ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
DEPARTMENT OF NURSING AND MIDWIFERY

DETERMINANTS OF BREASTFEEDING PRACTICE AMONG MOTHERS OF CHILDREN AGED LESS THAN 24 MONTHS ATTENDING GOVERNMENTAL MATERNAL AND CHILD HEALTH CLINICS IN MEKELLE TOWN, NORTHERN ETHIOPIA

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This thesis by Hailemariam Berhe is accepted in its present form by the board of examiners as satisfying thesis requirement for the degree of master in maternity and reproductive health nursing.

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Acronyms and Abbreviations

AAU- Addis Ababa University

ANC- Antenatal Care

BF- Breastfeeding

EBF- Exclusive Breastfeeding

EPI- Expanded Program of Immunization

FMOH- Federal Ministry of Health

HC- Health Center

HEW- Health Extension Worker

HH- Household

IF- Infant Formula

IYCF- infant and young child feeding

MCH- Maternal and Child Health

NGO-Non-Governmental Organizations

OC- Oral Contraceptive

OPD- Outpatient Department

PBF- predominant Breastfeeding

PNC- Postnatal Care

SC- caesarean section

SPSS- Statistical Package for Social Science

TBA- Traditional Birth Attendant

TIBF- Timely Initiation of Breastfeeding

UNICEF- United Nations Children's Fund

USAID-United States Agency for International Development

WHO- World Health Organization

ABSTRACT

Background- Breastfeeding and good nutrition for children are essential for achieving the Millennium Development Goals, particularly the goals relating to child survival. 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,". Mothers do not initiate breastfeeding within one hour after delivery, majority of them provide pre-lacteal feed and they do not exclusively breast feed to six months. Although the implementation of the national infant and young child feeding guideline has been in place since 2004, there is limited study which evaluated breastfeeding practices in the study area in this regard.

Objective- The aim of this study was to assess determinants of breast feeding practice among mothers' of children aged less than 24 months attending governmental maternal and child health clinics in Mekelle town.

Methods- Institution based cross sectional study was carried out among five health facilities selected using simple random sampling technique. Data was collected by interviewer administered structured questionnaire and it was entered, cleaned and analyzed by using SPSS for windows version 16.0. Proportion was used to describe the results and it was presented in the form of figures, tables and texts. Binary logistic regression model was used to test association between dependent and independent variables.

Result- A total of 361 mothers with their index child were interviewed. The ever breastfeeding rate in this study was 98.9%. The timely initiation rate of breastfeeding and exclusive breastfeeding were 77.9% and 60.8%, respectively. Eighty five percent of mothers reported on demand breastfeeding. The continued breast feeding rate at one year and at two years was 95.7% and 65.6% respectively. Home delivery (AOR=3.7[95%CI= 1.81, 9.33]), Vaginal delivery

(AOR=14.4[95%CI=4.8, 43.7]) and non health professional as a birth attendant (AOR=3.5[95%CI=1.21, 8.53]) were found to be positively statistically associated with timely initiation of breastfeeding (P<0.05). Employment status (AOR=4.81(95%CI=2.27, 10.16]) and Child's age (AOR=3.42[95%CI1.36, 8.59]) were associated with exclusive breastfeeding practice for the first 6 months.

Conclusion and recommendation-: A range of characteristics affect the practice of timely initiation of breastfeeding and exclusive breastfeeding such as socio-demographic, obstetric and health service related practices/factors. Coordination, strengthening and sustaining of the existing strategies, and approaches for further improvement of optimal breastfeeding practice is recommended

Key words: Timely initiation, exclusive breastfeeding

CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND

The World Health Organization has described breastfeeding as unequalled way of providing ideal food for the survival, healthy growth and development of infants and young children; it is also an integral part of the reproductive process with important implications for the health of mothers. As a global public health recommendation (according to WHO and UNICEF), infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional requirements, infants should receive nutritionally adequate and safe complementary foods while breastfeeding continues for up to two years of age or beyond(1, 2).

It is also recommended that breastfeeding should begin within one hour after birth. Feeding of colostrum should be promoted and prelacteal feeds discouraged. Colostrum is three times richer in vitamin A and ten times richer in betacarotene than mature milk. Because of its high levels of vitamin A, antibodies, and other protective factors, colostrum is often considered as the baby's first immunization. Breast milk completely satisfies an infant's nutritional and fluid needs for the first six months. Infants do not need water or other liquids to maintain good hydration, even in hot climates. 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. Breastfeed on demand, that is, as often as the infant wants, day and night, at least 8 times in 24 hours will provide more milk as suckling stimulates milk production(2).

Appropriate complementary feeding promotes growth and prevents stunting among children between 6 and 24 months of age. Infants are particularly vulnerable to malnutrition and infection during the transition period when complementary feeding begins. If breastfeeding is continued on-demand until 2 years of age or beyond it continues to be an important source of energy (35-40% of energy needs), protein and micronutrients. In addition continued breastfeeding along with complementary foods during this period results in a decreased risk of morbidity and mortality especially in populations with high risk of contamination(3).

Breastfeeding provides numerous benefits to infants, women, and society. It creates a special bond between mother and infant, enhances dental development, reduces risk for allergies, aids in cognitive development, and decreases the risk for obesity in later life. Breastfeeding also helps the uterus return to pre-pregnancy size faster; reduces risk of breast, ovarian, and uterine cancers; decreases risk for osteoporosis; enhances emotional health (especially for teenage mothers), and saves money otherwise spent on formula and feeding supplies. Adequate nutrition during infancy and early childhood is essential to ensure the growth and development of children to their full potential. Thus, optimal infant and young child feeding practices rank among the most effective interventions to improve child health (4).

The period from birth to two years of age is important for optimal growth, health and development, especially since it is during this period that children are particularly vulnerable to growth retardation, micronutrient deficiencies, and common childhood illnesses (4, 5).

1.2 **STATEMENT OF THE PROBLEM**

The single most cost effective intervention to reduce child mortality both in developed and developing countries is promotion of appropriate breast feeding practice. Despite these

recommendations, worldwide, only 39 percent of newborns are put to the breast within one hour of birth, and only 37 percent of infants less than six months of age are exclusively breastfeed in 2008. More than 10 million children under the age of five die each year; 41% of these deaths occur in sub Saharan Africa and another 34% in South Asia and the major contributor to their death is poor breastfeeding practices (6, 7).

Reviews of studies from developing countries showed that infants who are not breastfed are 6 to 10 times more likely to die in the first month of life than infants who are breastfed. Diarrhoea and pneumonia are more common and more severe in children who are artificially fed, and are responsible for many of these deaths. It is estimated that sub-optimal breastfeeding, especially non-exclusive breastfeeding in the first 6 months of life, results in 1.4 million deaths and 10% of the disease burden in children younger than 5 years (8).

Recent studies in Nepal and Ghana (2008) suggested that initiation of breastfeeding within the first hour of birth could prevent about 20% of neonatal deaths (9, 10).

All in all breastfeeding interventions have the potential to prevent 13 percent of all under five deaths in developing areas of the world, ranking it as the most important preventative approach for saving the life of millions of children; out of this 23% of deaths are preventable as a result of continued breastfeeding in the 6-24+ months age group. While, appropriate complementary feeding practices would result in an additional 6% reduction in under five mortality (6, 8, 11).

Cognizant to its impact on health, breastfeeding and good nutrition for children are recognized as essential for achieving the Millennium Development Goals, particularly the goals relating to child survival, such as reducing child mortality by two third between 1990 and 2015 and eradicating extreme poverty and hunger (12, 13).

Even though feeding a baby with mother's milk is a well accepted and praised behavior in the Ethiopia culture, they do not always follow the recommendations of the "National Strategy for Infant and Young Child Feeding," the guidelines established by world health organization and adopted by the Ethiopian federal ministry of health for optimum breastfeeding. Many newborns are neither breastfed during their first hours of life with colostrum nor exclusively breastfed during their first six months. Instead, they are given liquids and complementary food at an early age (5).

Contrary to WHO's recommendations only one in three Ethiopian children age 4-5 months is exclusively breastfed. Complementary foods are not introduced in a timely fashion for many children. At 6-8 months of age, 14 percent of children continue to be exclusively breastfed. These practices may expose them to infectious diseases, and therefore have a negative impact on their growth and development (5).

