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ADDIS ABABA UNIVERSITY
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**SOCIO-ECONOMIC AND DEMOGRAPHIC CORRELATES OF
EXCLUSIVE BREASTFEEDING AMONG WOMEN IN KIRKOS
SUBCITY OF ADDIS ABABA**

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OF EXCLUSIVE BREASTFEEDING AMONG WOMEN IN
KIRKOS SUBCITY OF ADDIS ABABA**

By

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Advisor

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*Socio-economic and Demographic Correlates of Exclusive
Breastfeeding among Women in Kirkos Sub-City of Addis Ababa*



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ACRONYMS

AAP	American Academics of Pediatrics
ANC	Anti-Natal Care
CSA	Central Statistical Agency
DHS	Demographic Health Survey
EBFP	Exclusive Breastfeeding Practice
FGD	Focus Group Discussion
FMoH	Federal Ministry of Health
UNICEF	United Nations Children's Fund
USAID	United State Agency for International Development
WHO	World Health Organization

ABSTRACT

The practice of Exclusive Breastfeeding is a vital source of healthy growth to infants and has a protective effect against mortality and morbidity. Exclusive Breastfeeding is defined as the practice of feeding a baby only of breast milk up to age 6 months without introducing complementary foods. However, different studies have proven that the subject is hardly understood by mothers and the general public. According to the available estimates at global, Africa and national (Ethiopia) levels, exclusive breastfeeding is practiced by nearly one-third of mothers.

The main objective of the study is to investigate the demographic and socio-economic factors that are influential to the exercise of EBF, in the study area, Kirkos Sub-city in April, 2011. The study is a cross sectional and simple random sampling method/technique to arrive at 334 eligible pregnant respondents – both from government and private health institutions. In addition to the face to face interview, Focus Group Discussions (FGDs) were undertaken.

Based on the results obtained, about 39% of the respondents do exercise EBF in the study area. Nonetheless, the concept of exclusive breastfeeding is found to be less understood by the respondents and an introduction of supplementary foods or at least water begins at early ages due to the cultural belief that children are thirsty, for the salty nature of breast milk and hungry for the disproportional demand of food to their growth after two or three months. Lots of factors are seemingly determinants to the exclusive breastfeeding. However, this study has concluded that attitude, income and education of mothers are found to have significant association with the practice of EBF than other factors.

Upon conclusion, the study has forwarded recommendation to stakeholders such as Ministry of Health including professional gynecologists, doctors, nurses, ... to be able to make the mothers aware of the unutilized opportunity of Exclusive Breastfeeding practice for themselves and their infants. By the same taken ministry of labour and social affairs in consultation with ministry of health could facilitate to give breastfeeding mothers a reasonable payment without work or reduction of working hours during the first six months of the babies age.

CHAPTER ONE

INTRODUCTION

1.1 Background

Breastfeeding is one of the oldest practices recommended by all religions and it is the universally endorsed solution in the prevention of early malnutrition (Dana, 1979). In light of the extensively studied benefits of Breast feeding to the society, mother and infant (Heining and Dewey, 1996; Moreland and Coombs, 2000), it is estimated that the lives of 1 million infants a year can be saved in the developing world by promoting Breast feeding. Different factors affecting such promotion need further studies including mother awareness, socio-economical factors and more importantly the health professional's training and attitude (Al-Nassaj *et al.*, 2004). World Health Organization and The American Academy of Pediatrics recommend that an infant be breast-fed without supplemental foods or liquids for the first 6 months of age, known as exclusive Breastfeeding (WHO, 2002).

Exclusive breastfeeding of babies especially from birth to at least six months is recommended in the primary health care services provided in the healthcare sector in Ethiopia and the world over. A very important aspect of the primary health care system is the education of women and the general public about the importance of exclusive breastfeeding that is, feeding babies with breast milk only till they are at least six months old. This education includes providing information on the components of breast milk and its nutritional benefits to the babies as well as their mothers. The reaction of the public to the introduction of exclusive breastfeeding is mixed depending on the social status of the people.

Breastfeeding is an ultimate bio-cultural phenomenon; in human, breastfeeding is not only the biological process but also a culturally determined behavior (Stuart-Macadam and Dettwyler, 1995).

UNICEF and WHO recommend that children be exclusively breastfed during the first six months of life and that children be given solid or semisolid complementary food in

addition to continued breastfeeding from six months on. Exclusive breastfeeding is recommended because breast milk is uncontaminated and contains all the nutrients necessary for children in the first few months of Nutrition of Children and Women life. In addition, the mother's antibodies in breast milk provide immunity to disease. Early supplementation is discouraged for several reasons. First, it exposes infants to pathogens and increases their risk of infection, especially disease. Second, it decreases infants' intake of breast milk and therefore suckling, which reduces breast milk production. Third, in a harsh socioeconomic environment, supplementary food is often nutritionally inferior. Contrary to WHO's recommendations only one in three Ethiopian children age 4-5 months is exclusively breastfed. (CSA and ORC Macro, 2006).

Exclusive breastfeeding is recommended for six months in any context where mothers cannot provide a safe, affordable and sustainable nutritious replacement feeding. The transition period between breastfeeding and replacement feeding should be kept as short as possible.

In many instances, the nutritional advantages of breast milk are studied and found to be certainly numerous. Breast milk completely satisfies an infant's nutritional and fluid needs for the first six months. Nutrients such as vitamins A and C, iron, zinc and vitamin D are more easily absorbed from breast milk than from other milk. Breast milk contains essential fatty acids needed for the infant's growing brain, eyes, and blood vessels and these are not available in other milks. Infants do not need water or other liquids to maintain good hydration, even in hot climates. Breastfeed on demand, that is, as often as the infant wants, day and night. This will be at least 8 times in 24 hours. The more times a baby breastfeeds, the more milk will be produced as suckling stimulates milk production. Breast milk protects against infection as the infant shares the mother's ability to fight infection. Exclusively breastfed infants are less likely to become ill with diarrhea, and less likely to die from diarrhea or other infections. They are also less likely to develop pneumonia, meningitis, and ear infections than non breastfeed infants. Exclusively breastfed children are at a much lower risk of infection from diarrhea and acute respiratory infections than infants who receive other foods. Other foods or liquids, or the feeding bottles or utensils used for them may contain germs and cause infections.

Offering foods to infants before six months reduces breast milk intake and interferes with full absorption of breast milk nutrients (FMoH, 2004).

Breast milk is also the least expensive way to feed an infant. However, the mother must maintain good nutrition and continue taking any vitamin/mineral supplements her doctor recommended during the pregnancy.

Formula-fed babies have the risk of developing an allergy to a particular formula. When a baby develops an allergy to formula, he or she may have symptoms that include irritability, crying after feedings, nausea, vomiting, diarrhea, or a skin rash (WHO, 2005)

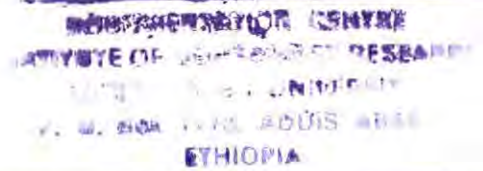
There is a well-accepted extra closeness that breastfeeding mothers experience that is both hormonal and emotional in nature.

The only disadvantages for the baby in breastfeeding occur when things are not going well, for example, if there's an inadequate supply of breast milk or an inefficient suck reflex in the baby. However, it is unusual for a mother not to produce enough milk for her baby unless she is not breastfeeding correctly or frequently enough. The disadvantages that most commonly arise involve the rest of the family. Siblings and dad often feel "left out" of baby care since mom is the only one who can do the nursing. However, other family members can be involved in helping with different aspects of the baby's care, and this gives them a valuable feeling of importance and allows mom a chance to rest (WHO, 2005)

Breast-fed babies eat more often than formula-fed babies since breast milk is more quickly digested and leaves the stomach empty more frequently. This puts a little more stress on the mother because of the potential necessity for more frequent feedings. (Ahmed , 2007)

The benefits of exclusive breastfeeding are numerous. Breastfeeding, a primary means of promoting and supporting good nutrition in developing countries, is universally high in Ethiopia; however, exclusive breastfeeding during the first 6 months of life as recommended by the World Health Organization (WHO) is far less common. According to the Ethiopia Demographic and Health Survey, 69 percent of women in Ethiopia

initiated breastfeeding within the first hour of delivery (CSA and ORC MACRO, 2006). Lack of information, social barriers and unsupportive work arrangements are among the reasons women do not breastfeed.



1.2 Statement of the Problem

There are lots of factors that help to tackle the problem of infant and child mortality. One of the most recommended means of reducing the risk of infant mortality is widely believed to be breastfeeding at early age of the child's development. However, due to different reasons all mothers are not practicing.

Breast feeding is the normal way of providing young infants with rich nutrients they need for healthy growth and development. Virtually all mothers can breastfeed, provided they have accurate information, and the support of their family, the health care system and society at large. Breastfeeding reduces mortality by providing optimum nutrition and protection against common, but deadly, childhood infections. Babies who do not breastfeed are two to six times more likely to die from infectious diseases, such as diarrhea, during their first year. This risk is particularly high during the first two months of life. Breastfeeding also provides the stimulation for good psychosocial and neurological development and contributes to birth spacing (Papst, et al., 1990).

With all the mentioned advantages and benefits of EBF, however, the experience of mothers in many countries doesn't seem to follow the expected international recommendation. According to UNICEF, the global rate of exclusive breastfeeding is still only around 37 per cent (UNICEF, 2010). In Sub-Saharan Africa, 20 percent of women reported exclusive breastfeeding of their last born infant less than four months old. In North Africa, the rate for exclusive breastfeeding is 41 percent respectively, 44 percent in Asia, and lowest in Latin America at 30percent. (USAID, 2001). In Ethiopia the prevalence of Exclusive breastfeeding rate is 31.6 percent of age 4-6 months. (CSA and ORC MACRO 2006). The government of Ethiopia has recognized the problem of lack of exclusive breastfeeding practice in the country and it has expressed its concern.

For instance, at national level, the FMOH has declared Tir 24 (Feb.1) as exclusive breastfeeding day.

Even though most mothers in Ethiopia breastfeed their babies, they do not always follow the recommendations of the "National Strategy for Infant and Young Child Feeding," the guidelines established by the FMOH for optimum breastfeeding. Many newborns are neither breastfed during their first hours of life with colostrums nor exclusively breastfed during their first six months. Instead, they are given liquids and complementary food at an early age. These practices may expose them to infectious diseases, and therefore have a negative impact on their growth and development.

The low prevalence of EBF in most developing countries including Ethiopia is attributed to various maternal and child factors such as place of residence, sex and age of the child, mother working outside home, maternal age and educational level, access to mass media and economical status by several researchers.((Tewodros *et al.*, 2009)

There are few studies that investigated the factors associated with exclusive breastfeeding practices in Ethiopia. Due to the presence of differences in geographic, economic and socio-cultural aspects studies so far done to investigate the factors for exclusive breastfeeding practice didn't seem suffice to bring about the intended influence from policy makers up to mothers in all places. In major cities such as Addis Ababa, the practice of exclusive breastfeeding could easily be replaced not only due to the availability of alternate sources of food for babies, but also expected to associate with other potential factors.

