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# FACTORS THAT INFLUENCE EXCLUSIVE BREASTFEEDING IN GHANA

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REGIONAL INSTITUTE OF POPULATION STUDIES

UNIVERSITY OF GHANA

LEGON

# FACTORS THAT INFLUENCE EXCLUSIVE BREASTFEEDING IN GHANA

BY

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**ACCEPTANCE**

Accepted by the Faculty of Social Sciences, University of Ghana, Legon in partial fulfilment of the requirements for the award of Degree of M.A (Population Studies)

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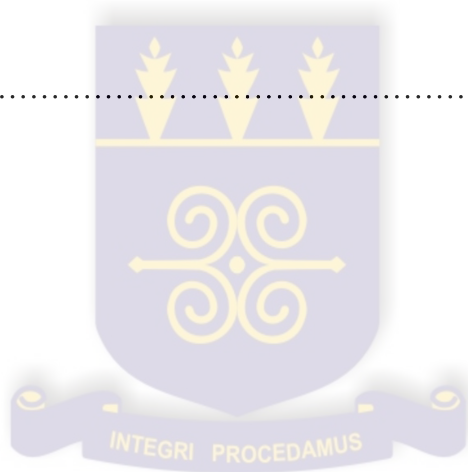

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## DECLARATION

I, KINGSLEY KWAME ADZRAKU, declare that except for duly cited references, this dissertation is the result of original research undertaken under supervision at the Regional Institute for Population Studies, University of Ghana, Legon, between August 2012 and March 2015, and that neither a part nor the whole of it has been presented elsewhere for the award of another degree.

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KINGSLEY KWAME ADZRAKU

DATE ……………………………

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# DEDICATION

This work is dedicated to my lovely son, Kekeli Adzraku and pretty daughter, Aseye Adzraku.

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**ACKNOWLEDGEMENT**

My sincere appreciation goes to all who contributed to the success of this work.

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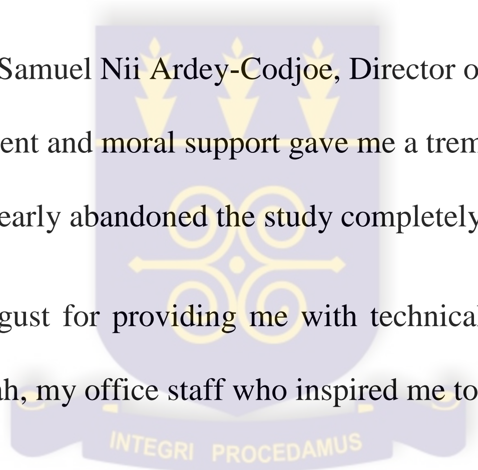

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## ABSTRACT

Factors that determine exclusive breastfeeding in Ghana are important, especially in line with recommendation by WHO/UNICEF. The difference between WHO/UNICEF recommendations of 90% and the level of coverage of exclusive breastfeeding in Ghana (45%) is wide. The study examines exclusive breastfeeding up to 6 months of age as recommended by WHO/UNICEF. It also determines possible factors that influence the progress of exclusive breastfeeding in Ghana, to inform possible strategies for improvement.

Secondary data from Ghana Demographic and Health Survey (2008) in a cross sectional study was analysed for the last-born babies ever breastfed, delivered 5 years preceding the survey. Univariate analyses were done on the background characteristics of the respondents, using frequencies and percentages. Bivariate, chi-square and logistic regression model was used to analyse socio-demographic characteristics.

The study revealed that prevalence of exclusive breastfeeding in Ghana in 2008 was 80 percent. Variations exist at the regional level. Ashanti had the highest proportion of 19 percent and Upper West had the least proportion of 3 percent. Factors that significantly influenced exclusive breastfeeding in Ghana included ethnicity, region of residence, marital status, type of delivery, religion and initiation of breastfeeding. Other factors that show association with exclusive breastfeeding in the bivariate analysis but not in the regression are age of child, number of antenatal attendance, timing of antenatal visits and place of delivery.

There is the need to equip existing health facilities with breastfeeding packages, and provide new ones close to where people live, to provide services to mothers to enable them initiate breast-feeding immediately after delivery.

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# CHAPTER ONE

# INTRODUCTION

## 1.1 Background to the Study

Women's conditions of work have been changing and continue to change. Women entered the workforce in large numbers following the 1st world war. Throughout the 20th century, increasing numbers of women worked in jobs outside the home and in jobs that were traditionally held by men (ILO, 2007). In the 1960s and 70s, more and more health professionals, scientists, nutritionists, and consumers, church and volunteer groups spoke out about the rise of artificial feeding and aggressive marketing of breast milk substitutes. That period recorded downward trend in breast-feeding practices globally, with high infant morbidity and mortality rates especially in developing countries where formulas were watered down and are less nutritious than mother's milk. That was characterized by bacteria infection, leading to diarrhoea and acute respiratory infection resulting in fatal infant morbidity and death.

In 1977, a boycott of Nestle due to its aggressive marketing of infant formula in the global periphery started in the USA and subsequently spread to the whole world. This boycott is believed to be one of the first examples of globalization in social and political spheres of life. Two non –governmental organisations (NGO) were instrumental in this boycott: World Wide Association of Business Coaches (WABC) and Infant Formula Action Coalition (INFACT). One outcome of this boycott was that it shed light on the issue of exclusive breastfeeding. Since then, the World Health Organization (WHO) and United Nation Children's Fund (UNICEF) have embarked on exclusive breastfeeding because of its safety to infants through programme such as Baby Friendly Hospital Initiative (BFHI). Acceptance of BFHI has been low in the global

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periphery partly because of the potential spread of Human Immune Virus and Acquired Immune Deficiency Syndrome (HIV/AIDS) from mother to child.

As a sequel to a meeting held by United States Agency for International Development (USAID) in December 1985, where many leading breast-feeding advocates were present and expressed general dissatisfaction with the support donor agencies were giving to breast-feeding and the lack of breast-feeding in UNICEF'S programme at that time, ''policy maker's meeting; Breast-feeding in the 1990s A Global Initiative was held. It was at the Innocenti Centre in Florence-Italy, on July 30-August 1, 1990. It was at this meeting that the UNICEF/WHO declaration on protecting, promotion and support for breast-feeding was made, and exclusive breastfeeding was defined with support from USAID and the World Bank. The declaration sets a high standard by stating that the period of exclusive breast-feeding should be 4-6 months, which countries are striving to achieve (WHO, 1998). The scientific basis for exclusive breast-feeding was laid only a few years before the Innocenti Declaration. A Swedish nutritionist, Stina Almroth discovered that healthy breastfed babies needed no additional water, even in hot climates, no matter whether humid or arid. This means that we could avoid altogether having to teach mothers to boil water and give it safely to their babies. It also reduced the risk that they would use other supplements unnecessarily and prematurely, which can be a source of infection in the infant. Not more than 35% of infants worldwide were exclusively breastfed, during the period preceding 1990s. In developing countries, the rate of exclusive breastfeeding for infants less than six months was only 37%, and there had been very little progress since the early 1990's. Exclusive breastfeeding is probably rare anywhere in the world except parts of Scandinavia (UNICEF, 2007). Breastfeeding hovered at around 15% to 20 % since 1978. It was increased throughout 1990's and it was at 45% among those born in 1997.

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In Ghana, currently, the percentage of children ever breastfed has remained stable at 97-98%, with median duration of 20 months. Exclusive breastfeeding by age 4-5 months is however only 45% with median duration of 3 months (GDHS, 2008). This study will identify the prevalence of exclusive breastfeeding in Ghana up to age 6 months, as recommended by UNICEF/ WHO. It will examine some of the factors that influence exclusive breastfeeding in Ghana to inform strategies for its improvement by stakeholders in infant and child survival.

## 1.2 Statement of the Problem

The level of exclusive breastfeeding in Ghana is far less than the 90 percent coverage recommended jointly by UNICEF/WHO. Although the rate of Exclusive Breastfeeding (EBF) for six months has improved from less than 5 percent in 1989 to about 63 percent in 2008, it lasts for a median duration of just about three months, indicating that the proportion of children exclusively breastfed declines rapidly during the first six months of life (Aryeeteys et al, 2012). The proportion of children under 2 months of age who are exclusively breastfed was 84 percent in 2008. By age 4-5 months, only about 45 percent were exclusively breastfed. Overall, 63 percent of children from 0-5 months of age were exclusively breastfed in 2008, before the rate declined to 46 percent in 2012 (GDHS, 2008; GNA, 2012). There exist 44percent difference between recommended level of 90 percent and coverage of 46 percent. Exclusive breastfeeding is relatively new. Information, care and services for its implementation are limited in scope; which are usually giving by health professionals at health facilities mostly. However, health facilities are not found in some remote areas of the country.

Furthermore, the information on early initiation leading to exclusive breastfeeding in Ghana is linked up with the type of care and services that a mother receives from a health professional. Ghana does not have maternity protection laws that may adjust work load for employed mothers

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of infants and young children. Neither is there opportunity to combine maternity leave with half-time-work. Employee mothers have only twelve weeks for maternity leave, which is inadequate for exclusive breastfeeding.

Worse still, there is no protection, promotion or support for infants and young children at work places. Facilities for storage of breast milk are non-existent and babies are not permitted to be at work places. The Ghana Demographic and Health Survey (GDHS 2008) and Multiple Indicator Cluster Survey (MICS 2010-2011) have separately analysed data on exclusive breastfeeding up to 4-5months of age. The analysis was based on initiation of breastfeeding within 24 hours after delivery. This study will examine exclusive breastfeeding up to 6 months of age as recommended by UNICEF/WHO. The study will find possible factors that influence the progress of exclusive breastfeeding in Ghana, to inform possible strategies for improvement in breastfeeding.

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## 1.3 Rationale of the Study

Breast milk is the best food for infants but it has the worst marketing (UNICEF, 2006). It is the best gift a mother can give her baby (Yadavannavar and Shailaja, 2011). Almost all women are physically able to breastfeed. It's a skill that every woman needs to learn and practise before it becomes easy. It happens more quickly for some women than others but nearly all women can produce the amount of milk their baby needs (MICS, 2012). In 2003, the Lancet series on child survival identified promotion of appropriate breastfeeding (exclusive breastfeeding for six months followed by breastfeeding plus adequate complementary feeding) as the single most effective preventive public health intervention for reducing mortality among children aged under 5 years (Aryeetey and Goh, 2013).

Analysis of nutritional status by age in 2008 showed that malnutrition was high among children. Twenty eight percent of children under five years were stunted, with ten percent being severely stunted. Four percent of these were likely to be less than six months (GDHS, 2008). Strategies to improve infant and young child feeding are key component of child survival and development programmes, supported by UNICEF and WHO in most countries, including Ghana. Exclusive breastfeeding is beneficial not for infant and mother only but also for community and society as well (WHO, 2001). In Ghana, the Baby Friendly Hospital Initiative (BFHI) was launched in 1993. The initiative aims to promote, protect and support breastfeeding practices and it was adopted from the global BFHI, launched in 1992. Upper East region has all the public health facilities declared entirely Baby Friendly by UNICEF in 2010.

The study will determine whether or not exclusive breastfeeding is contributing positively to the achievement of the Millennium Development Goals' target for childhood mortality so that neonatal and post-neonatal deaths will be reduced in other to save more lives.

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Exclusive breastfeeding is also chosen because of its large impact on nutrition and child survival outcomes which is one of the key indicators that all countries monitor.

## 1.4 Objectives

The main objective of the study is to identify the factors influencing exclusive breastfeeding in Ghana.

The specific objectives of the study include the following;

I. To assess factors that influence exclusive breastfeeding in Ghana.
II. To determine the prevalence of exclusive breastfeeding in Ghana.
III. To make recommendations for improvement in exclusive breastfeeding initiatives in Ghana.

## 1.5 Method of Analysis

Socio demographic and service related factors on exclusive and non-exclusive breastfeeding practices were measured using frequencies and percentages. Cross tabulations for selected variables were done using contingency table analysis to determine exclusive breastfeeding, after which comparisons were made. Chi square model was used to determine significant variables. Binary logistic model was used to determine the pattern of association between the dependent and independent variables.

## 1.6 Organisation of the Study

The study is presented in seven chapters. Chapter one consists of an introduction and background to the study, statement of the problem, rational of the study, objectives and organisation of the study. Chapter two comprises of literature review, conceptual framework and hypothesis. Chapter three focuses on methodology.

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The chapter is discussed under study area and source of data, profile of Ghana, description of terms and limitations of the study. Chapter four is made up of univariate analysis of socio economic and demographic characteristics. Chapter five addressed patterns and differentials of breastfeeding behaviour, with bivariate chi square analysis. Chapter six related the effect of socio economic and demographic variables on the dependent variable using a binary logistic model. Finally, chapter seven gives summary, conclusion and recommendations of the study.

1.7 Definition of Key Concepts and Terms

a) Exclusive Breastfeeding: This means no other drink or food is given to the infant, with the possible exception of small amounts of medical supplements (medicine and vitamin drops).

b) Breastfeeding: This is the way of providing breast milk as an ideal food for healthy growth and development of infants and children.

c) Postpartum Amenorrhoea: The temporary absence of menstruation after childbirth as a result of breastfeeding.

d) Contraception: Deliberate prevention of pregnancy by a fecund woman without necessarily inferring with coital frequency.

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# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 Introduction

This chapter reviewed studies that have been done on exclusive breastfeeding globally with a specific focus on the situation in Ghana. The review was done under the following headings; benefits of exclusive breastfeeding, prevalence of exclusive breastfeeding, and factors affecting exclusive breastfeeding.

## 2.1 Benefits of Exclusive Breastfeeding.

According to James P. Grant, former UNICEF Executive Director, "Breastfeeding is a natural safety net against the worst effect of poverty. If a child survives the first month of life, exclusive breastfeeding goes a long way towards cancelling out the health difference between being born into poverty and being born into affluence''. This implies exclusive breastfeeding may help bridge the divide between marginalized and vulnerable populations and more privileged groups (UNICEF, 2010). Economically, breastfeeding is the least expensive and safest method of infant feeding. Socially, it is a basic human right. It has important implications for the health of mothers (WHO, 2008). Its importance to infants and mothers depend on frequency, incidence and duration of breastfeeding (Kramer and Kakuma, 2002). Appropriate breastfeeding (exclusive breastfeeding for six months, followed by adequate complementary feeding) is known to be the most effective global public health method of preventive intervention to reduce early-childhood mortality (Jones et al, 2003; Brulde, 2011; WHO, 2012).

Optimum breastfeeding for the first six months and continued breastfeeding to 12 months-tops the list of preventive interventions that would most reduce the number of deaths of children less

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than five years old from all causes (Aryeetey and Goh, 2008). Optimum breastfeeding practices have the potential to prevent 1.4 million deaths every year among children under five years. The benefits of exclusive breastfeeding for infants extend beyond childhood. It has numerous benefits for mothers and for the family. Studies from Ghana and elsewhere show that early initiation within the first hour of life could prevent around 20 per cent of neonatal deaths (UNICEF, 2010). There is growing evidence that early initiation of breastfeeding has a significant impact on reducing overall neonatal mortality. Breastfed children have at least a six times greater chance of survival in the early months than non-breastfed children. In the first six months of life, breastfed infants are six times less likely to die from diarrhoea and 2.5 times less likely to die from acute respiratory infection. Breastfeeding protects infants against diarrhoea through two mechanisms: (1) reduced risk of bacteria from contaminated formula, other liquids and complementary foods and (2) the transfer of maternal antibodies through breast milk. This means that it plays a major role in reducing stunting, a condition in which infectious diseases are important determinants.