There are several reasons for poor breastfeeding practices in Ethiopia, including traditional and cultural beliefs, low education levels, heavy workload of mothers, poor sanitary conditions, type of assistance at delivery, duration of stay at home, ethnicity, poor maternal knowledge, age, parity, antenatal care service utilization and place of delivery(14,15).

According to the Ethiopian demographic and health survey 2005, in Tigray regional state the Percentage of children who started breastfeeding within 1 hour and within 1 day of birth was 52.9 and 73.7 respectively. In addition, the percentage who received a pre-lacteal feed was 30.6 (5).

Alive & Thrive initiative had tried to improve breast feeding practice in Ethiopia; likewise, USAID-funded LINKAGES Project (1996–2006) implemented its programe in Ethiopia and

breastfeeding was promoted as part of other essential nutrition actions and child survival interventions in Ethiopian context. The ministry of health Ethiopia has also tried to enhance the practice of optimal breast feeding practice by developing training manuals and implementation guidelines on breast feeding; and incorporated it to the primary health care in line with the health extension program but still the practice is far from the global recommendation(3,6,16)

This study is aimed therefore in assessing the determinants of breast feeding practice among mothers of infant and young children attending governmental maternal and child health clinics in Mekelle town.

1.3 SIGNIFICANCE OF THE STUDY

Despite few local studies conducted in different parts of the country, no sufficient study tried to identify the determinants of optimal breast feeding practice in the study area. Hence, there is a need to carry out a research to come up with the determinants of breast feeding practice.

Nurses and midwifes who work in maternity centers and in the community setting could use the result from this research as a baseline in their counseling/health education session to minimize the sub-optimal breastfeeding practice and strengthen the good practices.

The finding of this study can provide policy makers and NGOs (nongovernmental organizations) with relevant information for future planning and interventions of appropriate strategies to promote and maintain breastfeeding practices.

The finding of this study will also help as a baseline data for those who are interested in carrying out further research with this regard.

CHAPTER TWO: LITERATURE REVIEW

Optimal infant and young child feeding practices rank among the most effective interventions to improve child health (4). Improved breastfeeding practices in particular can contribute significantly to the reduction of child morbidity and mortality. Initiation of breastfeeding within the first hour of birth, exclusive breastfeeding for the first six Months, and continued breastfeeding to two years and beyond are optimal practices based on scientific evidence of their impact on health (8).

Breastfeeding initiation

The impact of early initiation in the first month of life on mortality has recently been documented. Infant feeding and weaning practices were investigated in a survey of 328 mothers living in 38 villages in the semi-arid Rajasthan (Jaipur) district, India (1997). Only 23% of mothers initiated breast feeding within 24 hours of delivery and 77% discarded their colostrum; 65.2% of mothers gave jaggery water as a prelacteal feed (17).

A descriptive study was done between July-October 2000 in maternity ward in Turkey, only 35.2% initiated breastfeeding within the first hour but all mothers started breastfeeding within the first 24 hours. It was found that the factors affecting early breastfeeding status were being primiparous mothers and cesarean section. Maternal age, educational level, employment status, gender of the baby and monthly family income had no influence on early breastfeeding (18).

Determinants of breast-feeding were assessed based on data from a sample of 1113 women, in Alberta, Canada and the proportion of breast-feeding initiation was 85.6%. Determinants of breast-feeding initiation were marital status, educational level and family income (19).

A cross-sectional study in Al Hassa, Saudi Arabia (2010) showed that 77.8% of mothers initiated breastfeeding within the first 24 hours of childbirth. Increased maternal age, multiparity (three or more), and vaginal delivery were significant positive predictors for early breastfeeding (20).

Cross-sectional study was conducted to identify factors affecting early initiation of breast-feeding and exclusive breast-feeding among mothers in peri-urban Guatemala City, Guatemala, Central America (1999). The most important determinant of early initiation of breast-feeding was place of delivery. Children born at home were significantly more likely than children born at hospitals to initiate breast-feeding early (21).

Another study conducted in Nepal (2005) among infants less than two months to assess rates of initiation of breast-feeding and exclusive breast-feeding and it showed that the rates of initiation within 1 h and within 24 h of delivery were 72.7% and 84.4%, respectively. Colostrum was given as the first feed to 86.2% of babies (22).

Similar study was conducted in Nepal (2006) to assess infant and young child feeding indicators and the determinants of selected feeding practices. Breastfeeding was initiated within the first hour after birth in 35.4% of children. Mothers who lived in the rural areas were more likely to initiate breastfeeding within 1 hour after birth. Cesarean deliveries were associated with delay in timely initiation of breastfeeding. (23).

In 2003, Demographic and Health Survey was conducted in Timor-Leste, Southeast Asia on a total of 2162 children aged 0–23 months and a very high proportion (97.6%) of infants had been ever breastfed, but only 46.1% had initiated breastfeeding within the first hour of birth (24).

A study undertaken in Edo state; Nigeria(2006) on factors influencing breastfeeding practices among 600 mothers of children aged 4–24 months showed that 75% of the respondents introduced prelacteal feeding immediately after birth (25).

Similar Hospital based cross sectional study among mothers in Osun state, Nigeria (1997) revealed that, only 24% of the survey sample gave colostrum to their babies. Majority of them discarded because it is dirty, "like pus", and therefore potentially harmful to the infant (26).

Study in Bissau, Guinea-Bissau (1986) showed that the most significant determinant of delaying breast feeding among mothers was being a member of the Balanta ethnic group. The other determinants of delaying breast feeding among women were no prenatal care and young maternal age (27).

According to DHS surveys from 1998-2006 in different parts of the world the initiation of breastfeeding was 33.3% in Burkina Faso (2003), 31.9% in Cameroon (2004), 43.3% in Chad (2004),77.9% in Eritrea (2002), 80.9% in Namibia (2000), 52% in Morocco (2003/2004), 39.7% in Jordan (2002), 24.2% in Bangladesh (2004), and 48.9% in Colombia (2005) (28).

Community based descriptive cross sectional survey in Sudan (2007) had indicated that 54.2% of them initiated breastfeeding after one hour from delivery and 39.7% of them initiated breastfeeding during the period from two hours to 24 hours and only 6.0% of the mothers initiated breastfeeding after one day (29).

A survey in Vietnam (2002) showed that 73.6% of the mothers initiated breastfeeding within the first hour. Colostrum or first milk was given to 85.6% of babies as the first meal while the remaining 14.4% were given a fluid other than breast milk (30). Similarly descriptive cross-

sectional survey in Nairobi, Kenya (2010) revealed that the timely initiation of breastfeeding was 61.1% (31).

A case control study was conducted among children under the age of five, admitted to Gondar University Hospital from July 2005 to April 2006 to identify risk factors for acute malnutrition. In both groups breastfeeding was initiated within the first hour of birth in 73 (71.6%) of the subjects. Butter was the most commonly used pre-lacteal feed 19(52.8%), followed by sugar water solution, cow's milk and fenugreek (abish) (32).

A Study carried out between October 2004 and January 2005 in rural communities of Tigray revealed that only one-fifth of the mothers started breastfeeding immediately after birth. An early introduction of other non breast milk fluids was very common in the study communities. More than 80% of the mothers initiated feeding their children with non breast milk pre-lacteal foods. The commonly used pre-lacteal foods were butter (46.7%), sugar dissolved in water (15.1%) and plain water (14.5%) (33).

In Ethiopia, according to the demographic and health survey (2005,) the initiation of breast feeding was 69 percent within one hour and 86 percent within one day of birth. Twenty-nine percent of children were given a prelacteal feed and 45% of children were given the first milk. Similarly, in Tigray regional state, the Percentage of children who started breastfeeding within 1 hour and within 1 day of birth was 52.9 and 73.7 respectively. In addition, the percentage who received a pre-lacteal feed was 30.6. In addition, the prevalence of timely initiation of breastfeeding was 86.4% in Afar, 71.1% in Oromia, 62.6% in Amara 73.7% in Harari 91.4% in Dire dawa regional states(5).

According to this study there was no difference in the timing of initial breastfeeding by gender of the child. However, type of assistance at delivery, place of delivery, had important influences on early breastfeeding practices. Rural children were more likely than urban children to start breastfeeding within one hour and within one day of birth. Highly educated mothers are less likely than those with little or no education to put their newborn to the breast within the first hour or day of birth. Early initiation of breastfeeding was more common among children whose mothers were assisted at delivery by a traditional birth attendant and among children delivered at home (5).