In light of this research gap, therefore, the current study has attempted to identify the most important demographic, socio-economic and health care factors affecting exclusive breastfeeding practice in Kirkos sub city, Addis Ababa. It is hoped that the findings of this study will be utilized in improving the beliefs, attitudes and practices of mothers towards EBF.

1.3 Objective of the Study

The general objective of the study is to identify the demographic and socio-economic factors that influence the practice or non-practice of exclusive breastfeeding among women.

Specific objectives are to:-

1. Examine practice of exclusive breast-feeding in Kirkos sub city of Addis Ababa;
2. Identify the demographic and socio-economic factors that influence EBF practices in the sub city
3. Investigate the influence of the social support and cultural beliefs on breastfeeding practice;

1.4 Research Question

This study would strive to answer the following research questions:

1. What is the practice of exclusive breastfceding in Kirkos sub city of Addis Ababa?
2. What is the knowledge and attitude of mothers to exercise exclusive breastfeeding?
3. What are the socio-economic correlates of exclusive breastfeeding practice?
4. What are the demographic and cultural factors which have an influence on breastfeeding practice?

1.5 Significance of the Study

Breastfeeding is associated with a lower incidence of infant diarrhea and respiratory disease, particularly in less developed countries. An ecological study on breastfeeding showed that more than half of all infant deaths from diarrhea disease and acute respiratory infections are preventable by exclusive breastfeeding in infants aged 0-3 months and partial breastfeeding throughout the remainder of infancy

(WHO, 1996). The theoretical basis for this may be a combination of the nutritional and immune modulator effects of human milk.

The significance of this research work lies in the fact that it would contribute to existing literature on the subject matter by providing an expository analysis of the practice of breastfeeding in one of the Addis Ababa sub-cities in Ethiopia and identify the demographic and socio-economic factors that influence it. This would enhance policy formulation in the primary health care in the area of improving the practice of exclusive breast feeding among women.

1.6 Limitations of the Study

The study, since it is limited to one sub city, it may not be valid to represent the practice of exclusive breastfeeding in other sub cities of Addis Ababa.

During the data collection process, the unavailability of eligible women especially of pregnant women having at least one child was found to be difficult. In connection with this there has been reasonable constraint in finance and time.

Furthermore, information with regards to income and age were found to be the most sensitive questions that limited respondents to respond openly.

CHAPTER TWO

LITERATURE REVIEW

Exclusive breastfeeding has become a subject of wide concern in the past few years, because of the modest link between exclusive breastfeeding and its importance to early childhood nutrition and health and, in part, fertility.

World Health Organization and The American Academy of Pediatrics recommends that an infant be breast-fed without supplemental foods or liquids for the first 6 months of age, known as exclusive Breast feeding (WHO, 2002). Feeding practices including lack of Breast feeding and early introduction of solid foods have been reported as health risks (Uauy and Solomons, 2005). Data from different countries revealed that there are very large differences in breast-feeding practice between countries and between population groups within countries. A downward trend in breast-feeding has been noted in widely differing countries of the Middle East, especially in urban areas (World Health Quarterly, 1982; Balo *et al.*, 1997; Harfouche, 1982). Furthermore there is a growing concern in recent years about the changing pattern of breast-feeding, particularly in societies in rapid transition (Patwardhan and Darby, 1972; World Health Quarterly, 1982; Sebai, 1982).

Exclusive Breastfeeding is widely accepted by the World Health Organization (WHO), Health Canada, and the Canadian Institute of Child Health as the optimal method for infant feeding because it provides the foundation for a healthy life. Breastfeeding reduces the risk of disease, enhances social and emotional development, and has economic benefits for mothers, families and the health care system. The WHO's Global Strategy on Infant and Young Child Feeding (2003) advocates that all health services protect, promote and support exclusive breastfeeding and timely and adequate complementary feeding with continued breastfeeding for up to two years and beyond.

According to UNICEF's five years (2003–2008) regional statistics on the percentage of children who are exclusively breastfed, South Asia is found to be the highest (45%) followed by Eastern and Southern Africa (42%).

REGIONAL SUMMARY	RATE OF EXCLUSIVE BREASTFEEDING *
Africa	32
Sub-Saharan Africa	31
Eastern and Southern Africa	42
West and Central Africa	22
Middle East and North Africa	30
Asia	41
South Asia	45
East Asia and Pacific	–
Latin America and Caribbean	41
CEE/CIS	27
Developing countries	37
Least developed countries	39
World	37

* *Exclusive breastfeeding: Percentage of infants who are exclusively breastfed (the infant only receives breast milk without any additional food or drink, not even water for the first six months (age 0-5 months).*

Source: (<http://www.childinfo.org/>)

There are many factors associated with the decision to initiate and continue breastfeeding and many are linked to wider issues associated with health inequities. These factors are well known and include: socio-economic status; educational level; attitudes and beliefs toward breastfeeding; embarrassment and discomfort; the influence of family, friends, and health professionals; peer support; hospital practices; return to unsupportive work settings and inconvenience (Breastfeeding Committee for Canada, 2005; Matthews, *et al.*, 1994; Palda *et al.*, 2004). There is no doubt that educational, environmental and attitudinal changes are needed to protect and support successful breastfeeding.

Research offers compelling evidence that breastfeeding improves health outcomes across the lifespan; significantly reducing health care costs (Health Canada, 2004; Ontario Public Health Association, 2004). Breastfeeding provides optimal nutritional,

immunological and emotional nurturing for growth and development of infants and children. Breast milk promotes sensory and cognitive development and protects infants against infectious diseases such as bacterial meningitis, respiratory tract infection, necrotizing enterocolitis, otitis media and urinary tract infection. (AAP, 2005). Exclusive breastfeeding reduces infant mortality due to common childhood illnesses such as diarrhea or pneumonia and helps for a quicker recovery during illness. These effects can be measured in resource-poor and affluent societies (WHO, 2003).

Some studies suggest that breastfeeding also helps protect against Sudden Infant Death Syndrome, type 1 and type 2 diabetes, lymphoma, leukemia, and Hodgkin disease, overweight and obesity, hypercholesterolemia, allergies, and asthma. (AAP, 2005; Canadian Institute for Health Information, 2004; Chen and Rogan, 2004; Dell and To, 2001). Breastfeeding has been associated with slightly enhanced performance on tests of cognitive development (AAP, 2005). Dentists note that breastfeeding is important for the proper development of the mouth and jaw (Palmer, 1998). In addition, the experience of breastfeeding has been found to strengthen attachment (McCain and Mustard, 1999). Breastfeeding also contributes to the mother's health by offering protection for some women against breast and ovarian cancers and osteoporosis (Collaborative Group on Hormonal Factors in Breast Cancer, 2002; Zheng *et al.*, 2001).

Lack of breastfeeding, *especially the lack of exclusive breastfeeding in the first six months of life*, is an important risk factor for infant and child morbidity and mortality that are only compounded by inappropriate complementary feeding (Feldman and Frati, 2005; WHO, 2003). When mothers do not breastfeed they generally use a breast milk substitute (eg., a commercial infant formula or an evaporated milk formula). The WHO's *International Code of Marketing of Breast milk Substitutes* (1981) was developed "to contribute to the provision of safe and adequate nutrition for infants, by the protection and promotion of breastfeeding, and by ensuring the proper use of breast milk substitutes, when these are necessary, on the basis of adequate information and through appropriate marketing and distribution" (WHO 1981). Among other things, the Code

requires that parents be informed about the 'health hazards' of unnecessary or improper use of infant formula and other breast milk substitutes.

While the health and nutritional benefits of breastfeeding are well documented, there is increasing evidence of cost savings to families, communities and the health system when infants are breastfed. Families save by not having to maintain the high cost of infant formula and complementary foods. The health care system saves with a reduction in expenditures as a result of fewer hospital admissions, physician visits and prescriptions for medications for childhood illnesses, such as, otitis media and gastroenteritis. Evidence also demonstrates that lack of breastfeeding is associated with poor school performance, reduced productivity, and impaired intellectual and social development (WHO, 2003). To put these findings in perspective, in 2001 it was estimated that a minimum of \$3.6 billion US could be saved if the national prevalence of exclusive breastfeeding increased to Health Canada's current recommendations (Breastfeeding Committee for Canada, 2005).

2.1 Determinants of Exclusive Breastfeeding Practice

2.1.1 Socio-demographic factors

The major socio-demographic factors that affect prolonged breastfeeding behaviors are: age, marital status, education and income level. Similarly, there are literatures which shows strong evidence that older age, being married, being well educated and a higher income are each associated with longer breastfeeding duration. These factors are not amendable to change by midwives once the woman is pregnant. Knowing that successful long term breastfeeding is less likely to be achievable for young, poorly educated, unmarried and lower income mothers helps midwives to focus their education and support for these groups of women (Shahla, 2010).

Research studies addressing the influence of maternal age on breastfeeding initiation and duration have varying results (Ford and Labbok, 1990). Investigators have found a strong, positive correlation between maternal age and education level and breastfeeding initiation and duration. Specifically, older, and more educated women are the subgroup most likely to choose breastfeeding as their preferred infant feeding method, and generally they breastfeed their children longer than other groups (AAP, 1997; Scott and Binns, 1999). Older women are more likely to breastfeed exclusively (Arora *et al.*, 2000). Multiple studies addressing the factors associated with the infant feeding practices have “identified adolescent mothers as one group that is unlikely to breastfeed” (Volpe and Bear, 2000).

The relationship between breastfeeding and pre-pregnancy employment, enrollment in school and intention to return to work are reported inconsistently in research findings (Littman *et al.*, 1994). However, most investigators agree that full-time employment and school enrollment are associated with decreased breastfeeding duration as the result of environmental barriers at both work and school (Spisak and Gross, 1991). Married women breastfeed their infants exclusively more often than single women (Arora *et al.*,

2000). In a study by De La Mora et al. (1999), the attitudes of married women concerning breastfeeding were more positive than were the attitudes of single mothers.

Notwithstanding home and support networks, nursing mothers struggle with the difficulty of combining infant feeding with employment or work. Infant feeding is a time-consuming behavior characteristic of the domestic arena. The primary empirical finding concerning working mothers and infant feeding is that the intention to return to a job does not hinder initiation of breastfeeding but does hinder duration of breastfeeding (Auerbach and Guss, 1984). A secondary finding is that the sooner a mother returns to work the less likely she is to maintain breastfeeding (Bick, *et al.*, 1998; Lindberg, 1996).

Familial factors have a profound impact on infant feeding practices (Arora et al., 2000). Having been breastfed as an infant or having a sibling who was breastfed establishes breastfeeding as a norm for an individual and her household (Meyerink and Marquis, 2002). Mothers are more likely to feed their infants in the same manner in which they themselves were fed (Hawthorne, 1994; Meyerink and Marquis, 2002).

Hospital practices may also affect infant feeding practices, with regards to the initiation and duration of breastfeeding, and the introduction of infant formulas (Ford and Labbok, 1990). The role of the healthcare professional can be very critical in providing women with the information they need to make the decision on how to feed their babies. Negative attitudes and lack of knowledge on the part of healthcare providers can be barriers to successful infant feeding practices (Black *et al.*, 1990).