Also, children who are breastfed do better on tests of cognitive motor development and academic outcomes and have lower risk of mental health problems than children who are not breastfed (Lucas et al., 1992). This is due to the presence of docosahexaenoic acid in breast milk which also contributes to the growth and development of healthy eyes and nervous system (Drover et al., 2011; Jorgensen et al., 2001). Yadavannavar and Shailaja (2011) reported that exclusive breastfeeding and longer duration of breastfeeding is known to protect a child from obesity risk, helps enhancing brain and learning readiness. It also serves as child spacing method. This is good for developing countries, like Ghana. It further gives bonding of mother and infant through skin-to-skin contact for the infants' wellbeing (GDHS, 2008).

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Exclusive Breastfeeding helps to reduce bleeding after delivery as may delay return of fertility and thus prevent short birth intervals and lower the risk of pre-menopausal breast cancer and ovarian cancer (American Academy of Paediatrics, 2005; Tung et al., 2003; UNICEFF, 2006). Exclusive breastfeeding gives faster post-partum weight loss in the mother (Dewey et al., 2001). It's a natural contraceptive and highly effective for fertility control (Butz, 1981; Jain and Bongarts, 1981; Becker and Ahmed, 2001). Financial gain is made by the family from exclusive breastfeeding, compared to mix feeding (Ladomenou et al., 2010). Money spent on infant formula is saved (Bartick, 2011, Bartick and Reinhold, 2010). Exclusive breastfeeding for six months decreases the probability of mother-to-child transmission (MTCT) of HIV, compared to mix feeding (IIiff et al., 2005). A study in Indonesia found that women whose babies nurse intensively (several nursing bouts per day of fairly long duration) delay the return of menses by average of 21 months, nearly twice the delay of those women who breastfeed with low intensity (Oddy, 2010).

## 2.2 Prevalence of Exclusive Breastfeeding

The level of exclusive breastfeeding globally, before the targets of Innocenti declaration were reviewed between 1990 and 2004. The rate of exclusive breastfeeding for the first four months of life increased from 34% to 41% across the developing world (based on 37 countries with trend data available, covering 60% of the developing world's population). Rates in some countries doubled, tripled, and even quadrupled, particularly where health and community workers had been trained to give mothers appropriate breastfeeding counselling and support. Notwithstanding these achievements, most infants today still do not receive the full benefits of breastfeeding, leaving millions at unnecessary risk of illness and death (UNICEF, 2006). The rate of exclusive breastfeeding for infants below 6 months, from the year 2000 to 2007 was 38 percent globally.

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Various regions recorded the following rates of exclusive breastfeeding: West and Central Africa recorded 23 percent, Middle East and North Africa had 26 percent, Eastern and Southern Africa had 39 percent and, East Asia and the Pacific had 43 percent. South Asia recorded the highest rate of 44 percent (UNICEF, 2008).

In a related study of exclusive breast feeding of infants below six months, from 1995 to 2010, Cai and colleagues (2012) observed the rate of 39 percent for developing countries. This rate compared with the exclusive breastfeeding rate for 1995 made an increase of 6 percent. In the USA, the rate of exclusive breastfeeding for infants at 3 months and 6 months in 2012 were 36 percent and 16.3 percent respectively (CDC, 2012). In Iran, the rate of exclusive breastfeeding in the north was 28 percent in 2009 (Olang et al., 2009). In Kenya, improved IYCF support for exclusive breastfeeding reached 73 per cent of women who received antenatal care. And also, Prevention of Mother to Child Transmission (PMTCT) services in 2008—an estimated 1.1million of the 1.5 million pregnant and lactating women. The approach used in Kenya strengthens the crucial infant feeding aspect of PMTCT and extends IYCF counselling and communication to the general population (WHO, 2008).

The exclusive breastfeeding rate in Ghana has risen from 7% in 1993 to 31% in 1998, then to 53% in 2003. It further increased to 63% in 2008 before declining to 46% in 2011 (GDHS, 2008, GSS MICS, 2011). Exclusive breastfeeding rate for the various countries and regions after 4 months was generally low and differ for different settings. Factors adduced for the low rate of exclusive breastfeeding include low socio economic status, maternal education and inadequate breastfeeding policies and programmes (Olang et al., 2009; Koosha et al., 2008).

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## 2.3 Factors Affecting Exclusive Breastfeeding

### *2.3.1 Baby Friendly Hospital Initiative*

The Baby Friendly Hospital Initiative (BFHI) is a project by WHO/UNICEF through which exclusive breastfeeding is being supported, promoted and protected (Nwankwo et al, 2002). It implements the ten steps to successful breastfeeding. The aim of the programme is to reduce morbidity and mortality, promote and protect maternal and child health. It does so by ensuring support for breastfeeding in maternity care facilities (UNICEF, 2005). Evidence from developed and developing countries indicates that, the BFHI has had a direct impact on breastfeeding rates at the hospital (Britton et al, 2007; Kramer et al, 2001; Rosenberg et al, 2008; Cattaneo et al, 2001). A 2003 analysis of data from Swiss mothers was done. It revealed that exclusive breastfeeding rates for infants less than six months was significantly higher among infants delivered in Baby Friendly hospitals, than in general sample. Also, average breastfeeding duration was longer for infants born in Baby Friendly hospitals that had maintained good compliance with the ten steps (Merten et al, 2005). A related study reported that mothers who experience no Baby Friendly practices in hospitals were 13 times more likely to stop breastfeeding before six weeks, than mothers who experience six weeks specific Baby Friendly practices (Digirolamo et al, 2008). A study on the relationship between Baby Friendly Hospital Initiative programme and trends in exclusive breastfeeding in 14 countries, including Ghana, revealed a statistically significant annual increase in rates of exclusive breastfeeding, in the countries under study (Sheryl and Miriam 2009).

Since 1979, the WHO recommendation for the duration of exclusive breastfeeding had been ‘4-6’months. It was however changed to 6 months in 2001, as a result of a review and evaluation of more than 3,000 references by its secretariat (WHO, 2001). Strategies such as BFHI, education

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of mothers and health care professionals, paternal support and peer counselling have been used to promote breastfeeding in the USA (Martens, 2000; Philipp et al., 2001). A Mauritius study by Jahangeer et al (2009), where public health institutions have adopted the BFHI found that proper breastfeeding initiation and successful exclusive breastfeeding for six months were encouraged (Jahangeer, Khan and Khan, 2009). In a related study on impact of Baby Friendly Hospital Initiative in Ile-Ife, Nigeria in 2000, Ojofeitimi established that Baby Friendly Hospital Initiative has proved to be an effective method of improving breastfeeding practices worldwide (Ojofeitimi et al., 2000). In another study of BFHI, one and half hour mandated breastfeeding education intervention of nursing staff significantly increased the compliance of the BFHI and breastfeeding beliefs over seven months at the intervention site compared to control site. Exclusive breastfeeding rate also increased from 31% to 54% (Martens, 2000).

A study was done on mothers currently breastfeeding who have had at least a talk on Baby Friendly Hospital Initiative program in Nigeria. The study recorded that the programme may not have positive effect if pregnant women still deliver their babies at home (Salami, 2006). The finding was in agreement with Haider et al, 2000). They found that Baby Friendly Hospital Initiative does promote exclusive breastfeeding in health facility but does not sustain it at community level. Salami (2014) noted that the WHO/UNICEF Baby Friendly Hospital Initiative goes beyond the designated university teaching hospitals to other public and private owned hospitals in Nigeria. The study reported that approximately 1.5 million young infants die each year as a result of lack of knowledge about exclusive breastfeeding benefit and improper infant and young child feeding.

Delivering in Baby Friendly health facility is more likely to increase initiation and duration of breastfeeding, compared with delivering in non-Baby Friendly Hospital Initiative facility,

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according to published data (Ukegbu et al, 2011; Perez et al., 2007). In assessing the role of BFHI in Nigeria, it was found that exclusive breastfeeding increased up to 75% for mothers who deliver at Baby Friendly Hospital Initiative facility, as compared to 35% from non-Baby Friendly Hospital Initiative facility (Laar AS and Govender V, 2011). All public health facilities have been designated baby friendly in the Upper East region of Ghana (GDHS 2008). Pregnant women on exclusive breastfeeding during antenatal, prenatal and post-natal visits to health facilities is part of the 10 steps to successful breastfeeding outlined for Baby Friendly Hospital Initiative (GRN, 1992).

### *2.3.2 Nutritional Knowledge*

Access to information is essential in increasing people's knowledge and awareness of issues. For example, listening to expert views on infant nutrition and exclusive breastfeeding in particular may influence women to breastfeed. Exposure of women and men to print and broadcast media in Ghana is high. Seventy six percent of women and 88 per cent of men listen to radio at least once a week. Also, 54 percent of women and 61 percent of men watch television at least once a week (GDHS 2008). The national child nutrition campaign on TV in Ghana gives insight on appropriate timely complementary feeding after six months exclusive breastfeeding. The advert "Aduane Pa Ma Asetena Pa" (Good food for good life) was launched in 2013 and sponsored by MOH and GHS (www.goodlife.ghana.com). This is expected to help mothers improve on child nutrition. Health care providers have an important impact on intention to breastfeed, initiation and duration of breastfeeding (Dennis, 2002).

Studies have shown that women who receive encouragement to breastfeed from health care providers are more likely to initiate and maintain breastfeeding than women who did not receive encouragement (Lu et al., 2001). Health care staffs in urban clinics give better education to

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mothers. They are better supervised and have more training opportunities. Therefore they impact proper knowledge on infant feeding practices, and counselling in pre and post natal periods in health facilities (Aidam et al 2005). In a survey on health care professionals' knowledge and attitudes about breastfeeding, it was showed that professionals do strongly advocate breastfeeding as optimum infant feeding method with their clients (Pascoe et al, 2002). Salami (2006) in a study in Nigeria, and other related studies noted that intensive nutrition education to mothers will enhance awareness about the importance of breastfeeding (Nirojini et al., 2004; Haider et al., 2000).

A study on professional working mothers in Ghana by Danso (2014) revealed that maternal knowledge on breastfeeding issues has significant association with exclusive breastfeeding. Maternal knowledge in the study was measured as:

a. Mothers current knowledge on duration of exclusive breastfeeding.
b. Maternal knowledge that breastfeeding protects the mother from getting pregnant.
c. Mothers' knowledge that semi-solid/ solid foods should be introduced to the infant at six months of age.

Women get health education from health workers, medical and para medical personnel in providing direct information to mothers about proper feeding of infants and guiding them (Nguyen, 2009). Aryeetey and Goh (2014) recorded that exclusive breastfeeding for six months does not affect introduction of supplementation after age six months and subsequent child feeding. According to Shrima et al., (2001), duration of exclusive breastfeeding is mainly associated with information and knowledge about breastfeeding. A study by Salami (2006) concluded that, women of child bearing age are mainly not adequately informed. Education still

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remains the most viable means of reaching everybody on the benefits of breastfeeding. In another study, limited knowledge about exclusive breastfeeding, pressure from family and friends to introduce complimentary foods and excessive demands on maternal time against their competing responsibilities were indicated to have negatively influenced exclusive breastfeeding in Kenya (Ochola, 2008).

Aslam et al., (2010) established in a study that, with appropriate knowledgeable advice, most women are able to continue breastfeeding successfully. The finding confirms MICS 2012 which recorded that breastfeeding is a skill, and almost all women are physically able to breastfeed. The claim was further supported by Ukegbu, who reported that mothers who know the benefits of exclusive breastfeeding will decide to practice it even in the face of challenges (Ukegbu et al., 2011). The finding was not in agreement with a study conducted in a region in Tanzania. A cross sectional study on knowledge and prevalence of exclusive breastfeeding in Tanzania recorded 86 percent for those who had good knowledge of exclusive breastfeeding but 58 percent rate of exclusive breastfeeding for infants under six months for the region (Nkala and Msuya, 2011). A related study in Nigeria recorded 91 percent rate of sound knowledge of exclusive breastfeeding and 37 percent for rate of practice of exclusive breastfeeding for infants less than six months for the region (Nkala and Msuya, 2011). The results show that knowledge of exclusive breastfeeding may not necessarily be predictor of practice of exclusive breastfeeding. Leshabari et al., (2001) found attendance of urban clinics as the strongest predictor of knowledge on exclusive breastfeeding in their study.

Studies have identified some factors that influence breastfeeding practices in different settings, as inadequate knowledge of benefits of breastfeeding, Inadequate antenatal counselling on breastfeeding, perceived belief that breast milk is insufficient (Savage et al, 2004; Coola, 2008;

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Linicabes, 2004; Dhandapany et al, 2008). Others are marital status, economical status and child age (Alemayehu et al, 2009). Mothers need specific culturally appropriate information to address their constraints and concerns for optimum breastfeeding (LINKAGES, 2004). Breastfeeding policies, training in management and rooming-in positively affect breastfeeding promotion (Kovach, 2002).

### *2.3.3 Place of Delivery*

Delivering in public health facility has been associated with higher initiation and duration of breastfeeding, due to education by health workers (Aidam et al., 2005; Ukegbu et al., 2011; Broun et al., 2003). Hospitals are of paramount importance in counselling on infant feeding. It is done during antenatal visits and mostly soon after delivery. Women are helped in their intended feeding choices, decision making and actual practice. This results in lowest risk of mixed feeding (Suryavanshi et al., 2003).

A study in Ghana reports that delivery in private clinics, maternity homes, at home, with traditional birth attendants (TBA) or spiritual leaders may lead to non- practicing breastfeeding, as oppose to delivering in government health facilities (Aidam et al., 2005). A study in Guatemala also reported that mothers who gave birth at health facility initiate breastfeeding early (Dearden et al., 2002). In a related study, Saka (2012) reported that 75% of mothers who opted for breastfeeding were shown how to attach and position the baby to the breast by health workers, after delivery. The finding is similar to a study in South Africa which reported how health workers assist mothers to breastfeed (Amadhila J.2005).

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The proportion of children who receive early breastfeeding varies by type of assistance at delivery and place of delivery. Children in urban areas 55% are likely to receive breast milk during the first hour after birth, than children in rural areas 50% (GDHS, 2008).

Children whose birth were assisted by someone other than a health professional or traditional birth attendant, and children born at home are more likely to receive pre-lacteal feed than children whose births were assisted by a health provider and children born at a health facility.

Whereas 56% of new born of mothers who received assistance at delivery from health professionals were breastfed within an hour of birth, only 33% of new born whose mothers received no assistance at delivery received the same attention (GDHS 2008).

In a study in Kigoma, Western Tanzania in 2011, women with adequate knowledge of exclusive breastfeeding, women who deliver at health facilities, and women who had no problems relating to breast, like engorgement were more likely to practise exclusive breastfeeding. Knowledge of exclusive breastfeeding was however higher than practice in the study (Tiras and Sia, 2011).

#### 2.3.4 *Mode of Delivery*

The pain and stress associated with delivery and recovery from surgery makes breastfeeding difficult (Flidel-Rimonand Shinwell, 2002). Consequently, babies delivered by caesarean section (CS) tend to initiate suckling later than their counterparts who go through vaginal delivery (VD) (Hyde et al., 2012; Zanardo et al., 2010; Perez Escamilla et al., 1996). The finding was confirmed by Coovadia in a study on HIV transmission that, vaginal delivery was a predictor of exclusive breastfeeding (Coovadia et al., 2007). CS exacerbates stress level, particularly in primiparous mothers compared with vaginal delivery (Grajeda and Perez Escamilla, 2002). Zanardo also confirmed the findings by reporting that CS delivery was associated with decreased rate of exclusive breastfeeding compared with vaginal delivery.

