOLIS

BY

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JULY, 2016

DECLARATION

I declare that with the exception of references to other people's work which have been duly acknowledged and quoted, this work is my own organized work. This has not been submitted neither in part nor whole anywhere for any degree.

…….. ……

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PROFESSOR PHILIP BABA ADONGO DATE

(SUPERVISOR)

DEDICATION

I wish to dedicate this project work of mine to the Almighty God and all my loved ones, especially my children and grandchildren namely, (Bryan Aboagye, Dayna- Christie Donkor, Kevin-Benjamin Donkor, Fleur-Chelsea Aboagye, Avery Louie Gyanewa Donkor and Nathan Sika Sasu), for their immeasurable support and motivation.

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LIST OF ABBREVIATIONS

AAP	-	American Academy of Paediatrics
ANC	-	Ante Natal Care
BFHI	-	Baby Friendly Hospital Initiative
CF	-	Complementary Feeding
EBF	-	Exclusive Breast Feeding
GHDS	-	Ghana Health Demographic Survey
GMP	-	Growth Monitoring Promotion
GHS	-	Ghana Health Service
HIRD	-	High Impact Rapid Delivery
IDS	-	Infant Death Syndrome
IYCF	-	Infant and Young Child Feeding
MOH	-	Ministry of Health
MDG	-	Millennium Development Goal
OPD	-	Out Patient Department
ORS	-	Oral Rehydration Salt
ORT	-	Oral Rehydration Therapy
UNICEF	-	United Nations Children's Education Fund
USAID	-	United States Agency for International Development
WHO	–	World Health Organisation

ABSTRACT

Introduction: Even though breastfeeding is beneficial for mother and child, exclusive breastfeeding rate and early initiation of breastfeeding has not reached pleasing height in many countries. This cross sectional descriptive study aimed at exploring feeding practices of mothers of infants and children 0-24months within the Tema East Sub metro attending child welfare clinic at Manhean health centre in the Tema Metropolis.

Methodology: This cross sectional descriptive study employed a structured questionnaire and a simple random sampling technique of YES or NOto collect data on the socio demographic data, prevalence of breast-feeding, factors militating against breast feeding, maternal knowledge on exclusive breast feeding and social support among 355 breastfeeding mothersin the Tema Metropolis.

Results: The results of the study show the mean age of the study respondents was 28.57years (SD=±6.04), with the majority of them (33.0%) aged 25-29years. Most of the mothers (82.5%) were currently breastfeeding and 36.6% of them indicated to have practice exclusive breastfeeding. Majority of mothers (63.4%) indicated to have started breast feeding within the first hour after delivery, andwere knowledgeable about the period for exclusive breastfeeding, and the ages at which babies should be given water and liquid/solid foods.Factors such as educational status (having attained a tertiary education)(OR=8.68; 95%CI=2.71-27.82), occupation (being a farmer) (OR=0.03;95%CI=0.00-0.48)* and delivering through a caesarean section (OR=3.36; 95%CI=1.82-6.23) were found to be associated with the practice of exclusive breast feeding among the mothers.

Conclusion: Helping mothers to understanding the factors that influence infant feeding will help in promotion, protecting and supporting breast feeding. Regarding knowledge,

the study shows that a relationship exists between level of knowledge and feeding practices, meaning that use of perceived seriousness, perceived susceptibility, perceived benefits and perceived barriers/ cuesto actionare important determinants of health behaviour as demonstratedin the health belief model. The practiceof breastfeeding in a particular community depends on the general perception of the community aboutbreastfeeding.

CHAPTER ONE

1.0 Introduction

1.1 Overview and Background of Study

One inevitable aspect of improving the health and nutritional status of children is the practice of optimal infant and young child feeding. Important recommendations from international guidelines state that, for normal physical and mental childhood growth as well as for good health in later life, it is important to adequately breastfeed during early childhood. Taking the very usefulness contribution of breastfeeding for optimal development, the World Health Organization (WHO) recommends exclusive breastfeeding for six months, followed by addition of complementary feeds thereafter, with continuation of breastfeeding up to or beyond two years (WHO, 2003).

According to WHO 2007, planning guide for national implementation of the Global Strategy for Infant and young Child Feeding, exclusive breastfeeding is defined as the act of giving infants only breast milk, excluding solids or any other fluids (including infant formula) except medicines, vitamins, and minerals. Statistically, it is shown that Suboptimal breastfeeding is responsible for the death of 1.4 million children and the disability of 44 million globally (Black, et al., 2008). Consequently, it has been recommended that all nursing mothers should breastfeed their infants exclusively in the first six months and successively with supplementary feeding for 2years for optimal growth and development (UNICEF, 2013).

The World Health Organization and UNICEF had launched several programmes like the baby friendly hospital initiative and the International Code of marketing milk substitutes in order to promote, protect, and support breastfeeding globally (Fairbank, et al.,2000: UNICEF, 2013). All these policies were implemented based on the above provided information.

Complex in nature, are the factors that influence infant feeding and obviously, these factors differ from one setting to another. Necessarily, it is relevant to understand these factors in addressing the diminishing rate of breastfeeding.

Additionally, breastfeeding stimulates uterine contraction, thereby decreasing blood loss after delivery and promotes uterine involution (NRDC, 2005). Furthermore, Breastfeeding lessens the menace of cardiovascular diseases and type 2diabetes (Davis, et al.2012) It also pulls down the risk of breast, endometrial and ovarian cancers (Labbok, 2001; NRDC, 2005; CCCH, 2006; Huo, et al., 2008; Sule, 2011; Davis, et al., 2012). Interestingly, the Absence of menstruation due to breastfeeding serves as a provisional natural method of contraception for most women. This is effective for some women who breastfed exclusively for six months (Kuti, et al., 2007).

Unarguably, Breastfeeding is cost effective as finances do not have to be set separately for infant formula. Also, Breastfeeding gives nursing mothers a sense of bonding with their babies (NRDC,2005, CCCH, 2006) and promotes mental health of women (Davis, et al., 2012).

The WHO e-library of Evidence for Nutrition Actions, 2015, defines Complementary feeding as the process which is started when breast milk unaided is no longer sufficient to meet the nutritional necessities of infants, and therefore other foods and liquids are required, along with breast milk. The changeover from exclusive breastfeeding to family foods – referred to as complementary feeding – characteristically covers the period from 6 - 24 months of age, even though breastfeeding may last to two years of age and beyond. This is a crucial period of growth and development during which nutrient deficiencies and infections contribute globally to higher rates of malnourishment among children below five years of age.

Convincingly, a number of fruitful policies have been developed to improve complementary feeding practices in low- and middle-income countries, where practical hitches can limit total adherence to complementary feeding guiding principles.

As stated by the IYCF programme that, during the period of complementary feeding, the young child progressively becomes accustomed to eating family foods. Complementary foods bridge the breach in vitamin A, energy, and iron intake, which happens in breastfed infants at six months of age. Too early or too late introduction of complementary feeding may principally lead to nutritional deficiencies of zinc, iron, vitamins and calcium. For that reason, complementary feeding needs to be nutritionally sufficient, safe and suitably fed to meet the nutritional and energy needs of the child.

Historically, Complementary feeding is also influenced by socio-cultural factors, beliefs, and knowledge of parents on appropriate practices. Likewise, safe preparation, psychosocial care, correct storage of complementary foods, and hygienic habits are also the imperative elements of proper feeding practices.

Globally, optimal breastfeeding could prevent 13% of deaths of children aged less than five years while correct complementary feeding (CF) practices might result in an extra 6% reduction in under-five mortality, especially in developing countries as ours. Notwithstanding the global practice of breastfeeding, only 30% of children under 6months of age in Sub Saharan Africa are exclusively breastfed (UNICEF, 2005).

Infant mortality rate is 41 deaths per 1,000 live births and under-5 mortality is a little higher at 60 deaths per 1,000 live births, this is as reported by the Ghana Demographic Health Survey. At these alarming heights, one in every 24 Ghanaian children dies before the attainment of age 1, and one in every17 does not live on to his or her fifth birthday. Infant

mortality has wilted by 28 percent since 1998, whereas under-5 mortality has dropped by 44 percent over the same period.

In the Northern, Upper West, and Ashanti regions of Ghana, Under-5 mortality is very high. The neonatal mortality rate for the preceding five years is 29 deaths per1, 000 live births, 2.2 times and the post neonatal rate. The perinatal mortality rate for the same reference period is 38 deaths per 1000live births.

Childhood mortality in a broad-spectrum and infant mortality specifically is often used as broad pointers of social development or as explicit indicators of health status. Childhood mortality rates are used to monitor a country's advancement towards Millennium Development Goal 4, which aims for a two-thirds reduction in the under-five mortality rate by the year 2015 (UN 2000). The 2014GDHS results can be used in checking the impact of prominent national neonatal and child health strategies, interventions and policies such as the Under-5 Child Health Policy 2007 – 2015, which was intended to cut-down under-5 mortality from 111 deaths per 1,000 live births (GDHS 2003) to 40 deaths per 1,000 live births by2015.

1.2 Problem statement

Infant feeding practices have been well documented around the globe: In Norway, by Lande, et al., (2003); In Australia, by Scott, et al.,(2006) and Forster, McLachlan & Lumley (2006); in the United States by Hendricks, et al., (2006), and in Germany by Kohlhuber, et al., (2008). Quite a number of studies have also evaluated the link between child feeding practices and diarrhea (WHO, 2003; Mihrshahi, et al., 2007). All these studies have detailed the critical relevance of appropriate feeding practices in decreasing diarrhea in children.

Diarrhoea in children continues to be of a major health concern in Ghana. The rota vaccine was introduced by the GHS in 2011 to reduce diarrhoea. Severe diarrhoea leading to dehydration is a key cause of morbidity and mortality among young children in Ghana. Death

can be prevented in the early stages by administering oral rehydration therapy (ORT). Coming into contact with diarrhoea-causing agents is recurrently related to the use of unclean water and other sources of water and to unhygienic practices in food preparation and disposal of human and animal excreta.

In Ghana, the latest Multiple Indicator Cluster Survey shows that about 13% of children below age 5 years are underweight, 23% are stunted, and 6% are wasted. In the Greater Accra Region (GAR), underweight is found among 8.3% of children 0-5 years while 13.7% and 5.4% are stunted and wasted respectively. Under nutrition is often common in poor-resource countries where appropriate breastfeeding and complementary feeding (CF) practices are suboptimal. Usually, complementary foods are introduced too early and are often of poor quality and quantity in terms of nutrient diversity, density and feeding frequency (Gyampoh, et al., 2014).

In Ghana, only 46% of children below six months are exclusively breastfed. In the GAR of Ghana, only 21.1% of children between 0-5 months were exclusively breastfed, being the lowest rate recorded in the country. Often, the diet of Ghanaian children is mainly made of grains, roots and tubers. Improving child feeding practices among mothers therefore remains essential to improving child nutrition and survival in Ghana. The Ghana Health Service's Child Welfare Clinic (CWC) is a comprehensive child health service that includes immunization, nutrient supplementation, and growth monitoring and promotion. The Growth Monitoring and Promotion (GMP) component of the CWC is focused on empowering mothers to know about and become competent to practice appropriate child care, feeding, and health seeking. These outcomes are pursued using individualized and group counselling. The GMP provides an opportunity for interaction between public health workers and mothers regarding the health and wellbeing of their Children (Gyampoh, et al., 2014).

In the 2014 GDHS, mothers were asked whether any of their children under five years of age had diarrhoea during the two weeks prior to the survey. If a child had diarrhoea, the mother was asked about feeding habits during the diarrhoeal episode and what measures were taken to treat the diarrhoea.

The 2014 GDHS has indicated that very young children under six months are least likely to have had diarrhoea (6 percent) when juxtaposed with older children, presumably because most of them are exclusively breastfed and hence less exposed to contaminated food. The prevalence and incidence of diarrhoea increases with age and peaks at 12-35 months given the role EBF plays in reducing diarrhoea, it is important to understand the child feeding practices in Ghana and its linkage to diarrhoea.The Tema east sub-metro is made up of thirteen (13) outreach communities with aprojected population of 105,154 based on the 2010 GSS population census. The estimated population for 0-24months is 5483 and OPD attendance according to verified figures is 3929 as at the third quarter report. The report stated that, eleven thousand and eighty eight (1188) children have reported with diarrheal conditions.

However, there is an insufficient of empirical studies in Ghana, precisely in Southern Ghana, on child feeding practices and its association with diarrhea in children. Awumbila, (2003), for example, used a qualitative research to explore social dynamics and infant feeding practices in Northern Ghana. This present study will fill a gap in literature by using a quantitative methodology to assess the infant feeding practices of mothers in southern Ghana specifically, Tema Manhean a fishing community where there are a lot of reported cases of diarrhea among infants and children under 24months to assess how their feeding practices are associated with diarrhea.

1.3Justification

The United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) current guidelines on infant feeding emphasize exclusive breastfeeding for the first six months of life, followed by the introduction of suitable solid foods along with breastfeeding between six and nine months of age.

The 2008 GDHS report reveal that notwithstanding the numerous efforts put in place by this health related organizations; appropriate complementary feeding practices remain a problem in Ghana. A large majority of young children in Ghana were not being fed appropriately; and generally, feeding practices met the minimum standards for only 36% of children aged 6-24 months.