2.1.2. Psychosocial factors

Psychosocial factors that influence breastfeeding initiation and duration are often amendable to educational interventions by a midwife. For instance, the strength of the woman's intention to breastfeed, the level of her breastfeeding self-efficacy and the level of support from partner and family are all amendable to being strengthened by interventions (Blyth, *et al.*, 2002).

2.1.3. Breastfeeding intention

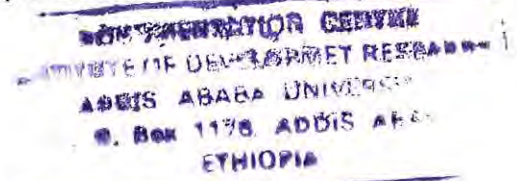
A woman's stated intention to breastfeed is one of the strongest predictors of breastfeeding initiation and duration. Breastfeeding intention is affected by both a woman's own breastfeeding attitude and by the influence of people in her social network (Shahla, 2010).

2.1.4. Woman's sense of breastfeeding self-efficacy

High maternal breastfeeding self-efficacy has been reported to be associated with prolonged breastfeeding. Women's breastfeeding self-efficacy is influenced by exposure to breastfeeding, her perception of being supported, her own breastfeeding experiences and physical/mental status. In a qualitative study among low-income mothers lack of exposure to breastfeeding was reported as a failure factor to enhance self-efficacy and commitment to successful breastfeeding. The positive influence of support on breastfeeding self-efficacy has been also reported in many studies (Shahla, 2010).

2.1.5. Social support

The positive influence of social support for breastfeeding initiation and duration has been well established (Shahla, 2010). In a Cochrane meta-analysis, Britton et al. systematically reviewed 34 randomised or quasi-randomised controlled trials (29,385 other—infant pairs) from 14 countries. They found that all forms of lay and professional support increased the duration of breastfeeding up to the first 6 months postpartum (0.91, 95% CI 0.86—0.96). A combination of lay and professional support extends the duration of any breastfeeding significantly. Social pressure to breastfeed seems to be effective. For example, Swanson and Power reported that women who choose to breastfeed their infant feel more social pressure to breastfeed than women who choose to bottle feed. Women's feeding attitudes and practices are unquestionably influenced by specific people in their social networks, including the baby's father, the maternal grandmother, close friends, and health care professionals (Shahla, 2010).

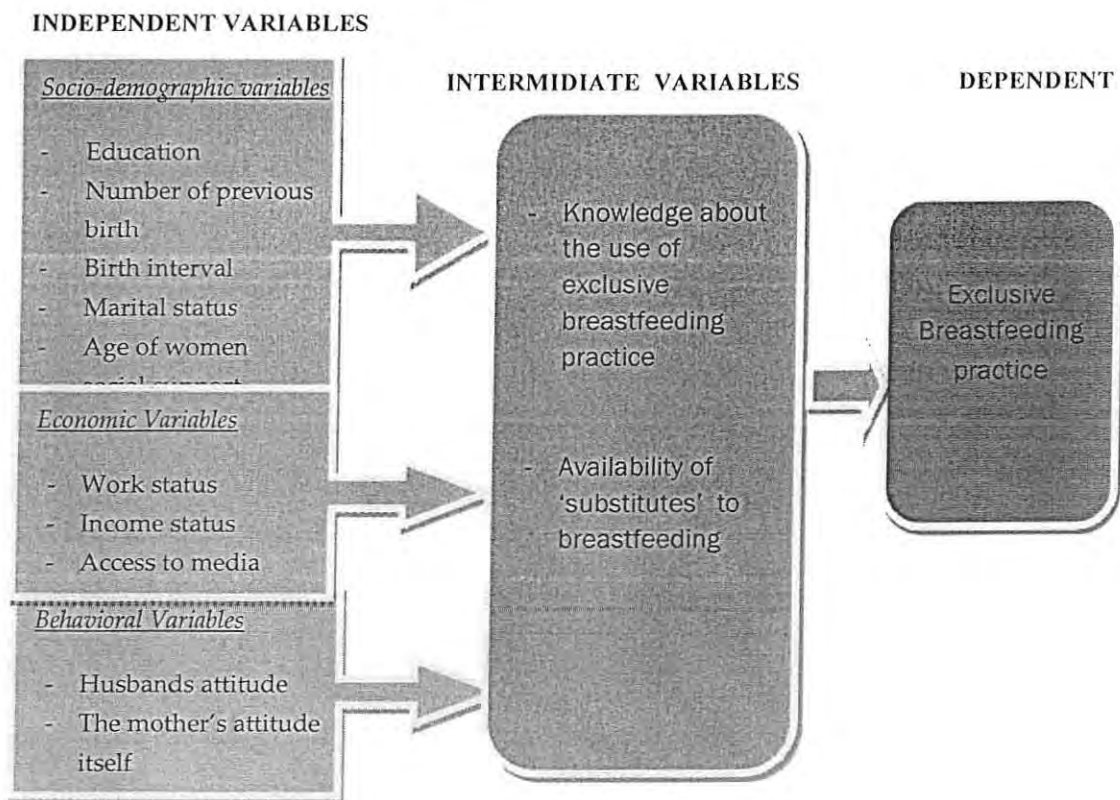


Infant feeding can be a difficult behavior to practice and, as such, is best practiced just as any other social behavior, in a supportive environment. Lack of social support, therefore, has emerged as a key constraining factor on infant choices. A link between social support and breastfeeding initiation and duration has been supported in multiple studies. Having friends who successfully breastfeed and seeing family and friends breastfeed increases the likelihood of a mother breastfeeding (Meyerink and Marquis, 2002).

2.2 Conceptual Framework

According to literatures in the area of breastfeeding the following conceptual framework is developed for the study. Looking at the conceptual framework, lots of studies evidenced that some variables do influence mothers to practice exclusive breastfeeding during rearing of their children these variables are called independent variables. In this case these variables generally are categorized into three groups; socio-demographic, economic and behavioral factors. Firm believe in the benefits of EBF and potential availability of 'substitutes' to breast milk are considered to be intermediate variables that can be influenced by the independent variables, which finally be responsible to influence dependent variable, EBF. This simplistic link can be seen from the framework below.

Figure 2.1: Conceptual Framework



Source: Developed by the author from different literatures, 2011.

CHAPTER THREE

METHODOLOGY OF THE STUDY

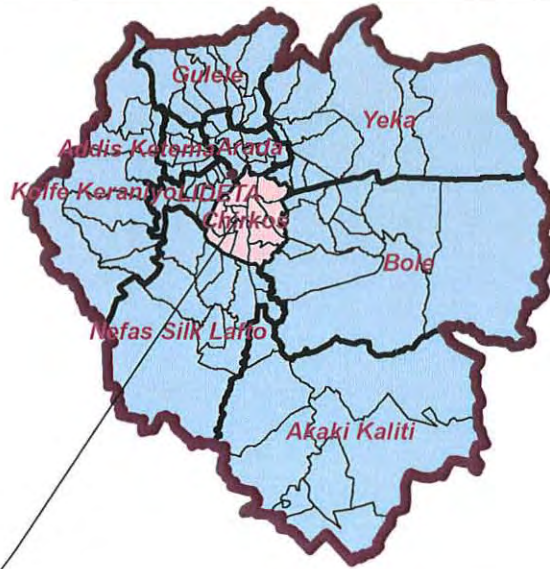
3.1. Description of the Study Area

Addis Ababa is selected as the study area mainly due to the fact that a wide variety of breast-milk substitutes are marketed in pharmacies, food stores, kiosks, super markets and are likely to have influence on the duration of breastfeeding. It is therefore, desirable to examine their effect on the duration of breastfeeding. Moreover, the female population of Addis Ababa is heterogeneous both in terms of Socio-economic and demographic characteristics which may also affect the duration of exclusive breastfeeding practice.

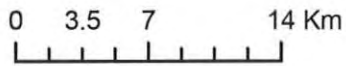
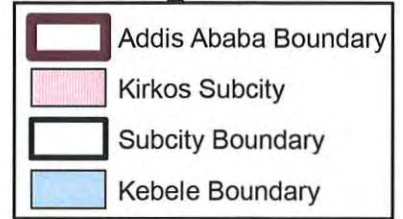
The specific sub city selected for this study is Kirkos Sub-City. According to the 2007 Housing and population Census report, the population size of the sub city is 220, 991 and it also consists of 11 Woredas (CSA, 2010). Based on the quarterly publication of the sub-city upto the year 2008, the health coverage of the area has reached 34%, through the provision of the service in three government health stations. There are also about 96 private health institutions.

(See the map of Kirkos Sub City in the following page).

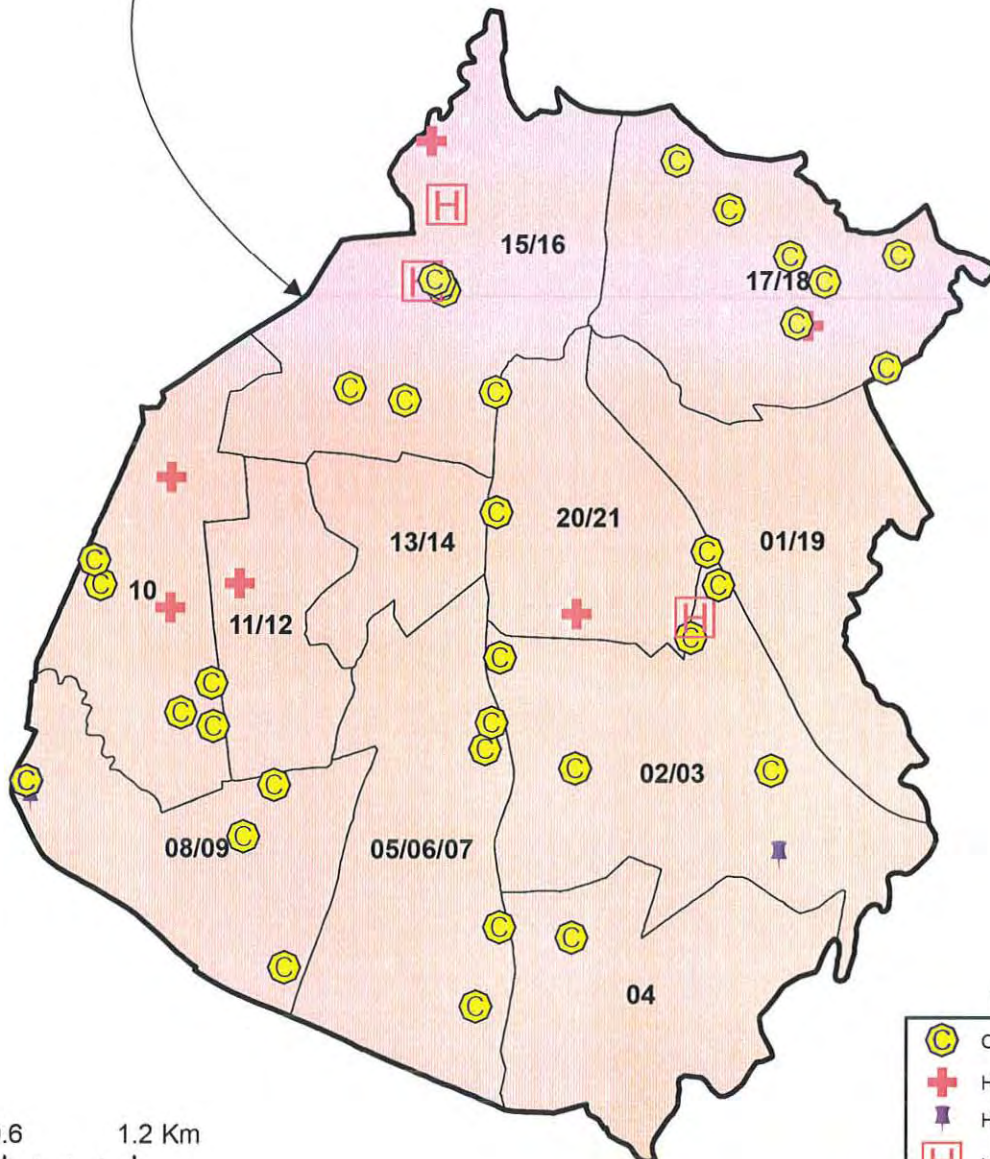
ADDIS ABABA CITY MAP



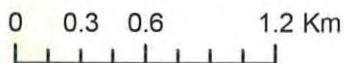
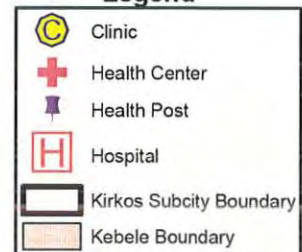
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KIRKOS SUB CITY MAP