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Maru and Haidaru further established that mothers with CS delivery are 80 percent times less likely to practice exclusive breastfeeding (Zanardo et al., 2010; Maru and Haidaru J. 2009). Stressed and anxious mothers record lower exclusive breastfeeding rates (Doulougari et al., 2013). Caesarean birth was negatively associated with exclusive breastfeeding (Al Sahab et al., 2010). Henderson however intimated that the decision to breastfeed is often influenced more by other factors, than by health consideration alone (Henderson et al. 2000).

#### 2.3.5 *Birth Order*

Antenatal counselling, inexperience and non-scientific belief of inadequacy of milk supply were important factors that lead to deprivation of exclusive breastfeeding for six months in first born infants. Predictor variables of exclusive breastfeeding identified in the study were maternal education level, residence and Post Natal Care (PNC) visits. Other factors were marginal-husband education, number of Ante Natal Care (ANC) visits, family size, child sex and parity (Suryavanshi et al., 2003). First born are deprived of exclusive breastfeeding in majority of lower socio economic group (Afzal et al, 2006)

#### 2.3.6 *Maternal Care Attendance*

Maternal care includes antenatal, delivery and postnatal care. Professionals counsel and assist women in their intended choice, decision making and actual practice of breastfeeding during ante natal care and post natal care visits. This leads to lowered risk of mixed feeding (Suryavanshi et al., 2003). Abay found out in a study that mothers who attended post natal care consistently were 3 times more likely to practice exclusive breastfeeding than mothers who were not consistent or did not attend at all (Abay et al., 2012). This could be due to the fact that those who were consistent were counselled by health care workers to do exclusive breastfeeding (EDHS, 2011;

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Upul et al., 2000). Aidam assert that health workers are responsible for health education. This includes infant feeding practices. This counselling is done in pre and post natal period in health facilities (Aidam B. A et al, 2005). Recorded number of scientific antenatal check-ups helps to curb breast feeding challenges as a hindrance to exclusive breastfeeding. A study in Namibia by Amadhila noted that antenatal care attendance is significantly associated with exclusive breastfeeding. Education is a key factor to successful practice of exclusive breastfeeding.

In Ghana, women are given education on exclusive breastfeeding when they receive skilled assistance during ante natal care, delivery and post natal care visit to health facilities. Access to skilled maternity care is therefore important to exclusive breastfeeding. Free maternity services and CHPS compounds were located closer to where people live. These have removed barriers to accessing skilled maternity care in Ghana. Community health officers man the CHPS compounds. Using community health officers is proving the most beneficial for Upper East region. The contribution of community health officers to delivery care is eight times higher than that provided by doctors in the region (GDHS 2008).

*2.3.7 Socio Economic Factors*

*2.3.7a Economic Factor*

Aslam et al, (2010) recorded that socio economic factors contributed unexpected 68.3% to exclusive breastfeeding. Mothers with monthly income less than Rs 10,000 (<170US $) gave exclusive breastfeeding for six months in comparison with 47.6% of mothers with monthly income of more than Rs 10,000 (>170 US$). Probably lack of purchasing power contributed in high percentage to exclusive breastfeeding in low income population (Afzal et al., 2006). In a study by Alemayehu in Ethiopia in 2005, exclusive breastfeeding was associated significantly

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with current marital status and economic status (Alemayehu et al 2009). In a related study, Sokol et al, (2007) noted that in resource inadequate settings, exclusive breastfeeding is regarded crucial for infants' survival. Afzal et al noted that socio-economically, mothers in low income category gave exclusive breastfeeding, in comparison with mothers in high income. In a related study in Kenya, mothers from higher socio-economic status were less likely to practice exclusive breastfeeding based on ownership of TV and Telephones (Ochola, 2008).

In contrast, in Tanzania, Shirima indicated that socio-economic factors had no significant association with exclusive breastfeeding (Shirima et al., 2001). The effect of economic factors on exclusive breastfeeding may differ in different set ups (Ochola, 2008). Abay et al noted that socio-economic status probably contributed to the trend of formula feeding. In low socio economic status, maternal education, inadequate breastfeeding policies and programmes are contributors to low exclusive breastfeeding rates (Olany et al., 2009; Koosha et al., 2008).

2.3.7b *Proximity to Infant*

Proximity of mother to baby was the most influential factor of exclusive breastfeeding in a study conducted by Salami in Nigeria. The provision of crèches at work place or market places will reduce the distance between babies and their mothers and subsequently increase the levels of breastfeeding (Salami 2006). A related study found that provision of crèches at the workplace or market places will reduce the distance between babies and their mothers.

It will subsequently increase the levels of breastfeeding (Vogel et al., 1999; Nwankwo BO and Brieger WR, 2002; Haider et al., 2000; Basic, 2000).

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2.3.7.3c *Employment*

Professional working mothers find it difficult to exclusively breastfeed their babies. And a full time employment status and family members' influence undermine the practice of exclusive breastfeeding (Danso, 2014). Mother's return to paid employment was negatively associated with exclusive breastfeeding duration in China, according to Xu et al, (2007). Mothers are forced to return to full time jobs with a shorter of breastfeeding span, which in most cases may not be exclusive (Haider et al, 2000; Wyatt, 2002; Bureau of Labour statistics, 2002; Libbus & Bullock, 2002). The negative association between employment and duration of breastfeeding was strongest in white women.

Duration of maternity leave was significantly associated with duration of breastfeeding (Visness and Kennedy, 1997) cited in Danso, (2014). Mothers who planned to return to work between six week postpartum were significantly less likely to initiate breastfeeding compared to mothers who are not planning to return to work (Noble, 2001; Meek, 2001). Type of work and hours of work have also been shown to influence breastfeeding (Meek, 2001). A study on optimal breastfeeding in Guatemala reported that, not working outside the home is important predictor of exclusive breastfeeding. Thus mothers who do not work away from home are more likely to do breastfeeding exclusively compared to mothers who work outside from home (Dearderik et al, 2002). The finding is in agreement with a study by Leshabari et al. They found out that before infant reaches six months, mothers had to leave their babies and go to work, to supplement family income due to economic difficulty. This leads to failure to practice exclusive breast feeding (Maru Y et al., 2009). Work status is a barrier to breastfeeding (Wyatt, 2002). Few women employed in full-time breastfeed their infants (Libbus and Bullock, 2002). A survey in Bristol, U.K established that mothers who planned to return to work before six weeks postpartum

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were significantly less likely to initiate breastfeeding, compared to mothers who were not planning to return to work (Noble, 2001). The National Maternal and Infant Health Survey (NMIHS) investigated the association between employment factors and breastfeeding practices in 1988. It observed that women who returned to work weaned their infants earlier, compared to women who did not work. This was strongest in white women (Danso, 2014). Fjeld reported that, many studies have shown that women who are employed while their children are young initiate breastfeeding at the same rate as unemployed women. But, they stop exclusive breastfeeding sooner for bottle feeding and wean earlier (Fjeld E, 2008).

#### *2.3.8 Sex of Infant*

Afzal et al (2006) in a study noted that in a male dominated area, male infants practice exclusive breastfeeding more than female infants. In male dominant society in Pakistan, male infants were more privileged to be exclusively breastfed for six months compared to female infants (Aslam et al, 2010). Mothers who had male children were two times more likely to do exclusive breast feeding than mothers who had female children. This might be due to cultural bias on sex of the individual. In Ethiopian context, more priority or respect is usually given to males than females (Aslan et al., 2010). The finding was in agreement with studies done in Uganda, Egypt and India which established bias towards male infants (L.L.Foo et al., 2002; Agho et al., 2011; Wamani et al., 2005; Prateek et al., 2012). The finding was not in agreement with studies done in Singapore and Nigeria. These studies reported no bias in breastfeeding regarding sex of infant (Mohamed et al., 201; Patil Sapna et al., 2009).

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### 2.3.9 *Education of Mother*

Ludvigsson (2003) stated that increased duration of exclusive breastfeeding was associated with less education. Illiterate mothers are more likely to breastfeed. Mothers who were unable to read and write or in primary school were three times more likely to practice exclusive breastfeeding than those who completed Secondary school or higher. This might be explained that women who were better educated could have better opportunity for employment that could lead them to be out of the house the whole day (Abay et al., 2014). Educational status of mothers is inversely associated with duration of breastfeeding (Glovannin et al., 1999).

Breastfeeding behaviour is associated with education of mother, place of delivery, contraceptive usage, working pattern of mother, age of mother and status of preceding birth (Vespe; Huffman, 1985). On the contrary in the United States in 1995, 81 percent of women with a college degree breastfed, compared with less than half of the mothers with only a high school education or less (WEEKS, 1999).

### 2.3.10 *Parity*

The number of children could affect infant feeding practices. In a study done by Abay et al (2000), Mothers who were primipara were two times more likely to do exclusive breastfeeding than multipara mothers. Primipara mothers could be young and have better access to media. Therefore they could be more knowledgeable on advantages of exclusive breastfeeding. The finding was supported by a study done in Peninsular, Malaysia, that younger mothers are exposed to media (Kok L et al., 2011). The finding was however not consistent with studies done in Saudi Arabia, Canada, West India and Thame district of India. They found no association between parity and media (Tarek A et al., 2010; Al Sahab et al., 2010; Prateek et al., 2012; Pat

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L.S et al., 2009). With family size, Abay et al found out that mothers who had more family members (four or more) were 3 times more likely to do exclusive breast feeding than those who live in small family (three or less). This might be because in a large family, some people might be better educated to convince the mother to do exclusive breast feeding. In considering parity, fewer first born babies were given exclusive breast feeding for six months, compared to other children. Older maternal age and higher parity were significantly associated with exclusive breast feeding in a prospective cohort study in Nigeria in 2006/2007 (Cuhegbn et al., 2011).

### 2.3.11 Culture, Norms and Beliefs

#### 2.3.11a *Culture*

Cultural norms of giving concoctions to infants for protection hinder exclusive breast feeding. It is similar to the custom of giving water to every stranger entering the house, including new born. Other studies on belief reported that, after birth, the infant becomes exhausted and thirsty hence needs water. This leads to non-adherence to exclusive breast feeding (Laar AS and Govender V, 2011; de Paoli et al., 2001; Leshabari SC et al., 2007; WHO, 2010). The culture whereby prelacteal feeds are given babies is reported to be common in Ashante, Western, Upper East and Central regions, with more than one out of four babies receiving prelacteal feeds (GDHS, 2008).

#### 2.3.11.2 *Norms*

A large number of women perceived reduction in milk supply (Aslan et al., 2010). Perception of breast milk insufficiency is likely to contribute to early breastfeeding cessation (Fjela et al., 2008). It is one of the main hurdles preventing optimum exclusive breastfeeding rates (Otoo et al., 2009). A study in Nigeria reported inadequate production of breast milk as justification for mix feeding (Ukegbu et al, 2011). However, Kielbratowska, in a study established that the

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body's demand and supply mechanism allows even quadruplets to be breastfed with sufficient milk (Kielbratowska et al., 2010). In another research, eight Western Australia women breastfeeding triplets were researched on by Saint and colleagues in 1986. It was found out that approximately 3000g of breast milk was produced per day by the mother who fully breastfed her set of 2.5 months triplets until they were four months. It was therefore concluded that mothers with twins can produce adequate breast milk to nourish their infants (Medoua et al., 2012).

The finding is in agreement with that of Kielbratowska which discovered that mothers with twins and triplets can produce more than triple the quantity of breast milk produced by mothers with singletons (Kielbratowska et al., 2010).

Some mothers associate cry of babies to insufficient milk production so resort to bottle feeding. This leads to decline in frequency and duration of breastfeeding (Bragelien et al., 2007; Yokoyama et al., 2006). Breast congestion due to inability to fully empty the breast of mothers who express the milk may trigger stress (Weeler and Demis, 2013). It was documented by Abay et al., (2014) that lack of antenatal counselling, inexperience and a non-scientific belief of inadequacy of milk supply led to deprivation of exclusive breastfeeding for six months in 1st born infants. In 2010, a study in Western Tanzania by Nkala and Msuya established that women who had no problems related to breast were more likely do to exclusive breastfeeding (Nkala and Msuya, 2011). Other factors that significantly associated with breastfeeding in their study were birth order, showing attachment, experiencing breast problems, type of delivery, breastfeeding education during pregnancy, early postpartum, duration of post natal stay and support for breast feeding decisions and Proximity (Salami, 2006). Other studies reported that, perception of inadequate breast milk supply is the cause of formula feeding babies born to multigravida mothers (Danso, 2014).

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*2.3.11.3 Initiation*

The Nigerian Integrated Child Heath Cluster Survey (ICHCS, 2003) indicated that major area of need in infant breastfeeding was early initiation. New born are expected to be put to breast within an hour of delivery.

Maternal level of education is positively associated with initiation, duration and exclusiveness of breastfeeding (Al Sahab, 2010; Alemayehu, Haidar and Habte, 2009). A study done in Ghana on child feeding adequacy reported that exclusive breastfeeding for six months does not result to perceived impairment of initiation of subsequent supplementation (Aryeetey and Goh 2013).

*2.3.11.4 Peer Counselling*

A study conducted in Dhaka, Bangladesh revealed that community-based peer counselling significantly increased exclusive breastfeeding practices. Only 6 percent in the control group, compared to 70 percent of the mothers in the intervention group were exclusively breastfeeding (Haider, Ashworth, et al., 2003). A study in Uganda revealed that the support of community based peer counsellors increased the rate of exclusive breastfeeding. Problems identified in the study included insufficient breast milk, sore nipples, breast engorgement, mastitis and poor positioning at the breast (Nankunda et al., 2006). In another study, Ghislain reported that community volunteers can improve breastfeeding among children less than six years. Their promotion in an area of endemic malnutrition increased the duration of exclusive breastfeeding from birth (Ghislain et al., 2012).

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*2.3.11.5 Beliefs*

Ithindi (1997), citing Cosminsky et al., (1993) stated that mother's milk is believed to become bad and cause the child not to thrive if the mother has sexual intercourse. In less developed societies, post- partum taboos on intercourse occasionally extend to several months or even a few years in societies in which intercourse is forbidden while a mother is nursing a child. The rational is based generally on superstition that intercourse will somehow be harmful to either the mother or child or on the generally correct notion that a pregnancy will be harmful to the nursing child because it will reduce the quality of mother's milk. The practice of discarding colostrum, serving water, butter, pre-lacteal feeds to infants after birth contribute to low rate of exclusive breastfeeding in Ethiopia (Tamiru et al., 2012; Alemayehu et al., 2009). In a study in 2009, cultural beliefs that discouraged Lebanese women from breastfeeding included the following; inadequate breast milk, poor quality of breast milk and mother could potentially harm her infant through breastfeeding. These beliefs were rooted in other beliefs such as having an inherited inability to produce milk, having bad milk, and transmission of abdominal cramps to infants through breast milk (Hibah et al., 2009).

2.3.12 *Maternal Age*

Young mothers who depend on advice, financial and emotional support from family members find it difficult to do exclusive breastfeeding due to pressure from family members to do mix feeding (Della et al., 2006; Thairn et al., 2005). Della indicated that duration of exclusive breast feeding increases as the age of mother increases. Thus older women are more experienced and can practice exclusive breastfeeding, compared to younger mothers (Della A.F et al., 2006). The finding is in agreement with a study conducted in Sweden by Hornell et al and other studies that

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older mothers are experienced in infant feeding (Adejuyigbe E et al., 2008; Thairn LN et al., 2005; Hornell A.et al., 2001). Husbands, mothers, co-wives and mothers in-law all have influence on a woman's infant feeding practices (Pelto, 1981; Draper, 1996; Frimpong –Nnuroh, 2004; Lamb, 1997).