Another study in south Gonder zone, Amhara regional state (2007) showed that the timely initiation rate was 66.8%, early initiation of breastfeeding was found to be three times higher among rural women compared to urban women; eleven percent of them gave pre-lacteal foods and 86.5% provided colostrum. In the same year in South wollo zone, Amhara regional state 41.8% of infants received prelacteal foods. Likewise, in Gursum Wereda, Somali regional state (2006) 79% of mothers gave prelacteal food (15)

Prevalence and determinants of exclusive breastfeeding

Worldwide, only 37 percent of infants less than six months of age are exclusively breastfeed in the majority receiving some other food or fluid in the early months (6).

According to the study conducted in the state of Sa˜o Paulo, south-eastern Brazil (1999), among infants less than 6 months, greater chance of EBF in women with tertiary education and aged between 25 and 29 years was observed. In addition multiparty and female babies were positively associated with exclusive breast feeding (34). Similar study in Bolivia, Latin America (1995)

revealed that the overall exclusive breastfeeding rate in infants < 6 months was 25%. Latin ethnicity was associated with a shorter duration of exclusive breastfeeding (35).

In the study in peri-urban Guatemala City, Guatemala, Central America (1999), the most important determinant of exclusive breast-feeding was whether or not the mother worked outside the home. After controlling for infant's age and sex and mother's ethnicity, women who did not work outside the home were 3.2 times as likely to exclusively breast-feed as were women who worked outside the home (21).

Study was carried out in Surat, India from July, 2008 to September, 2008. It showed that variables like maternal & paternal education, socioeconomic status and type of family revealed a significant association with newborn`s exclusive breastfeeding situation. Maternal age affecting exclusive breastfeeding has not shown any significance. On the other hand, number of antenatal visits taken, breastfeeding advice received during antenatal visits & postnatal visits and inter delivery interval more than 24 months have shown positive significant association with exclusive breastfeeding. Initiation of breastfeeding within one hour of delivery was positively associated with exclusive breastfeeding (36).

Likewise community-based cross sectional study was done in urban slums of Gwalior, India from November 2005 to July 2006. Only 7.8% practiced EBF. The early breastfeeding initiation, ante natal clinic visits, and mothers' education were significantly associated with higher probability of EBF (37).

According to the cross-sectional study in Al Hassa, Saudi Arabia (2010), Exclusive breastfeeding at birth was reported in 76.1%, which declined to 32.9% and 12.2% at the age of 2 and 6 months,

respectively. Rural, less-educated, low-income multiparous mothers were more likely to exclusively breastfed their infants as revealed by multivariate logistic regression (20).

Another study in Timor-Leste, Southeast Asia (2003) indicated that exclusive breastfeeding rate in children less than 6 months was 30.7%. Multivariate analysis revealed that exclusive breastfeeding was significantly lower in the rural region compared to the urban region, and among those from richest households compared to poorest. Mothers with primary education were significantly more likely to exclusively breastfeed than mothers with no education. Increasing age of the infant was associated with significantly less exclusive breastfeeding (24).

A cohort study was conducted on infant feeding practice in city, suburban and rural areas of Zhejiang province China on the initiation of breastfeeding and prevalence of exclusive breastfeeding at hospital discharge (6 days postnatal) during the period of October 2004 to December 2005. Living in the suburban and rural areas was positively associated with exclusive breastfeeding at discharge. Mothers who were older than 24 years, who did not make the decision to breastfeed until after birth and who didn't give breast milk as the first feed and who had a caesarean section were less likely to be exclusively breastfeeding on discharge. Lower income and low educational status were also positively associated with breastfeeding practice (38).

Descriptive longitudinal cohort study was conducted in Chilenje, Lusaka, Zambia, from June 2001 to July 2003; only 37% of women were EBF at week 16. Factors significantly associated with shorter duration of EBF were primiparity, maternal factors including mode of delivery, overall health, marital status, and age. Although place of delivery had no significant effect overall, it appeared that women who delivered in the Chilenje clinic exclusively breastfed for

longer than did women delivering elsewhere. Infant factors including sex and overall morbidity also had no effect on duration of EBF (39).

Study was carried out from May to October 2006 at the Paediatrics Clinics of the University of Nigeria Teaching Hospital. According to this study 21.2% practiced EBF for all their children. Among those who provided EBF, a high maternal educational, high socio-economic class and higher educational levels were important factors positively associated (40).

Data from the Nigeria Demographic and Health Survey 2003 also revealed that the average EBF rate among infants younger than 6 months of age was 16.4%. Multivariate analyses revealed that the odds of EBF were higher in rich and middle level households than poor households. Increasing infant age was associated with significantly less EBF. Mothers who had four or more antenatal visits were significantly more likely to engage in EBF. Female infants were more likely to be exclusively breastfed than male infants. Mothers who lived in the North Central region were significantly more likely to exclusively breastfeed their babies than those mothers who lived in other regions (41).

In the study in Vietnam (2002) women who had a vaginal delivery tended to have a much higher rate of EBF than those who had a caesarean section. Mothers who delivered at health institution were more likely to practice EBF compared with those who delivered at home being attended by a TBA (30).

According to the study undertaken in Edo state; Nigeria(2006) on factors influencing breastfeedi ng practices among mothers of children aged 4–24 months, 82% of them breastfed. But of the 82% that practiced breastfeeding, only 20 percent exclusively breastfed their infants until six months (25).

A cross-sectional survey on infant feeding practices was performed in Mbale District, Eastern Uganda in 2003 and 727 mother-infant (0–11 months) pairs were analyzed. The study showed 7% and 0% practiced exclusive breastfeeding by 3 and 6 months (42).

In a Study conducted in Sudan on breast feeding indicators among mothers with their index infants, in September 2007, 64.5% of woman breastfed exclusively for four months whereas those who breastfed for six months were 29.5% (29). Another study in Nairobi showed that the EBF rate was 34 % (31).

Further analysis of the 2005 demographic and health survey was undertaken to identify determinants of exclusive breast feeding practice in Ethiopia and the proportion of women who practiced EBF were found to be 49.0%. Exclusive breastfeeding was associated significantly with maternal educational level, current marital status, child age, and economical status. No association was observed regarding maternal age, place of residence, current employment of women, and access to mass media, attending antenatal care, and sex of the child. Women who are not currently married were two times more likely to breastfeed their child exclusively than those married. Infants less than two months of age were five times more likely to be on EBF than infant aged four to six months. Likewise women in the wealth index ranking middle and above were two times more likely to EBF than the reference category (43).

Another similar study was conducted in Adwa town, Tigray from November 2005 to January 2006 to examine feeding profile and diarrhea morbidity among infants of 7-12months. Two hundred and ninety one (41.8%) mothers exclusively breast-fed for six months. Mother's education was directly associated with exclusive breast-feeding practice, un-educated mother had lower practice than literate mothers. However, there was no significant difference between

practice of exclusive breastfeeding and mother's income, marital status, mother's occupation, and infant's sex (44).

In the study in south, Gonder zone (2007), 80% of infants breastfed exclusively up to age six months (15). Similarly a study in Ambo town (2007) revealed that the exclusive breastfeeding prevalence was 42.3% and mothers who initiated breastfeeding timely were about three times more likely to continue exclusively than those who didn't (45).

Frequency, duration and prevalence of breast feeding practice

According to study in United States (2004) the ever breastfeeding rate was73.8% and continued breastfeeding at one year was20.9%. In 2005/2006 the ever breastfeeding rate increased to 77%. (46).

In the study in Timor-Leste, Southeast Asia, Continuation of breastfeeding dropped from 72.4% in the first year (12–15 months) to 32.5% in the second year (20–23 months). Twelve point five percent of infants less than 12 months were bottle fed and a high proportion of infants 6-9 months (82%) were receiving complementary food in addition to breast milk (24).

Similar study in Zhejiang China on the initiation of breastfeeding and prevalence of exclusive breastfeeding at hospital discharge (6 days postpartum) indicated that the breastfeeding rate at discharge from hospital was 96.9 % (39). Similarly, in Vietnam most babies were fed according to need (96.7%), with an average of 10 times within 24 hours (30).