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Prepared by: CSA, Cartography & GIS Directorate
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 May, 2011

3.2 Study Design, Sample Size and Sampling Procedure

A cross sectional study was conducted among pregnant women who have had at least a child before the current pregnancy , and attending the antenatal care in hospitals and maternity centers to assess the factors that influence practicing or not practicing exclusive breastfeeding. In order to get the desired result from the study, eligibility filtering criterion was forwarded to beneficiaries of the ANC service. These include whether the mother resides in Addis Ababa for at least six months or more, has at least one child previously and the mother didn't give birth of twins during the last pregnancy. Upon fulfillment of these filtering questions, data collectors interviewed mothers.

Sample Determination and Selection of Individual Units

In order to determine the sample size to be considered in this study, the proportion of women who attend Antenatal Care service in selected maternal health centers was considered for computing the sample size. The Ethiopian Demographic and Health Survey estimated the proportion of women who exclusively breastfed (4-6 months) are one in three child which is approximately 31.6 percent in Ethiopia.

And the error to be tolerated in this study is taken to be 0.05, fixing the level of confidence interval at 95%; the sample size (n) is determined by the following formula

$$n = pq \left(\frac{z_{\alpha/2}}{e} \right)^2$$

Where, $E=0.05$, $\alpha=0.05$ and $Z_{\alpha/2}= 1.96$

$P= 0.32$ and we can compute q as $q = (1-p)$

Therefore $q= 0.68$

$$n = pq \left(\frac{z_{\alpha/2}}{e} \right)^2$$

$$n = (0.32)(0.68) \left(\frac{1.96}{0.05} \right)^2$$

$$n = 334.37 \cong 334$$

The method for allocation of sample size in each stratum is proportional allocation. The allocation is calculated on the basis of the monthly average of ANC attendants in each stratum. Sample size for each stratum in proportional allocation was calculated by:

$$n_h = N_h \frac{n}{N}$$

Where n_h is sample size for stratum h ,

N_h is population in stratum h ,

n is total sample size,

N is total population in all strata:



Therefore for $h = 1, 2, 3$ $n_1 = 109$, $n_2 = 47$, $n_3 = 50$ for government and

$h = 1, 2$ $n_1 = 80$, $n_2 = 48$ for private.

The following sample design is employed so as to arrive at the eligible respondents/smallest sampling unit (mothers) from health facilities where many people are expected to attend their ANC service. The detail description of each stage is presented below:-

After determining the total individual units of samples for the study, the number of the samples was distributed across the randomly selected health facilities in government, and private institutions. Then, the Identification of Health facilities providing ANC service in Addis Ababa and selection of sub city using a criterion of the presence of government and private hospitals and health centers is done. At this stage the distribution of health

facilities in each sub city of Addis Ababa has been identified from the Addis Ababa Health Bureau records. Based on the bureau's data, sub-cities host both government and private hospitals and health centers are visible. Hence, among the two sub-cities convenient for the study in terms of government and private health facilities presence (i.e, Arada and Kirkos sub-cities), Kirkos is selected for relatively its better distribution of those private and government health facilities, which potentially allows equal chance of being included in the sample from both stratum (government and private institutions).

Table.3.1: Distribution of Health Facilities which provide ANC service in the Respective sub city of Addis Ababa, 2010

Sub City	Government		Private	
	Hospital	Health Center	Hospital	Health Center
Arada	1	5	2	-
Addis Ketema	-	2	2	1
Lideta	-	1	3	1
Kirkos	2	3	3	-
Yeka	-	2	3	-
Bole	-	7	1	-
Akaki-kaliti	-	1	3	-
Lafto Nifas Silk	-	-	2	-
Kolfe-Keraniyo	-	2	3	-
Gulele	-	-	2	-

Source: Addis Ababa Health Bureau, 2010

Following the selection of health facilities, identification of sample health facilities for each identified categories of government and private ANC service is done. Once the sub-

city, Kirkos, is selected using the criterion of the presence of government and private ANC service facilities, and then simple random sampling technique is employed to select health facilities. Therefore, 3 hospitals - 1 from government and 2 from private (Ghandie Memorial, BGM and Bethezata Hospitals) and 2 government health centers (Kirkos and Kasanchis) were selected.

3.3 Data Collection Procedures and Instruments

The study relies on primary data that was collected through interview from the target group. The data was complemented by Focus Group Discussion (FGD), the researcher's own observation and secondary data sources for a desk analysis of data sets from other studies in the area. The study applied both quantitative and qualitative data collection methods to obtain the situation from different primary sources. Structured questionnaire was prepared and administered to mothers selected for the study. Similarly discussion guides were developed to use for Focus Group Discussions (FGDs).

Face to face interview using structured questionnaire was used by experienced female data collectors for the quantitative data collection. Four data collectors and one supervisor who were selected through their experiences were involved. Though this is the recruitment plan, there was a one day intensive training about the study and the contents of the questionnaire included.

The following inclusion criteria were defined for participation.

The respondent:-

- 1) Has to be pregnant and has to have at least a child*
- 2) Has to be a resident of Addis Ababa Metropolis*
- 3) Should not have twins (index child)*

3.4 Data Quality Control Procedures

The principal investigator and the study facilitator have taken the responsibility to pre-test the questionnaire, editing/coding and entry of the data to the computer. Computer

data cleaning was also taken place to check for the consistency of data and identify errors occurred during data collection or coding process. In the actual data collection process, the supervisor strictly ensured that the data collected fulfills the expected procedures and keep every question responded properly by the respondent, through spot checking. When data collectors face/encounter problem during interview, the principal investigator and supervisors were actively supporting them.

Initially the questionnaire was developed in English language for ease of understanding and then the questions were translated into Amharic to ensure consistency of understanding among data collectors and respondents.

3.5 Study Variables

Factors affecting exclusive breastfeeding among women are the central theme to be investigated in the study. Hence, the following study variables are included in the study:-

Dependent Variable

Exclusive breastfeeding Practice

Independent Variables

There are a number of factors that affect the practice of exclusive breastfeeding from the literature. Therefore, the following variables are labeled as independent variables that potentially influence exclusive breastfeeding:

1. Age of mothers
2. Attitude of mothers
3. Education of mother
4. Number of previous birth
5. Birth interval
6. Marital status
7. Work status
8. Income status
9. Social support
10. Access to media



3.6 Operational Definitions

Exclusive Breastfeeding practice in this study is defined as the practice of feeding a baby only breast milk up to age 6 months without introducing complementary foods. So as to verify the understanding of mothers on EBF, they were asked to respond for how many times a baby is breastfeed within 24 hours.

Definition of Concepts

- A. **BREASTFEEDING**:-Is the practice of feeding an infant, or sometimes a toddler or a young child, with milk produced from her mammary glands, usually directly from the nipples, one or more times per day.
- B. **EXCLUSIVE BREASTFEEDING**:-Is generally defined as feeding a baby with nothing but breast milk for at least 6 months.
- C. **LACTATION**:-Is the period during which a woman produces milk from the breasts to feed a baby.
- D. **MALNUTRITION**:-Is a poor condition of health caused by a lack of food or a lack of the tight type of food.
- E. **MAMMAL GLANDS**:- Are the parts of the breasts that produce milk
- F. **PREDOMINANT OR MIXED BREASTFEEDING**:-Is the practice of feeding breast milk along with some form of substitute.

3.7 Ethical Considerations

Prior to collection of the data, permission was requested and access granted from the administrators in each hospital and Health centre. During the interview, data collectors used to explain the objectives of the study to the respondents. They assured that any information concerning them will never be passed to other unauthorized person or institutes without their consent. On the structured questionnaire there was no part that will specify the name of the respondent. The selected respondents were then requested kindly for their consent to participate in the study or not.

3.8 Data Analysis

The study employed statistical software called Statistical Package for Social Sciences (SPSS 15) for data entry and data analysis. The quality of data was assessed prior to the analysis. Frequency for each variable was run to correct errors and check for quality, specifically quality of age data was tested.

3.8.1 Quality of the Age Data

In most developing countries population based census and survey are exposed to age misreporting. To detect it, demographers have developed different methods to assess the quality of age data. Among these methods, age heaping indices have been proposed to detect the degree of preference or avoidance for specific digits in age reporting.

In this study, data on the age of respondents were collected. Based on the collected information, the quality of the age data was tested using Whipple' Index method (in which the method is used to measure heaping on age ending with multiples of five). To compute the value of whipple's index the following formula was applied:-.

$$WI = (p_{20} + p_{25} + \dots + p_{45} + P_{50} / 1/5(P_{16} + P_{17} + \dots + P_{48} + P_{49} + P_{50})) * 100$$

$$WI = 123$$

The magnitude of the error in the single age data in view of the Wipple Index is that the data is approximately rough. That means the data is affected by age misreporting. So it is not recommended to use a single year age data for the analysis. To minimize the effect of the error it is preferable to combine the single year age into groups as this approach eliminates the irregularities within these groups.

In order to analyze study variables different types of statistical analysis techniques are utilized. Univariate, Bivariate and Multivariate data analysis was employed. Univariate analysis was used to describe the respondents' social, demographic, and economic characteristics in descriptive, tabular and graphic forms. In the Bivariate analysis, the

association of independent variables with the dependent variable (Exclusive breastfeeding practice) was assessed. And finally, since one of the objectives of the study is to identify the factors affecting Exclusive Breastfeeding (EBF) practice, Multivariate analysis was carried out. At the multivariate analysis level, since the dependent variables is dichotomous, binary logistic regression models were fitted for Exclusive Breastfeeding practice. Logistic regression was applied to examine the relationship between practice of Exclusive Breastfeeding and a set of predictor variables. The logistic regression model, the natural logarithm of odds ratio is expressed as a linear function of various independent variables.

$$\ln(p/1-p) = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_k x_{ki}$$

The corresponding multiplicative model for the odds is

$$(p/1-p) = \exp(\beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_k x_{ki})$$

β_i = regression coefficients (are partial coefficients, controlling for other variables in the model.)

x_i = set of independent variables.

p = probability of a woman practicing Exclusive Breastfeeding

$1-p$ = probability of a woman not practicing.