2.3.13 *Multiple Births*

Studies have shown that twins and other higher order multiple births are less likely to be exclusively breastfed up to six months compared to their singleton counterparts. (Yokoyama et al, 2006; Yokoyama and Ooki, 2004). In a related study by Jean Odei on twins in Ghana, exclusive breastfeeding was significantly associated with perceived breast milk production ability and TV ownership. Mothers with multiples are less confident in breastfeeding compared with mothers with singletons (Yokoyama et al; 2006, Flidel-Rimon and Shinwell 2002; Odei, 2012).

2.3.14 *Maternal Health*

A study was done by Cernadess et al, (2003) on maternal and perinatal factors influencing the duration of exclusive breastfeeding among mothers in Buenos Aires, Argentina. The study noted that appropriate suckling techniques and no nipple problems were associated with longer duration of exclusive breastfeeding.

2.3.15 *Maternity Leave*

Duration of maternity leave was significantly associated with duration of breastfeeding (Visness & Kennedy, 1997) cited in Danso 2014). In Ethiopia, maternity leave given during post postpartum period is only two months. This could affect educated people not to exclusively

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breastfeed for the first six months. At the same time, women may be influenced by media advertising milk substitutes which will further compromise the practice of exclusive breast feeding. The finding was in agreement with studies done in Saudi Arabia, Ethiopia, Sweden and Vietnam, that infant formula advertisement influences breastfeeding (Tarek A et al., 2010; Tewodros A. et al., 2009; Dat V. et al; 200, Ludvigsson J.F et al., 2005).

But, the finding is not consistent with other studies done in Sri Lanka and Canada which established no association between breastfeeding and sale of infant feed (ASL Bandusena and ND Warna Suriya, 2009; Alsahals et al., 2010; Prateek et al., 2012 and L.L Foo et al., 2002).

UNICEF is creating a working environment for its staff that fosters and protects six months of exclusive breast feeding and continued breast feeding with adequate complementary foods for two years or beyond. Offices are required to provide a comfortable and private area for mothers to breastfeed their children during the work day or to express their milk. . The office should provide clean and secure space in a refrigerator for storing milk. A staff member who has completed six weeks of post-delivery maternity leave may opt to combine maternity with half-time-work for the rest of maternity leave.

2.3.16 *HIV*

When husbands and close members are not aware of HIV status of their nursing mothers, they impose inappropriate feeding practices on them, including mix feeding. This leads to non-adherence to exclusive breast feeding (Mary Y and Haidarn J, 2009). The finding is in agreement with other studies in Ghana and Tanzania (Laar A S & Govend V: 2011, Falnes et al., 2011; Leshabari et al., 2007). Bentley et al conducted a study on perception of maternal nutrition in HIV positive women. It was found out that, most women perceive exclusive breast feeding as a

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factor that may increase progression of HIV. Non-disclosure of one's HIV status is a barrier to exclusive breast feeding and predictor of mixed feeding (Bentley et al, 2006).

Summary

The following factors have been identified from literature as significant predictor of exclusive breastfeeding but GDHS 2008 does not have the data to measure some of the factors that have been identified. They include cultural belief, perception of insufficient milk production, maternal health and infant health. Others are proximity to baby, maternity leave, multiple birth, maternal HIV status, peer counselling and nutritional knowledge.

## 2.4 Conceptual Framework

The independent factors considered in this study that influence exclusive breastfeeding include level of education, age of mother, children ever born, reading of newspaper, listening to radio, watching television, type of delivery, place of residence, number of antennal care visits, initiation, timing of ante natal care visits, supplementation and region of residence. Others are contraceptive usage, employment, wealth index, marital status, ethnicity, sex of child, religion, birth order and age of child. The intermediary factors are nutritional knowledge and place of delivery. Mothers who know the benefits of exclusive breastfeeding may practise it even in the face of challenges (Ukegbu et al 2011). Also, mothers who deliver their babies at health facilities will be equipped with information to breastfeed exclusively. Mothers who initiate breastfeeding within one hour of delivery will continue with it and practise exclusive breastfeeding (AL Sahab et al 2010). Mothers with low education (primary or below) are less likely to be employed outside the home so they will do exclusive breastfeeding. Mothers in private informal sector and unemployed mothers may practise exclusive breastfeeding. About 86 percent of the

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economically active population in Ghana are employed in the private informal sector, out of which about 65 percent are self-employed (GSS, 2012).

Mothers in the formal sector employment will find it difficult to practice exclusive breast feeding (Abay et al., 2013; Prateek et al., 2011; Noble, 2001; Vogel et al., 1999). Maternity leave in Ghana is only three months. Women who attend antenatal care (especially at BFHI facility) will receive professional counselling to practise exclusive breastfeeding (Dhandapany et al, 2008). Skilled assistance is essential to safe delivery care (GDHS, 2008). Women who are assisted by health professional in delivering their babes at health facility would also be counselled and assisted to start breastfeeding within 30 minutes after delivering. However, mothers who go through caesarean section delivery may find it difficult to start initiation of breastfeeding within 30 minutes due to the pain and stress associated with it (Hyde et al., 2012; Flidel-Rimon and Shinwell, 2002). Mothers who attend post natal care will have their breastfeeding challenges discussed and resolved by health professionals to enable them continue breastfeeding (Abay et al., 2013; Upul et al., 2010).Young mothers may not practise exclusive breastfeeding. They may be influenced by relatives and friends who advise and support them financially to do mix feeding (Della et al., 2006; Thairu et al., 2005; Hornell et al., 2001). On the other hand, primipara mothers might be young people who have better access to media and may be more knowledgeable in infant feeding so they may practise exclusive breastfeeding up to six months (Kok et al., 2011). Multipara mothers are however more experienced so they are more likely to practise exclusive breastfeeding than primipara mothers.

Women of low economic status will do exclusive breastfeeding up to six months to avoid the cost of formula feeding. On the contrary, women of high economic status can afford the cost of formula feeding so they may not do exclusive breastfeeding up to six months (Sheehan et al

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2001; Leshabari et al., 2006). Male infants are prioritised in some settings so they are given exclusive breastfeeding up to six months (Prateek et al., 2012). Currently married women have better nutritional knowledge and will breastfeed their babies better than ever married women Culturally, women who belief that breast milk in women can be contaminated by sperm during sexual intercourse in breastfeeding period may breastfeed longer to space out their childbirth.

Women who deliver their babes at health facilities, especially those designated BFHI will be encouraged and assisted to do exclusive breastfeeding up to six months (Coutinho et al., 2005; Braun et al., 2003). All the health facilities in the Upper East region were declared baby friendly in 2012. Therefore women who deliver their babies at health facilities in the region will practise breastfeeding. Decision to do exclusive breastfeeding and its practice to a large extent depends on maternal awareness of infant feeding, counselling and assistance mothers receive at ante natal care visits, delivery, and post natal care visits to health facilities, especially BFHI facilities. Mothers may give exclusive breastfeeding to their first born longer than the succeeding children due to lack of experience in infant feeding at the first birth. On the other hand, other mothers may improve on their exclusive breastfeeding, with experience, as their number of children increases. Other mothers may want to maintain the form of their breast so may not breastfeed longer at their initial birth, compared with the subsequent ones. Mothers in religion that allow for co-wives may receive support from other members of the extended family to enable them practise exclusive breastfeeding. Mothers may not initiate early breastfeeding in a culture that colostrum is considered bad milk, insufficient breast milk is perceived for the first three days of birth or concoction is given to infants soon after birth for protection. As a result, they may not practise exclusive breastfeeding. Some mothers may practise exclusive breastfeeding, and also breastfeed their infants for a longer duration as a means of natural contraceptive, to space out

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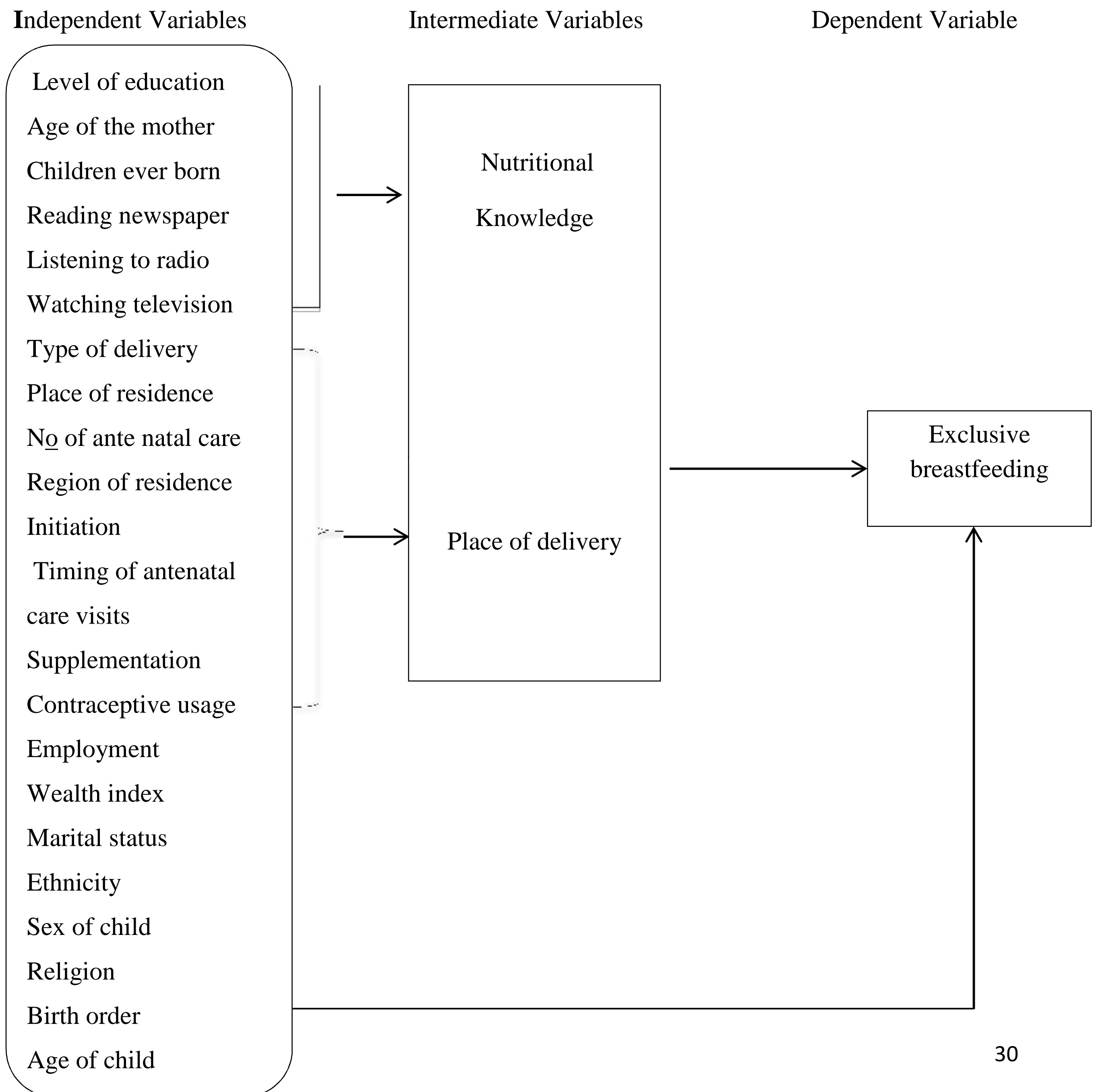
their child birth. Mothers who reside at a place or region where they have easy access to health facilities will be educated at ante natal visits, delivery and post natal visits to practise exclusive breastfeeding. Some preterm babies may not have well developed features for sucking breast immediately after delivery. It is expected that mothers who access quality information on breastfeeding on the radio, newspaper, and magazine or on television may practise exclusive breastfeeding.






Adapted from Bongaarts" Framework for analysing the proximate determinants of fertility"

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## 2.5 Hypothesis

i. Mothers who deliver at health facilities are more likely to practice exclusive breastfeeding than mothers who deliver at home.

ii. Mothers who are unemployed are more likely to breastfeed exclusively than mothers who are employed.

iii. Mothers who have low economic status are more likely to do exclusive breastfeeding up to six months than mothers of high economic status.

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# CHAPTER THREE

# METHODOLOGY

## 3.0 Study Area and Source of Data

The study used secondary source of data, The Ghana Demographic and Health Survey (GDHS, 2008) was used for the study. The data involved 4,916 women age 15-49 who were interviewed over a three-month period from early September to late November.

Women who were either usual residents of the household or visitors the night before were eligible to be interviewed. The survey used a two-stage sample based on the 2000 population and housing census to produce separate estimates for each of the ten regions in Ghana. Verbal Autopsy Questionnaire was used to collect data from only women who had one or more births in 2008 or earlier. The last child of women who were born five years preceding the survey was considered in this study, totalling 2099.

This study focused on factors affecting exclusive breastfeeding in Ghana. Some of the questions that were asked on breastfeeding practices include;

i. Did you ever breastfeed (Name)?

ii. How long after birth did you first put (Name) to the breast?

iii. In the first three days after delivery, before your milk began flowing regularly, was (Name) given anything to drink other than breast milk?

Also, information such as place of residence of respondents, educational level, age and other social, economic and demographic characteristics were collected.

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## 3.1 The Profile of Ghana

The total population of Ghana in 2010 was 24,658,823 (twenty four million, six hundred and fifty eight thousand, and eight hundred and twenty three) covering a total land area of 238,533 Sq. Km. Fifty one percent (about 50.9 %) were urban dwellers and forty nine percent (about 49.1 %) were rural dwellers. The sex ratio was 95.2. The economically active population (aged 15 to 64) made up 57.1 percent and the proportion under 15 years of age was 38.3 percent whilst the proportion aged 65 and above made up 4.6 percent (GSS, 2012). The main economic activity is agriculture, including forestry and fishing which employs about 41.6 percent of the economically active population aged 15-64 years. The country's main exports are cocoa, gold, timber and crude oil (a recent discovery that has put Ghana in a lower middle income status). Out of the ten regions of Ghana, Ashanti region is the most populous representing 19.4 percent, and the least is Upper West region, which constitutes 2.8 percent of the total population.

## 3.2 Description of Variables

The definition of exclusive breastfeeding used in this study which is applicable to this section is that a respondent must feed the baby on breast milk only for the first three days after which it is assumed the respondent will continue.

### 3.2.1 Dependent variable

The dependent variable for this study is exclusive breastfeeding. It has been coded as;

0 = Not exclusively breastfed

1= Exclusively breastfed

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The question that was asked on breastfeeding practices which was used to measure the dependent variable, exclusive breastfeeding is; In the first three days after delivery, before your milk began flowing regularly, was (Name) given anything to drink other than breast milk?

The likelihood of continuing breastfeeding exclusively after the first three days is better than that of thirty minutes or later hours.

### 3.2.2 Independent Variables

The independent variables used in this study include the following; Level of education, age of mother, parity, newspaper, radio, television, type of delivery, place of residence, ante natal care, region of residence, initiation ,supplementation ,contraceptive usage, employment, economic status, marital status, antennal visits, ethnicity, sex of child, religion , birth order, wealth index and age of mother. Some of the independent variables influence the dependent variable directly. Others work through intermediate variable to influence the dependent variable.