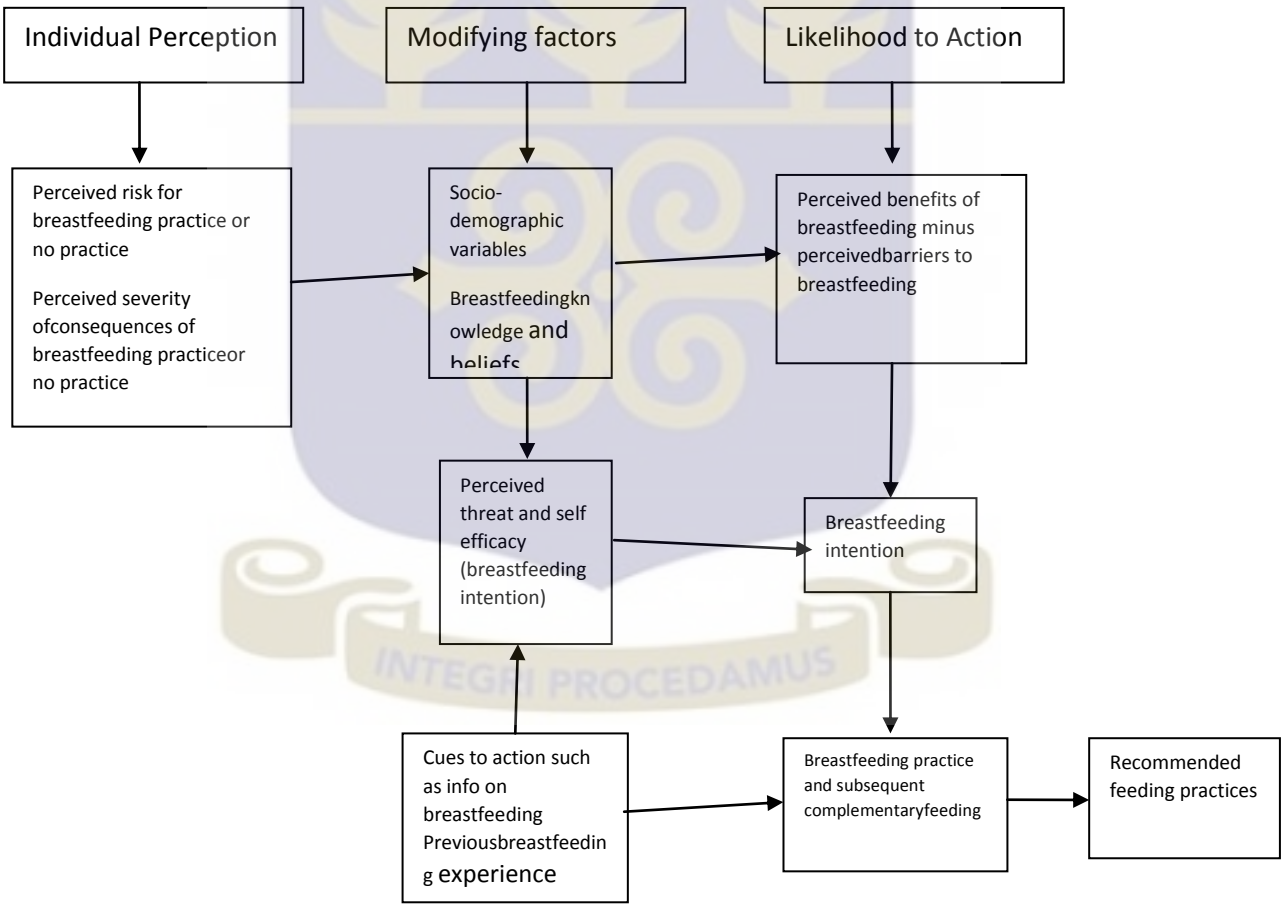
In Ghana, diarrhoea in children continues to be a health concern. The 2014 GDHS has indicated that very young children under six months are least likely to have had diarrhoea (6 percent) when compared with older children, presumably because most of them are exclusively breastfed and hence less exposed to contaminated food. Diarrhoea prevalence increases with age and peaks at 12-35 months. Given the role EBF plays in reducing diarrhoea, it is relevant to understand the child feeding practices in Ghana and its association with diarrhoea.

The relevance of the study lies in the fact that, the number of infants and children with reported cases of diarrhea especially in the study area, is more likely to be due to inappropriate feeding practices among nursing mothers. This study will provide results that would guide the Ghana Health Service to foster social inclusion of supportive networks amongst groups of peers and families which have repercussions for the breastfeeding practices of mothers in general.

Also this study will form a baseline for the establishment of BFHI and HIRD Services and empower other researchers to build upon it in the Tema East Sub metro. It would also give insight for future assessment and a guideline for policy planning on recommended feeding practices. The initiatives will support feeding practices and subsequently benefit infant, child and mother in formulating policies and possibly increase maternity leave to ensure optimal exclusive breastfeeding of six months and timely complementary feeding.

1.4Conceptual frame work

Figure 1: Conceptual frame work



The conceptual framework was developed after a careful review of literature.

1.4.1Personal Perception

Perceived seriousness, Perceived susceptibility, Perceived benefits, and Perceived barriers /cost of action are important determinants of health behaviour. The practice of breastfeeding in a particular community depends on general perception of the community about breastfeeding.

Perceived Seriousness / Perceived Susceptibility

The perception of seriousness is a function of medical information or knowledge an individual has about a disease (Hayden, 2009). It may also come from beliefs a person has about the difficulties a disease would create or the effect it would have on his or her life in general (Hayden, 2009).The tendency of engaging in behaviour to reduce risk of a disease increases with increased perceived risk of the diseases.

An adequate breastfeeding education will enable women to understand and appreciate the seriousness of health challenges associated with suboptimal breastfeeding. If women understood the degree of health challenges that may arise due to inadequate infant feeding, it is likely that they will change for the benefit of their health and that of their baby. Inadequate knowledge regarding breastfeeding negatively influence infant feeding.

1.4.2 Perceived Benefits

This is a person's view of usefulness of new behaviour in reducing the risk of developing a disease; people tend to adopt healthier behaviour when they believe a new behaviour will decrease their chances of developing a disease (Hayden, 2009). If women are aware of the benefits of adequate breastfeeding for them and their infants, they may likely practice it. Most women do not practice breastfeeding as recommended probably because they are ignorant of the benefit of associated with such practice. Adequate enlightenment especially during antennal care is vital in promotion breastfeeding.

1.4.3 Perceived Barrier

This is an individual's own evaluation of the obstacles in the way of him or her adopting a new behaviour. Women have various experiences with breastfeeding (Schmied, et al., 1999). Mothers commonly complain of painful / sore nipple or breast, low milk production (Lamontagne, et al., 2008; Raffle, et al., 2011; Jager, 2012; Mutekanga, et al., 2007;Muluye, 2012), Infants refusal to suck (Lamontagne, et al., 2008; Jager, 2012), breast infection, maternal illness (Doherty, et al., 2012), and Stress (Ugbaoja, et al., 2013). Others include exclusive breastfeeding not culturally acceptable (Ugbaoja, etal., 2013; Ajibade, et al., 2013), husband refusal (Ugbaoja, et al., 2013) and delayed milk production after delivery (Mutekanga, et al., 2007). Most women can breastfeed as recommended if given the support they need to overcome barriers associated with breastfeeding (UNICEF, 2013).

Maternal characteristics such as level of education and occupation influence infant feeding practices. In Nicaragua, for example, Contreras, et al., (2015) found that high level of education was associated with low compliance to EBF. Exposure to formula food is a contributing factor which affects child feeding practices and optimal breastfeeding (Kaplan, et al., 2008). Certain cultural beliefs deter the practice of EBF and affect infant feeding practices (Nankumbi, et al., 2015). Child feeding practices is also affected by children with conditions such as with cleft palate and cleft lip. Exclusive breastfeeding is also defined by WHO as the act giving infants only breast milk, excluding giving infant solids or any other fluids (including infant formula) with the exception of medicines, vitamins, and minerals drops to baby's for the first six months of life.(WHO, 2003).

1.4.4 Cue to Action/ Self Efficacy

Cues to action are events, people or things that move people or things that move people to change their behaviour e.g. illness of family members, media report, mass media campaign while self-efficacy is belief in one's ability to do something. Self-efficacy is influenced by

personal accomplishment (personal experience), vicarious experience (individual performances whether live, recorded or printed),verbal persuasion from health care professionals, peer counsellors, family members or personal friends, physiological and affective state (excitement or satisfaction, enhances self-efficacy while pain, fatigue, anxiety or stress reduces ones sense of self efficacy) (Danis, 1999).

1.5General objective:

To assess the feeding practices of infants 0-2years attending CWC at Tema Manhean Health Centre.

1.6 Specific objectives:

1. To examine mothers level of knowledge on feeding practices
2. To determine the practice of exclusive breast feeding is up to six months
3. To determine the exact period when complementary foods are introduced
4. To determine socio cultural practices that militate against recommended feeding practices

1.7 Research questions

1. What is the level of knowledge of mothers on optimal feeding practices?
2. What is the level of the practice of exclusivebreast feeding by mothers?
3. How early are complementary feeding introduced and which types of complementary foods are utilized?
4. What socio-demographic and cultural factors influence child feeding practices?

CHAPTER TWO

2.0 Theoretical/Literature Review

2.1 History of breastfeeding

The historical evolution of infant feeding includes wet nursing, the feeding bottle, and formula use. Before the invention of bottles and formula, wet nursing was the safest and most common alternative to the natural mother's breast milk. Society's negative view of wet nursing, combined with improvements of the feeding bottle, the availability of animal's milk, and advances in formula development, gradually led to the substitution of artificial feeding for wet nursing.

In addition, the advertising and safety of formula products increased their popularity and use among society. Currently, infant formula-feeding is widely practiced in the United States and appears to contribute to the development of several common childhood illnesses, including atopy, diabetes mellitus, and childhood obesity.(Stevens,et al., 2009).

Use of a wet nurse, ''a woman who breastfeeds another's child'' (Davis, 1993, p. 2111), was a common practice before the introduction of the feeding bottle and formula. Wet nursing began as early as 2000 BC and extended until the 20th century. Throughout this time period, wet nursing evolved from an alternative of need (2000 BC) to an alternative of choice (950 BC to 1800 AD). It became a well-organized profession with contracts and laws designed to regulate its practice. Despite objections during the Middle Ages and the Renaissance, wet nursing continued until the feeding bottle was introduced in the 19th century. With a feasible alternative feeding method available, wet nursing as a profession quickly declined to extinction(Stevens, et al., 2009).

In Israel, as early as 2000 BC, children were deemed a blessing, and breastfeeding was considered a religious obligation (Wickes, 1953a). Breastfeeding was not always possible,

however, due to lactation failure of the mother (Wickes, 1953a) or to the mother dying from childbirth (Fildes, 1986). Lactation failure is mentioned in the earliest medical encyclopaedia, The Papyrus Ebers, which came from Egypt (1550 BC) and contains a small paediatric section that includes a prescription for lactation failure, as follows: To get a supply of milk in a woman's breast for suckling a child: Warm the bones of a sword fish in oil and rub her back with it. Or: Let the woman sit cross-legged and eat fragrant bread of soused durra, while rubbing the parts with the poppy plant. (Wickes, 1953a, p. 154).The prescription demonstrates that lactation failure was a problem during ancient Egyptian times and, as such, wet nursing was the primary alternative- feeding method (Osborn, 1979a). Few writings from this era discuss the use of artificial feeding (Wickes, 1953a). In Greece circa 950 BC, women of higher social status frequently demanded wet nurses. Eventually, wet nurses acquired a position of great accountability and had authority over slaves (Wickes, 1953a). The Bible also notes several examples of wet nurses, perhaps the most famous being the woman hired by Pharaoh's daughter to nurse Moses, whom she found in the bulrushes (Osborn, 1979a). At the height of the Roman Empire, between 300 BC and 400 AD, written contracts were formed with wet nurses to feed abandoned infants. The infants were usually unwanted females thrown onto rubbish piles. The wealthy purchased the infant as an inexpensive slave for future use, and the wet nurses—who were slaves themselves—fed the infant for up to 3 years. Contracts provided a detailed account of the wet nursing service, including duration of breastfeeding, clothing supplies, lamp oil, and payment for the service (Stevens, et al., 2009).

2.2 Benefits of breasting feeding

Breast milk is widely acknowledged as the most complete form of nutrition for infants, with a range of benefits for infants' health, growth, immunity and development. Breast milk is a unique nutritional source that cannot adequately be replaced by any other food, including infant formula. Although pollutants can accumulate in breast milk, it remains

superior to infant formula from the perspective of the overall health of both mother and child(People, H. 2010). Infants are fragile and susceptible to disease, partly because their bodies are not fully developed. They must be treated with special care and given adequate nourishment. Infant formulas are able to mimic a few of the nutritional components of breast milk, but formula cannot hope to duplicate the vast and constantly changing array of essential nutrients in human milk. Nevertheless, breastfeeding is often devalued, both in the United States and abroad, and in many parts of the world it must compete with relentless advertising by infant-formula companies.

Breast-fed children are more resistant to disease and infection early in life than formula-fed children. Breast-fed children are less likely to contract a number of diseases later in life, including juvenile diabetes, multiple sclerosis, heart disease, and cancer before the age of 15. Mothers, who breastfeed are less likely to develop osteoporosis later in life, are able to lose weight gained during pregnancy more easily and have a lower risk of breast, uterine and ovarian cancer.

It's cheaper than buying formula and helps avoid medical bills later because it helps equip the baby to fight off disease and infection. New parents are well advised to learn all they can about the pros and cons of breast milk and formula. Breast milk is a unique combination of nutrients essential to a child's health, and cannot be duplicated by any laboratory formula. It provides a number of health advantages beginning at birth and continuing throughout a child's life. In fact, a large number of the health problems today's children face might be decreased, or even prevented, by breastfeeding the infant exclusively for at least the first six months of life. The longer the mother breastfeeds, the more likely her child will get the health benefits of breastfeeding(People, H.2010).

The American Academy of Paediatrics (AAP) recommends that mothers breastfeed for at least the first year of a child's life and continue until they both feel they are ready to stop. In the first six months, the baby should be nourished exclusively by breast milk. The slow introduction of iron-enriched foods may complement the breastfeeding in the second half of the first year. Breast milk without supplements during the first six months reduces the possibility of food contamination due to contaminated water or malnutrition as a result of over-diluted formula. Therefore, the child should be nursed without the interference of water, sugar water, juices, or formulas, unless a specific medical condition indicates otherwise. The AAP asserts that breast milk has the perfect balance of nutrients for the infant. It is by itself enough sustenance for approximately the first six months of life and should follow as the child's staple throughout the first year. A variety of studies have demonstrated that breastfeeding increases a child's immunity to disease and infection:

Many studies show that breastfeeding strengthens the immune system. During nursing, the mother passes antibodies to the child, which helps the child resist diseases and help improve the normal immune response to certain vaccines. Respiratory illness is far more common among formula-fed children. In fact, an analysis of many different research studies concluded that infants fed formula face a threefold greater risk of being hospitalized with a severe respiratory infection than do infants breast-fed for a minimum of four months. Diarrheal disease is three to four times more likely to occur in infants fed formula than those fed breast milk(People, H. 2010).