3.8.2 Focus Group Discussion (FGDs)

In order to complement individual responses, two focus groups (FGDs) both in government and private hospitals were organized. The participants were drawn from mothers who were attending their anti-natal care. Seven pregnant women in one of the government hospitals and six in the private formed the Focus Group Discussion (FGD). The groups consist of educated ones, elders, and young mothers.

During the analysis of the quantitative variables, summarized points from the FGD were utilized and sometimes direct quotation was used to backup the findings.

CHAPTER FOUR

FINDINGS OF THE STUDY

A total of 334 women who had at least one child were interviewed using structured questionnaire, with a response rate of 100%. In terms of response, all questionnaires have been filled out and hence, the findings reflect the response of these persons.

4.1 Characteristics of the Respondents

Three hundred thirty four mothers were included and all women were asked to report their age in completed years at the time of the study. The current age of respondents ranges from 21 to 47 years. Their mean age was 30 years. The majority of the respondents (48%) aged between 25 and 38 years. Similarly marital status was one of the main characteristics in the study and unsurprisingly ninety nine percent of the respondents were married and the rest were separated and widowed.

Respondent fertility experience is also detailed in table 4.1. The mean number of children ever born was 1.52 and most of the respondents had 1 child (62 percent), 35.6 percent 2 and 3 children, respondents having 4 and above children were 2.4 percent.

Table 4.1: Percentage Distribution of Respondents by selected Socio-Demographic characteristics, Kirkos Sub City Addis Ababa, April 2011

Variables	Number (N=334)	Percent
Age (in completed years)		
• ≤30	183	56.8
• > 30	139	43.2
Marital status		
• Married	329	98.5
• Other	5	1.5
Religion		
• Orthodox	251	75.1
• Muslim	62	18.6
• Protestant	19	5.7
• Other	2	0.6
Ethnicity		
• Oromo	52	15.6
• Amhara	156	46.7
• Tigre	34	10.2
• Gurage	67	20.1
• Other	25	7.5
Mother's Education		
• Illiterate	52	15.6
• Primary	64	19.2
• Secondary	149	44.6
• Diploma and above	69	20.7
Husband's Education		
• Illiterate	14	4.4
• Primary	42	13.2
• Secondary	216	67.7
• Diploma and above	47	17.7
Occupation		
• Unemployed	137	41
• Employed	197	49
Parity		
• 1	207	62
• 2and3	119	35.6
• 4and above	8	2.4
Route of delivery		
• Vaginal	245	73.4
• Caesarean section	89	26.6
Income Group		
• 100 - 650 birr	77	23.1
• 651 - 1100 birr	71	21.3
• 1101 - 2000 birr	74	22.2
• Above 2000 birr	112	33.5

As shown in the details of the respondents' characteristics in table 4.1, respondents were asked about their current employment status. Unemployed comprises 41 percent, Include Housewives and daily laborer and Employed 49 percent (include petty trader government and NGO employee). In terms of their educational status, most of them had attended secondary school education (44.6%), followed by diploma and above holders (20.7%). Regarding ethnicity, the majority of the respondents were Amhara (46.7%), followed by Gurage (20.1%), Oromo (15.6%), Tigre (10.2%), and others (7.5%). Religion wise, seventy-five percent of the respondents were Orthodox Christianity followers, 18.6 percent were Muslim and 5.7 percent were protestant. Looking at the experience of mothers with regards to the modes of delivery in their last previous births seventy-three percent had vaginal delivery while the rest underwent cesarean section.

Ever married women were asked to report on their husbands'/partners' literacy status and highest level of education attended. Overall, 67.7% women reported that their husband did attend secondary school education, 17.7% of respondents reported that their husband completed, diploma and above, 13.2% completed primary school and only 4.4% respondents' husbands had no education at all.

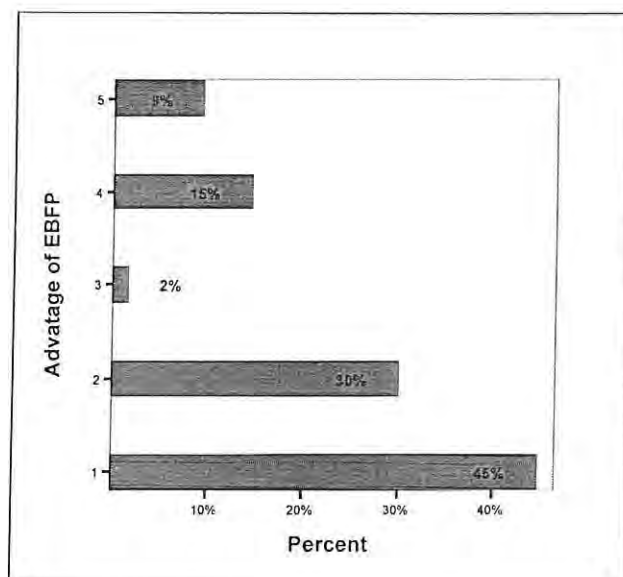
Most often collecting income data is difficult. In this study also the income question has been found to be less responded than other questions due to its sensitive nature. Hence, it needs caution to interpret the information. Based on the responses given, the highest percentage of the respondent fall under the category of persons earning more than 2000 Birrs for their expenses per month (33.5%), followed by a category of 100 – 650 birrs, which comprises nearly 23.1 percent of the respondents and about 43.5 percent fall between 651 – 2000 birr.

4.2. Knowledge, Attitude and Practice of Exclusive Breastfeeding practice

4.2.1 Mothers' Knowledge on the Advantages of Breastfeeding

Mothers were asked to mention the three most important advantages of breastfeeding practice in general. Following this question, the three most rated advantages are, it is vital for the child's optimal health care (44.7%), protects against infectious diseases (29.9%), and make them strong (14.5%). Though there are other benefits raised by mothers including the enhancement of attachment between mothers and children, the mentioned ones are found to be popular amongst them.

Figure 4.1: Advantages of Breastfeeding practice mentioned by respondents, kirkos Sub city, Addis Ababa, April 2011



Key

- 1- Provide optimal health care
- 2- Protects against infectious disease
- 3- Promote sensory and cognitive development
- 4- Make them strong
- 5- Strength the attachment between mother and infant

Source: survey data

4.2.2 Mothers' Attitude towards Exclusive Breastfeeding

When mothers were asked about their attitude towards exclusive breastfeeding practice for about six months, the majority (63.2%) suggested that children should have breastfeeding within the mentioned period. However, 36.8 percent felt that children need not be waited till their six months in order to introduce supplementary foods. Alternatively, about 46.8% of respondents felt that four months is enough as a threshold to period of exclusive breastfeeding practice followed by those suggesting two months (26.6%) and three months (16%) respectively.

Table 4.2: Percentage Distribution of Respondents By Attitude on the practice of Exclusive Breastfeeding , Kirkos sub city, Addis Ababa, April 2011

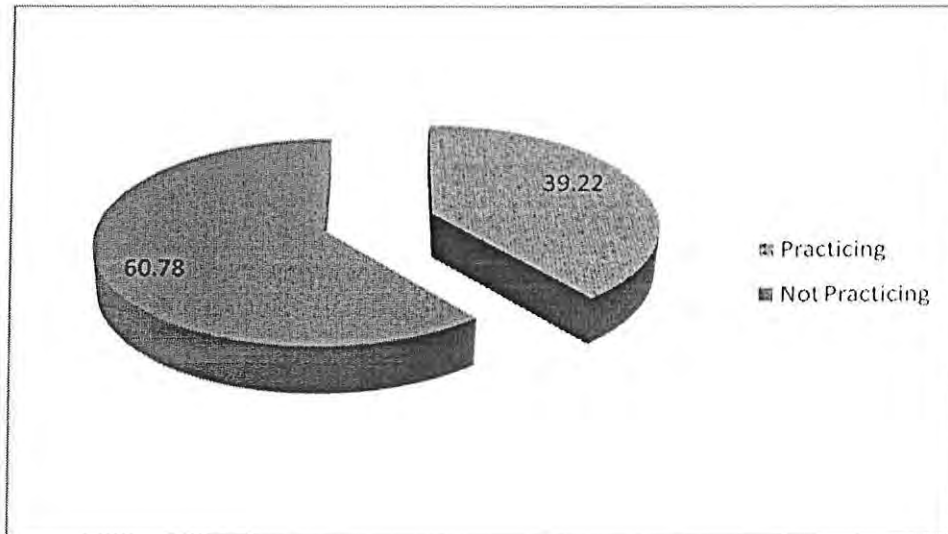
<i>Attitude on Exclusive breastfeeding</i>		
	Number	Percent
• Approves EBF	211	63.2
• Don't approve EBF	123	36.8
<i>Appropriate time to feed babies exclusively</i>		
• Two months	25	26.6
• Three months	15	16
• Four months	44	46.8
• Five months	7	7.4
• Other	3	3.2
Total	334	100

Source: survey data

4.2.3 Practice of Exclusive Breastfeeding

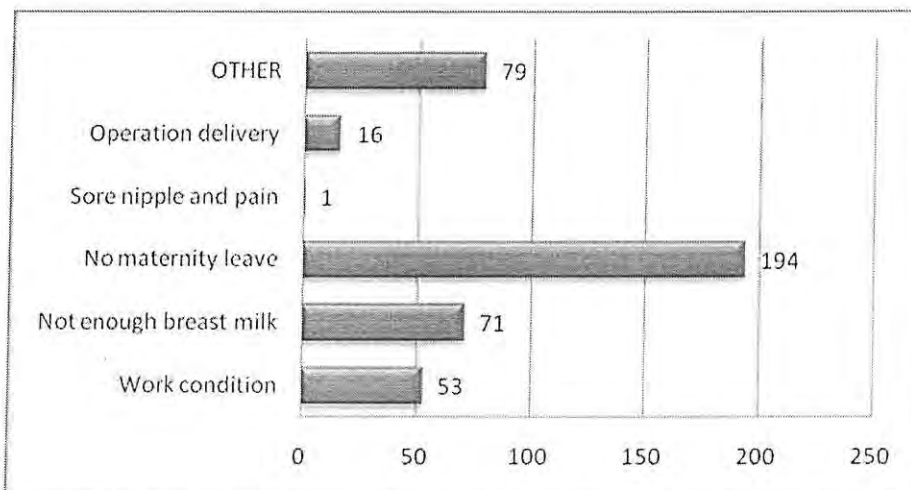
Of the total respondents of the study, only 39.2 percent do practice exclusive breastfeeding.