For each of the independent variables, a reference category was chosen. The reference categories were taken as the datum from which purported impact of the other categories would be estimated. For example with regard to the highest educational level, no education was chosen as the reference category because one presumes that the other levels above the no education group are expected to have their individual impacts as a result of the accumulation of additional knowledge compared to the level below it.

### 3.2.3. Intermediate Variable

The two intermediate variables used for this study are nutritional knowledge and place of delivery. Some of the independent variables work through an intermediate variable to influence the dependent variable. For example, level of education, age of mother and parity will work

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through nutritional knowledge to influence the dependent variable (exclusive breastfeeding). Also, type of delivery, place of residence, antenatal care, initiation and region of residence will work though place of delivery to influence exclusive breastfeeding.

## 3.3 Limitations of the Study

The sample survey (GDHS, 2008) is affected by both sampling and non-sampling errors. The data may be affected by problem of definition regarding eligible women for the study, age 15-49 years. Some mothers are below age fifteen. The questionnaire did not ask any question on exclusive breastfeeding.

The level of exclusive breastfeeding in this study was therefore determined using a proxy. 'given no supplementary feeding for the first three days apart from the mother's milk only'.

A similar proxy was used to measure exclusive breastfeeding by (GDHS, 2008). 'No supplementation for 24 hours' was used. The levels recorded were as follows

Table 3.1 Age of child in months and level of exclusive breastfeeding

| Age in months | Level of exclusive breastfeeding |
|---|---|
| < 2 | 84.3 |
| 2-3 | 60.3 |
| 4-5 | 49.4 |

Also, there was no specific question on nutritional knowledge, (one of the two intermediate variables for this study) in the questionnaire. Mass media and contact with health professionals as sources of knowledge were assumed to provide information that will help address the nutritional component.

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# CHAPTER FOUR

## 4.1 Introduction

This chapter discussed the descriptive statistics of factors that affect exclusive breastfeeding in Ghana. It also examined the proportion of women practicing exclusive breastfeeding in the sample and a description of the intermediate variables.

## 4.2 Background Characteristics of Respondents

The background characteristics of respondents constitute some of the primary factors that affect exclusive breastfeeding in Ghana. This information will go a long way in the analysis of the data and interpretation of the findings. The background characteristics of mothers for the survey include age of respondents, marital status, type of place of residence, region of residence, highest level of education, occupation and religion.

## 4.3 Age Composition of Respondents

Age determines the needs and the limits of society's productive potential (Kpedekpo, 1982).The age structure of women is of paramount importance, especially to this study since all the women interviewed have a child and this will help determine their place of delivery and how that affects exclusive breastfeeding.

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Table 4.1 Percentage Distribution of Age Groups

| Age 5-year group | Frequency | Percentage (%) |
|---|---|---|
| 15-19 | 100 | 4.8 |
| 20-24 | 405 | 19.3 |
| 25-29 | 552 | 26.3 |
| 30-34 | 430 | 20.5 |
| 35-39 | 361 | 17.2 |
| 40-44 | 173 | 8.2 |
| 45-49 | 78 | 3.7 |
| Total | 2099 | 100.0 |

Source GDHS, 2008

Table 4.1 shows that women in the age group 25-29 years formed the highest percentage of women in the sample. Also, adolescent mothers (aged 15 to 19 years) and elderly mothers (aged 40 to 49 years) constituted about 17 percent. Majority of mothers (83) percent were concentrated in the age range of 20-39 years. This age distribution of mothers is typical of the pattern of the total national population.

## 4.4 Educational Level of Respondents

Female education is inversely correlated with fertility. Education is one of the most important indices of change (Ayee, 1985). Women with lower education are more likely to breastfeed exclusively and for longer duration than women with higher education. Literacy status has little effect on continuation of breastfeeding for more than six months (Yadavannavar and Shailaja, 2011).

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Table 4.2 Percentage Distribution by Level of Education

| Level of education | Frequency | Percent |
|---|---|---|
| No education | 647 | 30.8 |
| Primary | 511 | 24.3 |
| Secondary | 892 | 42.5 |
| Higher | 49 | 2.3 |
| Total | 2099 | 100.0 |

Source: GDHS 2008

Table 4.2 shows percentage distribution of respondents according to their level of education. More than two-fifth of the mothers (43 percent) had secondary education. Mothers who had higher education however constituted 2 percent of the sample. It is expected that mothers with higher education will have better understanding of infant nutrition. Therefore they will initiate breastfeeding early leading to the practice of exclusive breastfeeding. On the contrary, mothers with low education may be in the informal sector hence they may have time to practice exclusive breastfeeding.

## 4.5 Employment Status of Respondents

A woman's occupation is interrelated with family size, family health and breastfeeding pattern (Robertson, 1976). It significantly affects their decision to prolong breastfeeding and remain with their children (De Rose, 2002). Women's employment status therefore correlates exclusive breastfeeding.

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Table 4.3 Percentage Distribution by Employment Status

| Employment Status | Frequency | Percentage |
|---|---|---|
| Unemployed | 217 | 10.3 |
| Employed | 1882 | 89.7 |
| Total | 2099 | 100 |

Source: GDHS 2008 `

It can be observed from table 4.3 that, the higher proportion of mothers, (1882), representing about 90 percent is employed. The mothers who were unemployed (217) constituted about 10 percent. In Ghana, maternity leave is only twelve weeks (three months), so employee mothers in the formal sector will find it difficult to practice exclusive breastfeeding up to six months Unemployed mothers will practise exclusive breastfeeding for longer period.

4.6 Marital Status of Respondents

Marital status show the proportion of women who are exposed to the risk of pregnancy and child bearing. It can also influence women's breastfeeding behaviour. Married women may be influenced by husband, in-laws and other family members to initiate breastfeeding immediately, leading to exclusive breastfeeding or introduce supplementation.

Table 4.4 Percentage Distribution by Marital Status

| Marital status | Frequency | Percentage (%) |
|---|---|---|
| Never married | 129 | 6.1 |
| Currently married | 1837 | 87.6 |
| Formerly married | 133 | 6.3 |
| Total | 2099 | 100.0 |

Source GDHS 2008

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It can be seen from table 4.4 that the greatest proportion of respondents (88 percent) were mothers in union. Formerly married (6 percent) and never married women (6 percent) would not need to negotiate with husbands or in-laws to breastfeed exclusively.

## 4.7 Religious Status of Respondents

Religion is a socio cultural factor which influences people's fertility behaviour and cultural values. Moslems, Traditional and Spiritualists practice polygamy. Family members and co-wives may support with household chores or agricultural work whilst the nursing mother breastfeeds her child. Catholics may however practise exclusive and prolong breastfeeding in order to delay return of menstruation, as a natural method of birth control.

Table 4.5 Percentage Distribution by Religion

| Religion | Frequency | Percentage (%) |
|---|---|---|
| Catholics | 255 | 12.1 |
| Protestants | 283 | 13.4 |
| Pentecostal./Charismatic | 733 | 34.9 |
| Other Christians | 234 | 11.1 |
| Moslem | 378 | 18.0 |
| Traditional | 126 | 6.0 |
| No religion | 87 | 4.1 |
| Other | 4 | 0.2 |
| Total | 2099 | 100.0 |

Source: GDHS 2008

From table 4.5 Pentecostal/Charismatic mothers are in the majority (35 percent). Christians altogether constituted 72 percent.

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Another significant group of women were Muslims (18 percent). This is in line with the proportion of Christians in Ghana (71.2%) which far exceeds members of other religions (GSS, 2010).        .

4.8 Place of Residence of Respondents

Mothers who reside at places where they can access health facility for antenatal and delivery services may benefit from the Baby Friendly Hospital Initiative (BFHI).

These mothers will be assisted to initiate breastfeeding within half an hour after delivery and practice exclusive breastfeeding. Urban areas abound in health facilities more than rural areas, even though fertility is higher among rural dwellers in Ghana.'

Table 4.6 Percentage Distribution by Type of Place of Residence

| **Place of residence** | **Frequency** | **Percentage (%)** |
|---|---|---|
| Urban | 844 | 40.2 |
| Rural | 1255 | 59.8 |
| **Total** | **2099** | **100.0** |

Source: GDHS 2008

From table 4.6 most of the mothers (60 percent) were rural dwellers; even though Ghana is more urban than rural (GSS, 2012). The percentage of the mothers who were urban dwellers was 40.

4.9 Region of Residence of Respondents

Regions with high level of breastfeeding community support groups and have their health facilities upgraded to the recommended BFHI will have high rates of exclusive breastfeeding. Upper East, Greater Accra, Volta and Western regions were therefore expected to have high rates of exclusive breastfeeding.

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Table 4.7 Percentage Distribution by Region of Residence

| Region | Frequency | Percentage (%) |
|---|---|---|
| Western | 189 | 9.0 |
| Central | 200 | 9.5 |
| Greater Accra | 262 | 12.5 |
| Volta | 181 | 8.6 |
| Eastern | 185 | 8.8 |
| Ashanti | 396 | 18.9 |
| Brong Ahafo | 218 | 10.4 |
| Northern | 291 | 13.9 |
| Upper East | 119 | 5.7 |
| Upper West | 58 | 2.7 |
| Total | 2099 | 100.0 |

Source: GDHS 2008

Table 4.7 puts Ashanti, (20 percent), Northern, (14 percent) and Greater Accra, (13 percent) in the lead for number of regional respondents, respectively. Upper West, (3 percent) had the least representation of mothers. Ashanti is the most populous region with a proportion of 19.4 of the national population. Northern region however has Islam as its dominant religion (60 %). Islam is characterised with polygamy so one household may produce many mothers. Greater Accra on the other hand is the most densely populated (1,236 persons per square Kilometre), besides being the next populous region (16.3%) to Ashanti.

4.10 Initiation of Breastfeeding

Mothers are usually encouraged to breastfeed immediately after birth, thus within the first thirty minutes.

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The colostrum (first yellowish milk) protects the child against infection because it is highly nutritious and has antibodies. Mothers benefit from early suckling because it stimulates breast milk production and facilitates the release of oxytocin, which helps the contraction of the uterus and reduces post- partum blood loss (GDHS, 2008).

Table 4.8 Percentage Distribution of Babies by Time of Initiation of Breastfeeding

| Time baby was put to breast | Frequency | Percent (%) |
|---|---|---|
| Immediately | 840 | 40.9 |
| Within first hour | 238 | 11.6 |
| Later (Hours or days later) | 975 | 47.5 |
| Total | 2053 | 100.0 |

Source: 2008 GDHS

Table 4.8 shows the time baby was put to breast after delivery. From the table 840 babies, out of 2099 representing 41 percent were put to breast immediately. This is in line with the fourth step of the ten steps to successful breastfeeding which requires that mothers initiate breastfeeding within one half-hour of birth. Also, 238 (12 percent) were also put to breast within the first hour of birth. These babies are likely to be exclusively breastfed. Babies put to breast hours and days later may be given prelacteal feed.

Early initiation encourages the bond between the mother and baby and helps maintain the baby's body temperature. Also early initiation encourages, and ensures the release of hormone that the uterus needs to contract to its normal state. Oppong et al (2001) concluded in a study that, women in rural areas observe essential techniques of breastfeeding from relatives and neighbours so they are more likely to breastfeed than women in urban area.

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Table 4.9 Percentage Distribution by Type of Breastfeeding

| Type of Breastfeeding | Frequency | Percent (%) |
|---|---|---|
| Fed on breast milk only first three days | 1682 | 80.1 |
| Had other supplements within first three days | 417 | 19.9 |
| Total | 2099 | 100.0 |

Source: 2008 GDHS

Table 4.9 presents babies who were fed on only breast milk for the first three days (1682), corresponding to the majority (80 percent). Babies who had other supplements aside breast milk within the first three days were (417) which correspond to 20 percent. The majority initiated exclusive breastfeeding and they are likely to continue with it.

## 4.11 Antenatal Care Coverage of Respondents

It is during antenatal care visit that advice on a range of issues, including breast feeding and infant feeding is given mothers. The vast majority of mothers receive antenatal care services from health professionals regardless of region of residence (96-98 percent); however, mothers in the Volta and Central regions are less likely than other women to have access to antenatal care (GDHS, 2008).

Table 4.10 Percentage Distribution by Number of Antenatal Visits

| Number of antenatal visit | Frequency | Percentage |
|---|---|---|
| No antenatal visit | 72 | 3.5 |
| 1-3 times | 338 | 16 |
| 4-6times | 900 | 42.9 |
| 7-9times | 521 | 24.8 |
| 10-12times | 165 | 7.9 |
| 13+times | 54 | 2.6 |
| Not stated | 49 | 2.3 |
| Total | 2099 | 100 |

Source: 2008 GDHS

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According to table 4.10 majority of mothers (2027) representing 97 percent received antenatal care service, with 4-6 times visit being the most (43 percent). Mothers who attend antenatal care regularly are likely to be well counselled to practice exclusive breastfeeding.

4.12 Birth Order of Respondents

Mothers in Ghana are somewhat more likely to receive antenatal care from a health professional for the first birth than for births of order six or higher (GDHS, 2008). Birth order may increase or decrease breastfeeding.

Table 4.11 Percentage Distributions by Birth Order

| Birth Order | Frequency | Percentage |
|---|---|---|
| 1 | 467 | 22.3 |
| 2 | 436 | 20.8 |
| 3 | 349 | 16.6 |
| 4 | 306 | 14.6 |
| 5 | 193 | 9.2 |
| 6 | 137 | 6.5 |
| 7 | 211 | 10.0 |
| Total | 2099 | 100.0 |

Source: 2008 GDHS

From table 4.11, most of the infants in the study (467) representing 22 percent were of the first order. As the birth order increased, the number of infants decreased from the first birth to the sixth birth. The number of infants however increased for the 7$^{th}$ birth.

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## 4.13 Type of Delivery of Respondents

According to Flidel-Rimon and Shinwell (2002), babies delivered by caesarean section tend to initiate suckling later than their counterparts who go through vaginal delivery. Stressed and anxious mothers record lower exclusive breastfeeding rates.

Table 4.12 Percentage Distributions by Type of Delivery

| Type of Delivery | Frequency | Percentage |
|---|---|---|
| Vaginal Delivery | 1949 | 92.8 |
| Caesarean Section | 150 | 7.2 |
| Total | 2099 | 100.0 |

Source: 2008 GDHS

From table 4.12 majority of the deliveries (1,949) representing 93 percent were vaginal delivery. These babies may initiate breastfeeding early, leading to exclusive breastfeeding.

## 4.13 Place of Delivery of Respondents

The place of delivery is associated with type of facility and services. Mothers who deliver their babies at health facilities designated Baby Friendly will have access to facilities, care and services needed for initiation and practice of breastfeeding.

Table 4.13 Percentage Distributions by Place of Birth

| Place of Delivery | Frequency | Percentage |
|---|---|---|
| Home | 826 | 39.3 |
| Government health facility | 1065 | 50.7 |
| Private health facility | 198 | 9.5 |
| Other facility | 10 | 0.5 |
| Total | 2099 | 100.0 |

Source: 2008 GDHS

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From table 4.13 most of the babies (1065) representing 51 percent were delivered at government health facility. Also 198 babies who made up about 10 percent were delivered at private health facility. Mothers of these babies may initiate breastfeeding at the health facility and continue with it as exclusive breastfeeding.

### 4.14 Distribution of Respondents by Children Ever Born

Mothers who had their first babies may be young women. These mothers may have infant nutritional knowledge to practice exclusive breastfeeding. On the other hand due to lack of experience in infant feeding and breastfeeding, young mothers may resort to early supplementation. Older mothers have experience in infant feeding so they will practise exclusive breastfeeding.