Breastfeeding has been shown to reduce the likelihood of ear infections, and to prevent recurrent ear infections. Ear infections are a major reason that infants take multiple courses of antibiotics. In developing countries, differences in infection rates can seriously affect an infant's chances for survival. For example, in Brazil, a formula-fed baby is 14 times more

likely to die than an exclusively breast-fed baby. Researchers have observed a decrease in the probability of Sudden Infant Death Syndrome (SIDS) in breast-fed infants(People, 2010).

Another apparent benefit from breastfeeding may be protection from allergies. Eczema, an allergic reaction, is significantly rarer in breast-fed babies. A review of 132 studies on allergy and breastfeeding concluded that breastfeeding appears to help protect children from developing allergies, and that the effect seems to be particularly strong among children whose parents have allergies(People, 2010).It has been revealed and explained by researchers that, a better postmenopausal and reproductive health which is of utmost benefit to women is ensured when the concept of exclusive breastfeeding is carried out for six months (NRDC, 2005; Murimi, et al., 2010).

Breastfeeding has an advantageous effect on the health of nursing mothers. Their research has shown that, breastfeeding aids in trailing pregnancy weight faster (Kramer and Kakuma, 2012; Baker Gamborg, et al., 2008; Sanusiand Falana, 2013). According to (Dewey, et al., 1993), women who breastfed lost 4.4kg within a year, while those who did not breastfeed only lost 2.4 kg ($P<0.05$).This systematic facts accentuates the efficacy of breastfeeding especially if practiced exclusively within the first six months, it also helps in reducing weight gain during pregnancy.

Infants who are adequately breastfed grow more quickly and are in good health than those who were not breastfed (Ukegbu, et al., 2010; Gale, et al., 2012). Breast milk provides a child with substantial protection against countless infectious diseases because it contains antibodies (immunoglobulin's) that strengthens the Child's immunity (Ukegbu, 2010; Murimi, et al., 2012; Lamberti, et al., 2013). Breastfeeding reduces the incidence and prevalence of asthma, malaria, meningitis, respiratory diseases (such as pneumonia), ear infection, urinary tract infection and diarrhoea (Ukegbu, 2010; Murimi, et al., 2012; Ibadin, et al., 2012; Lamberti et

al 2013).Kramer and Kakuma (2012) postulated that, in the first six months of life, exclusively breastfed infants are six times less likely to die from diarrhoea and 2.5 times less likely to die from acute respiratory infection as compared to those that were not exclusively breastfed. Breastfeeding lowers the risk of food intolerance and allergies and thus improves brain development (CCCH, 2006: 7). On entering their teenage hoods, Infants who were exclusively breastfed for six months have higher IQs, lower risk of childhood obesity, lower risk of mental health problems and diabetes (UNICEF, 2010; Davis, et al., 2012).

Breastfed children have at aminimum, six times greater a chance of survival in their early months as in contrast to non-breastfed children (UNICEF, 2013). Early breastfeeding dwindles the rate of infant morbidity and mortality as a result of the preventive benefits of breastfeeding in reducing long term diseases (WHO, 2007).

The ultimate goal of this review is to judiciously exploit the Health Belief Model so as to highpoint the factors that influence breastfeeding practices universally. Understanding these factors and how they influence various infant feeding practices is important in improving breastfeeding practice through appropriately targeted and premeditated promotion programs.

It has been found by Lamberti, et al., (2011) that the risk of diarrhoea, morbidity and mortality is advanced among children who were not exclusively breastfed or not breastfed at all but found with low incidence of diarrhoea in children who were exclusively breastfed. Thus poor child feeding habits can practically predispose infants and children to diarrhoea and other illnesses resulting from unhygienic management of food. Pitiable infant and child feeding practices are concomitant with malnutrition (Lartey, 2008; WHO, 2003) which in turn intensifies the likelihood of diarrheal diseases and death in children under five years of age (WHO, 2003).

2.3 Breastfeeding and diarrhoea

Recent studies have again shown the beneficial effects of breast-feeding in preventing morbidity and mortality from diarrhoea in infants. A case-control study in Brazil has shown that young infants who are not breast-fed have a 25-time greater risk of dying of diarrhoea than those who are exclusively breast-fed. A longitudinal study in the urban slums of Lima, Peru found that exclusively breast-fed infants have a reduced risk of diarrhoea morbidity when compared with infants receiving only water in addition to breast-milk(Huffman, et al., 2009).

Both these studies, along with numerous others in developing countries, point to the need to extend the duration of exclusive breast-feeding to at least 4-6 months. A review of concerned studies throughout the world shows that even in malnourished women, breast-milk output is sufficient to maintain growth of infants up to this age. The addition of early food supplements to infants fed under prevailing environmental conditions in developing countries leads to their increased diarrhoea attacks and associated reduced food intake. This results in worsened nutritional status of the affected infants. Breast-feeding helps maintain hydration status during diarrhoea episodes. Studies in Peru, India, and Nigeria have shown that breast-feeding can be continued during diarrhoea when the infants often refuse other foods, especially non-human milk. Thus, breast-feeding is important in providing necessary calories and protein during a time when a loss of appetite for other foods is common. Diarrhoea disease control programmes need to modify service delivery to ensure that breast-feeding mothers are not separated from their infants while being treated with oral rehydration therapy (ORT) as inpatients or outpatients. Oral rehydration solution (ORS) should be given to infants with cup and spoon rather than bottles, in order not to interfere with suckling.

When in a health system bottles are used for treatment, an implicit credibility is given to their role in modern treatment. Programmes also need to include breast-feeding promotion as a

part of their activities. This should comprise hospital practices supporting and ensuring breast-feeding immediately after delivery of the infants and subsequently while they are treated in the hospital: immediate breast-feeding after delivery; Mothers and infants rooming together; on demand breast-feeding; No bottle feedings of water or infant formula; No pre-lacteal feeds. In addition, health professionals need to understand the skills for the management of breast-feeding, so that mothers are given appropriate advice on how to breast-feed and counteract breast-feeding problems (Huffman et al., 2009).

2.4 Child feeding practice in Africa

Poor infant feeding practices coupled with high rates of infectious diseases are the major causes of malnutrition during the first two years of life(Akeredolu, et al., 2014). Appropriate breast feeding and complementary feeding practices and access to adequate amounts of appropriate foods are essential for optimal infant nutrition. Breast feeding provides infants with superior nutritional content that is capable of improving infant immunity and possible reduction in future health care spending. Child mortality remains high in low and middle income countries. It has been reported that 17% of Nigerian children were exclusively breastfed for less than 4 months, while 13% were exclusively breastfed for less than 6 months.

All these figures are still far below average levels. Children need complementary foods in addition to breast milk from the age of six months. Infancy period is a critical nutritional period for children, in which they should be transitioning from exclusive breast feeding to receiving complementary foods in addition to continued intake of breast milk.

The nutrition education given to mothers should emphasize the importance of breast milk only for the first six months of life and promote appropriate and timely complementary foods at six months with increased feeding frequency and change in food consistency, quality and

diversity as the child ages. However, inadequate knowledge of appropriate foods and feeding practices is often a greater determinant of malnutrition than lack of foods. It has been observed that mothers who are nutritionally educated bring up their children in a healthier way than those who lack nutrition knowledge (Akeredolu, et al., 2014).

2.5 Child feeding practices in Ghana

An estimated 35% of global under-five deaths, and 50-70% of diarrhoea diseases, measles, malaria and lower respiratory infections in developing countries are attributable to child under nutrition(Gyampoh, et al., 2014). Undernourished children are prone to poor mental, physical and physiological development, and are at increased risk of infections and death due to nutrient deficiencies.

2.6 Modifying Variables

The four major constructs of perception are modified by other variables such as culture, educational level, past experiences, skill, and socio-demographic variables and motivation.

2.7 Maternal Age

The relationship between maternal age and infant feeding practices differs from place to place. Ogunlesi, (2010) posited that maternal age is not a significant determinant of breastfeeding. On the other hand, other studies have demonstrated that maternal age at the time of birth influenced breastfeeding initiation and duration (Li, et al., 2004; CCCH, 2006). Studies have shown that older maternal age is associated with exclusive breastfeeding and longer duration of breastfeeding (Bolton, et al., 2009; Ukegbu, et al., 2010), while others, associated low rates of exclusive breastfeeding with younger maternal age (Qureshi, et al., 2011; Lawoyin, et al, 2001; Brown, et al., 2011). These findings suggest that the relationship between maternal age and breastfeeding varies from place to place, therefore, health workers

should understand how maternal age influence breastfeeding practices in their locality in order to plan better promotion intervention.

2.8 Education

The influence of education on infant feeding practices varies from one setting to another (CCCH, 2006; Ahmed, 2008; Sapna, 2009;Okeh, 2010; Ajibade, et al., 2013).Maternal education below secondary level contributed to prelacteal feeding and failure to practice exclusive breastfeeding (Ogunlesi, 2010).Women with low level of education are less likely to practice exclusive breastfeeding (Li, et al., 2004; Uchendu, et al., 2009; Qureshi, et al.,2011). On the other hand, another study reported that lower maternal education attainment is related to increase in breastfeeding practices (Lawoyin, et al., 2001).Highly educated women may be able to breastfeed exclusively as recommended because they are more likely to understand the benefits of breastfeeding when compared with less educated women who may not see any need for that but may breastfeed longer as a tradition. An enlightenment campaign in various languages centred on the benefits of exclusive breastfeeding could help improve practice.

2.9 Occupation/Employment

Many scholars posited that maternal employment is in a continuous competition with breastfeeding (Okeh, 2010; Raffle, et al., 2011;Muluye,) and may even be a barrier to breastfeeding (Velpuri, 2004; Ajibade, et al., 2013)especially if there is no adequate planning for breastfeeding mothers in the workplace. Women's work may have a negative impact on breastfeeding because of inadequate time to breastfeed (Ukwuani, et al., 2003). Working outside the home after birth was reported to have significantly reduce the likelihood of exclusive breastfeeding at six months (Xu, et al., 2007; Qureshi, et al., 2011; Chuang, et al., 2010; Matias, et al., 2013). Jager, et al., (2012) identified return to work as an important factor that influence breastfeeding because of the challenges women face in trying to sustain

adequate infant feeding practices while working. Women who are unemployed are less likely to quit breastfeeding early when compared with women working as administrators and in manual jobs (Kimbro, 2006) and are more likely to exclusively breastfeed (Tan, 2011). This implies that women who work many hours are likely to mix feeding. Occupation of both parents affects breastfeeding (Lawoyin, et al., 2001).

A study by Scott, et al., (2001) reported that mothers who intended to return to full or part time work or study within 6 months of the birth were less likely to be breastfeeding at discharge (from hospital) than mothers who intended to remain at home. Because of the challenges associated with breastfeeding by working mothers (poor support for breastfeeding in the work place), WHO, (2013) recommended that all women working should be supported to sustain breastfeeding when they return to work by giving them a minimum of one break per day to breastfeed or express breast milk.

2.10Economic Status

Studies have shown that high socio-economic status was significantly related to low exclusive breastfeeding rate, and short duration of overall breastfeeding (Lawoyin, et al., 2001; Okeh, 2010; Ekanem, et al., 2012; Ajibade, et al., 2013). This is not unconnected to the employment status of women with high economic status which has a negative impact on breast feeding. A contrary opinion was reported by Velpuri, (2004) in which women with high income status were associated with a high breastfeeding rate. Adelekan, (2003) identified low economic status as one of the most important determinants of suboptimal breastfeeding (non-exclusive and short duration) and concluded that significant improvement in the socioeconomic status of women could help reduce childhood malnutrition.

2.11 Marital Status

Marital status of a woman is an important determinant of infant feeding practices in some setting (Sika-Bright, 2010; Ajibade, et al., 2013). Suboptimal infant feeding is common with single mothers (Kimani-Murage, et al.,2011; Tampah-Naah, et al., 2013).Studies concluded that single mothers are less likely to breastfeed adequately and longer due to absence of partners' support and confidence compared with married mothers (Lamontagne, et al., 2008; Ajibade, et al., 2013). This conclusion was reached following a chi-square analysis that indicated a significant relationship (P=0.01) between marital status and exclusive breastfeeding and duration of breastfeeding.

2.12Parity

The effect of parity on infant feeding and breastfeeding in particular is inconclusive because in some settings multiparity has a positive impact on breastfeeding (Ukegbu, et al., 2010;Qureshi, et al., 2011) while in other settings, the impact is negative. Some studies have shown that parity did not confer any advantage to breastfeeding practice (Ogunlesi, 2010; Sapna, et al., 2009) meaning that breastfeeding behaviour of primiparous and multiparous women is the same (Amatayakul, et al., 1999).

2.13 Primiparity/Low Parity

Primiparous women are more likely to desire or plan to breastfeed than multiparous women (Lee, et al., 2005; Leuung, et al., 2003). In some settings longer duration of breastfeeding has been associated with low parity suggesting that fewer children in the home incur less cost to women's time (Uchendu, et al., 2009). It has been demonstrated that primiparous women were twice as likely to be breastfeeding at discharge when compared with multiparous women; however, there was no association between parity and overall duration of breastfeeding.

2.14 Multiparity/High Parity

Studies have shown that high breastfeeding rate is associated with multiparity (Ukegbu, et al., 2010); of infant feeding practice (Agho, et al., 2009). Antenatal care increases the likelihood of early breastfeeding initiation (Ogunlesi, 2010). Mothers who did not attend antenatal clinic during pregnancy may have a poor initiation and exclusivity of breastfeeding (Qureshi, et al., 2011). A study revealed that women with fewer than five children are likely to record low exclusive breastfeeding duration. (Qureshi, et al., 2011). Tan, (2011) opined that multiparity is associated with the practice of exclusive breastfeeding. This means that, primiparous mothers are less likely to breastfeed exclusively (Lawoyin, et al., 2001).

2.15 Antenatal Care

Adequate counselling about breastfeeding during antenatal care could significantly improve breastfeeding (Sapna, et al., 2009). Antenatal attendance is a potential determinant (Ogunlesi, 2010).