Figure 4.2 Percentage Distribution of Respondents by Practice of Exclusive Breastfeeding, Kirkos sub city, Addis Ababa, April.2011



Source: survey data

Figure 4.3: Reasons for not practicing Exclusive Breastfeeding by Mothers, Kirkos sub city, Addis Ababa, April.2011

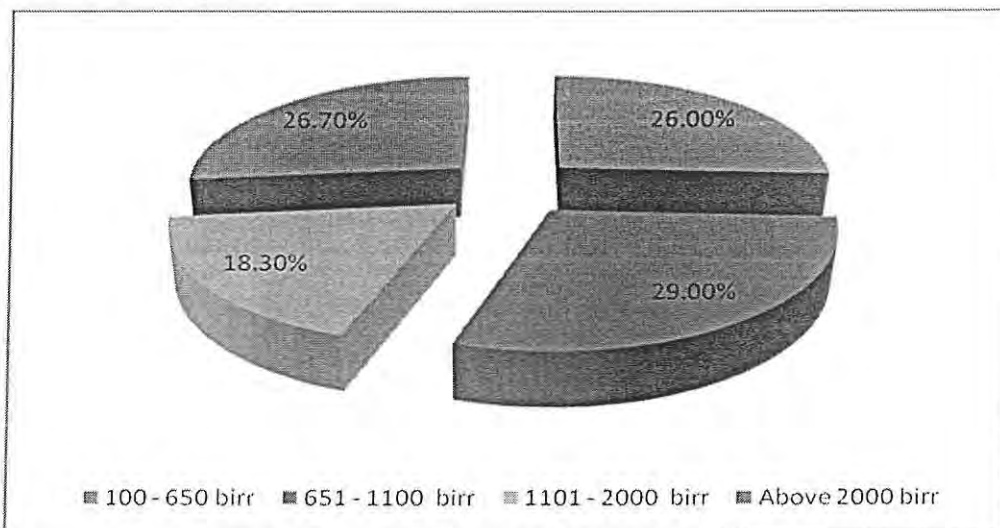


Source: survey data

Mothers have mentioned the reasons for not practicing exclusive breastfeeding practice. As can be seen from the figure above (fig. 4.3), the majority of the respondents don't practice EBF due to the absence of maternity leave. Other reasons such as inadequate amount of mothers breast milk and work condition were taken as challenges to the practice of exclusive breastfeeding.

A close look at the different income groups with their previous exclusive breastfeeding practice, there is no evidence as to how the practice pattern follows certain income level. For instance, this is evident from the above data that both income groups in the highest and lowest categories found to be almost similar percentage (about 26%) of mothers are exclusively breastfeed their babies.

Figure 4.4 Percentage Distribution of Respondents by monthly Income *Kirkos sub city, Addis Ababa, April.2011*

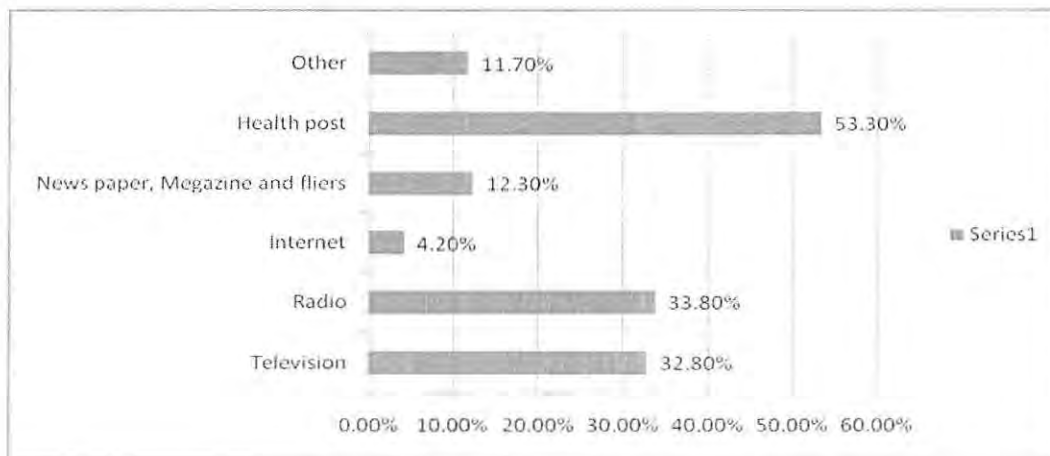


Source: survey data

4.3 Sources of Information on Exclusive Breastfeeding Practice

Often times, access to media or availability of information on health issue or other matters seem to contribute positively to nurture certain culture. According to the survey data on the sources of information about exclusive breastfeeding practice, the majority of mothers have heard of the idea and they heard of it in health institutions (53%), In addition, another significant number of mothers were also aware of exclusive breastfeeding from radio and television programs, 34% and 32%, respectively.

Figure 4.5: Percentage Distribution of Respondents by Source of Information on Exclusive breastfeeding Practice Kirkos sub city, Addis Ababa, April.2011



Source: survey data

However, a further probing to the practice of exclusive breastfeeding in some cases proved to have at least given their babies water. One mother described supportive argument by saying:

“...babies can't be grown without stomach-ache that only be relieved by taking the mixture of water and 'tena adam”

Hence, the idea of exclusive breastfeeding practice (EBFP) might not be fully understood as it stands. As it has been evidenced from the Focus Group Discussions (FGDs), EBFP

doesn't necessarily mean that they don't provide water or formula. One mother strongly expressed, which others are also support, saying that:-

"... a child will be hungry due to disproportional food demand against the mother's inadequate breast milk. It is also known that breastfeed children are extremely thirsty since breast milk has salty nature. Hence, in my case I couldn't wait my babies to get thirsty or hungry, as long as God has blessed us with natural water and food."

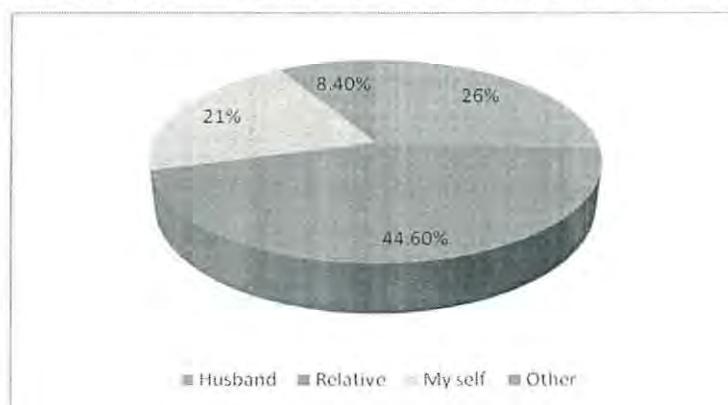
4.4 Social Support for Women to practice EBF

4.4.1. Assistant for caring a baby

Mothers who are backed and assisted by a close relative when caring their baby could potentially have impact on the exercise of exclusive breastfeeding. Following this presumption, data collected on the matter revealed that 26 percent were assisted by their husbands, 44.6 percent by close relatives or friends, and 8.4 percent by others such as maid/servants, baby sitters, etc.

As per the discussion made by focus group discussants one of the major determinants of EBF was mentioned to be social support/assistance given to breastfeeding mothers. Based on their argument, as long as close relatives and neighbors including different social groups are in favor of supporting the idea of EBF practice, it could be so much helpful to mothers to practice it.

Figure 4.6: Percentage Distribution of women by persons who Assist mothers in caring babies during the first six months, Kirkos sub city, Addis Ababa, April.2011

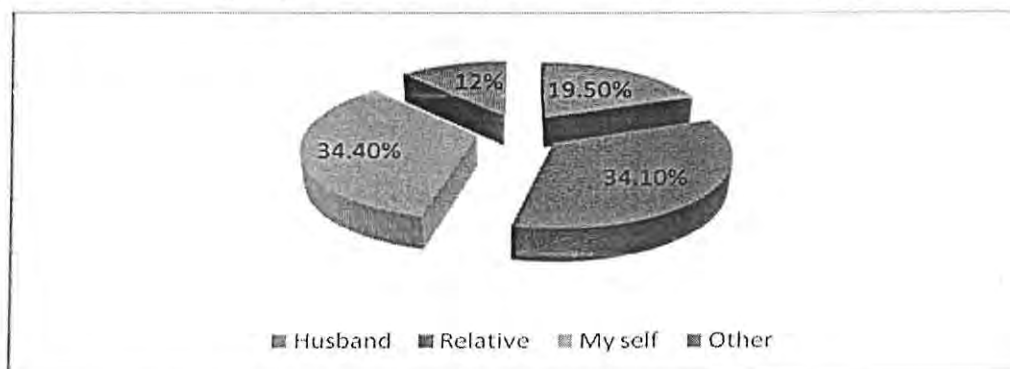


Source: survey data

4.4.2. Advice on what to Feed Babies

Similar to the mentioned justification, one who influences the practice of breastfeeding by giving advice to the mother is another potential contributor for the practice of EBF. Based on the data, however, the most influential to decide on what to feed babies is found to be mothers themselves (34.4%). Relatives including grandmothers of the child play important advising role in the feeding practice of most babies (34.1%). It may be premature conclusion to say that the social impact is limited in terms of closely influence on the feeding practice of a baby, however, it is more likely to mothers to follow their own style of nurturing the baby than others.

Figure 4.7: Distribution of Respondents by persons Who Assist mothers on how to feed babies during the first six months, Kirkos sub city, Addis Ababa, April.2011



Source: survey data

4.5. Factors associated with Exclusive Breastfeeding

4.5.1 Bivariate Analysis

At the bivariate level, we tested the factors associated with the practice of Exclusive breastfeeding using a chi-square test. Demographic and socio-economic characteristics of the respondents and also knowledge, attitude and social impact of Exclusive breastfeeding practice were included in the analysis.

The demographic characteristics of mothers such as age, marital status and parity, and the socio-economic characteristics including employment status, educational status of the

women and her husband, income, ethnicity, religion, type of delivery were included. Of these tested independent variables, Educational status of the women and her husband, employment status and Income had significant relationship with the dependent variable (Exclusive breastfeeding practice).

Educational status was the variable which has association with Exclusive breastfeeding practice. From those who were practicing EBF, higher proportion of women, 40.9% have completed secondary school ($\chi^2 = 25.493$, $p < 0.001$). With respect to respondent's Husband's education, the study reveals that there is a relationship between Husband's education and Women's Exclusive breastfeeding practice. So that within women practicing Exclusive breastfeeding 36.9% of women married to a husband who has completed secondary education, 54.8% were married to husband with primary education, 36.2% were married to husband with diploma and above education. ($\chi^2 = 7.173$, $p < 0.05$). The other variable which has strong relationship with the dependent variable is found to be employment status of the mother. About 34.5 percent of mothers who are practicing exclusive breastfeeding were employed and 46.0% were unemployed ($\chi^2 = 4.458$, $p < 0.05$). With regards to income, the higher percentage of respondents is found under income range between 650 – and 1100 birrs, followed by nearly 27 percent of respondents with income category of above 2000 birrs ($\chi^2 = 11.293$, $p < 0.05$).

Variables employed in the study to see any relationship with EBF practice include knowledge, attitude, social influence, information on EBF practice in ANC service, knowing the advantage of EBF, support on caring and feeding the baby. Among these variables, only Information on Exclusive breastfeeding practice in ANC service, knowledge on EBF and Attitude on EBF are found to significantly associate with the practice of exclusive breastfeeding.