A hospital based cross sectional survey carried out in Hong Kong (2000) showed, 63% of mothers gave both human milk and IF (infant formula) to their babies. Thirty percent of mothers

reported insufficient breast milk as the most important barrier to successful BF in the postnatal wards.

Likewise, in the follow-up interviews, 34% of mothers reported insufficient breast milk as the main reason for quitting BF in the first month of the baby's life. For BF mothers who ceased around week 5 to week 8, the main reason was to work (73%). Work was also the main reason for mothers ceasing BF when the babies were between 3 to 6 months old (47).

Another cross sectional study in primary health care centers in Jeddah City, Saudi Arabia (1997) on maternal factors associated with the duration of breast feeding revealed that the proportion of mothers who ever breastfed their infants was 94.0%. Approximately 92.8% of mothers continued breast feeding up to 1 month, after which the proportion of lactating mothers declined to reach 40.0% by the 12th month post partum. The median duration of breast feeding was 6 months. Introduction of solid foods was as early as the 4th month of the infant's life. Breastfeeding was mostly reported to be on demand (48).

On the study in Edo state, Nigeria, majority of the women (82%) breastfed, with only 18 percent not breastfeeding; the main reason given for not breastfeeding was ill health (25).

Study was conducted between June and August 1998 in Kumasi Ashanti Region, Ghana to assess Knowledge, Attitude and Practice of Breast Feeding among a total of 200 mothers' of infants 0-2 years. Breast feeding in Kumasi Ashanti Region was 100%. The average duration of breast feeding was 21 months (49).

An Epidemiological Study was carried out in Yaounde, Cameroon, in 2004. According to this study, 98% of mothers breastfed their children; the 2% of mothers who did not breast-feed their children, cited lack of milk flow or the infant's refusal to suckle as the main reason. Infants who

were exclusively breastfed sucked the milk on demand, while those on mixed feeding received 2 to 4 breast meals per day regularly scheduled between the morning and the evening (50).

Another study conducted in Alexandria, Egypt (1997) indicated that the prevalence rate of continued breast-feeding rate at 1 year was 64.4%, and at 2 years was 33.9%. The bottle-feeding rate (among infants less than 12 months) was 44.3 % (51).

In the study in Sudan, majority of mothers stopped breastfeeding during the period between 19 to 24 months, 21.2% of them stopped breastfeeding before one year and 25% stopped breastfeeding during the period 13 to 18 months. The main reason led the mothers to wean their infants was pregnancy (54.1%). Some mothers (15.5%) stopped breastfeeding their children because their health was not helpful to continue breastfeeding. Others (9%) argued that they stopped breastfeeding for cultural beliefs. Only 5.5% stopped breastfeeding for work and little milk (29).

In the study in Nairobi, Kenya (2010), 90.6% of mothers practiced on demand breastfeeding. Reasons for discontinuation before the age of two years was inadequate breast milk (44.4%), child refusal to breastfeed (33.3%) and maternal illness (22.2%) (31).

Further analysis of the 2005 demographic and health survey in Ethiopia showed that the proportion of women who practiced ever breastfeeding rate was 96% (5).

Feeding practices among 1464 under fives were surveyed in Gondar Zuria district of northern Ethiopia. Ninety nine point eight of the children in the study area were breast fed initially, 5% discontinued before six months of age and 15% before the end of their first year of life. The mean duration of breast feeding was 21.97 +/- 10.15 months. Supplementary diet was initiated between 4-6 months in 42.4% of the children while in 16% it was started beyond the first year of life. The mean age of starting supplementary feeding was 9.9(52); meanwhile the study in rural

communities of Tigray, revealed that, 88% of the mothers breastfed their children until two years of age and 25% continued breastfeeding for more than three years (33).

Conceptual framework

Many studies in different parts of the world reviewed that breast feeding practice in general and initiation of breast feeding and exclusive breast feeding in particular is affected by different factors. For this study according to the literature review the main factors are identified as Maternal Socio-demographic & Economic factors, Infant's demographic factors, Health service related factors/practice and Obstetrics factors. Initiation of breast feeding also affects the exclusive breast feeding practice. The next conceptual frame work which depicts the relationship of the variables is derived from previous unpublished study which was conducted in Jimma university by Tesfaye S. in 2010 (53). It helps to summarize the determinant factors and to analyze the association between dependent and independent variables.

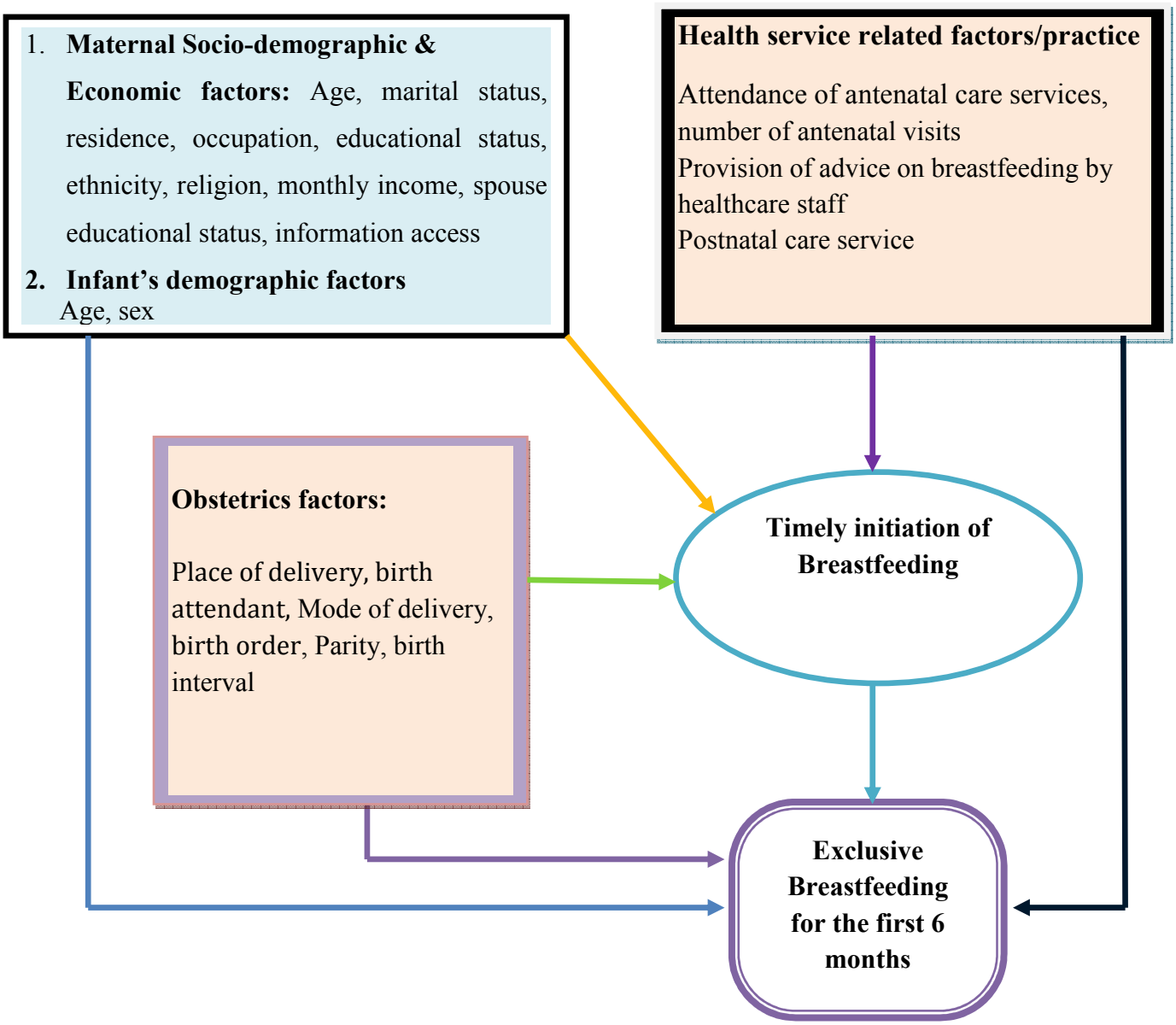

Figure 1: Conceptual framework for the determinants of breast feeding practice

CHAPTER THREE: OBJECTIVES

3.1 **General objective**

To assess the determinants of breast feeding practice among mothers' of children aged less than 24 months of age attending governmental MCH clinics in Mekelle town.