2.16Multiple Births

Mothers of twins face more challenges than mothers of singletons when it comes to exclusive breastfeeding. A study revealed that insufficient milk for the twins and time for breastfeeding are common causes of early cessation of breastfeeding among mothers of twins. Another study revealed that 89.4% of women with twins initiated breastfeeding and that support for mothers of twins to overcome breastfeeding problem over the first 6weeks may result in a longer duration of breastfeeding. Mothers of twins can breastfeed for the recommended duration if supported (Damato, et al., 2005).

2.17 Type of Delivery

Mothers who had a normal delivery tend to have a positive attitude towards breastfeeding and had less stressful experiences with breastfeeding than mothers who gave birth through

caesarean section (Imhonde, et al., 2012; Carlander, et al., 2009). Caesarean delivery is associated with formula feeding and low milk production (Li, et al., 2004). In a study of the effects of maternal care practice on breastfeeding, DiGirolamo, etal., (2008) concluded that type of delivery (vaginal versus caesarean) had no influence on breastfeeding practices. Patel, Liebling et al (2003) also reported that type of delivery had no impact on breastfeeding.

2.18 Birth Weight/Infant Size

Low birth weight infants are less likely to exclusively breastfeed (Matias, et al., 2012; Butte, et al., 2002) and may be associated with the belief that breast milk substitute is required to make up the low weight (Matias, et al., 2012).

2.19 Previous Experiences with Breastfeeding

Breastfeeding experience helps in building confidence and confidence is a potential determinant of breastfeeding (Brodribb, et al., 2008; Meedya, et al., 2010).Women with little or no previous breastfeeding experience require additional support to be able to breastfeed adequately (Kronborg, et al., 2007) women with breastfeeding experience are more likely to intend to breastfeed than those who never had any experience (Mclnnes, et al., 2001). Health beliefs, experience of friends and family could encourage or discourage breastfeeding (Raffle, et al., 2011).A study reported that less confident women are four to five times more likely to experience breastfeeding failure (Dennis, 1999).Furthermore, a longitudinal study of pregnant women in Australia to determine the influence of antenatal services on breastfeeding revealed that mothers with high breastfeeding confidence were more likely to breastfeed compared with women with low breastfeeding confidence (79.3% versus50.5%) (Blyth, et al., 2004).

2.20 Breastfeeding Support from Family and Friend

Women who enjoyed support from family and friends are likely to breastfeed longer (Wambach, et al., 2009).Presence of mother in-law in the home increased breastfeeding self efficacy and has implication for continuing breastfeeding (Ku, et al., 2010). Social support by women's partners (husbands encouraging wives to breastfeed)may promote, and prolonged breastfeeding (Lamontagne, et al., 2008; Meedya, et al., 2010; Scott, et al., 2001; Tan, 2011; Brown, et al., 2011). Grandmothers are influential in infant feeding choices and can positively influence breastfeeding, especially if they are aware of recommended practices (Kerr, et al., 2008; Grassley, et al., 2008).

2. 21Support from Health Workers

Clinicians and health workers may have an influential role in breastfeeding initiation and continuation (Li, et al., 2004). Professionals can sometimes have a negative influence when they provide women with breastfeeding information and recommendations that are confusing (Lamontagne, 2008). Post-natal support from experts increases breastfeeding duration (Brown, et al.,2011). Kronborg, et al., (2007) reported that home visits in the first 5 weeks following birth may prolong the duration of exclusive breastfeeding. This assertion was made after observing a significant increase in the duration of breastfeeding of breastfeeding with an intervention which focused on assisting women to overcome obstacle to breastfeeding. Ahmed (2008) identified support for mothers immediately after delivery as a way of overcoming breastfeeding problems and enhancing confidence.

2.22 Knowledge of Individuals' Feeding as Babies

Women who knew how long they were breastfed as a child showed a longer duration of exclusive breastfeeding and total breastfeeding than those who did not (Ekstrom, et al., 2003;

Forster, et al., 2006). Therefore, women who do not know how they were breastfed as babies or who knew they were formula or mixed fed require counselling during antenatal care.

2.23 Maternal Prenatal Intention

Maternal prenatal intention to breastfeed has an impact on infant feeding practices (Donath, et al., 2003). High intention and self-efficacy increase the likelihood to breastfeed for 6 months (Wilhelm, etal., 2008). All women should be guided to plan for breastfeeding of their children in the antenatal period and the Knowledge of individuals' feeding as babies' maternal prenatal feeding intention and infant birth weight. A positive perception about breastfeeding will result in self-efficacy and intention to breastfeed as recommended.

2.24 Prevalence of diarrhoea

Diarrhoea is one of the infant and child illnesses which can potentially threaten the life of the child. Nevertheless good feeding practices are reportedly associated with low incidence of diarrhoea and the protective effect of exclusive breastfeeding against infectious diseases-related morbidity in infancy has been well documented. In Bangladesh, for example, Mihrshahi, et al., (2007) found that the prevalence of diarrhoea was significantly associated with lack of exclusive breastfeeding (OR= 0.69, 95% confidence interval (CI) = 0.49-0.98, p=0.039). The results confirmed a protective effect of exclusive breastfeeding against infectious diseases-related morbidity in infancy. Thus the important role of appropriate breastfeeding practices in the survival of infants is evident from the study.

2.25 Level of education and child feeding practices

Studies on factors affecting child feeding practices have revealed that women with high level of education are the least likely to comply with exclusive breast feeding and good weaning practices. In their study in Nicaragua, et al., (2015) found that mothers with the lowest education level were more likely to exclusively breastfeed (EBF) their infants (OR not EBF: 0.19; 95% CI: 0.07, 0.51). Women with high level of education are more likely to work in the

formal sector where there is early return to work following child birth. These become a hindrance to EBF as many mothers adjust by initiating complementary feeding prior to 6month postpartum (Lawan, et al., 2014).

2.26 Socio cultural practices

Almost all the socio cultural practices in Ghana studies on child feeding practices have mainly been focused on the three Northern regions. Awumbila, (2003), for example used a qualitative approach to explore social dynamics and infant feeding practices in Northern Ghana. Exclusively breastfeeding for 6months in Ghana, however, has increased over the years from 2.2% in 1989 to about 53% in 2003(GSS,2009) and according to a study by Timpo, (2007), this could be attributed to behaviour change communication interventions by the Ghana Health Service and its Partners to improve infant and young child feeding practices.

2.27 Knowledge on feeding practices

Gyampoh, et al., (2014) used quantitative approach to assess child feeding knowledge and practices among women attending ANC in six Sub- metros of AMA. Their findings revealed that exclusive breast feeding (EBF) was practiced by 80.1% of mothers with children 0-5 years in the preceding 24 hours. Seventy four percent of mothers had not missed any scheduled child welfare clinic sessions. Over 60% of mothers knew the appropriate age of introduction of foods; 86% also gave correct response regarding minimum number of times their child should be fed daily. About 81% of children less than 6 months were exclusively breastfed in the preceding 24 hours, although 36% had received water since birth. Forty two percent of children 6–23 months received dietary diverse meals while 64% were fed the required number of times in a day. Overall, only 32% of children 6–23 months received a minimum acceptable diet in the preceding 24 hours. A higher GMP exposure was positively associated with feeding knowledge scores among mothers with children below 6 months

($p < 0.05$). According to them, although most mothers were knowledgeable about recommendations, feeding practices was suboptimal, especially complementary feeding. GMP exposure was associated with feeding knowledge only among mothers with children less than 6 months. In their concluding recommendations they said that strengthening of feeding counselling should be focused on children above 6 months.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

This chapter gives a description of the study location, design, study setting, population, and sampling technique, sampling size, data collection and analytical methods of study. This study was conducted in 2016.

3. 2 Study design

A Quantitative research approach was adopted. A structured explanatory questionnaire was used to collect the data. The purpose of the study was discussed and explained to participants and questionnaires which were used were scored after completion, to assess the outcome.

3.3 Profile of Study Area

Tema district is politically demarcated into three sub- metros namely; Tema East, West and Central and therefore Tema East is one of the three sub-districts of Tema Metropolis. It is the seat of the Tema Mantse and Tema Traditional Council.The study was carried out in the Tema East Sub Metro of the Tema Metropolitan Assembly within the Greater Accra Region.

It shares boundaries with Tema Community Two on the West, Kpone on the East, Tema Industrial area on the North and the Atlantic Ocean on the south. Manhean Health Centre is located on the eastern plain of the fishing harbour near the Naval Base Tema New Town and the community is referred to as Tema East sub- metro.Manhean Health Centre is the Sub-Metro Head.

3.4 Health Facilities and health status

The Tema Eastsub-metro is made up of 11 electoral areas namely; Ashiboy, Padmore, Kwesi Plange, Bankuman, Dadeagbo, Harbour, Industrial Area, Oklor Kofi, Oninku, Sea light. The reporting facilities are Tema Metro Assembly (TMA) Maternity and Child Clinic,Port

Medical Centre, Concerned Clinic, GTP Clinic, Unilever Clinic, Valco Hospital. Other important health activities include the Community Health Based PlanningServices (CHPS) in the 18 communities within the eleven electoral areas.

The top ten diseases commonly recorded in the metro 2015 included; malaria, 9661, HIV/AIDS 29, Diarrhoea 1221,Viral hepatitis 4, enteric fever,195, chicken pox 161 and dysentery 68. Other cases are acute ear infection, acute eye infection, upper respiratory tract infection, dental caries, rheumatism and other joint conditions.Acute urinary tract infection, skin diseases and gynaecological conditions are mostly referred for further management.

3.5 School facilities

The metro has public primary and Junior high schools, private second cycle Schools and tertiary institution, the Naval Base Training School. There is also several numbers of private schools.

3.6 Target population.

TARGET POPULATION
(Tema East)

Target	% Pop Dist by Age-Group	Actual Population
Children 0-11 months	4	4337
Children 12-23	7.7	8348
Children 24-59	8.2	8890
Children 5-14 years	20.0	21683
WIFA 15-49 years	24.0	26019
MEN 15-49 years	23.3	25260
MEN/WOMEN 50-60	5.9	6396
MEN/WOMEN	6.9	7481
TOTAL	**100.0**	**108413**
Expected Pregnancy	4.0	4337

The projected population for Manhean is 105,154 based on the 2010 Ghana Statistical Survey (GSS) population census but has increased due to migration into the community and has seen

upward increase as at 2016. Other activities carried out are Reproductive and Child Health, Disease Control and Surveillance, Health Promotion and Nutrition.

3.7 Occupation

Occupation for the people of Tema Manhean or Newtown, as it is popularly known is a predominant fishing. About 70% of the population are fish mongers and traders.

3. 8 Ethnicity and Religious composition

Many different ethnic groups can be found in the sub metro and noticeable among the inhabitants is mainly Gas, Ga Adanbges, who are believed to be the indigenes forming the majority. The Akans, the Northern tribes and the Ewe community have also migrated to the sub metro for trading activities and intermarriage so it's now a cosmopolitan community. The majority of the populace are Christians. Others religious groups found in the sub metro are Islam, traditional believers whereas others belong to no religious group.

3.9 Study Population

Survey respondents were nursing mothers who attended postnatal and Child Welfare Clinic (CWC) at theManhean health centre from all the communities in the Tema East sub metro for child welfare services. Respondents were selected among women aged between 15-49 years who are nursing mothers and had previously practised breastfeeding for their children or are currently breastfeeding. Estimated total population for Manhean for 2015, the time of writing the proposal was 86,136, WIFA for ages 15-49 years stands as 18,800, age 0-2years, 10,078.

3.10 Variables

3.10.1 Dependent variables;

Attitude towards feeding practices

3.10.2 Independent variables;

Perceptions of mothers

Maternal characteristics (socio-demographic)

Maternal characteristics that were used for the survey included: age, religion, ethnicity, marital status, educational level and occupation.

Among the breast feeding practices that were documented included; timeliness, breastfeeding initiation, exclusive breastfeeding, maternal support, socio cultural practices among mothers, complementary feeding practices and some characteristics of the babies.

3.11 Sample Size Determination

The sample size for the quantitative study was calculated using the Epi Info version 7 software using the population of infants and children 0-24mths with the acceptable sampling margin of error that was estimated at 5% or 0.05, proportion of mothers who were reported to be practising good feeding or had knowledge of such was estimated to be 60%(Gyampoh, et al.,) and a confidence level of 95%.The minimum sample size was estimated to be 356 based on Epi Info calculation.

Epi Info 7 may use the Microsoft Access database format or a SQL server database to create projects. Each project contains one or more forms, and each form may have one or more data tables. Form Designer allows you to place prompts and data entry fields on one or more pages within the form. Since this process also defines the database(s) that are created, Form Designer can be regarded as the database design environment. The form and the data table are located inside an Epi Info 7 project. An unlimited amount of forms may be contained inside a project. When data are entered into a form through the Enter module, it will be populated into the form's corresponding data table. Inside each form, fields (called variables in Analysis) are

created to hold data. The Check Code Editor component of the Form Designer can be used to add intelligence to a form (e.g., allowing for skip patterns, hiding fields from view, and performing math calculations). It can also be used to implement data validation checks. Functions are provided for importing files from Epi Info 3.5.x, aligning fields, and placing a layout grid on the workspace. Fields can also be grouped for display and used in Classic Analysis or Visual Dashboard. Source: CdC.gov/Epi info

The child welfare clinic is organized once a week and therefore within May and June 2016 weekly seventy- ninety questionnaires were given out to correspondence to answer. To avoid double participation, a simple random selection was done using a yes and no balloting so that mothers who picked yes and fell within the research criteria were chosen as participants for the study.

3.12 Data collection technique and procedure

A convenient simple random sampling with a well-structured survey questionnaire was used in the present study and was administered through assistance by trained interviewers including myself to mothers of infants and children 0-2years. Data collection was from May to June 2016. All interviewers were trained and provided with written materials about the definitions of breastfeeding, predominant breastfeeding and exclusive breastfeeding, and inclusion and exclusion criteria. The interviewers gave the questionnaire to eligible mothers after registration at the clinic, introduced the objective and obtained consent from them. The interviewers also helped the mothers, especially those with little education, to complete the questionnaire if any problems were encountered. All questionnaires were completed by the interviewers.

3.13 Ethical consideration and issues;

3. 13. 1 Approval

Approval was sought for ethical clearance from the responsible authorities, the Ghana Health Service (GHS) Ethical Review Committee. A letter of permission was obtained from the District Health Management Team (DHMT) of the sub metro. The objective and rationale for the study was explained to respondents and consent obtained.