Table 4.14 Percentage Distribution by Number of Children Ever Born

| Total children ever born | Frequency | Percentage |
|---|---|---|
| 1 | 467 | 22.3 |
| 2 | 436 | 20.8 |
| 3 | 349 | 16.6 |
| 4 | 306 | 14.6 |
| 5 | 193 | 9.2 |
| 6 | 137 | 6.5 |
| 7+ | 211 | 10.0 |
| Total | 2099 | 100.0 |

Source: 2008 GDHS

From table 4.14 majority of mothers (467) representing 22 percent had their first baby. And (436) representing 21 percent had their second babies. The number of babies decreased from the

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third birth through to the sixth birth, before increasing again at the seventh birth. The least number of babies were therefore recorded at the sixth birth.

### 4.15 Wealth Index

Wealth index provides a consistent measure of combined indicators of household income and expenditures. Mothers who are poor will practise exclusive breastfeeding, perhaps because they cannot afford infant formula. Rich mothers have purchasing power for infant formula so they may not practise exclusive breastfeeding.

Table 4.15 Percentage Distribution by Wealth Index

| Wealth index | Frequency | Percentage |
|---|---|---|
| Poorest | 480 | 22.9 |
| Poorer | 461 | 22.0 |
| Middle | 400 | 19.0 |
| Richer | 436 | 20.8 |
| Richest | 322 | 15.3 |
| Total | 2099 | 100 |

Source: 2008 GDHS

According to table 4.15 about 45 percent (941 mothers) were poor, and 36 percent were rich. Mothers who were neither poor nor rich constituted 19 percent (400 mothers). The poor mothers who made up the 45 percent will practise exclusive breastfeeding

### 4.16 Ethnicity

Ethnic groups that are influenced by beliefs of inherited inability to produce breast milk, having bad milk and transmission of abdominal cramps to infants through breast milk militate against exclusive breastfeeding. S

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4.16 Percentage Distribution by Ethnic Groups

| Ethnicity | Frequency | Percentage |
|---|---|---|
| Akan | 976 | 46.5 |
| Ga\Dangme | 105 | 5.0 |
| Ewe | 270 | 12.9 |
| Mole- Dagbani | 424 | 20.2 |
| Grussi | 64 | 3.0 |
| Gruma | 102 | 4.9 |
| Guan'Mande,Other | 158 | 7.5 |
| Total | 2099 | 100 |

Source: 2008 GDHS

From Table 4.16 the proportion of Akan (47 %) is close to one half of the entire sample. Mole-Dagbani and Ewe ethnic groups constituted about 20% and 13% respectively. Grussi was 3% of the sample.

4.17 Sex of Child

The sex of a child may determine the pattern of breastfeeding in societies. Among some group of people, priority is given males over females. As a result male infants are breastfed better than female infants.

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Table 4.17 Percentage Distribution by Sex of Child

| Sex of Child | Frequency | Percentage |
|---|---|---|
| Male | 1088 | 51.8 |
| Female | 1011 | 48.2 |
| Total | 2099 | 100 |

Source: 2008 GDHS

From table 4.17, about 52 percent (1088 mothers) of the infants were males and 48 percent (1011) mothers were females.

4.18 Frequency of Newspaper Reading

Access to mass media is essential for information, education and entertainment. However, exposure to mass media is positively associated with level of education and household wealth status. Mothers who read columns on nutrition in newspaper will gain more knowledge on infant nutrition and breastfeeding.

Table 4.18 Percentage Distribution by Frequency of Newspaper Reading

| Frequency of newspaper reading | Frequency | Percentage |
|---|---|---|
| Not at all | 1864 | 88.8 |
| Less than once a week | 101 | 4.8 |
| At least once a week | 114 | 5.5 |
| Almost every day | 20 | 0.9 |
| Total | 2099 | 100 |

Source: 2008 GDHS

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From table 4.18, Most mothers (1,864) representing 89 percent do not read newspapers at all. About 10 percent (215) of mothers read newspaper once a week and less than 1 percent (0.9) made up of 20 mothers read newspaper almost every day.

4.19 Frequency of Listening to Radio

From table 4.19, most mothers (1037) representing 49 percent listen to radio almost every day.

About 31 percent listen to radio once a week and 407 representing 19 percent did not listen to radio at all. Exclusive breastfeeding education on radio will reach many mothers and positively influence their decision and practice of exclusive breastfeeding.

Table 4.19 Percentage Distribution by Frequency of Listening to Radio

| Frequency of listening to radio | Frequency | Percentage |
|---|---|---|
| Not at all | 407 | 19.4 |
| Less than one week | 148 | 7.1 |
| At least once a week | 508 | 24.2 |
| Almost every day | 1037 | 49.4 |
| Total | 2100 | 100.1 |

Source: 2008 GDHS

Most mothers (1037) representing about 49 percent listen to radio almost every day. About 74 percent of the mothers listen to radio every week. These mothers may be educated on breastfeeding on the radio. However, 407 mothers representing about 19 percent did not listen to radio at all. About 7 percent listen to radio less than one week.

4.20 Frequency of Watching Television

Nutritional education on TV will get to a lot of mothers to influence their decision and practice of exclusive breastfeeding.

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Table 4.20 Percentage Distribution by Frequency of Watching Television

| Frequency of watching Television | Frequency | Percentage |
|---|---|---|
| Not at all | 977 | 46.6 |
| Less than once a week | 183 | 8.7 |
| At least once a week | 340 | 16.2 |
| Almost everyday | 599 | 28.5 |
| Total | 2099 | 100 |

Source: 2008 GDHS

Table 4.20 Indicates that, 47 percent (977 mothers) do not watch television at all. About 25 percent (523 mothers) watch television once a week and 29 percent (599 mothers) watch TV almost every day.

4.21 Types of Contraceptive Usage

Knowledge of family planning is nearly universal, with 98 percent of all women and 99 percent of all men aged 15-49 knowing at least one modern method of family planning. The Lactational Amenorrhoea method (LAM) is the least known method of family planning among both women and men (GDHS, 2008).

Table 4.21 Percentage Distribution by Types of Contraceptive Usage

| Types of contraceptive | Frequency | Percentage |
|---|---|---|
| No Method | 1610 | 76.7 |
| Trade/Folkloric | 138 | 6.6 |
| Modern | 351 | 16.7 |
| Total | 2099 | 100 |

Source: 2008 GDHS

From table 4.21 Majority of mothers (1610) representing 77 percent did not use any contraceptive.

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Whereas 17 percent (351 mothers) used modern method, about 7 percent (138 mothers) used Trade/Folkloric method. Mothers who used no method will practise exclusive breastfeeding to delay return of their menstruation.

### 4.22 Age of Infant

Preterm babies may not fully develop their structures and muscles for suckling, compared with babies who travelled nine months before delivery. Preterm babies may therefore not practice exclusive breastfeeding.

Table 4.22 Percentage Distribution by Age of Infant

| Age Distribution | Frequency | Percentage |
|---|---|---|
| < 2 | 86 | 4.1 |
| 2 – 3 | 122 | 5.8 |
| 4 – 5 | 112 | 5.3 |
| 6 – 8 | 152 | 7.2 |
| 9 – 11 | 156 | 7.4 |
| 12 – 17 | 318 | 15.1 |
| 18 – 23 | 232 | 11.1 |
| 24 – 35 | 382 | 18.2 |
| 36+ | 539 | 25.7 |
| Total | 2099 | 100.0 |

Source: 2008 GDHS

From table 4.22 Infants aged below 6 months who were currently breastfeeding were 320 representing 15 percent. Most of the infants (539) representing 26 percent were three years and above.

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### 4.23 Antenatal Visit

Health professionals counsel and assist women in their intended choice, and decision making regarding breastfeeding during ante natal visits. Women who attend ante natal care visits will make informed decision to exclusively breastfeed their babies.

Table 4.19 Percentage Distribution by Time of Antenatal Visits

| Time of Antenatal visits | Frequency | Percentage |
|---|---|---|
| $1^{st}$ Three months | 1155 | 55.0 |
| 4-6months | 809 | 38.6 |
| 7+months | 50 | 2.4 |
| Not Stated | 85 | 4.0 |
| **Total** | **2099** | **100** |

Source: 2008 GDHS

According to table 4.23, mothers who attended antenatal care in the first three months formed more than half of the sample (55%), whereas those who attended in the $7^{th}$ week formed 2%. The proportion decreased with increase in months.

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# CHAPTER FIVE

# BIVARIATE ANALYSIS

## 5.0 Introduction

Exclusive breastfeeding is the most natural way of feeding in the first six months of life and can contribute in many ways to better the health of children as well as mothers. It can prevent under nourishment, infections and mortality in young infants.

This chapter presents bivariate analysis on infant feeding practices in Ghana as pertains to initiation of breastfeeding, and the introduction of liquids within the first three days of delivery. In relation to the analysis in this study, an index for exclusive breastfeeding has been created with feeding on only breast milk for the first three days of life. A mother who initiated breastfeeding immediately after delivery, and did not supplement breastfeeding for the first three days of life was assumed to have started exclusive breastfeeding and had continued with it. The chapter further examines some socio-economic and demographic factors that influence a woman's delivery and exclusive breastfeeding.

## 5.1 Exclusive Breastfeeding among Age Groups

Babies born to mothers aged 40-44 exclusively breastfed most with about 39 percent.

This could be due to the fact that women aged 40-44 years would have had more than one birth. These mothers have experienced and known more about the benefits of exclusive breastfeeding so they will continue to provide only breast milk within the first three days after delivery.

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Table 5.1 Exclusive Breastfeeding by Age Groups

| Age groups | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| 15-19 | 31.0 | 69.0 | 100 | 100 |
| 20-24 | 36.3 | 63.7 | 405 | 100 |
| 25-29 | 34.8 | 65.2 | 552 | 100 |
| 30-34 | 30.7 | 69.3 | 430 | 100 |
| 35-39 | 34.3 | 65.7 | 361 | 100 |
| `40-44 | 39.3 | 60.7 | 173 | 100 |
| 45-49 | 25.6 | 74.4 | 78 | 100 |
| Total | 34.0 | 66.0 | 2099 | 100 |

Source: 2008 GDHS 2 = 7.149 df= 6 Sig. = 0.307

Low initiation of breastfeeding after delivery among women aged 15-19 (31 percent) may be due to their first time experience, so breastfeeding now may be more difficult than subsequent breastfeeding experiences (Ramachandran, 1987). The least was 26 percent, recorded by mothers in age group 45-49. These mothers might felt complaisant to breastfeed due to their inadequate knowledge of infant feeding and experiences in breastfeeding. Overall, 34 percent of babies were exclusively breastfed by the various 5-year age groups. All the proportions cluster around the mean of 34, indicating that other factors rather than maternal age groups are influencing exclusive breastfeeding in Ghana. There is no statistically significant association between 5-year age groups of mothers and exclusive breastfeed

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## 5.2 Exclusive Breastfeeding by Ages.

Table 5.2 analyses infants who were exclusively breastfed according to their ages. About 84 percent of infants were exclusively breastfed up to age 6 months and above. There was decline in proportion from age < 2 to 2-3 months. The highest proportion of infants (91 %) was in the age bracket 4-5 months, after which there was consistent decline in the subsequent ages up to 24-35 age bracket. There is a statistically significant association between age of infants and exclusive breastfeeding.

Table 5.2 Exclusive Breastfeeding by Age of Infants

| Age of infants | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes (%) | No (%) | | |
| <2 | 85.9 | 14.1 | 85 | 100 |
| 2-3 | 82.0 | 18.0 | 122 | 100 |
| 4-5 | 91.1 | 8.9 | 112 | 100 |
| 6-8 | 83.6 | 16.4 | 152 | 100 |
| 9-11 | 83.3 | 16.7 | 156 | 100 |
| 12-17 | 78.3 | 21.7 | 318 | 100 |
| 18-23 | 77.7 | 22.3 | 233 | 100 |
| 24-35 | 76.7 | 23.3 | 382 | 100 |

Source: 2008 GDHS 2 =17.14 df= 8 Sig = 0.29

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## 5.3 Exclusive Breastfeeding by Type of Place of Delivery

Table 5.3 represents exclusive breastfeeding by type of place of delivery. From table 5.3, most babies who were exclusively breastfed were delivered at government and private health facilities, 83% and 79% respectively, compared to 77% of babies who were delivered at home. Delivering in public health facility has been associated with higher initiation and duration of breastfeeding, due to education by health workers (Ukegbu et al., 2011). There is a statistically significant association between type of place of delivery and exclusive breastfeeding.

Table 5.3 Exclusive Breastfeeding by Type of Place of Delivery

| Place of Delivery | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Home | 76.6 | 23.4 | 826 | 100 |
| Government Health facility | 83.1 | 16.9 | 1065 | 100 |
| Private health facility | 79.3 | 20.7 | 198 | 100 |
| Other facility | 70.0 | 30.0 | 10 | 100 |
| Total | 309 | 91 | 2099 | 100 |

Source: 2008 GDHS 2 =12.967 DF= 3 Sig = 0.005

## 5.4 Exclusive Breastfeeding by Number of Antenatal Care Visits

Table 5.4 shows the number of times a mother attended antenatal care before she gave birth. Health professionals counsel and assist women in their decision making and actual practice of breastfeeding during antenatal care and post natal care visits to health facilities. This leads to lowered risk of mixed feeding (Suryavanshi et al., 2003).

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Table 5.4 Exclusive Breastfeeding by Antenatal Care

| Number of antenatal care | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| No antenatal care | 68.5 | 34.2 | 73 | 100 |
| 1-3 times | 77.4 | 22.6 | 337 | 100 |
| 4-6 times | 81.6 | 18.4 | 900 | 100 |
| 7-9 times | 82.7 | 17.3 | 521 | 100 |
| 10-12 times | 81.2 | 18.8 | 165 | 100 |
| 13 + times | 74.5 | 25.5 | 55 | 100 |
| Not stated | 68.8 | 31.3 | 48 | 100 |
| Total | 534.7 | 168.1 | 2099 | 100 |

Source: 2008 GDHS 2 = 19.457 df = 6 Sig = 0.003

According to table 5.4, mothers who attend antenatal care 7-9 times exclusively breastfed their babies most (83%), than mothers who received antenatal care from non-health professionals (25%). Health professionals are essential in promoting exclusive breastfeeding. Mothers who did not attend antenatal care recorded the least proportion of about (69%).

There was a gradual increase in proportion, from no antenatal care to 7-9 times attendance. There is statistically significant association between number of antenatal care visits and exclusive breastfeeding.

### 5.5 Exclusive Breastfeeding by Region of Residence

Regional variations in exclusive breastfeeding could be due to many and varied factors; demographic, socio-economic, cultural or geographic. Table 5.5 discusses exclusive breastfeeding on regional bases. The table indicates that Upper West region has the highest proportion, (97%) followed by Volta region (93%) and Northern region (88%). These three regions may have attained a high level of Baby Friendly Hospital Initiative status.

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Poverty may be a cause of the high proportion of exclusive breastfeeding in the three regions. Residents in the three northern regions are most likely to be in the lowest wealth quintile.