3.2 **Specific objectives**

To describe the pattern and duration of breast feeding practice

To assess timely initiation and exclusive breastfeeding practices of mothers.

To determine the factors associated with breast feeding practice in the study area

CHAPTER FOUR: METHODS

4.1 Study area

The study was carried out in Mekelle town, Tigray regional state, northern Ethiopia, which is located at 783km from the capital Addis Ababa. There are 7 local administrations namely, Ayder, Semien, Hawelti, Kedamy weyane, Adi Haki, Hadnet and Quiha. Total population of Mekelle town is estimated to be 215,546 according the 2007 population and house hold survey. Among this population, 110,788 were females, 104,758 male, 26,536 under 5, 60,998 women in reproductive age (15-49 years) and 78,770 <15 years age. The dominant religion is orthodox Christian followed by Muslim. There are private and governmental health facilities in the town. The majority of the city's population, however, is served by the government-owned and operated health facilities. There are 8 health centers, one referral hospital and three general hospitals owned by government and 4 general hospitals, 38 clinics owned by private organizations.

4.2 Study period

The study was conducted from October, 2010 to May, 2011.

4.3 Study design

Institution based cross sectional study

4.4 Source population and study population

The source population for this study was all mothers of children aged from 0 to 24 months residing in the catchetment area of the MCH clinics in Mekelle town. Study population was all mothers of children aged 0 to 24 months attending government owned MCH clinics during the study period.

4.5 Eligibility criteria

Inclusion criteria

Mothers with their index child aged from 0 to 24 months who attend the MCH clinics and who were willing to participate; during the study period was included

Exclusion criteria

Mothers who were acutely ill and unconscious and/or having acutely ill child were not included in the study.

4.6 Sample size and sampling procedure

4.6.1 Sample size

The sample size for this particular study was calculated using formula for a single population proportion considering the following assumptions.

Assumptions: A 95% confidence level, margin of error (0.05), national prevalence of exclusive breastfeeding at age 4-5 months (p = 0.31) (5) is substituted in the following single population proportion formula.

$$n = \frac{(Z\alpha/2)^2 p(1-p)}{d^2}$$

$$= \frac{(1.96)^2(0.31)\ (0.69)}{(0.05)^2}$$

$$= 328$$

Where n= required sample size

Z= = critical value for normal distribution at 95% confidence level which equals to 1.96 (z value at α =0.05)

P= (Proportion of exclusive breast feeding (31%) from previous study).

d= 0.05 (5% margin of error); and non response rate 10%.

The total sample size is **361**

4.6.2 Sampling technique and procedure

There are 12 governmental health facilities in Mekelle town administration. From these 12 health facilities, defense hospital was excluded from the sample because it was not providing MCH service during the data collection time and Quiha health center as well because it was the site of pre-test. Then, from the 10 health facilities 5 were selected by simple random sampling. Study subjects were obtained proportionally to the client flow from each facility and all mothers with their index child less than 2 years who attend the selected government owned MCH clinics during the data collection period was interviewed using convenience sampling technique until the predetermined sample size was obtained.

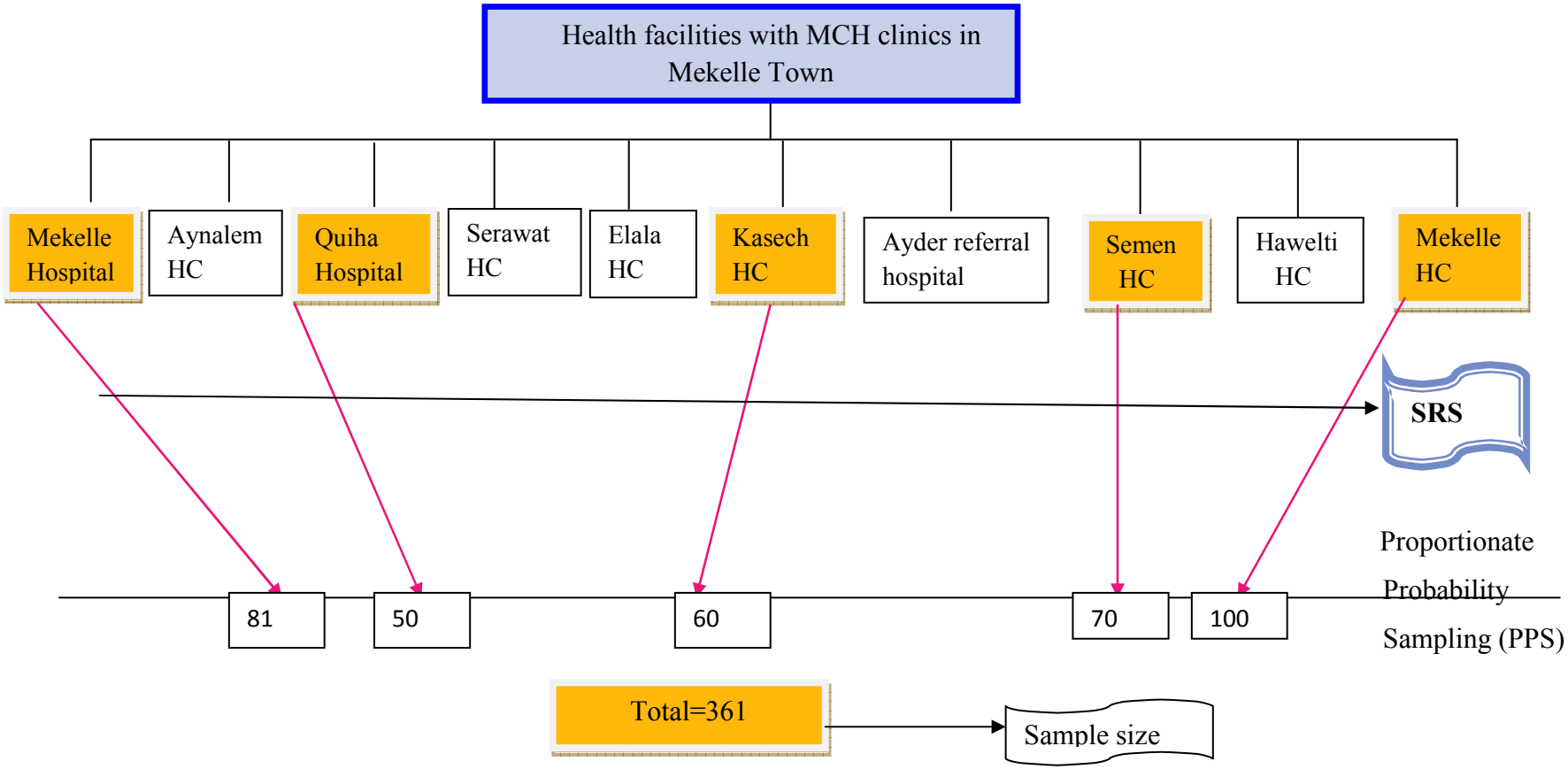

Figure 2: Schematic representation of the sampling procedure for the study on determinants of breastfeeding practice among mothers of children aged less than 24 months in Mekelle town MCH clinics Northern Ethiopia, 2011

4.7 Data collection procedure

Structured questionnaire was developed according to the WHO guide line for feeding infants and young children and all the variables of interest were assessed accordingly. The questionnaire comprises three parts; the first part was about socio demographic characteristics of mothers and children, the second maternal health related practice and the third feeding practice of the child. It was designed in a way to assess the experience of breast feeding and the factors associated with the breast feeding practice. Five nurses and one supervisor were trained for two days by the principal investigator about the purpose of the study and how to interview as well as fill the questionnaire properly. Interviewer administered face to face data collection technique was implemented in the selected health facilities and it took 12 days.