3.13.2 Privacy and confidentiality

The privacy and confidentiality of the respondents was assured. All information provided by the respondents was kept confidential and data were locked in cabinet and on computers protected by passwords. The name and identity of the respondent was not needed for the study. The information provided was only identified by a code number and was treated strictly confidential. Respondents' name did not appear or was not mentioned in any part of the report of this study.

The respondents' involvement in this study was only through an interview and was not exposed to any form of risks. The subjects' participation in the study was voluntary and was not given any monetary or any kind of reward. All the information provided by the respondents was used for the study without any interference with work harmony.

3.14 Limitations of the study

The study included only female nursing mothers attending child welfare clinic at Manhean health centre and could not include any other private clinics, although their participation could have further substantiated the results obtained. Mothers from the private clinics were not included because of the time period of the study.

The study relied on self-report from the respondents and no information was given by the respondent's husbands or other family members. Therefore the information was one way which was not confirmed by anybody.

3.15 Training of interviewers

Four research assistants were identified and given a day's training on the community entry and the administration of the questionnaires. A training manual was prepared to aid collection of data.

3.16 Pretesting/ pilot study

The questionnaire was pre-tested on a sample of 10 child welfare mothers in the required age group at the Tema General Hospital, because the sub metro share some similarities in the socio-demographic features with the Tema Metropolis. This was to allow for modifications to make the questionnaire clearer and reliable.

3.17 Validity and Reliability

Data collection was done solely by the researcher and trained assistants. All questionnaires returned were checked for mistakes and completeness. Questionnaires with unclear responses or which had missing information that could not be clarified was excluded. The data was entered in an excel spreadsheet and exported into STATA 13version (StataCorp LP, College Station, TX, USA).

3.18 Quality control

All completed questionnaires were checked for incomplete data entry. Double entry was done to avoid duplication and omissions. During data entry, verifications were run at defined intervals to correct any observed inconsistencies. Data cleaning was done before the final analysis.

3.19 Data processing and analysis

All responses were entered using Epi Info version 7(CDC, 2007) and STATA 9 version (2007) were used for the analysis. Data on maternal socio-demographic characteristics, type of deliveries techniques were summarized using descriptive statistics of frequency and percentages. The respondents rating of questionnaire items regarding knowledge and attitude about breastfeeding were summarized using mean and standard deviation. Regression analysis was employed as well as for testing bivariate relationships. All statistical tests were two sided and alpha level set at 0.05 was considered significant.

CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This chapter describes the results of the study of different behaviours that encourages good feeding practices adopted by mothers with children 0-24months attending CWC at Manhean Health Centre. It presents the socio-demographic characteristics of the respondents, the awareness and knowledge levels of exclusive breastfeeding, prevalence of breastfeeding among mothers. Also covers Factors associated with exclusive breastfeeding and Social support among breast feeding mothers. The section also covers the associations between the socio-demographic variables, knowledge, perceptions and attitudes towards feeding practices.

4.2 Socio-demographic characteristics of the respondents

Three hundred and fifty five (355) nursing mothers attending CWC at Manhean health centre in the Tema East sub metro were interviewed. Table 4.1 presents the socio-demographic characteristics of the respondents. The ages of the respondents were supposed to range from 15-49 as according to WIFA. But there were no responses from age 45-49.The mean age of the study respondents is 28.57years (SD=±6.04), with the majority of them, 33% in the age category 25-29years. Most of the respondents (68.2%) indicated that they were married and 108 (30.4%) were single.

Most of the respondents in this study had attained a certain level of education; where the majority, 133, 37.5%, of the respondents indicated they had middle school (JSS), whereas only 10.7% of them had no formal education. Most of the respondents were Christians(85.9%),while 14.1% (50) were Muslims. Furthermore (38.1%) were Akansand Gas 20.8% (74), Gadangme 16.9%, others from the other regions of Ghana 10.4% and Ewes 13.8%. This may reflect the religious and ethnic composition of the sub metro where the

Christians and the Akan ethnicity make up the majority. The occupation trend among respondents, most of them was traders (51.8%) whilst 18.9% of them were business women.

In relation to the respondents' babies, most of the mothers had female babies (87.6%). Most of them babies were aged between1-5months (58.9%) and 6-10 months (32.9%).

On the type and place of delivery, most of the mothers indicated to have deliveredat the health facility (85.9%) and deliveries were mostly vaginal deliveries (78.6%) (See table 4.1).

Table 1: Socio-demographic characteristics

Characteristics	Frequency	Percentage
Age of mothers		
15-19	17	4.8
20-24	74	20.9
25-29	110	33.0
30-34	97	27.2
35-39	41	11.6
40-44	16	4.5
45-49	0	0
Marital status		
Single	108	30.4
Married	242	68.2
Divorced	5	1.4
Educational level		
No education	38	10.7
Primary	49	13.8
Middle/JSS	133	37.5
SSS/A-level	81	22.8
Tertiary	54	15.2
Ethnicity		
Ga	74	20.8
Akan	135	38.1
Dangme	60	16.9
Ewes	49	13.8
Others*	37	10.4
Religion		
Christian	305	85.9
Muslim	50	14.1
Occupation		
Formal employee	34	9.6
Business woman	67	18.9
Trader	184	51.8
Farmer	5	1.4
Fisherfolks	7	2.0
Others	58	16.3
Sex of child		
Male	44	12.4
Female	311	87.6
Age of last baby (in months)		
1-5	209	58.9
6-10	117	32.9
11-15	22	6.2
16-20	5	1.4
21 and above	2	0.6
Place of delivery		
Health facility	305	85.9
Maternity home	36	10.1
TBA	4	1.1
At home	10	2.8
Type of delivery		
Vaginal delivery	279	78.6
Caesarean section	76	21.4

*any other ethnic group in Ghana

4.3Prevalence of breastfeeding among mothers

The result on the prevalence of breastfeeding among mothers is presented on Table 4.2. The results showed that most of the mothers (82.5%) were currently breastfeeding. On the initiation of breastfeeding after delivery, majority of mothers (63.4%)indicated to have started breast feeding within the first hour after delivery whereas 23 4.5% of them indicated they started within first 24 hours after delivery. Furthermore, out of the 355 study respondents, 81.4% of the respondents indicated that they offered colostrum to babies after delivery while 18.6% of them indicated otherwise. However, 24.2% of the mothers indicated to have offered their babies something before initiating breastfeeding whilst 75.8% of them did not. Among those who offered their babies something before initiating breastfeeding, plain water (38.4%), milk from wet nurse 26.7% and formulas (16.3%) were given. With regards to the age at which babies were given water and liquids/solids foods, majority of them mothers (40.6%) indicated they gave water to their babies when they were 1-5 weeks old whereas were 36.6% of them said after 24 weeks. On other hand, most of the mothers (37.2%) indicated to have fed their babies with liquids and/or solids foods after they were 24 weeks olds and 28.5% of them said when their babies were 6-10 weeks old, whilst 26.2% said at 1-5 weeks old.

Table 2: Prevalence of breastfeeding among mothers

Statements	Frequency	Percentage
Currently breastfeeding		
Yes	293	82.5
No	62	17.5
Start of breastfeeding after delivery		
Within first hour	225	63.4
Within first 12 hours	66	18.6
Within first 24 hours	23	4.5
Less than first 24 hours within first 30minutes	41	11.6
Offer colostrums to baby after delivery		
Yes	289	81.4
No	66	18.6
Offer anything to baby before breastfeeding after delivery		
Yes	86	24.2
No	269	75.8
What was offered (n=86)		
Plain water only	33	38.4
Plain water with additives	4	4.7
Milk from a wet nurse	23	26.7
Formula	14	16.3
Lactogen	4	4.7
Cow milk	4	4.7
SMA	4	4.7
Age of baby when he/she was given water (in weeks)		
1-5	144	40.6
6-10	20	5.6
11-15	22	6.2
16-20	19	5.4
21-24	20	5.6
After 24 weeks	130	36.6
Age of baby when other foods were given (in weeks)		
1-5	93	26.2
6-10	101	28.5
11-15	22	6.2
16-20	6	1.7
21-24	1	0.3
After 24 weeks	132	37.2

4.4 Factors associated with non-exclusive breastfeeding

The study further explored from mothers possible factors that influence exclusive breastfeeding and table 4.3 presents information on it. The results revealed that majority of the mothers (76.6%) said they had no problem with breastfeeding but about 23.4% of them mothers indicated otherwise. Among the mothers who indicated to have problems with breastfeeding, problems such as breastfeeding not pleasant (49.4%), and embarrassment

feeding in public(42.4%) were indicated. On reasons why mothers introduce water and other foods to their babies, mothers indicated inadequate breast milk (38.3%), child cries after breastfeeding (18.6%), having to resume work 18.0% and influence from relations recorded (14.1%). Mothers who offered other foods to their babies fed them using feeding bottle (55.8%), and cup and spoon (36.1%). With regards to the type of food mothers had given to their babies in the last 24hours, out of the 355 study respondents, 73.8% of the respondents indicated breast milk and cereals (11.5%), whilst 10.4% of them said porridge (see table 4.3)

On the period mothers have exclusive breastfed their babies, most of the mothers indicated 6 months (36.6%) whilst 20.9% indicated 3months. However, 23.9% of the mothers indicated to have exclusively breastfed for less than 3 months (see table 4.3).

Table 4.3: Factors associated with exclusive breastfeeding

Factors	Frequency	Percentage
Have problem breastfeeding		
Yes	83	23.4
No	272	76.6
Problem of breastfeeding		
Not pleasant	42	49.4
Embarrassing	36	42.4
Spouse does not agree	7	8.2
Reason for giving water/other foods		
Inadequate breast milk	136	38.3
Influence from relations	50	14.1
Child cries after breastfeeding	66	18.6
Painful breast	22	6.2
Child did not like breast milk	17	4.8
Have to resume work	64	18.0
Other foods given to baby using		
Feeding bottle	198	55.8
Spoon and cup	128	36.1
Only cup	29	8.2
Period of exclusive breastfeeding		
1 month	43	12.1
2 months	42	11.8
3 months	74	20.9
4 months	45	12.7
5 months	21	5.9
6 moths	130	36.6
Foods given to baby in the last 24 hours*		
Breast milk	262	73.8
Cereal	41	11.5
Milk	15	4.2
Porridge	37	10.4
Rice and stew	11	3.1
Banku and stew	15	4.2
SMA	24	6.8
Tom brown	2	0.6
Yam	4	1.1
Lactogen	2	0.6
Tea (Milo)	2	0.6
Biscuit	4	1.1

*multiple responses given

4.5 Maternal knowledge on exclusive breastfeeding

Table 4.4 provides information on maternal knowledge on exclusive breastfeeding. The results revealed that all the respondents (100%) indicated to have heard about exclusive breastfeeding. In relation to what time should to initiate breastfeeding after delivery, majority of the mothers (71%) correctly indicated that initiation of breastfeeding starts within the first

hour after delivery, whereas 20.9% of them indicated less than one hour. Furthermore on the knowledge of period for exclusive breastfeeding, most of the mothers (86.5%) correctly indicated that exclusive breastfeeding spans over a period of six months, but 6.2% of them said 4 months. Enquiring about what age should a baby be given water and liquids/solids foods, most of the mothers indicated that water (68.7%) and liquid/solid foods (78.6%) are given to a baby when they are 6 months old.

With regard to a place for help on breastfeeding, most of the mothers (80.0%)identified the health facility as a place to go for help on breastfeeding. On what mothers do to get more breast milk, most of the mothers said eating special food, soups and drinks (68.2%), and increasing the quality of food and liquids (35.2%)(See table 4.4).

Table 4.4: Maternal knowledge on exclusive breastfeeding

Statements	Frequency	Percentage
Ever heard of exclusive breastfeeding		
Yes	355	100.0
No	0	0.0
When a mother should start breastfeeding after delivery		
Within the first hour	252	71.0
Less than 1 hour	74	20.9
Don't know	29	8.1
Period for exclusive breastfeeding		
1 month	5	1.4
2 months	6	1.7
3 months	9	2.5
4 months	22	6.2
5 months	6	1.7
6 months	307	86.5
Age at which baby should be given water		
1 month	7	2.0
2 months	38	10.7
3 months	48	13.5
4 months	10	2.8
5 months	8	2.3
6 months	244	68.7
Age at which baby should be given liquid/solid foods		
1 month	4	1.1
2 months	4	1.1
3 months	21	5.9
4 months	34	9.6
5 months	4	1.1
6 months	279	78.6
7 months	3	0.9
8 months	6	1.7
Place for help on breastfeeding		
Doctors	4	1.1
Midwife	34	9.6
Health facility	284	80.0
Own mothers and midwife	25	7.0
Other relatives	8	2.3
What mothers do to get more breast milk*		
Increase frequency of child suckling	34	9.6
Have no worry	63	17.7
Eat special food/soups/drinks	242	68.2
Increase the quality of food/liquids	125	35.2
Massage breast	76	21.4
Don't know	2	0.7

*multiple responses given

4.6 Social support among breastfeeding mothers

Table 4.5 presents information on the social support among breastfeeding mothers. Most of mothers (60.9%)indicated they relied on midwives and other nurses for information on breastfeeding whilst 28.5%, of them said own mothers. The information on breastfeeding received by mothers were indicated as mainly on the ways to breastfeed (65.9%) and supplementary foods (18.0%). However, majority of the mothers (87.0%) indicated not to belong to any community mother support group and/or association. But the few (13.0%) that indicated to belong to community mother support group and/or association, most of them (52.2%) indicated to have received support on breastfeeding from the support group.

On infant feeding practices that mothers required more information on, most mothers (72.1%) indicated they received more informationon breastfeeding and 12.75 of the mothers said they needed financial support on feeding (see table 4.5).