Table 5.5 Exclusive Breastfeeding by Region of Residence

| Region | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Western | 73.0 | 27.0 | 189 | 100 |
| Central | 73.5 | 26.5 | 200 | 100 |
| Greater Accra | 79.8 | 20.2 | 263 | 100 |
| Volta | 92.8 | 7.2 | 181 | 100 |
| Eastern | 83.8 | 16.2 | 185 | 100 |
| Ashanti | 71.0 | 29.0 | 396 | 100 |
| Brong Ahafo | 85.7 | 14.3 | 217 | 100 |
| Northern | 87.7 | 12.3 | 292 | 100 |
| Upper east | 72.9 | 27.1 | 118 | 100 |
| Upper west | 96.5 | 3.5 | 57 | 100 |
| Total | 816.7 | 183.3 | 2098 | 100 |

Source: 2008 GDHS 2 =80.592 DF= 9 Sig = 0.000

The Upper West region has less than 4 percent of its population in the highest wealth quintile. Northern region has 4 percent and Volta region has 8 percent. Other factors may include increase in CHIPS compounds and peer counselling in the regions. There exists statistically significant association between region of residence and exclusive breastfeeding.

## 5.6 Exclusive Breastfeeding by Level of Education

Table 5.6 analyses exclusive breastfeeding based on maternal level of education. Increased duration of exclusive breastfeeding is associated with less education (Ludvigsson, 2003).

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Table 5.6 Exclusive Breastfeeding by Level of Education

| Highest level of Education | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| No Education | 82.4 | 17.6 | 647 | 100 |
| Primary | 76.7 | 23.3 | 511 | 100 |
| Secondary | 80.8 | 19.2 | 892 | 100 |
| Total | 313.4 | 86.6 | 2099 | 100 |

Source: 2008 GDHS 2 =7.447 DF= 3 Sig = 0.059

From table 5.6, most mothers with no education put their babies to breast immediately (82%). Mothers with secondary education recorded higher proportion (81%), than mothers with primary education (77%).

There exist marginal difference (about 1%) between mothers with no education and mothers with secondary education. Therefore the impact of maternal level of education on exclusive breastfeeding may be minimal. From the table, there is no statistically significant association between maternal level of education and exclusive breastfeeding.

## 5.7 Exclusive Breastfeeding by Employment Status

The challenges of employee mothers differ from the challenges of unemployed mothers. The type of work, and hours of work of women influence breastfeeding (Meek, 2001).

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Table 5.7 Exclusive Breastfeeding by Employment Status

| Employment status | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Unemployed | 82.5 | 17.5 | 217 | 100 |
| Employed | 79.9 | 20.1 | 1882 | 100 |
| Total | 162.4 | 37.6 | 2099 | 100 |

Source: 2008 GDHS 2 =0.843 DF= 1 Sig = 0.358

It is evident from table 5.7 that more mothers (83%) who were unemployed practise exclusive breastfeeding than mothers who were employed (80%). The difference in proportion is however 3 %, showing minimal influence of employment on exclusive breastfeeding.

A study conducted in Malaysia, United States and Ghana suggests that women's employment status has effect on breastfeeding (Butz et al, 1981). However, according to Van Esterik (2002) information on women's occupation status has little effect on breastfeeding prevalence. The table does not show statistically significant association between employment and exclusive breastfeeding.

5.8 Exclusive Breastfeeding by Ethnic Groups

Some cultural beliefs that may discourage breastfeeding among Lebanese women include; having inherited inability to produce milk, and transmission of abdominal cramps to infants through breast milk (Hibah et al., 2009).

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Table 5.8 Exclusive Breastfeeding by Ethnic group

| Ethnicity | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| 5Akan | 73.7 | 26.3 | 975 | 100 |
| Ga/Dangme | 81.0 | 19.0 | 105 | 100 |
| Ewe | 90.4 | 9.6 | 270 | 100 |
| Mole-Dagbani | 83.3 | 16.7 | 424 | 100 |
| Grussi | 90.6 | 9.4 | 64 | 100 |
| Gruma | 82.4 | 17.6 | 102 | 100 |
| Others | 87.4 | 12. 6 | 159 | 100 |
| Total | 588.8 | 588.8 | 2099 | 100 |

Source: 2008 GDHS 2 =55.464 DF= 6 Sig = 0.000

According to table 5.8, Grussi (91%), Ewe (90%) and Mole-Dagbani (87%) mostly practise exclusive breastfeeding respectively. These ethnic groups might have been positively influenced by the presence of CHIPS compound, various breastfeeding support groups, NGOs and the upgraded health facilities to Baby Friendly status in the regions. There is statistically significant association between ethnicity and exclusive breastfeeding.

## 5.9 Exclusive Breastfeeding by Marital Status

The table below analyses the influences of marital status on exclusive breastfeeding. According to table 5.9 currently married mothers (80%) mostly breastfed their infants exclusively, followed by never married mothers (80.6%). The difference in proportion between currently married and never married mothers is 0.2%, which is marginal. Formerly married mothers recorded the least proportion of 71%. Never married mothers do not have husbands who will influence them against exclusive breastfeeding. There is statistically significant association between marital status and exclusive breastfeeding.

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Table 5.9 Exclusive Breastfeeding by Marital Status

| Marital status | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Never married | 80.6 | 19.4 | 129 | 100 |
| Currently married | 80.8 | 19.2 | 1837 | 100 |
| Formerly married | 70.7 | 29.3 | 133 | 100 |
| Total | 232.1 | 67.9 | 2099 | 100 |

Source: 2008 GDHS 2 =7.979 DF= 2 Sig = 0.019

### 5.10 Exclusive Breastfeeding by Sex of Child

The next table presents exclusive breastfeeding by sex of child. Table 5.10 shows that female infants (80.4%) breastfeed exclusively more than male infants (79.9%). Male infants are given priority in breastfeeding in some cultures. There is statistically no significant association between sex of child and exclusive breastfeeding.

Table 5.10 Exclusive Breastfeeding by Sex of Child

| Sex of child | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Male | 79.9 | 20.1 | 1088 | 100 |
| Female | 80.4 | 19.6 | 1011 | 100 |
| Total | 160.3 | 39.7 | 2099 | 100 |

Source: 2008 GDHS 2 =0.097 DF= 1 Sig = 0.755

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## 5.11 Exclusive Breastfeeding by Religion

Religious bodies may practise exclusive breastfeeding also as a natural birth control method. Moslems practice polygamy. Co-wives may help with other chores whilst the mother breastfeeds her baby exclusively. There is statistically significant association between religion and exclusive breastfeeding.

Table 5.11 Exclusive Breastfeeding by Religion

| Religion | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Catholics | 86.3 | 13.7 | 0255 | 100 |
| Protestants | 78.5 | 21.5 | 284 | 100 |
| Pentecostal/Charismatic | 80.2 | 19.8 | 733 | 100 |
| Other Christians | 69.4 | 30.6 | 235 | 100 |
| Moslems | 87.8 | 12.2 | 378 | 100 |
| Traditionalists | 73.0 | 27.0 | 126 | 100 |
| No religion | 72.4 | 27.6 | 87 | 100 |
| Other | 66.7 | 33.3 | 3 | 100 |
| *Total* | *614.3* | *185.7* | *2099* | 100 |

Source: 2008 GDHS 2 =45.261 DF= 7 Sig = 0.000

From table 5.11 Moslems (88%), Catholics (86%) and Pentecostal/Charismatic (80%) mostly practise exclusive breastfeeding respectively.

## 5.12 Exclusive Breastfeeding by Place of Residence

The next table shows exclusive breastfeeding by place of residence. According to table 5.12 urban mothers (80.3%) practise exclusive breastfeeding more than rural mothers (79.9%). The marginal difference of 0.4 % between urban mothers and rural mothers shows minimal effect of place of residence on exclusive breastfeeding. There is no statistically significant association between place of residence and exclusive breastfeeding.

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Table 5.12 Exclusive Breastfeeding by Place of Residence

| Place of residence | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Urban | 80.3 | 19.7 | 884 | 100 |
| Rural | 79.9 | 20.1 | 1256 | 100 |
| Total | 160.2 | 39.8 | 2140 | 100 |

Source: 2008 GDHS 2 =0.050 DF= 1 Sig = 0.824

5.13 Exclusive Breastfeeding by Time Baby Was put to Breast

The table that follows analyses exclusive breastfeeding by the time baby was put to breast. According to table 5.13, mothers who put their babies to breast within one hour (92%), and mothers who put their babies to breast immediately (85%) are likely to practise exclusive breastfeeding. Initiation of breastfeeding is statistically associated with exclusive breastfeeding.

Table 5.13 Time Baby was put to Breastfeeding

| Time baby was put to breastfeed | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Immediately | 85.1 | 14.9 | 840 | 100 |
| Within one hour | 91.6 | 8.4 | 239 | 100 |
| Later (hours or days later) | 76.6 | 23.4 | 976 | 100 |
| Total | 253.3 | 46.7 | 2055 | 100 |

Source: 2008 GDHS 2 =39.273 DF= 2 Sig = 0.000

5.14 Exclusive Breastfeeding by Supplementation

From table 5.14 all the infants (100%) fed on breast milk only for the first three days.

Supplementation may have taken place after the first three days for mothers who chose infant

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formula. There is statistically significant association between supplementation and exclusive breastfeeding. This association may be in the negative.

Table 5.14 Exclusive Breastfeeding by Supplementation

| Supplementation | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Fed on breast milk only first three days | 100 | 0 | 1682 | 100 |
| Had other supplements within first three days | 0 | 100 | 417 | 100 |
| Total | 100 | 100 | 2099 | 100 |
| Source: 2008 GDHS | 2 =2099.0 | DF= 1 | Sig = 0.000 | |

5.15 Exclusive Breastfeeding by Birth Order

The next table analyses exclusive breastfeeding by birth order, from the 1st to the 7+ birth. From table 5.15, the proportion of infants who were exclusively breastfed decreased steadily from the second to the $4^{th}$ birth (81.9 -77.1).The rate however increased from the $5^{th}$ to the $6^{th}$ birth (81.3-83.2), before decreasing to 78% for the 7+ birth. There was an increase in proportion from the first to the second birth (80.6-81.9). First time mothers may have improved upon breastfeeding in the second birth. There is no statistically significant association between birth order and exclusive breastfeeding in this study.

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Table 5.15 Exclusive Breastfeeding by Birth Order

| Birth order | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| 1 | 80.6 | 19.4 | 468 | 100 |
| 2 | 81.9 | 18.1 | 436 | 100 |
| 3 | 79.4 | 20.6 | 349 | 100 |
| 4 | 77.1 | 22.9 | 306 | 100 |
| 5 | 81.3 | 18.7 | 193 | 100 |
| 6 | 83.2 | 16.8 | 137 | 100 |
| 7+ | 77.7 | 22.3 | 211 | 100 |
| Total | 561.2 | 138.8 | 2100 | 100 |

Source: 2008 GDHS 2 =4.511 DF= 6 Sig = 0.608

5.16 Exclusive Breastfeeding by Wealth Quintiles

The next table presents exclusive breastfeeding by wealth quintile. Wealth quintile provides a consistent measure of combined indicators of household income and expenditures.

Table 5.56 Exclusive Breastfeeding by Wealth Index

| Wealth index | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Poorest | 80.6 | 19.4 | 479 | 100 |
| Poorer | 80.3 | 19.7 | 461 | 100 |
| Middle | 76.8 | 23.3 | 400 | 100 |
| Richer | 83.5 | 16.5 | 436 | 100 |
| Richest | 79.2 | 20.8 | 322 | 100 |
| Total | 400.4 | 99.7 | 2098 | 100 |

Source: 2008 GDHS 2 =6.207 DF= 4 Sig = 0.184

The data from table 5.16 shows that 84% of richer mothers practised exclusive breastfeeding most.

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The next was 81% of poorest mothers and 80% of poorer mothers respectively. Richer mothers (79%) were the proportion that practises exclusive breastfeeding least. This finding is contrary to that of Sokol et al (2002) who reported that, socio economically, mothers in low income gave exclusive breastfeeding, compared to mothers in high income. Richest mothers (79%) however practised exclusive breastfeeding least, as expected. There is no statistically significant association between wealth quintile and exclusive breastfeeding in this study.

## 5.17 Exclusive Breastfeeding by Reading of Magazine

The next table shows exclusive breastfeeding by reading of magazine. From table 5.17, most mothers read magazine or newspaper at least once a week (86%), and 'Almost every day' (85%). About 80% of mothers do not read magazine or newspapers at all.

A similar proportion (79.2%) with only a marginal difference of 0.6 % read magazine less than once a week. There is no statistically significant association between reading of newspaper or magazine and exclusive breastfeeding.

Table 5.17 Exclusive Breastfeeding by Reading of Magazine

| Frequency of reading of newspaper or magazine | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Not at all | 79.8 | 20.2 | 1864 | 100 |
| Less than a week | 79.2 | 20.8 | 101 | 100 |
| At least once a week | 85.8 | 14.2 | 113 | 100 |
| Almost every day | 85.0 | 15.0 | 20 | 100 |
| Total | 329.8 | 70.2 | 2098 | 100 |

Source: 2008 GDHS 2 =2.814 DF= 3 Sig = 0.421

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5.18 Exclusive Breastfeeding by Listening to Radio

The next table presents exclusive breastfeeding according to how mothers listen to radio. Mass media can improve nutritional knowledge to influence exclusive breastfeeding.

Table 5.18 Exclusive Breastfeeding by Frequency of Listening to Radio

| Frequency of listening to radio | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Not at all | 78.6 | 21.4 | 407 | 100 |
| Less than a week | 79.1 | 20.9 | 148 | 100 |
| At least once a week | 80.7 | 19.3 | 507 | 100 |
| Almost every day | 80.7 | 19.3 | 1036 | 100 |
| Total | 319.1 | 80.9 | 2098 | 100 |

Source: 2008 GDHS 2 =0.987 DF= 3 Sig = 0.804

According to table 5.18, about 81% of mothers listen to radio weekly and 79% listen to radio in less than a week or not at all. The difference between the proportion of mothers who listen to radio weekly and mothers who do not listen to radio at all is a marginal 2%. Mothers who listen to nutritional messages on radio or mass media may be influenced to decide to practise exclusive breastfeeding. However, there is no statistically significant association between listening to radio and exclusive breastfeeding in this study.

5.19 Frequency of Watching Television and Exclusive Breastfeeding

Table 5.19 shows the frequency of watching television. Media exposure is higher among younger women than older women (GDHS, 2008). From table 5.19 majority of mothers 83% watch television once in less than a week, followed by mothers who watch television almost every day (80%). Almost equal number of mothers (79%) either watches television once in less than a week or do not watch at all. A marginal 1% difference exist between mothers who watch

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television weekly and mothers who do not watch television at all. There is no statistically significant association between watching television and exclusive breastfeeding.

Table 5.19 Exclusive Breastfeeding by Watching of Television

| Frequency of watching television | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Not at all | 79.9 | 20.1 | 977 | 100 |
| Less than a week | 83.1 | 16.9 | 183 | 100 |
| At least once a week | 78.9 | 21.1 | 341 | 100 |
| Almost every day | 80.1 | 19.9 | 599 | 100 |
| Total | 322 | 78 | 2100 | 100 |

Source: 2008 GDHS 2 =1.338 DF= 3 Sig = 0.720

5.20 Breastfeeding by Type of Contraceptive

The next table analyses exclusive breastfeeding by type of contraceptive. According to table 5.20 most mothers (82%) use traditional \folkloric contraceptive, followed by proportion of mothers who use modern contraceptive (80%). About 80% of mothers do not use any contraceptive. A marginal 1% difference exists between mothers who do not use contraceptive and mothers who use contraceptive; hence, the influence of contraceptive on exclusive breastfeeding may not be much. There is no statistically significant association between type of contraceptive and exclusive breastfeeding.