4.8 Measurements

For the assessment of breastfeeding practice currently used definitions and recommendations of WHO, the national strategy for IYCF was used. In this study mothers were requested to provide information regarding the time at which the baby has put to the breast and the 24-hour period feeding practice of the infant prior to the survey. To estimate the timely initiation of breastfeeding, the ratio of infants put to the breast within 1 hour of delivery to the total number of infants was used. To estimate the prevalence of exclusive breastfeeding, the proportion of women (with infants aged between 0 and 6 months) who stated to have fed their children only breast milk in the last 24-hours preceding the survey, was expressed as an exclusive breastfeeding percentage of the total number of children in the same age group. To assess the duration of breastfeeding continued breast feeding rate at one and two years was used. To estimate the continued breastfeeding rate at one year, the proportion of children aged 12-15 months who breastfed in the last 24-hours preceding the survey, was expressed as continued

breastfeeding percentage at one year of the total number of children in the same age group. To estimate the continued breastfeeding rate at two years, the proportion of children aged 20-24 months who breastfed in the last 24-hours preceding the survey, was expressed as continued breastfeeding percentage at two year of the total number of children in the same age group

4.9 Study variable

Dependent variable

- **Timely initiation of breast feeding**
- **Exclusive breast feeding**

Independent variable

Socio-demographic variables- Age, marital status, residence, occupation, maternal educational status, ethnicity, religion, monthly income, spouse educational status, information access, sex of the child and age of child

Health service related factors- Attendance of antenatal care services, number of antenatal visits, Provision of advice on breastfeeding by healthcare staff during ANC, postnatal care service

Obstetrics and Medical variables- Place of delivery, birth attendance, Mode of delivery, birth order, Parity and birth interval.

4.10 Operational definitions

Exclusive breastfeeding- infant receives only breast milk within 24 hours preceding the interview.

Ever breastfeeding- Breastfeeding at any point of time since birth

Maternal and child health clinic- refers to EPI, under five OPD, Postnatal clinic

On demand breast feeding- breastfeeding greater than or equal to 8 times per 24 hours

Optimal breast feeding- relates to adherence to standard recommendations such as initiation of breastfeeding within one hour, exclusive breastfeeding for 6 months and introduction of safe , nutritious, age appropriate complementary food around 6 months, on demand breast feeding and giving colostrums.

Pre-lacteal feeding- feeding of an infant with something other than breast milk during the first three days of life.

Timely initiation of breast feeding- putting the neonate on the mother's breast to suckle within one hour (including one hour).

4.11 Data quality assurance

Questionnaire was prepared in English version and translated in to Tigrigna (local language) and back to English by two different experts for consistency. The questionnaire was reviewed by senior researchers and comments were incorporated for internal validity. Data collection was carried out by trained nurses with a similar previous experience in doing so, after getting training for two days. Ten percent of the collected data was checked by the supervisor daily for completeness and finally the principal investigator had monitored the overall quality of data collection.

4.12 Pretest

The questionnaire was pre-tested on 10% of the calculated sample size in health facility which was not selected in the study (Quiha health center) preceding the actual data collection period. Additional adjustments in the sequence and wording of the questionnaire were made based on the results of the pre-test.

4.13 Data analysis procedure

The data was checked for completeness, inconsistencies, then coded, entered, cleaned and analyzed in SPSS for windows version 16.0. Descriptive statistics was computed to determine the breastfeeding practice. Binary logistic regression analysis was made to obtain odds ratio and the confidence interval of statistical associations. The strength of statistical association was measured by adjusted odds ratios and 95% confidence intervals. Statistical significance was declared at $P<0.05$.

4.14 Ethical Consideration

The study was conducted after getting ethical clearance from Addis Ababa University, College of Health Science, Department of Nursing and Midwifery research committee. Support letter was obtained from Addis Ababa University to Tigray Regional Health Bureau and from Tigray regional health bureau to respective health institutions. In addition informed consent was obtained from study participant to confirm willingness for participation after explaining the objective of the study. The respondents were notified that they have the right to refuse or terminate at any point of the interview. The information provided by each respondent was kept confidential.

4. 15 Dissemination of the result

Finally the findings of the study will be submitted to the Department of nursing and midwifery, Addis Ababa University. It will be also communicated to Tigray regional health bureau and Mekele Zonal health office; in addition a copy of it will be submitted to the respective health facilities. It will be presented in seminars and workshops as well as further effort will be made to publish the findings on national and international peer reviewed journal.

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CHAPTER FIVE: RESULT

5.1 Socio-demographic Characteristics

In this study, a total of 361 mothers whose children aged 24 months and less were interviewed making the response rate to be 100%. The mean (±SD) age of mothers was 26.2 (±5.3), the median and modal age was 25 years. More than a third, 124 (34.3%) of mothers were in the age range 20-24 years. Only 24 (6.6%) were in the age group of 15- 19 years. Three hundred twenty one (88.9%) were orthodox by religion. The largest ethnic group was Tigray, 345(95.6%) followed by Amhara, 15 (4.2%). Concerning the educational status of mothers, two hundred forty four (67.6%) had attended formal school out of which 157 (43.5%) had accomplished secondary school and higher (Grade 9 and above)). The majority of mothers were married, 331 (91.7%) and house wife by occupation, 205(56.8%), while 95(26.3%) were on some form (private or governmental) employment. Out of the total study subjects more than three fourth, 276(76.5%) of mothers earn an average monthly income of higher than 501 Birr. Study subjects were also asked about their husband's educational status, 315(91%) have attended formal education (**Table 1**).

Table 1: Socio-demographic characteristics of mothers attending MCH clinics, Mekelle town northern Ethiopia, 2011

Variable	number	percent
Mother's age		
15-19	**24**	**6.6**
20-24	**124**	**34.3**
25-29	**116**	**32.1**
30-34	**61**	**16.9**
35+	**36**	**10.0**
Total	**361**	**100.0**
Current marital status		
Married	**331**	**91.7**
Single	**10**	**2.8**
Widowed/Divorced	**8**	**2.3**
Separated	**9**	**2.5**
Cohabitated	**3**	**0.8**
Total	**361**	**100.0**
Religion		
Orthodox	**321**	**88.9**
Muslim	**33**	**9.1**
Protestant	**4**	**1.1**
Catholic	**3**	**0.8**
Total	**361**	**100.0**
Ethnicity		
Tigray	**345**	**95.6**
Amhara	**15**	**4.2**
Other*	**1**	**0.3**
Total	**361**	**100.0**
Mothers' educational level		
No education	**117**	**32.4**
Primary (1-8)	**87**	**24.1**
Secondary and higher(9+)	**157**	**43.5**
Total	**361**	**100.0**
Mother's occupation		
Housewife	**205**	**56.8**
Government employee	**84**	**23.3**
Daily laborer	**29**	**8.0**
Business woman	**30**	**8.3**
Private Organization	**11**	**3.0**
Other **	**2**	**0.6**
Total	**361**	**100**
Monthly income		
<=500	**54**	**15.0**
501-1000	**113**	**31.3**
>1000	**163**	**45.2**
Don't know	**31**	**8.6**
Total	**361**	**100.0**

* Sltie **student, farmer

5.2 Obstetrics and health service related variables

Study subjects were asked about their history of ANC visit during pregnancy for the current child, three hundred thirty two (92%) of them received ANC service at least once. Almost 80 % of mothers gave birth to their current child in health institutions and about a third, 23 (31.5%) of those mothers delivered at home were assisted by traditional birth attendants (**Table 2**).

Table 2: Distribution of obstetrics and health service related variables of mothers attending MCH clinics, Mekelle town northern Ethiopia, 2011

Variable	number	Percent
Parity		
1	**149**	**41.3**
2-4	**193**	**53.5**
5 and above	**19**	**5.3**
Birth interval of the baby		
1	**4**	**1.8**
2-3	**98**	**45.8**
4 and above	**112**	**52.3**
Total	**214**	**100.0**
History of ANC		
Yes	**332**	**92.0**
No	**29**	**8.0**
Total	**361**	**100.0**
Number of ANC visit		
1-4	**198**	**59.6**
5-8	**106**	**31.9**
>8	**7**	**2.1**
Don't remember	**21**	**6.3**
Total	**332**	**100.0**
Health education on BF during ANC		
Yes	**287**	**86.4**
No	**45**	**13.6**
Total	**332**	**100.0**
place of delivery		
Home	**73**	**20.2**
Hospital	**160**	**44.3**
Health center	**128**	**35.5**
Total	**361**	**100.0**
Mode of delivery		
Vaginal	**264**	**91.7**
S/C	**24**	**8.3**
Total	**288**	**100.0**
Birth attendant		
TBA	**23**	**6.4**
Health profe.	**287**	**79.5**
Relatives	**50**	**13.8**
Total	**361**	**100.0**
Postnatal follow up		
Yes	**275**	**76.2**
No	**86**	**23.8**
Total	**361**	**100.0**