Table 4.5: Social support among breastfeeding mothers

Statements	Frequency	Percentage
Who mothers rely on for information on breastfeeding		
Own mothers	101	28.5
Mother in-law	19	5.4
Friends	19	5.4
Midwife/Nurse	216	60.9
Information mothers receive on breastfeeding*		
Way to breastfeed	234	65.9
Personal hygiene	20	5.6
Child care	34	9.6
Maternal and child health	4	1.1
Supplementary foods	64	18.0
Nutrition	20	5.6
Belong to any community group/association		
Yes	46	13.0
No	309	87.0
Receive support on breastfeeding from the group (n=46)		
Yes	24	52.2
No	22	47.8
Support received (n=24)		
Breastfeeding	24	100.0
Infant feeding that require more information*		
Baby positioning	17	4.8
Breastfeeding	256	72.1
Infant food	10	2.8
Feeding timing	10	2.8
Child behaviour and eating habit	8	2.3
Feeding practices	19	5.4
Health education	17	4.8
Nutrition	12	3.4
No support	32	9.0
Financial support on feeding	45	12.7

*multiple responses given

4.7 Socio-demographic factors associated with exclusive breastfeeding among mothers

Table 4.6 presents information on the socio-demographic factors associated with exclusive breastfeeding among mothers. A bivariate analysis found that, there was a relationship between exclusive breastfeeding and socio-demographic factors age of the respondents, educational status, ethnicity, religion, occupation, type of delivery, and sex of baby (see table 4.6).

However, there was no relationship between factors marital status and place of delivery; and exclusive breastfeeding (see table4.6).

Table 4.6: Socio-demographic factors associated with exclusive breastfeeding among mothers

Characteristics		$X^2(df)$	*P*-value
	Yes		
Age of respondent			
15-19	7(41.2)		
20-24	16(21.6)		
25-29	51(46.4)		
30-34	35(36.1)	14.9741(5)	0.010*
35-39	18(43.9)		
40-44	3(18.7)		
Marital status			
Single	41(38.0)		
Married	88(36.4)	0.6858(2)	0.710
Divorced	1(20.0)		
Educational status			
No education	9(23.7)		
Primary	15(30.6)		
Middle/JSS	42(31.6)	35.6043(4)	<0.0001*
SSS/A-Level	25(30.9)		
Tertiary	39(72.2)		
Ethnicity			
Ga	22(29.7)		
Akan	67(49.6)		
Dangme	17(28.3)	17.4082(4)	0.002*
Ewes	11(22.4)		
Others*	13(35.1)		
Religion			
Christian	118(38.7)	3.9933(1)	0.046*
Muslim	12(24.0)		
Occupation			
Formal employee	15(44.1)		
Business	31(46.3)		
Trader	57(31.0)		
Farmer	1(20.0)	12.3572(5)	0.030*
Fisherperson	0(0.0)		
Others	26(44.8)		
Place of delivery			
Health facility	115(37.7)		
Maternity home	11(30.6)		
TBA	0(0.0)	3.8515(4)	0.426
At home	4(44.4)		
Others	0(0.0)		
Type of delivery			
Vaginal delivery	87(31.2)	16.5980(1)	<0.0001*
Caesarean section	43(56.6)		
Sex of baby			
Male	10(22.7)	4.1765(1)	0.041*
Female	120(38.6)		

*p<0.05; X^2= Chi-square statistic; *df*= degree of freedom

4.8 Logistic regression of factors associated with exclusive breastfeeding among mothers

Table 4.7 shows the results from logistic regression of factors associated with exclusive breastfeeding among mothers. In the simple logistic regression, educational status was found to be associated with exclusive breastfeeding. Mothers who had attained a tertiary education had 8.38 higher odds of exclusive breastfeeding compared to mother with no formal education (OR=8.38; 95%CI=3.22-21.79). On ethnicity, there was a 2.33 higher odds of exclusive breastfeeding among mothers of the Akan ethnicity compared to those of Ga origin (OR=2.33; 95%CI=1.28-4.25). Religions affiliation was also found to be associated with exclusive breastfeeding. Compared to mothers who were Christians, there was 50% odds of exclusive breastfeeding among mothers who were Muslims (OR=0.50; 95% CI=0.25-0.99). Furthermore, mothers who were delivered through a caesarean section had 2.88 higher odds of exclusive breastfeeding compared to mothers who had a vaginal delivery (OR=2.88; 95% CI=1.71-4.83). The sex of a baby was also found to be associated with the practice of exclusive breastfeeding. Mothers who had female babies had 2.24 higher odds of exclusive breastfeeding compared to mothers whose babies were males (OR=2.14; 95%CI=1.02-4.48). However in the multiple regression controlling for other significant factors; educational status (having attained a tertiary education), occupation (being a farmer) and delivering through a caesarean section were found to be associated with the practice of exclusive breastfeeding (see table 4.7)

Table 4.7: Logistic regression of factors associated with exclusive breastfeeding among mothers

Factors	Exclusive breastfeeding, n(%)	Unadjusted OR(95%CI)	Adjusted OR(95%CI
Age of respondent			
15-19	7(41.2)	1	1
20-24	16(21.6)	0.39(0.13-1.20)	0.55(0.15-2.02)
25-29	51(46.4)	1.23(0.44-3.48)	1.37(0.38-5.02)
30-34	35(36.1)	0.81(0.28-2.31)	1.20(0.34-4.30)
35-39	18(43.9)	1.12(0.36-3.52)	1.44(0.38-5.38)
40-44	3(18.7)	0.33(0.07-1.61)	0.52(0.08-3.23)
Educational status			
No education	9(23.7)	1	1
Primary	15(30.6)	1.42(0.54-3.73)	1.26(0.41-3.86)
Middle/JSS	42(31.6)	1.49(0.65-3.42)	1.73(0.67-4.48)
SSS/A-Level	25(30.9)	1.44(0.59-3.48)	1.44(0.53-3.91)
Tertiary	39(72.2)	8.38(3.22-21.79)*	8.68(2.71-27.82)*
Ethnicity			
Ga	22(29.7)	1	1
Akan	67(49.6)	2.33(1.28-4.25)*	1.61(0.69-3.74)
Dangme	17(28.3)	0.93(0.44-1.98)	1.18(0.46-3.02)
Ewes	11(22.4)	0.68(0.30-1.58)	1.34(0.48-3.74)
Others*	13(35.1)	1.28(0.55-2.96)	1.79(0.63-5.08)
Religion			
Christian	118(38.7)	1	1
Muslim	12(24.0)	0.50(0.25-0.99)*	0.72(0.31-1.63)
Occupation			
Formal employee	15(44.1)	1	1
Business	31(46.3)	1.09(0.48-2.50)	1.28(0.44-3.70)
Trader	57(31.0)	0.57(0.27-1.20)	0.65(0.25-1.69)
Farmer	1(20.0)	0.32(0.03-3.14)	0.03(0.00-0.48)*
Fisherperson	0(0.0)		
Others	26(44.8)	1.03(0.44-2.41)	0.79(0.26-2.36)
Type of delivery			
Vaginal delivery	87(31.2)	1	1
Caesarean section	43(56.6)	2.88(1.71-4.83)*	3.36(1.82-6.23)*
Sex of baby			
Male	10(22.7)	1	1
Female	120(38.6)	2.14(1.02-4.48)*	2.25(0.94-5.40)

*p<0.05; OR=odds ratio; CI= confidence interval

CHAPTER FIVE

DISCUSSION

5.0 Introduction

This chapter presents the discussion of the major findings from the study. This study was undertaken to assess the feeding practices of infants 0-2years attending CWC at Tema Manhean Health Centre. The study found an exclusive breastfeeding (EBF) rate of 36.6%, despite the high level of knowledge about EBF among the mothers. Most of the mothers initiated breastfeeding within the first one hour after delivery and most of the mothers gave water and liquid/solid foods to their babies at ages 1-5 weeks and after 24 weeks respectively. Factors such as educational status of mothers, occupation and type of delivery were found to be associated with EBF.

5.1 Breastfeeding Practices

The study found exclusive breastfeeding rate of 36.6% lower than found by other studies (Danso, 2014; Mahmoud, et al., 2014; Nkala, et al., 2011), but slightly higher than what has been reported in Nigeria (Oche, et al., 2011; Agho, et al., 2011). However the study by Danso (2014) was done among only professional mothers compared to the mothers in this presents study. This could explain the observed difference in the present study.

The study found that most mothers (63.4%) breastfed within the first hour of delivery similar to other published studies (Oche, et al., 2011; Mahmoud, et al., 2014). However the study found about 81% of the mothers fed their babies with the first breast milk (colostrums). This is higher than what has been reported for peri-urban babies but emphases the widespread of the practice in breastfeeding (Danso, 2014). However, the finding from this current study is contrary to what was found by Aborigo, et al., (2012) where the colostrums of mothers who

delivered outside the hospital was used to test for the suitability of the mother breast milk and in Nigeria where colostrums was said to be a dirty milk (Oche, et al., 2011).

On the initiation of water and other liquid/solid foods, the study revealed that most of the mothers gave babies something before breastfeeding, gave water similar to what was found by another study (Agho, et al., 2011). Furthermore, most of the mothers gave water to their babies after at age 1-5 weeks as reported by Otoo, et al., (2009) most Ghanaian mothers have the beliefs that a baby can be given water so far as it is clean. The current study also found that most of the mothers fed their babies with liquid/solid foods after they attained 24 weeks similar to what has been reported by Mahoud, et al., (2014). The study found reasons such as inadequate breast milk, baby crying after breastfeeding, influence from relatives and have to resume work as why mothers introduced water and liquid/solid foods are to their babies. This finding is consistent with that of other studies (Agunbiade, et al., 2012; Otoo, et al., 2009; Danso, 2014). It has also, been reported that the lack of breast milk prevents mothers from initiation early breastfeeding (Oche, et al., 2011). However, mothers in this current study indicated that eating special food/soups/drinks and increasing the quality of those food/liquids enable them produce more breastmilk. This suggests mothers should be educated on the necessary foods to be taken in order to produce more breast milk and among the working class; employers should make the work environment conducive for breastfeeding mothers to breastfeed their babies.

Majority of the mothers were knowledgeable about the period for exclusive breastfeeding, and the ages at which babies should be given water and liquid/solid foods. This is consistent with other studies (Nkala, et al., 2011; Danso, 2014). In relation to accessing help and information on breastfeeding, this current study found that mothers turn to go to the health facilities and rely on midwives/Nurses for information on breastfeeding. This result is in consonance with the finding of the study by Danso (2014). However, the study found that

most of the mothers did not belong to any community mother group and/or association. This finding stresses the trust and confidence mothers have in the health professionals and importance of health education to be carried out at the ANC. Nevertheless, a study has found out that the rate of exclusive breastfeeding increased among mothers after mothers were provided with breastfeeding counselling by peer counsellors (Chapman, et al., 2010).

The study found factors such as age of the mother, educational status, religion, ethnicity, occupation, type of delivery and the sex of the baby were found to be associated with exclusive breastfeeding. In relation with education as a factor of EBF, similar finding has been reported in another study (Agho, et al., 2011). Also factors with regards to factors; type of delivery and sex of the baby, similar findings have been found by another study (Agho, et al., 2011). Furthermore, occupation as a factor associated with EBF is consistent with other studies (Nkala, et al., 2011; Otoo, et al., 2009; Danso, 2014). However, the findings with regards to age, education and occupation are contrary to another study in Nigeria (Oche, et al., 2011). This could be due to geological setting of the two studies; whereas the current study is done in Ghana, the previous study was done in Nigeria. With regard to ethnicity as a factor associated with EBF, a similar finding has been reported by another study where ethnicity influenced initiation of breastfeeding (Tawiah-Agyemang, et al., 2008). The study further stated that most mothers who did not initial breastfeeding within the first 1-12 hours after delivery gave their babies water, evaporated milk and others (Tawiah-Agyemang, et, al., 2008), prompting that those mothers did not practice EBF.

There was a good feeding practice among mothers and that was reflected in the fact that there were no reported cases of diarrhoea case among the children of the mothers similar to what a study found in Bangladesh (Mihrshahi, et al., 2007) that diarrhoea was significantly associated with lack of breast feeding. Most mothers were doing breast feeding and so

confirmed a protective effect of EBF against infectious diseases related to morbidity in infancy.

5.2 Explanation of the results with the conceptual framework

It was predicted that mothers' perceptions about breastfeeding modified by factors such as socio-demographic factors, knowledge about exclusive breastfeeding and cue from previous breastfeeding information and practice could influence breastfeeding intention and subsequent exclusive breastfeeding, thus infant feeding practices. The study found that age of the mother, educational status, religion, ethnicity, occupation, type of delivnery and the sex of the baby were found to be associated with exclusive breastfeeding. Modifying factors identified such as education, religion and ethnicity informs ones knowledge and perceptions held about initiation and exclusive breastfeeding. It is expected that the higher education a mother attains the more likely she is to access information and be informed about good infant feeding practices (exclusive breastfeeding). This was found in this study as mothers who had attained tertiary education were more likely to practice exclusive breastfeeding similar to finding of others studies (Alemayehu, et al., 2009; Aidam, et al., 2005). Religion and ethnicity influences mothers' beliefs (perceptions) about breastfeeding which determines their infant feeding practices. As found in this study, another study has reported that some ethnic groups in Ghana believe placing the baby to the breast boosts the milk and also mostly the Bronos (an Akan ethnic group) engaged in early breastfeeding (Tawiah-Agyemang, et, al., 2008). Furthermore, occupation of mothers as identified in this current study has been widely reported to be associated with exclusive breastfeeding (Nkala, et al., 2011; Otoo, et al., 2009; Danso, 2014) and as such good infant feeding practices. The current study identified that mothers introduced water and liquids/solids food in order for them to resume work stressing the effect on a mother job on infant feeding practices. The study found out that most mothers had heard about EBF, knowledgeable about the period for exclusive

breastfeeding, and the ages at which babies should be given water and liquid/solid foods. However, this high knowledge did not translate into a higher rate of EBF as only 36.6% of the mothers practice EBF but there was a good feeding practice among mothers and that was reflected in the fact that there were no reported cases of diarrhoea case among the children of the mothers.

The study further found that mothers relied on mainly the health facility and midwife/nurses for help and information on breastfeeding and other feeding practices. Information received on breastfeeding and generally infant feeding practices provides mothers to cue to action and increasing their likelihood of practicing good infant feeding practices.

In conclusion, the results from this current study widely supported the constructs of the conceptual framework.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Three hundred and fifty five mothers were interviewed on feeding practices of their children, socio-cultural practices against exclusive breast feeding knowledge on breastfeeding and how their children who develop problems such as diarrhoea are managed home and at health facilities. The results showed that the majority of the people practise exclusive breastfeeding. Again, most of the children were weaned between seven and eighteen months and fed with porridge rice and stew or soup. With such improvement in feeding practices, it is expected that there would be reduction in malnutrition and occurrence of diarrhoea diseases. Timing for weaning was good but weaning foods may not be perfect in nutrients or not properly prepared.