Forty-Four percent of women, who had information on Exclusive breastfeeding during their ANC service practicing EBF and the rest 30.2% were practicing EBF without having information ($\chi^2 = 6.971$, $p < 0.01$). Attitude of women towards exclusive breastfeeding has significant association, 51.7% of women believed that the babies should have been exclusively breastfed and 17.9% of them has believe it is not enough

being feed only breast milk till six month. With regard to the knowledge of Exclusive breastfeeding practice those who had knowledge and practicing found to be 42.1% and had no knowledge were 16.2%.

Table 4.3 Chi-square test result of Practicing Exclusive Breastfeeding and independent variable, Kirkos Sub city Addis Ababa, April 2011

Independent variable		Practicing Exclusive Breastfeeding		χ^2 - Value	p-value(sig 2-tailed)
		Yes	No		
Age (In completed year)	<ul style="list-style-type: none"> • <= 30 • > 30 	77(42.1%) 47(33.8%)	106(57.9%) 92(66.2%)	2.278	0.132
Education of women	<ul style="list-style-type: none"> • Illiterate • Primary • Secondary • Diploma and above 	27(51.9%) 33(51.6%) 61(40.9%) 10(14.5%)	25(48.1%) 31(48.4%) 88(58.1%) 59(85.5%)	25.493	0.000**
Marital status	<ul style="list-style-type: none"> • Married • Others 	131(39.8%) (0.0%)	198(60.2%) 5(100%)	3.276	0.071
Husband Education	<ul style="list-style-type: none"> • Illiterate • Primary • Secondary • Diploma and above 	8(57.1%) 23(54.8%) 78(36.1%) 17(36.2%)	6(42.9%) 19(45.2%) 138(63.9%) 30(63.8%)	7.173	0.027*
Employment status	<ul style="list-style-type: none"> • Employed • Unemployed 	68(34.5%) 63(46.0%)	129(65.5%) 74(54.0%)	4.458	0.035*
Income range	<ul style="list-style-type: none"> • 100-650 • 651-1100 • 1101-2000 • Above 2000 	34(44.2%) 38(53.5%) 24(32.4%) 35(31.3%)	43(55.8%) 33(46.5%) 50(67.6%) 77(68.8%)	11.293	0.010*
Attitude on EBF	<ul style="list-style-type: none"> • Approves EBF • Don't approves EBF 	109(51.7%) 21(17.9%)	102(48.3%) 101(82.1%)	37.189	0.000**
Ethnicity	<ul style="list-style-type: none"> • Oromo • Amhara • Tigre • Gurage • Other 	27(51.9%) 47(30.1%) 16(47.1%) 29(43.3%) 10(47.6%)	25(48.1%) 109(69.9%) 18(52.9%) 38(56.7%) 11(52.4%)	11.086	0.653

	<ul style="list-style-type: none"> • Tigre • Gurage • Other 	16(47.1%) 29(43.3%) 10(47.6%)	18(52.9%) 38(56.7%) 11(52.4%)		
Religion	<ul style="list-style-type: none"> • Orthodox • Muslim • Protestant • Other 	92(36.7%) 29(46.8%) 10(52.6%) 0(0.0%)	159(63.3%) 33(53.2%) 9(47.4%) 2(100%)	4.902	0.202
Type of delivery	<ul style="list-style-type: none"> • Vaginal • Cesarean section 	99(40.4%) 32(36.0%)	146(59.6%) 57(64.0%)	0.543	0.463
Parity	<ul style="list-style-type: none"> • 1 • 2&3 • 4& above 	78(37.3%) 51(43.2%) 2(28.6%)	131(62.7%) 67(56.8) 5(71.4%)	1.441	0.496
Advantage of EBF	<ul style="list-style-type: none"> • Provide optimal health care • protects against infectious disease • Strength the attachment between mother and infant • Make them strong 	53(35.8%) 39(39.4%) 4(80.0%) 24(50.0%) 11(35.5%)	95(64.2%) 60(60.6%) 1(20.0%) 24(50.0%) 20(64.5%)	6.694	0.258
Knowledge on EBF	<ul style="list-style-type: none"> • No • Yes 	6(16.2%) 125(42.1%)	31(83.8%) 172(57.9%)	9.238	0.002**
Information on EBF in ANC service facility	<ul style="list-style-type: none"> • Have Information • Do not have information 	93(44.7%) 38(30.2%)	115(55.3) 88(69.8%)	6.971	0.008**
Care and support	<ul style="list-style-type: none"> • No Support • Supported by someone 	29(41.4%) 102(38.6%)	41(58.6%) 162(61.4%)	0.181	0.672

*. Significant at the 0.05 level (2-tailed)

** . Significant at the 0.01 level (2-tailed)

Source: survey data

4.6 Determinant Factors of Exclusive Breastfeeding Practice:

4.6.1 Multivariate Analysis

When there are a number of explanatory variables of possible relevance, the effect of each term cannot be studied independently of the other in the bivariate analysis. In the presence of inter correlated variables; no full proof method exists to obtain the contribution of a particular variable. The effect of any given variable therefore depends on the other variables included in the analysis. So that, in order to assess the relative importance of the selected predictors, multiple logistic regression is used to analyze relationships between a dichotomous dependent variable and metric or dichotomous independent variables.

Multicollinearity Effect:

The most crucial assumption in the logistic regression analysis which is more often violated is that the independent variables should be uncorrelated or at least weakly correlated among themselves. To assess multicollinearity effect in multiple linear regression analysis Variance Inflation Factor (VIF) and Tolerance are two measures that can guide a researcher in identifying Multicollinearity.

In the multiple linear regression analysis, for all variables the value of Variance-Inflation Factor (VIF) were found to be less than 2.5 and the tolerance was more than 0.4; meaning that there is no multicollinearity effect.

Goodness of Fit Test

The goodness of fit of a model measures how well the model describes the response variable. The Hosmer and Lemeshow test table shows that the significance is 0.223 which is greater than 0.05. This implies that we failed to reject the null hypothesis that there is no difference between observed and predicted model value, implying that the model well fitted the data.

Test of Significance

The Wald test is a way of testing the significance of particular explanatory variables in a statistical model. For a particular explanatory variable, or group of explanatory variables, the Wald test is significant, then we would conclude that the parameters associated with these variables are not zero, so that the variables should be included in the model. If the Wald test is not significant then these explanatory variables can be omitted from the model. Then the next table is used to filter out the variables which have significant influence on the dependent variable.

Table 4.5: Result of Logistic Regression on Practicing Exclusive Breastfeeding and Independent variables, Kirkos Sub city Addis Ababa, April 2011

Variables	Category	B	S.E	Wald	Sig.	Exp(B)
Women Education	Illiterate (RC)					
	Primary	1.956	.574	11.600	.001*	7.068
	Secondary	1.827	.550	11.024	.001*	6.212
	Diploma and above	1.164	.422	7.622	.006*	3.204
Husband Education	Illiterate(RC)					
	Primary	.334	.800	.174	.676	1.396
	Secondary	.170	.519	.107	.744	1.185
	Diploma and above	-.339	.409	.689	.406	.712
Employment status	Unemployed (RC)					
	Employed	-.081	.297	.075	.784	.922
Income	100-650 (RC)					
	651-1100	-.149	.402	.138	.710	.861
	1101-2000	.633	.365	3.017	.082***	1.884
	Above 2000	-.159	.397	.161	.688	.853
Attitude on practicing EBF	Negative attitude(RC)					
	positive attitude	1.604	.315	25.857	.000**	4.974
Information on EBF in ANC service facility	Have Information(RC)					
	Do not have information	-.081	.297	.075	.784	.922
Knowledge on practicing EBF	No(RC)					
	Yes	-.989	.555	3.178	.075	.372
	Constant	-3.779	.806	21.956	.000	.023

- RC= reference category ; * significant at 0.05; ** significant at 0.001;

- *** significant at 0.1

Source: Survey data

Many factors has been mentioned as a determinant in influencing EBFP, in this study, only Mothers attitude on EBF, Income and mothers' education are found to be significantly affects the practice of Exclusive Breastfeeding.

Attitude of EBFP: The practice of Exclusive breastfeeding those who had positive attitude towards EBF are 4.97 times more likely than those of who had negative attitude in practicing Exclusive breastfeeding to practice exclusive Breastfeeding.

Income: Testing the significance of the relationship between income and EBF practice, among the four categories of income groups, only one group of the data range (1100 – 2000 birrs) is found significant. No significant difference is observed between the other categories and the reference category.

Education of Women: The likelihood of practicing EBF of those who have, primary education, secondary education and diploma is higher than those who have no education by 7.07, 6.21 and 3.20 times respectively and the difference is statistically significant. Unlike to the mothers' education, educational qualification of a husband thought to be determinant to women's EBFP. However, the wald test of significance showed that there is no statistically appreciable significance between the two variables.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Discussions

The study has come up with somewhat similar results to previously conducted studies and brought some outputs that could help to better understand the underlying reasons and motivations for women to practice exclusive breastfeeding practice in general and in Kirkos sub-city, specifically.

Exclusive breastfeeding which is probably the most recommended infant feeding method during the first six month has a protective effect against mortality and morbidity. Neverseless, it has not been yet universally accepted and practiced and reduction in breastfeeding rate is now considered as a serious problem, especially in developing countries.

Duration of breast feeding practices and exclusive breast feeding practices are declining and various factors have been associated world-wide which includes social factors, practice in health care facilities, advertising and promotion of infant feeding products. Breast feeding duration in developing countries is high but exclusive breast feeding practice remained low.

In this study, as expected almost all pregnant respondents are currently in marital union and nearly 40% practice exclusive breastfeeding. On the other hand, those who are separated and widowed are not practicing at all. This might indicate that these mothers are breadwinners of their home and they may not be able to exclusively breastfeed their children at least for the reason that they engage in some sort of income generating activities.

There is an apparent contradiction with the result of the FGD with regards to mothers' educational qualification and EBFP. Mothers who participated in the FGD felt that those mothers with good educational achievement tend to exclusively breastfeed their babies due to their knowledge on the issue. However, a close investigation could suggest that

due to mothers' greater employability as their level of education increases, it in turn keep them away from home and let them not practice exclusive breastfeeding.

As other study evidenced that “ ... higher maternal education level was found to be associated with lower rate of EBF in Ethiopia – this might be explained by the fact that when women are better educated, the opportunity for employment is eminent and thus the opportunity to stay at home and practice EBF is compromised.” (Tewodros et al, 2009).

This study showed no association between Husband education, and mother's employment with exclusive breastfeeding practice. It differs with Agampodi SB et al. study which associates influence of parental education and women's employment on breastfeeding practices.

Although peer support is one type of social support that is important for breastfeeding success, the overall social support from which a woman may draw has a critical impact on the decision to breastfeed as shown in previous literatures (Buckner and Matsubara, 1993; Locklin and Naber, 1993; McNatt and Freston, 1992). And many mothers who are backed and assisted by a close relationship when caring their baby could potentially have impact on the exercise of exclusive breastfeeding. But this survey showed that there is no significant difference between the two variables.