Mothers were also asked about the information received during ANC visit. From those who had visited ANC facility more than half, 196 (54%) were informed to breastfeed exclusively for six months and not to introduce pre-lacteal feeding. Only 132(36.5%) of them were informed to initiate breast feeding within one hour **(Figure 3).**

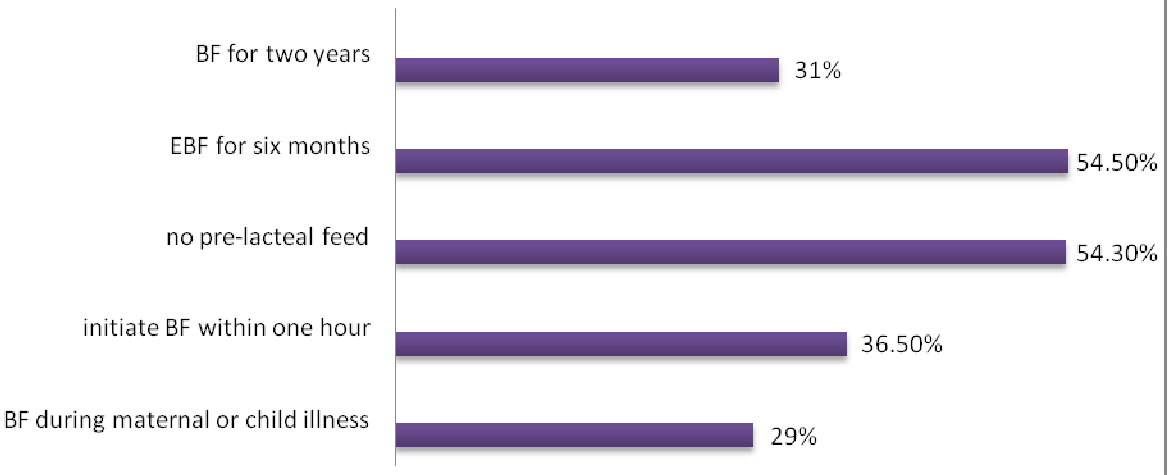

Figure 3: Distribution of respondents by the type of information/advice on BF at ANC visit Mekelle town MCH clinics Northern Ethiopia, 2011

5.3 Pattern of breast feeding practice

5.3.1 Ever breastfeeding rate

This study revealed that from the total 361 respondents, 98.9% of mothers practiced ever breastfeeding. For mothers who did not ever breastfeed, the perceived reasons were: mother returning to work (25%), breastfeeding is painful (50%), breasts are too small to feed the baby (25%), breastfeeding takes too much time (25%), bottle feeding is enough (25%)**.**

5.3.2 Initiation of breastfeeding

All the study subjects were asked whether they have ever breastfed or not and for those who had ever breastfed they were also asked the time of initiation of breastfeeding to their index child. The result showed that almost 78% initiated breastfeeding within one hour (including one hour)

after delivery and around 18 % of them initiated breastfeeding with in the period 1 hour to 1 day. Only 15(4.2%) of the mothers initiated breastfeeding in the period of 1 to 3 days.

The distribution of timely initiation of breastfeeding versus history of ANC visit was assessed, accordingly from the total mothers who attended ANC service, two hundred sixty three (80%) of them initiated within one hour and only 12(3.6%) of them initiated within 1-3 days. But from those mothers who did not attend ANC service 10.7% of them initiated within1-3 days. As shown on the graph below, having history of ANC visit, higher proportion of mothers initiated BF within one hour but lesser proportion of them initiated after one hour **(Figure 4**).

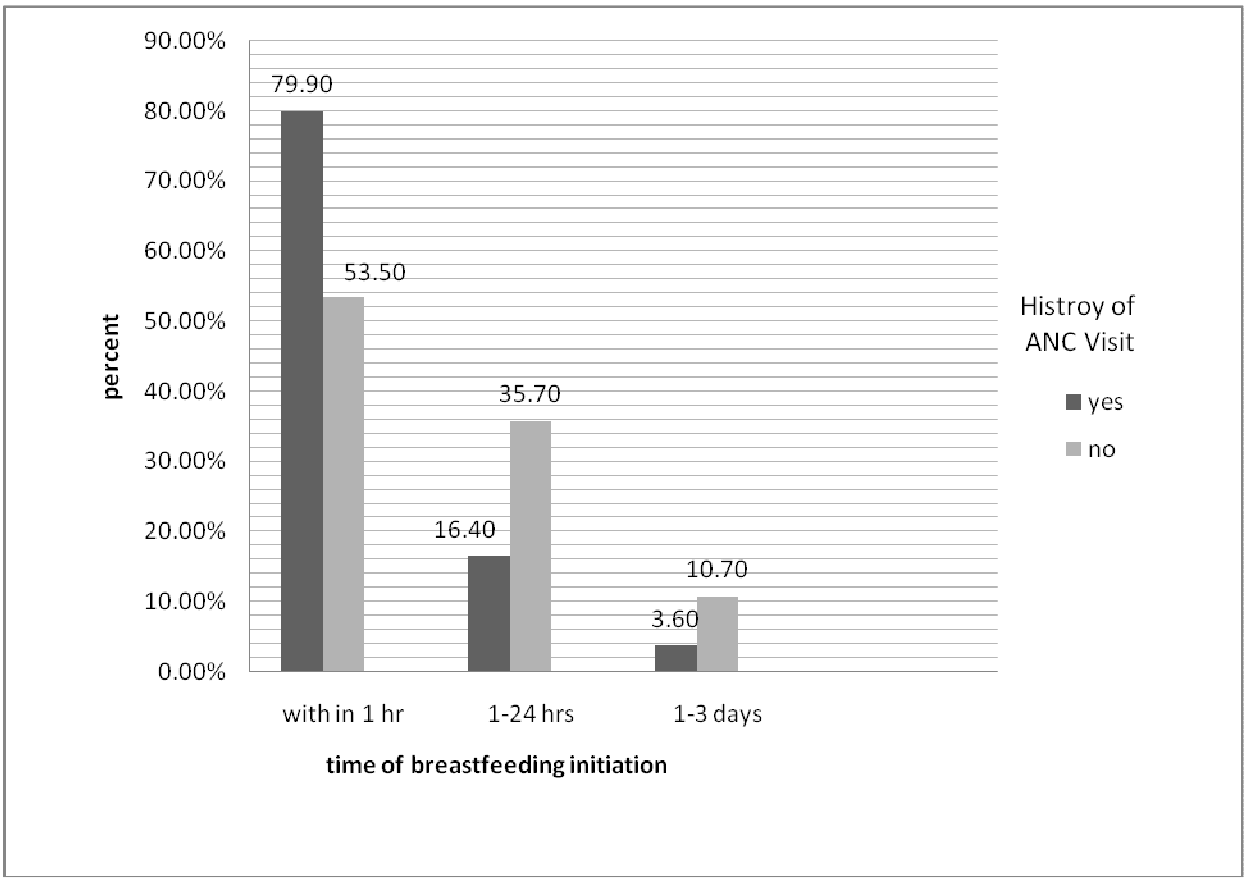

Figure 4: Distribution of mothers who attended ANC by their time of breastfeeding initiation in Mekelle town MCH clinics, Northern Ethiopia, 2011

5.3.3 Colostrum and pre-lacteal feeding

Among mothers who practiced ever breastfeeding, 64(18%) of them squeezed and threw the colostrum and 37(10.4%) of mothers gave pre-lacteal food to their infants. Mothers were asked for the reason of throwing colostrums; 32(50%) of them reported colostrum is dirty, 24(37.5%) of them said it creates abdominal cramp, 4(6.2%) said baby was unable to suckle the breast because of engorgement and the rest 4(6.2%) was because mother undergone operation.