It was also found from the study that water was introduced to some of the babies before six months due to various reasons. Domestic and drinking water was obtained from pipe borne water, sachet water in some cases. Such sources of water are often good but exposed to contamination during collection and storage. Storage of water in buckets and wide-mouth pots render water to be easily polluted as narrated by mothers during the interviews.

This study also revealed that mothers were adhering to good practices of personal and basic environmental hygiene. Such practices can facilitate prevention of communicable diseases including diarrhoea diseases. Lack or inadequate toilet facilities in homes Based on the findings of the study the following recommendations were made; expectant mothers should be provided opportunities for learning about feeding practices during antenatal periods to know about the importance of breast feeding before delivery so that they are psychologically prepared for early initiations that will be effective to ensure successful feeding period.

In summary, the present research adds to the relatively small number of studies in the southern part of Ghana that found evidences that breast feeding is the key to optimal health and development, which improves the physical and psychological development of the growing child. Regarding knowledge, the study shows that there is a relationship existing between level of knowledge and feeding practices, meaning that use of perceived seriousness, perceived susceptibility, perceived benefits, and perceived barriers /cues to action are important determinants of health behaviour as demonstrated in the health belief model. The practice of breastfeeding in a particular community depends on general perception of the community about breastfeeding.

6.2 Recommendations

6. 2.1. The Ministry of Health (MOH) and the Ghana Health Service (GHS)

These organizations must work together with health related agencies to organize periodic educational campaigns on recommended feeding practices to expectant and nursing mothers in the deprived communities to enhance their knowledge.

6. 2.2. Sub metros

The baby friendly education on breast feeding campaigns in the districts and Sub metros should be intensified with mass education to create awareness on knowledge and benefits through active home visiting campaigns by health workers that should be aimed at increasing community and male support for proper feeding of infants.

6. 2.3. Future research

This is a quantitative study and was limited in exploring detailed practices, barriers and challenges. Future research in this area that would be seeking to identify and recommend best feeding practices. It is advisable to conduct a number of different studies on the same subject to help find more solutions especially to determine the causes of diarrhoea in children in

cross sectional researches to inform decision makers for planning of evidenced based programmes for the vulnerable especially children under 0-24months, the first thousand days of the child which is important for survival.

There is the need to support institutions to research further in to the benefits of breast milk, to inform policy decisions that will improve the behaviour of community members to accept breast feeding holistically for all mothers to practice exclusive breast feeding for six months before introduction of new feeds.

6.2.4.Support from Community members to help nursing mothers to breast feed

Nursing mothersshould also be well informed, supported and encouraged on breast feeding practices to counter negative socio cultural practices among ethnic groups. Baby friendly health facilities should be encouraged to support evidence based interventions to boost best feeding practices. Interventions that are targeted to support breastfeeding programs by policy makers should recognise stakeholders including nurses especially public health and community health nurses at the grass root to ensure implementation of breast feeding policies, aimed at reducing childhood morbidity and mortality through recommended feeding practices

REFERENCES

Aborigo, R. A., Moyer, C. A, Rominski, S, Adongo, P., Williams, J., Logonia, G., Affah G, Hodgson, A, Engmann, C. (2012). Infant nutrition in the first seven days of life in Rural Northern Ghana. *Pregnancy and Childbirth. 12*(76). http://www.biomedcentral.com/1471-2393/12/76

Agho, K. E., Dibley, M. J., Odiase, J. I., Ogbonmwan, S. M. (2011). Determinants of exclusive breastfeeding in Nigeria. *BMC Pregnancy and Childbirth. 11*(2).

Agunbiade, O. M., Ogunleye, O. V. (2012). Constraints to exclusive breastfeeding practice among breastfeeding mothers in Southwest Nigeria: implications for scaling up. *International Breastfeeding Journal, 7*(5).

Ahmed, A.H. 2008. Breastfeeding preterm infants: an educational program to support mothers of preterm infants in Cairo, Egypt.

Aidam, B. A., Perez-Escamilla, R., Lartey, A., Aidam, J. (2005). *Factors associated with exclusive breastfeeding in Accra, Ghana.* European Journal of Clinical Nutrition, 59:789–796. doi:10.1038/sj.ejcn.1602144

Ajibade, B., Okunlade, J., Makinde, O., Amoo, P. &Adeyemo, M. (2013).Factors influencing the practice of exclusive breastfeeding in rural communities of Osunstate, Nigeria.

Akeredolu, I. A. J. O. O., Seriki-Mosadolorun, J. S., & Okorafor, A. U. (2014). Mothers' nutritional knowledge, infant feeding practices and nutritional status of children (0-24 months) in Lagos State, Nigeria. *European Journal of Nutrition & Food Safety,4*(4): 364-374.

Alemayehu, T., Haidar, J., Habte, D. (2009). Determinants of exclusive breastfeeding practices in Ethiopia. *Ethiopian Journal of Health Development, 23*(1). Doi:dx.doi.org/10.4314/ejhd.v23i1.44832

Amatayakul, K., Wongsawasdi, L., Mangklabruks, A., Tansuhaj, A., Ruckphaopunt, S., Chiowanich, P., Woolridge, M.M., Drewett, R.F, et, al. (2003). *Effects of parity on breastfeeding: a study in the rural setting in northern Thailand.* Journal of Human Lactation: 15(2): 121-124.

Anette Ekström RNM, Ann-Marie Widström RNMTD, PhD andEva Nissen RNMTD, PhD *3 Breastfeeding Support from Partners and Grandmothers: Perceptions of Swedish Women* Version of Record online: DEC (2003) DOI: 10.1046/j.1523-536X.2003.00256.x

Awumbila, M. (2003). Social dynamics and infant feeding practices in Northern Ghana. *Institute of African Studies Research Review, 19*(2), p-85.

Baker, J.L., Gamborg, M., Heitmann, B.L., Lissner, L., Sorensen, T.I. & Rasmussen, K.M. (2008). Breastfeeding reduces postpartum weight retention. *The American Journal of Clinical Nutrition.*

Bani, I. A., Saeed, A. A. W., & Othman, A. A. M. A. (2002). Diarrhoea and child feeding practices in Saudi Arabia. *Public health nutrition, 5*(06), 727-731.

Bezner Kerr R, Dakishoni L, Shumba L, Msachi R, Chirwa M. Soc Sci Med. (2008) Mar; 66(5):1095-105. Epub (2007) Dec 21. "We grandmothers know plenty": breastfeeding, complementary feeding and the multifacetedrole of grandmothers in Malawi.

Black, R. E., Morris, S. S., & Bryce, (2008).Where and why are 10 million children dying every year? *Lancet. 361*:2226-2234.

Blyth, R.J., Creedy, D.K., Dennis, C.L., Moyle, W., Pratt, J., De Vries, S.M. & Healy, G.N. (2004). *Breastfeeding duration in an Australian population: the influence of modifiable antenatal factors.* Official Journal of International Lactation Consultant Association..

Brodribb, W., Fallon, A., Jackson, C, &Hegney, D. (2008). The relationship between personal breastfeeding experience and the breastfeeding attitudes, knowledge, confidence and effectiveness of Australian GP registrars.

Brown, A., Raynor, P. & Lee, M. (2011). Young mothers who choose to breast feed: the importance of being part of a supportive breast-feeding community. Midwifery. 27(1): 53-59.

Butte, N.F., Lopez-Alarcon, M.G. & Garza, C. (2002). Nutrient adequacy of exclusive breastfeeding for the term infant during the first six months of life; World Health Organization, Geneva.

Centre for Community Child Health (2006). Breastfeeding promotion: practice resources. http://www.rch.org.au/ccch.

Chapman, D. J., Morel, K., Anderson, A. K., Damio., G, Pérez-Escamilla, R. (2010). Review: Breastfeeding peer counseling: from efficacy through scale-up. *J Hum Lact, 26*(3): 314-326. doi: 10.1177/0890334410369481

Damato EG, Dowling DA, Madigan EA, Thanattherakul C. (2005)Duration of breastfeeding for mothers of twins.

Danso, J. (2014). Examining the practice of exclusive breastfeeding among professional working mothers in Kumasi Metropolis of Ghana. *International Journal of Nursing.*

Davis SK, Stichler JF, Poeltler DM. Nurs Women's Health.(2012)Dec;16(6):460-70. doi: 10.1111/j.1751-486X.2012.01774.x.

Dewey, K. G., Heinig, M. J., Nommsen, L. A., Peerson, J. M., and Lönnerdal, B. Growth of breast-fed and formula-fed infants from 0 to 18 months: the DARLING study. Pediatrics 1992;89: 1035-1041.

DiGirolamo, A.M., Grummer-Strawn, L.M. & Fein, S.B. (2008). Effect of maternity-care practices on breastfeeding. Pediatrics. 122 Suppl2S43-9. DOI:10.1542/peds.2008-1315e [doi].

Doherty, T., Sanders, D., Jackson, D., Swanevelder, S., Lombard, C., Zembe, W., Chopra, M., Goga, A. et al. (2012). *Early cessation of breastfeeding amongst women in South Africa: an area needing urgent attention to improve child health. BMC Pediatrics*. 12(1): 105.

Emily, E. Stevens, R., Patrick, T. E. R., & Pickler, R. R.. (2009). A history of infant feeding. *The Journal of Perinatal Education, 18*(2). doi: 10.1624/105812409X426314

Ekström, A.,Widström, A. &Nissen, E. (2003). Breastfeeding support from partners and grandmothers: perceptions of Swedish women Birth. 30(4): 261-266.

Epi Info version 7 (CDC, 2007) and STATA 9 version (2007) CdC.gov/Epi info

Fairbank, L., O'Meara, S., Renfrew, M.J., Woolridge, M., Sowden, A.J. & Lister-Sharp, D. (2000). A systematic review to evaluate the effectiveness of interventions to promote the initiation of breastfeeding. Health Technology Assessment (Winchester, England).

Gale, C., Logan, KM., Samankumaran, S., Pakinson, JR., Hyde, MJ and Modi, N. (2012). Effect of breastfeeding compared with formulafeeding on infant body composition: a systematic review and meta-analysis. Am. J. Clinnutr; 95: 656-669

Hayden, J.A. (2009). Introduction to health behavior theory.NewyorkJones & Bartlett Publishers.

Huo, D., Adebamowo, C., Ogundiran, T., Akang, E., Campbell, O., Adenipekun, A., Cummings, S., Fackenthal, J. et al. (2008). Parity and breastfeeding are protective against breast cancer in Nigerian women. British Journal of Cancer. 98(5): 992-996.

Forster, D. A., McLachlan, H. L., & Lumley, J. (2006). Factors associated with breastfeeding at six months postpartum in a group of Australian women. *Int Breastfeed J, 1*(1), 1-12.

Gyampoh, S., Otoo, G. E., & Aryeetey, R. N. (2014). Child feeding knowledge and practices among women participating in growth monitoring and promotion in Accra, Ghana. *BMC Pregnancy Childbirth, 14*, 180. doi: 10.1186/1471-2393-14-180

Hendricks, K., Briefel, R., Novak, T., & Ziegler, P. (2006). Maternal and child characteristics associated with infant and toddler feeding practices. *Journal of the American Dietetic Association, 106*(1), 135-148.

Huffman, S. L., & Combest, C. (2009). Role of breast-feeding in the prevention and treatment of diarrhoea. *J Diarrhoeal Dis Res, 8*(3), 68-81.

Imhonde, H., Shaibu, H., Imhonde, J. &Handayani, L. (2012). Type of Birth, Depression and Anxiety as determinates of Breastfeeding Attitude among Nursing Mothers. *International Journal of Public Health Science (IJPHS) 1(2): 49-54.*

Ibadin, O., Ofili, N., Morrison, O. &Nkwuo, E. (2012). Exclusive Breastfeeding and Malaria in Early Infancy: Experience from Benin City, Nigeria. *Journal of Medicine and Biomedical Research. 11(1): 116-122.*

Jager, M.D, Hartley, K., Terrazas, J. & Merrill, J. (2012). Barriers to breastfeeding-a global survey on why women start and stop breastfeeding; European*Journal of Obstetrics and Gynecology. 7(1): 25-30.*

Karen Wambach, Jan Riordan, Int Breastfeed J. (2013); 8: 14. Breastfeeding and Human Lactation 5th Edition Int Breastfeed J. 2013; 8: 14. Published online 2013 Oct 23. doi: 10.1186/1746-4358-8-14PMCID: PMC3815630

Kerr, RB., Dakishoni, L., Shumba, L., Msachi, R &Chirwa, M (2008). "We grandmothers know plenty "Breastfeeding, complementary feeding and multifaceted role of grandmothers in Malawi. *Social Science and Medicine*; 66 (5): 1095-1105.

Kramer, M. &Kakuma, R. (2012). Optimal duration ofexclusive breastfeeding (Review). TheCochraneLibrary;8:1-40.JohnWiley&Sons,Ltdhttp://www.thecochranelibrary.com

Kuti, O., Adeyemi, A.B. &Owolabi, A.T. (2007). Breast-feeding pattern and onset of menstruation among Yoruba mothers of South-west Nigeria. *European J.of Contraception and Reproductive Healthcare.* 12(4): 335-339.

Kohlhuber, M., Rebhan, B., Schwegler, U., Koletzko, B., & Fromme, H. (2008). Breastfeeding rates and duration in Germany: a Bavarian cohort study. *British Journal of Nutrition*, *99*(05), 1127-1132.

Lamberti, L. M., Walker, C. L. F., Noiman, A., Victora, C., & Black, R. E. (2011). Breastfeeding and the risk for diarrhea morbidity and mortality. *BMC public health*, *11*(Suppl 3), S15.

Lamontagne, C., Hamelin, A. & St-Pierre, M. (2008). The breastfeeding experience of women with major difficulties who use the services of a breastfeeding clinic: a descriptive study. *International Breastfeeding Journal*. 3(17): 1-13.