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Table 5.20 Exclusive Breastfeeding by Type of Contraceptive Usage

| Type of contraceptive | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| No method | 79.8 | 20.2 | 1609 | 100 |
| Traditional/Folkloric | 81.8 | 18.2 | 137 | 100 |
| Modern | 81.2 | 18.8 | 351 | 100 |
| Total | 242.8 | 57.2 | 2097 | 100 |
| Source: 2008 GDHS | 2 =0.586 | DF= 2 | Sig = 0.746 | |

## 5.21 Exclusive Breastfeeding by Timing of Antenatal Visits

Table 5.21 shows that 80.5% of mothers attended antenatal care in the first trimester, against 81.2% in the second trimester, an increase of 0.7% over the first trimester attendance. The proportion declined to 74% of the third trimester; 67% was not stated. There is statistically significant association between timing of ante natal visit and exclusive breastfeeding.

Table 5.21 Exclusive Breastfeeding by Timing of Antenatal Visits

| Timing of Antenatal | Exclusive breastfeeding | | N visits | Total |
|---|---|---|---|---|
| | Yes | No | | |
| 1st Three months | 80.5 | 19.5 | 1155 | 100 |
| 4-6 months | 81.2 | 18.8 | 810 | 100 |
| 7+ months | 74.0 | 26.0 | 50 | 100 |
| Not stated | 66.7 | 33.3 | 84 | 100 |
| Total | 302.4 | 97.6 | 2099 | 100 |
| Source: 2008 GDHS | 2 =11.452 | df= 3 | p = 0.010 | |

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## 5.22 Exclusive Breastfeeding by Type of Delivery

From table 5.22, more mothers (81%) had vaginal delivery than caesarean section with 11% difference. There is statistically significant association between type of delivery and exclusive breastfeeding.

Table 5.22 Exclusive breastfeeding by type of delivery

| Type of delivery | Exclusive breastfeeding | | N | Total |
|---|---|---|---|---|
| | Yes | No | | |
| Vaginal Delivery | 81.0 | 19.0 | 1948 | 100 |
| Caesarean Section | 69.5 | 30.5 | 151 | 100 |
| Total | 150.5 | 49.5 | 2099 | 100 |

***Source:*** 2008 GDHS  2 =11.477  df= 1  p = 0.001

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# CHAPTER SIX

# REGRESSION ANALYSIS

## 6.1 Determinants of Exclusive Breastfeeding

These variables were arrived at as a result of their statistically significant association with Exclusive Breastfeeding in the bivariate analysis. These are as shown in Table 6.1.

Table 6.1 Distribution of variables by their chi square and significance values with exclusive breastfeeding.

| **Variable** | **Chi square** | **P-values** |
|---|---|---|
| Marital status | 7.979 | 0.19 |
| Religion | 45.261 | .000 |
| Region of residence | 80.592 | .000 |
| Time baby was put to breast | 39.273 | .000 |
| Number of antenatal visits | 19.457 | .003 |
| Type of delivery | 11.477 | .001 |
| Place of delivery | 12.967 | .005 |
| Timing of first antenatal visit | 11.452 | .010 |
| Ethnicity | 55.464 | .000 |
| Age of child | 17.141 | .029 |

For each of the independent variables, a reference category was chosen. The reference categories were taken as the datum from which purported impact of the other categories would be estimated. For example with regard to the marital status, formerly married was chosen as the reference category (and assumes an odds ratio of 1) and the likelihood of the other categories to exclusively breastfeed is compared to it.

The reference categories for the independent variables are indicated in the Table with the letters

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"RC" after them. The dependent variable (exclusive breastfeeding) has been coded as:

0 = Not exclusively breastfed

1 = Exclusively breastfed

Table 6.2 Binary Logistic Regression of Exclusive Breastfeeding of Last Child on Background

| | B | Std error | Sig. | Exp(B) |
|---|---|---|---|---|
| **MARITAL STATUS** | | | .098 | |
| Never married | .540 | .355 | .128 | 1.716 |
| Currently married | .528 | .246 | .032 | 1.695 |
| Formerly married (RC) | | | | |
| **RELIGION** | | | .002 | |
| Catholics | 1.195 | .311 | .000 | 3.303 |
| Protestants | .951 | .312 | .002 | 2.588 |
| Pentecostal/Charismatic | .914 | .274 | .001 | 2.494 |
| Other Christians | .447 | .312 | .153 | 1.563 |
| Moslem | .964 | .325 | .003 | 2.622 |
| Traditional | .625 | .360 | .082 | 1.869 |
| Other | .910 | 1.213 | .453 | 2.484 |
| No Religion(RC) | | | | |
| **REGION OF RESIDENCE** | | | .000 | |
| Western | -.126 | .370 | .734 | .882 |
| Central | .211 | .394 | .593 | 1.235 |
| Greater Accra | .061 | .398 | .878 | 1.063 |
| Volta | .752 | .492 | .127 | 2.121 |
| Eastern | .533 | .408 | .191 | 1.705 |
| Ashanti | -.140 | .352 | .691 | .869 |
| Brong Ahafo | .736 | .370 | .047 | 2.087 |
| Northern | 1.286 | .364 | .000 | 3.619 |
| Upper West | 2.715 | .563 | .000 | 15.099 |
| Upper East (RC) | | | | |
| **TIME BABY WAS PUT TO BREAST** | | | .000 | |
| Immediately | .676 | .142 | .000 | 1.966 |

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| | | | | |
|---|---|---|---|---|
| Within first hour | 1.096 | .279 | .000 | 2.993 |
| Hours or days later(RC) | | | | |
| **NUMBER OF ANTENATAL VISITS** | | | .555 | |
| 1 – 2 times | 2.013 | 1.194 | .092 | 7.483 |
| 4 – 6 times | 2.119 | 1.188 | .075 | 8.321 |
| 7 – 9 times | 2.096 | 1.193 | .079 | 8.134 |
| 10 – 12 times | 2.103 | 1.212 | .083 | 8.191 |
| 13 and more times | 1.791 | 1.221 | .142 | 5.998 |
| Not stated | 1.656 | 1.200 | .168 | 5.236 |
| No Antenatal visit(RC) | | | | |
| **TYPE OF DELIVERY** | | | | |
| Caesarean delivery | -.564 | .247 | .022 | .569 |
| Vaginal delivery (RC) | | | | |
| **PLACE OF DELIVERY** | | | .000 | |
| Home | .076 | .688 | .912 | 1.079 |
| Government Health Facility | .758 | .694 | .275 | 2.134 |
| Private Health Facility | .649 | .720 | .367 | 1.913 |
| Other Facility(RC) | | | | |
| **TIMING OF FIRST ANTENATAL VISIT** | | | .225 | |
| First three months | -1.538 | 1.154 | .183 | .215 |
| 4 – 6 months | -1.543 | 1.158 | .183 | .214 |
| 7 and more months | -2.107 | 1.205 | .080 | .122 |
| Not Stated(RC) | | | | |
| **ETHNICITY** | | | .008 | |
| Ga/Dangme | .383 | .343 | .264 | 1.466 |
| Ewe | 1.062 | .307 | .001 | 2.893 |
| Mole-Dagbani | .082 | .272 | .764 | 1.085 |
| Grussi | .778 | .497 | .117 | 2.177 |
| Gruma | .522 | .371 | .159 | 1.686 |
| Guan,Mande,Other | .586 | .316 | .064 | 1.796 |
| Akan(RC) | | | | |
| **AGE OF CHILD (months)** | | | .100 | |
| Under 2 | .331 | .380 | .384 | 1.393 |
| 2 – 3 | .031 | .302 | .919 | 1.031 |
| 4 – 5 | .471 | .349 | .177 | 1.601 |

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| | | | | |
|---|---|---|---|---|
| 6 – 8 | .305 | .284 | .283 | 1.357 |
| 9 – 11 | .075 | .276 | .787 | 1.078 |
| 12 – 17 | -.345 | .199 | .083 | .708 |
| 18 – 23 | -.071 | .229 | .755 | .931 |
| 24 – 35 | -.312 | .188 | .098 | .732 |
| 36 and above (RC) | | | | |
| Constant | -1.526 | .818 | .062 | .217 |

**R squares: Cox and Snell = 0.124 Nagelkerke = 0.207**

## 6.2 The Binary Logistic Model

A logistic regression model was fitted on the most recent births in the last three years using the enter method. The independent variables used are as shown in Table 6.1.

Using Nagelkerke $R^{2,}$ the estimated fit of the model to the data is 0.207 (20.7%). In other words, the model can explain up to 20.7 percent of the variation in exclusive breastfeeding using the independent variables.

## 6.3 Significant Independent Variables

As regards marital status, the Currently Married group is statistically significantly related to exclusive breastfeeding. They are about 70 percent more likely to exclusively breastfeed their babies compared to those who are formerly married.

The Never Married women on the other hand are about 72 percent times more likely to exclusively breastfeed their babies compared to the formerly married.

Religious categories of Catholics, Protestants and Pentecostal/Charismatics as well as the Moslems are statistically significant in their relation to excusive breastfeeding. The Catholic women are three times more likely to exclusively breastfeed their babies compared to those with no religion. The Moslems on the other hand have the likelihood slightly above two and a half times more, to breastfeed their babies compared to women with no religion. The Protestants have about two and a half times more likelihood to exclusively breastfeed their babies compared

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to those with no religion while the Pentecostal/Charismatics and those who belong to other religions are twice more likely to exclusively breastfeed compared to women with no religion.

Northern, Brong Ahafo and Upper West regions are the only three regions that are significantly related statistically, to exclusive breastfeeding. Women from the Northern region are slightly above three and a half times, more likely to exclusively breastfeed compared to those in the Upper East region. Women from the Brong Ahafo and the Volta regions each exhibit twice more likelihood to breastfeed their babies exclusively compared to women in the Upper East region. The very high odds ratio (15) for women from the Upper West region, can be attributed to their low number compared to the other regions.

When their babies were put to breast shows a statistically significant association between the two categories (immediate breastfeeding and breastfeeding within the first hour) and Exclusive Breastfeeding as the dependent variable.

Women who put their babies to breast immediately after birth are about twice more likely to exclusively breastfeed while women who breastfeed their babies within the first hour are about three times more likely to exclusively breastfeed compared to women who put their babies hours or days after delivery.

The type of delivery is also significantly related statistically to exclusive breastfeeding and women who went through a caesarean section are about 43 percent less likely to exclusively breastfeed their babies compared to their counterparts who went through vaginal delivery.

On the part of Ethnicity, the Ewes show statistical significance with exclusive breastfeeding. They are almost close to three times more likely to exclusively breastfeed compared to their Akan counterparts. The Grussi women are also twice more likely to breastfeed exclusively than their Akan counterparts.

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## 6.4 Non significant independent variables

Though the number of antenatal visits, place of delivery, timing of first antenatal visit and age of the child showed some significance with exclusive breastfeeding at the bi-variate stage, they do not exhibit any statistical significance in the logistic model.

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# CHAPTER SEVEN

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 7.0 Introduction

The chapter presents a summary and draws conclusions from the findings in the research. The chapter also highlights some suggestions for future research and presents recommendations that could be adopted to increase the education and practise of exclusive breastfeeding in Ghana and beyond.

## 7.1 Summary

The aim of the study was to determine the factors that affect exclusive breastfeeding in Ghana. Socio-economic, demographic geographic and cultural variables such as; highest educational level, place of delivery, place of residence, sex of child, ethnicity, antenatal care, marital status, respondents work status and religion of the mother were selected. Data from the Ghana Demographic and Health Survey conducted in 2008 was used in the analysis of the study. The study used mothers between ages 15 and 49 who had delivered 5 years preceding the survey. The sample size was 2099 mothers who breastfed their babies. There were 3 hypothesis stated among which none was rejected.

The background characteristics of the study were examined using frequency tables and cross tabulations. About 26 percent of the mothers were between 25 to 29 years as the majority, and the minority between the ages of 45 and 49 was about 4 percent of the total number of mothers. Mothers with secondary education constituted the largest proportion with about 43 percent, followed by no education 31 percent with the least being those in higher education with about 2 percent.

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As regards place of residence, about 60 percent of women resided in the rural areas and about 40 percent of women resided in the urban areas. From the analysis, about 19 percent of women were from Ashanti region, followed by Northern region with about 14 percent. The least number of mothers were selected from the Upper West region, comprising about 3 percent of the sample.

The result of the bivarite analyses indicated that 4-5 months infants, delivery in health facility, attending antenatal care in the first trimester ,attending antenatal care 7-9 times ,affiliation to Moslems and Catholics, putting babies to breast within one hour after delivery, vaginal delivery, currently married and never married mothers mostly influenced exclusive breastfeeding. The others are Grussi, and Ewe ethnic groups, and Upper West region.

In binary logistic regression model, region of residence, marital status, ethnicity, religion, type of delivery and time of initiation of breastfeeding were the variables that were statistically significant to affect exclusive breastfeeding at 95 percent confidence interval, after controlling for the effect of other variables.

## 7.2 Conclusions

The findings revealed that, exclusive breastfeeding practice in Ghana is influenced by religion, geography, demography and cultural factors. The findings do not indicate poverty and modernization as in contentious debate in the global core. The regression model can explain up to 20.7% of variation in exclusive breastfeeding using the independent variables. The prevalence of exclusive breastfeeding in Ghana in 2008 was 80 percent of national coverage.

Mothers in Ghana might have realised that exclusive breastfeeding is a life-and–death issue. As a result, more mothers who have secondary education and are better informed practise exclusive

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breastfeeding than mothers with primary education. Again, richer mothers practise exclusive breastfeeding than poorer and middle income mothers.

The findings confirmed two of the hypothesis used for the study, as follows;

(1)Mothers who deliver their babies at health facilities are more likely to practice exclusive breastfeeding than mothers who deliver at home.

(2)Mothers who are unemployed are more likely to breastfeed exclusively than mothers who are employed.

The findings however failed to confirm the hypothesis that mothers who have low economic status are more likely to do exclusive breastfeeding up to six months than mothers of high economic status.

## 7.3 Recommendations

Further research should be conducted into the specific roles of husbands as regards exclusive breastfeeding to further support currently married mothers to continue exclusive breastfeeding. Currently married women exclusively breastfed than formerly and never married mothers in the study.

Also, further research is needed to find out why the northern sector (Upper West, Northern and Brong Ahafo) is performing better in exclusive breastfeeding, than the southern sector. The possible factors for this development include poverty, yet the analysis of the wealth index did not support it. Other possible factors may include Baby Friendly Hospital Initiative, CHIPS compounds and peer counselling.

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More CHIPS compounds should be built in the communities that do not have adequate health facilities, to make health service delivery more accessible to women. That will enable many more women to attend antenatal care regularly and deliver at health facilities, without travelling for long distances with the pregnancy. Regular antenatal care visits and timing, and delivery at health facilities were significantly associated with exclusive breastfeeding in this study.

Religious bodies should be involved in a campaign to promote exclusive breastfeeding in the various communities across the country. There is a significant association between religion and exclusive breastfeeding in Ghana.

There is a need for the Ghana Health Service to design educational campaign to promote infant feeding and breastfeeding in English and local languages The programme should involve all health workers, employers, peer counsellors NGO's, communities and families in the support of exclusive breastfeeding initiatives in the country. The mass media should be used to advertise the programme since exposure of women and men to print and broadcast media in Ghana is high

The Regional Institute for Population Studies should make a request to the Ghana Statistical Service to include questions on exclusive breastfeeding in the next Demographic and Health Survey in Ghana, for analysis and measurement purposes. The survey is nationally representative so its findings can have implications for the whole country.

Finally, maternity leave policy in Ghana should be reviewed to ensure complete implementation of exclusive breastfeeding, as defined by UNICEF/WHO. A longer maternity leave of at least six months will encourage public sector workers to decide and practise exclusive breastfeeding, with spousal support.

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