It is clear from the 2005 Ethiopian DHS that, the prevalence rate of exclusive breastfeeding is one-in three (or nearly 31 percent). In this research, most mothers hardly understand what exactly exclusive breastfeeding mean. Similarly different studies indicate that in most countries exclusive breastfeeding during the first 6 months is rare and early supplementation with water, or other fluids, is the norm.

5.2. Conclusions

Lots of factors are seemingly determinants to the practice of exclusive breastfeeding. Among repeatedly studied factors, educational level; attitudes and beliefs toward breastfeeding; embarrassment and discomfort; the influence of family, friends, and health professionals; peer support; hospital practices; return to unsupportive work settings and inconvenience (Breastfeeding Committee for Canada, 2005; Matthews *et al.*, 1994; Palda *et al.*, 2004). In this study, however, attitude and mother's education are found to be determinants of exclusive breastfeeding practice.

As the study indicated both from the quantitative analysis and the FGD, it can be inferred that there is a conceptual problem in understanding EBFP. Even those who are educated in the university do mix up the traditional giving of water and 'tena adam' to babies while practicing exclusive breastfeeding. Similarly, all mothers do understand the advantages of breastfeeding but not deeply on the exclusive breastfeeding. Hence, these points have clearly showed the knowledge gap on the way exclusive breastfeeding is understood.

5.3 Recommendations

As the study reveals, the majority of mothers had the experience in getting advise from health institutions during their attendance in the Anti-natal Care (ANC) service about the practice of exclusive breastfeeding; hence, it is strongly recommended that health institutions could bring the desirable change in terms of exclusive breastfeeding practice,. This has been demonstrated in many studies is that, the evidence of effectiveness of the interventions that increase duration of breastfeeding based on women's breastfeeding intention, self-efficacy and support.

In the early postpartum period if ANC service provider professionals (such as midwives, gynecologists, etc) can reassure their new mothers that they most likely have enough milk for their babies and can show them ways to increase their milk supply so that

supplementation with formula is not necessary. The concept of supply and demand, in that the more the baby breastfeeds the more milk will be produced, is an important one for nurses to share with their clients. The conceptual problem in understanding exclusive breastfeeding practice need to be communicated well to mothers to practice. Government, private and non-government organizations that provide the service need to pay attention to educate and inform mothers on the issue.

Favorable working condition for maternity leave with full pay or a shorter working day after the return from post natal leave will help mothers to practice EBF, even though, they are working in a skilled occupation. By the same token ministry of labour and social affairs in consultation with ministry of health could facilitate to give breastfeeding mothers a reasonable payment without work or reduction of working hours during the first six months of the babies age.

As many hospitals should be made baby-friendly hospital which is thought to be the best way in achieving the goal to inform all pregnant women about the benefits and management of Exclusive breast feeding.

- Help mother initiate breast feeding within a half-hour of birth.
- Show mothers how to breast feed and how to maintain lactation even if they should be separated from their infants.
- Give new born infants no food or drink other than breast milk unless medically indicated.
- Generally, awareness creation is key to initiate mothers to practice EBF
Additional research could be commendable for comparative purpose and also to fully understand the issue.

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ANNEX - I
QUESTIONNAIRE
ADDIS ABABA UNIVERSITY
COLLEGE OF DEVELOPMENT STUDIES INSTITUTE OF
POPULATION STUDIES

My name is -----

I am working with a student in Addis Ababa University, who is completing her master's Degree in Reproductive Health, in the department of Population Studies. This study is, therefore, part of the requirements for the fulfillment of the MSc programme she is enrolled in.

The study focuses on the identification of the factors that are responsible for mothers to exercise Exclusive Breastfeeding practice while rearing their children. Mothers are selected from the hospitals and health centers, based on lottery method when they are found attending their ANC service. Hence, you are now part of the selected mothers for interview.

Hence, I hereby assure you that the responses secured from you will be kept strictly confidential for all matters and it will only be used for the purpose of the study mentioned above. The study may require ----- Minuit. So please give me only some minutes to complete my questions. And I thank you in advance for your cooperation to the study.

If you have any questions about the study, you may raise.

Note: - if the selected mother don't respond all the filtering question (as yes, yes and No, respectively), then stop the question and leave her by thanking for her time and search for another women.

Section 0. Filtering Question to be forwarded initially

<i>Did you live in Addis Ababa for at least 6 months?</i>	1. Yes 2. No (Not eligible woman for the study)
<i>Did you give birth before?</i>	1. Yes 2. No (Not eligible woman for the study)
<i>Did (name) gave birth of twins in the last pregnancy?</i>	1. Yes 2. No

Section I. Background information about the respondent

1.1. In what month and year you were born?	1. Month _____ 2. Don't know month 3. Year _____ 4. Donot know year
1.2. Place of birth	_____
1.3 Have you ever attended school?	1. Yes 2. No \Rightarrow go to Q.1.5
1.4 What is the highest class you completed?	Grade -----
1.5 Have your husband ever attended school?	1. Yes 2. No
1.4 What is the highest class your husband completed?	Grade -----
1.6 What is your religion?	1. Ortodox 2. Chatolic

	3.Muslim 4.Protestan 5. Other specify-----
1.7 Marital status	1. Married 2. Not married 3. Divorced 4. Separated 5. Widowed 6. Other specify-----
1.8 How old were you at your last birthday? <i>(Age in completed years)</i>	_____
1.9 What is your Ethnicity?	1.Oromo 2.Amhara 3.Tigre 4.Gurage 5.Others specify-----
Section II. Economic Indicators	
2.1 Employment status	1.Housewives 2.Petty trader 3.Permanent employee 4.Daily laborer 5.Student 6.No job 7.Commercial sex worker 4.Other (specify)_____
2.2. What is the amount of your monthly average income? <i>Birr (per month) Or in which range does it fall?</i>	_____

(if received in kind, please convert in cash)

Section III. Previous Births and experience in Breastfeeding

3.1 Number of pregnancies (Including the current one) 1,2,3,4+	_____
3.2 How many children's did you have?	1. Son----- 2. Daughters -----
3.3 How many of them are living with you?	1. Son----- 2. Daughters -----
3.4 How many of them are living away from you?	1. Son----- 2. Daughters -----
3.5 How many of them are not alive?	1. Son----- 2. Daughters -----
3.6. Is there similar birth interval between your children	1.Yes 2.No \implies Go to Q.3.8
3.7 What is the average year/month difference between your children?	_____
3.8 What will be the difference between your current pregnancy and the previous children?	_____
3.9 Age of the child before current pregnancy?	_____
3.10 What was the type of your delivery before now?	1.Vaginal delivery/Normal delivery 2.Caesarean section

3.11 Did you ever breastfed?	1.Yes \Rightarrow Go to Q.3.7 2.No
3.12 Why did not you breastfeed? (all go to Q.5.1)	1.Working condition 2.Fear of producing not enough milk 3. Due to maternity leave 4. Number of births 5. Birth interval 6. Sex of the child 7.Sore nipple and pain during breast feeding 8. Due to cesarean delivery 9. Other specify
3.13 For how many months did you breastfed?	_____
3.14 How long after birth did you first put (Name) to the breastfed? Name = It is better to ask about the baby before the current pregnancy	1.Immideatly } 2.Hours } (Go to Q. 4.1) 3.Days
3.15 In the first three days after delivery was (Name) given anything to drink other than breast milk? (Name = the baby before current pregnancy)	1.Yes 2.No \Rightarrow Go to Q. 4.1)
3.16 What was given to drink?	1.Milk (other than breast milk) 2.Plain water 3.Sugar or glucose water 4.Gripe water 5.Sugar-salt-water solution

	6.Fruit juice 7.Infant formula 8.Tea/infusions 9.Honey 10.Fresh butter 11.Fenugreek 12.Other specify-----
--	---

Section IV. Exclusive Breastfeeding

4.1 Did you practice Exclusive breastfeeding?	1.Yes (Skip to Q. N0. 4.3) 2.No
---	------------------------------------

4.2. What factors did affect you not to practice Exclusive breastfeed? <i>"More than one answer is possible"</i>	1.Working condition 2.Fear of producing not enough milk 3. Due to maternity leave 4. Number of births 5. Birth interval 6. Sex of the child 7.Sore nipple and pain during breast feeding 8. Due to cesarean delivery ----- 9. Other specify -----
---	---

4.3 How many times did you breastfed in 24 hours?	_____
---	-------

Section V. Knowledge, Attitude and Practice of Exclusive Breastfeeding

5.1 Is breastfeeding only be enough for a child of aged 0-6 months?	1.Yes 2.No
---	---------------

5.2 At what age do you think breast milk alone would no longer be enough to feed infant?	1. Two months 2. Three months 3. Four months 4. Five months 5. Six months 6. Other specify-----
5.3 Is Exclusive breastfeeding possible for at least six (6) months?	1. Yes 2. No 3. I don't know
5.4 As you have responded in the previous question, what is your attitude towards Exclusive breastfeeding for at least six months?	1. I want to practice 2. I don't want to practice 3. In different
5.5 During (any of) your antenatal care visit(s), were you told about Exclusive breastfeeding?	1. Yes 2. No
5.6 Which sources do you have access to hear/read about Exclusive Breastfeeding practice?	1. Not at all 2. News paper/Magazines/Fliers 3. Radio 4. TV 5. Internet 6. Other
Section VI. Social Factors Influencing EBF	
6.1 Who advised you on what to feed baby?	1. Nurse/Doctors/ 2. Family 3. Friends 4. Other specify-----

6.2 What do friends and relatives feed their babies?	1. Formula only 2. Breast milk only 3. Mixed feeding 4. Other specify-----
6.3 Who assist you most in caring for your baby?	1. Husband 2. Parents 3. Fiancée 4. No one(self) 5. Other specify-----
6.4 How many times in your pregnancy did you receive ANC service?	_____

THANK YOU FOR YOUR GENIUNE RESPONSE TO MY QUESTIONS!

ANNEX - II

QUESTIONS FOR FOCUS GROUP DISCUSSION (FGD)

A group of four to five pregnant women (from among the respondents) discussed in the following theme provided by the researcher:-

1 – What is exclusive breastfeeding for the team (group)? How is it practiced? The number of months to a mother to exclusively breastfeed her baby?

2- What are the most important advantages of exclusive breastfeeding practice and the most known challenges/causes for not practicing exclusive breastfeeding while believing in the advantages?

3 – What factors do you think are potentials to support the idea and practice of exclusive breastfeeding such as family, community, work associates, ethnicity, religion, employment status, income, age, number of children, education, marital status, ...)

4 – Anything the group could say about exclusive breastfeeding practice

ANNEX- III

Mode 1		Collinearity Statistics	
		Toleran ce	VIF
1	(Constant)		
	INCOMECAT	.847	1.180
	Husband Education	.839	1.192
	Women Education level	.679	1.473
	Employment status	.884	1.131
	Attitudes on EBF	.914	1.094
	Information	.895	1.118

Declaration

The thesis is my original work, has not been presented for a degree in any other university and that all sources of material used for the thesis have been duly acknowledged.

Tirfu Tenagne
Student


Signature

27/05/2011
Date

I confirm that this thesis has been submitted with my approval as the supervisor of the same.

Yohannes Dibaba
Advisor


Signature

27/05/2011
Date