Lande, B., Andersen, L. F., Baerug, A., Trygg, K. U., Lund-Larsen, K., Veierød, M. B., & Aa, E. (2003). Infant feeding practices and associated factors in the first six months of life: the Norwegian infant nutrition survey. *Acta pædiatrica*, *92*(2), 152-161.

Labbok, M.H. (2001). Effects of breastfeeding on the mother. *Pediatric Clinics of North America*. 48(1): 143-158

Lawoyin, T.O., Olawuyi, J.F. &Onadeko, M.O. (2001). Factors associated with exclusive breastfeeding in Ibadan, Nigeria.Journal of Human Lactation: *Official Journal of International Lactation Consultant Association.* 17(4): 321-325.

Li, L., Zhang, M., Scott, J.A. &Binns, C.W. (2004). Factors associated with the initiation and duration of breastfeeding by Chinese mothers in Perth, Western Australia. *Journal of Human Lactation: Official Journal of International Lactation Consultant Association.* 20(2): 188-195.DOI:10.1177/0890334404263992

Mahmud, N. A., Megahed, N. M., Essam, M. M., Ibraheem, M. M., BelalMarrouf, O., Hussein, E. K. E.,….Ahmed, D. A. Assessment of Knowledge and Practice of Proper Breastfeeding among Mothers Attending- El-Shohada Primary Health Care Units, Ismailia City. *International Journal of Healthcare Sciences. 2*(1), 70-78

Matias SL, Nommsen-Rivers LA, Dewey KG(2011). Determinants of exclusive breastfeeding in a cohort of primiparous Periurban Peruvian mothers.

Meedya, S, Fahy, K & Kable, A (2010), 'Factors that positively influence breastfeeding duration to 6 months: a literature review', Women and Birth, vol. 23, no. 4, pp. 135-145. Women and Birth

Mihrshahi, S., Ichikawa, N., Shuaib, M., Oddy, W., Ampon, R., Dibley, M. J., & Peat, J. K. (2007). Prevalence of exclusive breastfeeding in Bangladesh and its association with

diarrhoea and acute respiratory infection: results of the multiple indicator cluster survey 2003. *Journal of Health, Population, and Nutrition, 25*(2), 195.

McLnnes, R.J., Love, J.G. & Stone, D.H. (2001). Independent predictors of breastfeeding intention in a disadvantaged population of pregnant women. *BMC Public Health. 1:10. DOI: doi: 10.1186/1471-2458-1-10.*

Murimi, M., Dodge, C.M., Pope, J. & Erickson, D. (2010). Factors that influence breastfeeding decisions among special supplemental nutrition program for women, infants, and children participants from Central Louisiana. *Journal of the American Dietetic Association. 110(4): 624-627.*

Mutekanga, E. &Atekyereza, P. (2007). The relationship between child breastfeeding and infant health: The case of Rukungiri District in Uganda. *Journal of Social Development in Africa. 22(2): 63.*

Natural Resource Defence Council (2005). Benefit of breastfeeding. Available: http://www.nrdc.org/breastmilk/benefits.asp

Nkala, T. E., Msuya S. E. (2011). Prevalence and predictors of exclusive breastfeeding among women in Kigoma region, Western Tanzania: a community based crosssectional study. *International Breastfeeding Journal, 6(17).*

Ogunlesi, T.A. (2010). Maternal socio-demographic factors influencing the initiation and exclusivity of breastfeeding in a Nigerian semi-urban setting. *Maternal and Child Health Journal. 14(3): 459-465.*

Okeh, U.M. (2010). Breastfeeding and the mother–child relationship: A case study of Ebonyi State University Teaching Hospital, Abakaliki. *African Journal of Primary Health Care & Family Medicine. 2(1): doi: 10.4102/phcfm.v2i1.97*

Oche, M. O., Umar, A. S., Ahmed, H. (2011). Knowledge and practice of exclusive breastfeeding in Kware, Nigeria. *African Health Sciences. 11*(3): 518 – 523

Otoo, G. E., Lartey, A. A., Pérez-Escamilla, R. (2009). Perceived incentives and barriers to exclusive breastfeeding among Periurban Ghanaian women. *J Hum Lact., 25*(1): 34-41. doi: 10.1177/0890334408325072

People, H. (2010). Healthy Milk, Healthy BabyChemical Pollution and Mother's Milk. *Centers for Disease Control and Prevention, Atlanta, Georgia, Natural Resources Defense Council*.

Qureshi, A.M., Oche, O.M., Sadiq, U.A. &Kabiru, S. (2011). Using community volunteers to promote exclusive breastfeeding in Sokoto State, Nigeria. *Pan African Medical Journal. 10. http://dx.doi.org/10.4314/pamj.v10i0.72215*

Raffle, H., Ware, L.J., Borchardt, A.R. & Strickland, H.A. (2011). Factors that influence breastfeeding initiation and persistence in Ohio's Appalachian region. Ohio: Voinovich School of leadership and public affairs at Ohio.

Sapna, S., Ameya, A., Rooma, S., Aarti, P., Rashid, A. & Narayan, K. (2009). Prevalence of exclusive breastfeeding and its correlates in an urban slum in western India. *International eJournal of Science Medicine & Education. 3(2): 14-18.*

Scott, J. A., Binns, C. W., Oddy, W. H., & Graham, K. I. (2006). Predictors of breastfeeding duration: evidence from a cohort study. *Pediatrics*, *117*(4), e646-e655.

Sika-Bright, S. (2010). Socio-cultural factors influencing infant feeding practices of mothers attending welfare clinic in Cape Coast, Ghana. Department of Sociology and Anthropology, University of Cape Coast.

Sule, E.A. (2011). Breastfeeding and breast cancer, a veritable association among Nigerian women? Continental J. Medical Research 5 (2): 1 – 5

Tampah-Naah, AM., & Kumi-Kyereme. (2013). Determinants of exclusive breastfeeding among mothers in Ghana: a crosssectional study. *International Breastfeeding Journal; 8:13 doi.10.1186/1746-4358-8-13.*

Tan, K.L. (2011). Factors associated with exclusive breastfeeding among infants under six months of age in peninsular malaysia. *Int Breastfeed J. 6(2): 1-7*.

Tawiah-Agyemang, C., Kirkwood, B. R., Edmond, K., Bazzano, A., & Hill, Z. (2008). Early initiation of breast-feeding in Ghana: barriers and facilitators. *Journal of Perinatology, 28*, S46–S52; doi:10.1038/jp.2008.173

Uchendu, U., Ikefuna, A. &Emodi, I.(2009). Factors associated with exclusive breastfeeding among mothers seen at the University of Nigeria Teaching Hospital. *South African Journal of Child Health. 3(1): 14-19.*

Ugboaja, J., Berthrand, N., Igwebge AO & Obi-Nwosu, A. (2013). Barriers to postnatal care and exclusive breastfeeding among urban women in South-eastern Nigeria; *Nigerian Medical Journal. 54(1): 45-50.*

Ukegbu, A., Ukegbu, P., Onyeonoro, U. &Ubajaka, C. (2010). Determinants of breastfeeding patterns among mothers in Anambra State, Nigeria. *South African Journal of Child Health. 5(4): 112-116.*

Ukwuani, F.A. &Suchindran, C.M. (2003). Implications of women's work for child nutritional status in sub-Saharan Africa: a case study of Nigeria. *Social Science & Medicine. 56(10): 2109-2121.*

UNICEF (2010). Improving exclusive breastfeeding practices. Available: www.globalhealthcommunication.org

UNICEF(2013). Breastfeeding. Available: http://www.unicef.org/nutrition/index_24824.html

UNICEF, (2015). Breastfeeding. Available At http://www.unicef.org/nutrition/index_24824.html

Wendy Brodribb, Anthony Fallon, Claire Jackson andDesley Hegney *The relationship between personal breastfeeding experience and the breastfeeding attitudes, knowledge, confidence and effectiveness of Australian GP registrars* Version of Record online: 19 SEP 2008 DOI: 10.1111/j.1740-8709.2008.00141.x .

Wilhelm, S.L., Rodehorst, T.K., Stepans, M.B.F., Hertzog, M. &Berens, C. (2008). Influence of intention and self-efficacy levels on duration of breastfeeding for Midwest rural mothers. *Applied Nursing Research. 21(3): 123-130.*

WHO(2003).*10factsonbreastfeeding.Availableathttp://www.who.int/features/factfiles/breastfeeding/facts/en/*.

WHO (2013). Essential nutrition actions: Improving maternal, newborn, infant and young child health and nutrition. Geneva: World Health Organization.

World Health Organization (2007). Planning guide for national implementation of the Global Strategy for Infant and Young Child Feeding, Geneva. WHO.

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APPENDICES

Appendix 1: Study Questionnaire

FEEDING PRACTICES AMONG MOTHERS OF INFANTS 0-24MONTHS ATTENDING CWC AT TEMA MANHEAN HEALTH CENTRE TEMA EAST SUB-METRO

ID NO…….. DATE……...

COMMUNITY……. SUB-DISTRICT……

NAME OF INTERVIEWER ……. INTERVIEWER CODE……

SECTION A: SOCIO-DEMOGRAPHIC DATA OF MOTHER

Q.NO	QUESTION	RESPOND	VARIABLE
Q1	How old are you?.....years		
Q2	What is your marital status? Single……..... Married…… Widowed……. Divorced…….. Separated……. Cohabitation……		
Q3	What is your educational level? None…… Primary…….... Middle/JSS…….. SSS/A 'Level……..… Tertiary…… Other (Specify)…….		
Q4	Which ethnic group do you belong to? Ga…… Akan…… Dangme……..... Ewes…… Other (Specify)…….		
Q5	What is your religion? Christian ……. Muslim…… Traditional……..... Other (Specify)……		

Q6	What is your occupation? Formal employee……... Business…… Trader……... Farmer…….. Fisherperson……. Other (Specify)……		

SECTION B: PREVALENCE OF BREASTFEEDING AMONG MOTHERS

Q7	Where did you deliver? Health facility…….. Maternity home…….... TBA……. At home…… Other (Specify)……..		
Q8	What kind of delivery did you have? Vaginal delivery……..... Caesarean Section(C/S)……. Other (Specify)……		
Q9	How old is(Name)?.....Months		
Q10	Sex of (Name) Male Female		
Q11	Did you ever breastfeed (Name)? Yes…….. No……...		
Q12	If yes, how long after delivery did you start breastfeeding (NAME)? Within first hour……. Within first 12 hours……... Within first 24 hours……... >First 24hours……..		
Q13	Did you offer your baby the first yellowish fluid (colostrums) that came from your breast after delivery? Yes ……. No……... NA……..		
Q14	Before putting (Name) to the breast for the first time after delivery, was anything offered to him/her to eat or drink? Yes……. No……..... NA……..		

Q15	If yes, what was offered (Name) to drink? Plain water only……. Plain water or with additives……. Milk from a wet nurse……... Other (specify)…….. NA……		
Q16	Are you currently breastfeeding your baby? Yes …….. No……		
Q17	At what age did you start giving water to (Name)?.....weeks NA……..		
Q18	At what age did you start giving other foods to (Name)?.....Weeks NA……..		

SECTION C: FACTORS ASSOCIATED WITH EXCLUSIVE BREASTFEEDING

Q19	Do you have any problem breastfeeding your baby publicly? Yes……. No……..		
Q20	If yes, what kind of problem? Not pleasant…… Embarrassing ……. Spouse does not agree……... Other (Specify)……... NA……..		
Q21	What was the main reason (only ONE reason) Why you introduced water/other foods to (Name)? Inadequate breast milk…… Influence from relations…… Child cries after Breastfeeding…….… Painful breast……..... Child did not like breast milk…… Child was old enough…… Have to resume work…… Other		

	(Specify)…… NA……		
Q22	How was (Name) fed with the other foods? Feeding bottle…… Spoon and cup…… Cup……. Other (Specify)…		
Q23	How long (duration)did you breastfeed (Name) exclusively……..Months		
Q24	Tell me all that (Name) has eaten/drunk in the last 24hours. (List all)……..		

SECTION D: MATERNAL KNOWLEDGE ON EXCLUSIVE BREASTFEEDING

Q25	When should a mother start breastfeeding her baby after delivery? Within the first hour……..... >1 hour…….. Others (Specify)…… Don't know……...		
Q26	How long should exclusive breastfeeding be carried out?.....Months Don't know……..		
Q27	At what age of the infant should a mother start offering water?.....Months Don't know……		
Q28	At what age of the infant should a mother start offering liquid/solid food?.....Months Don't know……		
Q29	If you have a problem with breastfeeding, where can you seek help? Don't know…….		
Q30	What can a mother do to have more breast milk? **(Circle all that matters)**		

	Increase frequency of child suckling…….. Have no worry….. Eat special food/soups/drinks….. Increase quantity of food/liquids …… Massage breasts …… Other (specify)…… Don't know….		

SECTION E: SOCIAL SUPPORT AMONG BREASTFEEDING MOTHERS

Q31	Who do you rely on mostly (choose one) for information on breastfeeding? Own mother…….. Mother in-law….. Friends……. Midwife/Nurse….. Mother support groups……. Community Based Growth Promoters… Other (Specify)……		
Q32	What kind of information have you obtained from your choice above on breast feeding? ……..		
Q33	Do you belong to any community group/association (Mother support group etc.)? Yes…….. No……		
Q34	If yes, have you received or support on breastfeeding from this group? Yes…….. No…… Don't know…….		
Q35	If yes what kind of support have you received on breastfeeding? …… (list all)		
Q36	List all aspects of infant feeding for which you need/needed information or support 1. …… 2. …… 3. ……		

Thank you

APPENDIX 2: Consent Form

I…….. Have been thoroughly briefed on the entire methodology and significance of the on-going research which is being conducted by Joyce Veronica Preko (Master of Public Health)

On my own accord, I hereby consent to be part of the study based on my understanding of what the study entails.

I am doing this on condition that under no circumstances should any reference be made to my actual identity to other persons outside this study as promised by the researcher.

Respondent's signature…… Date……

Researcher's signature…… Date…….

APPENDIX 3: Volunteer Agreement Form

The above document describing FEEDING PRACTICES AMONG MOTHERS OF INFANTS 0-24MONTHS ATTENDING CWC AT TEMA MANHEAN has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

....

Date Signature of volunteer

If volunteers cannot read the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

....

Date Signature of witness

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

…… ……..

Date Signature of person who obtained consent