The common pre-lacteal food was Butter reported by 12(32.4%) of breastfeeding mothers followed by sugar solution and cow milk 10(27% each). Tradition/culture was the most frequently mentioned reason 13(35.1%) for the introduction of food for infants during the first three days after delivery followed by breast milk insufficiency 10(27%) **(Figure 5).**

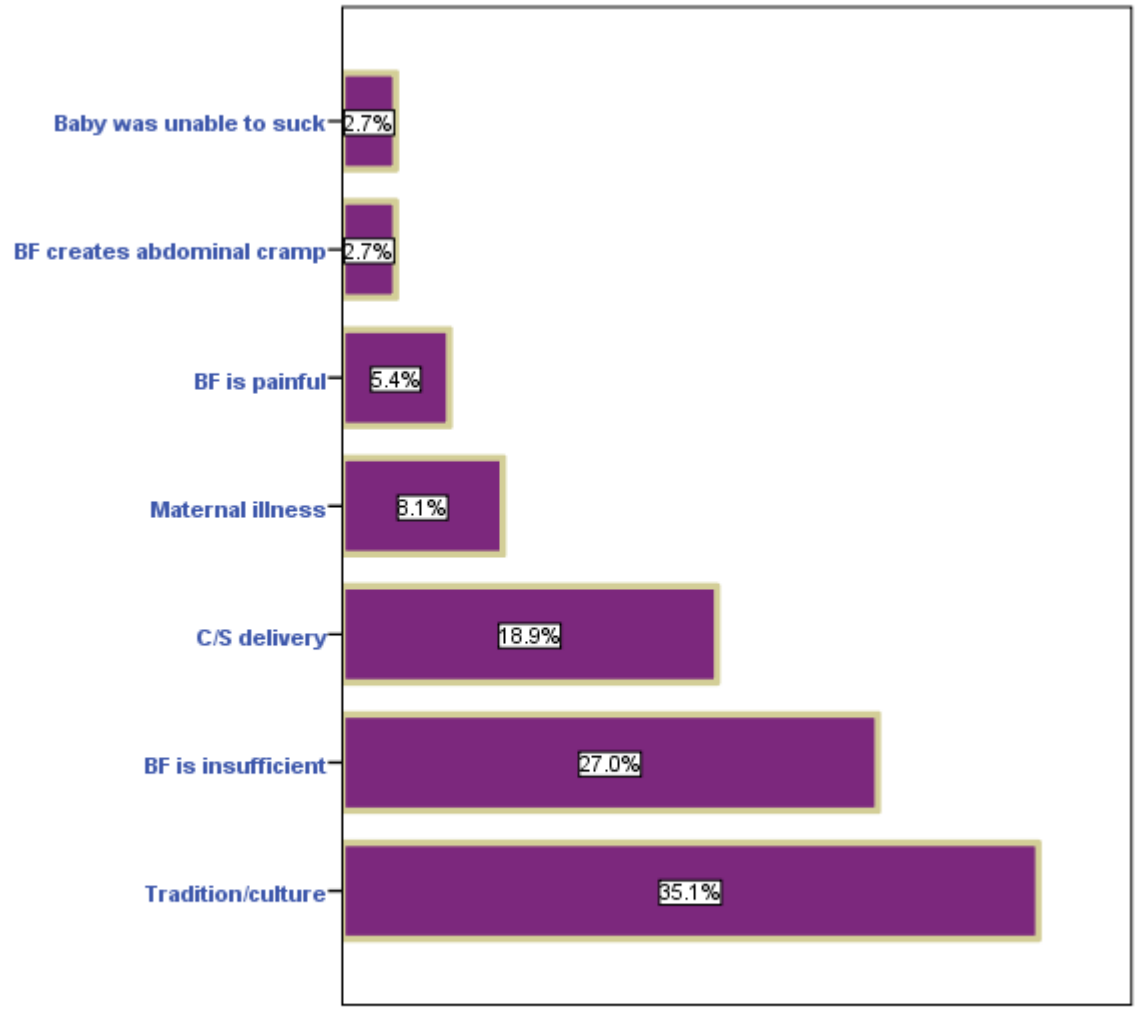

Figure 5 : Reasons for the introduction of pre-lacteal food in the first three days after delivery among mothers in Mekelle town MCH clinics, Northern Ethiopia, 2011

5.3.4 Exclusive breastfeeding practice

Regarding to exclusive breastfeeding, one hundred and ten (60.8%) of infants in the age group 0 - 6 months were exclusively breastfed in the last 24 hours of the survey. Those mothers who introduced additional feeding were asked about the types of additional feeding during the last 24 hour prior to the survey and 23(32.0%) of them introduced cow's milk, 22(30.9%) sugar solution, 16(22.5%) porridge, 7(9.8%) formula milk and 3(4.2%) juice.

5.3.5 Frequency and duration of breastfeeding

From the total mothers who had ever breastfed their infant (98.9%), about (95.5%) of them were breastfeeding till the time of the survey. The mean (±SD) and median duration of exclusive breastfeeding, in this population were 3.9(±1.4) and 4 months respectively. The continued breastfeeding rate at one year was 95.7% and at two years was 65.5%. Respondents were also asked about the frequency of breast feeding. Two hundred ninety one (85.3%) of them reported breastfeeding beyond 8 times per day.

During the survey 13(3.6%) of mother weaned(discontinued) breastfeeding their childen. From the total mothers who had weaned breastfeeding during the survey 2(15.4%) of them weaned during the age 6-12months and 11(84.6%) weaned after one year. They described Pregnancy 4(30.70%), believed that it is time to stop 6(46.20%), and returned to work or education 3 (23%) as a reason for weaning. The timely compelementary feeding rate(complementary feeding for the age 6-9months) in this study was 62.2%.

5.4 Determinants of breastfeeding initiation

Timely initiation of breastfeeding was assessed for its association with socio-demographic, obstetric and health service related variables. Bivariate analysis in the binary logistic regression model showed that residence of mothers was significantly associated with timely initiation of breastfeeding($P<0.05$) in which rural residents were 2.3 times more likely to initiate breast feeding as compared to their counterpart(COR=2.31[95%CI=1.076, 4.963]). History of ANC visit was statistically associated with timely initiation of breastfeeding ($P<0.01$). Mothers who had ANC follow up at least once were 3.4 times more likely to initiate breastfeeding within one hour than those who had no ANC visit(COR=3.4[95%CI=1.56, 7.61]). Likewise Place of delivery and mode of delivery were associated with timely initiation of breastfeeding ($P<0.001$).

Mothers who gave birth at home were 3.5 times more likely to initiate breastfeeding timely than those who delivered at health institutions (COR=3.5[95%CI=2.01, 6.21]); similarly those mothers who experienced normal delivery(vaginal) were 8.5 times more likely to initiate breastfeeding as compared to those who delivered via caesarean section(COR=8.5[95%CI=3.5, 20.9]. There was also a difference with regard to delivery assistance; mothers assisted by non health professionals (TBA, relatives) were more likely to initiate timely (COR=3.44[95%CI=1.96, 6.02](**Table 3).**

In the multivariate analysis, adjusting possible confounding variables, home delivery (AOR=3.7[95%CI= 1.81, 9.33], normal (vaginal) delivery (AOR=14.4[95%CI=4.8, 43.7] and non health professionals as a delivery attendant (AOR=3.5[95%CI=1.21, 8.53] were positively associated with timely initiation of breastfeeding. On the other hand, maternal age, child's sex, income, educational level, marital status, employment status, and parity were not statistically associated with timely initiation of breastfeeding in this study. Likewise residence and history of ANC visit were not retained as a significant factor in the multivariate analysis (**Table 3**).

Table 3: Socio-demographic and obstetric factors versus timely initiation of breastfeeding among mothers Mekelle town MCH clinics, (N=357), Northern Ethiopia, 2011

Variables	Timely initiation of breastfeeding			
	Yes	No	COR[95%C.I]	AOR[95%C.I]
Residence				
Rural	20(62.5%)	12(37.5%)	2.31[1.07-4.96]*	2.66[0.58, 12.07]
Urban	258(79.4%)	67(20.6%)	1.0	1.0
Mother's age				
15-19	20(83.3%)	4(16.7%)	0. 38[0.10-1.37]	0.23[0.03, 1.70]
20-24	100(81.3%)	23(18.7%)	0.44[0.19-1.01]	0.41[0.13, 1.28]
25-29	90(78.3%)	25(21.7%)	0.53[0.23-1.21]	0.63[0.20, 1.93]
30-34	45(75.0%)	15(25.0%)	0.63[0.25-1.58]	0.52[0.15, 1.78]
35+	23(65.7%)	12(34.3%)	1.0	1.0
Child's sex				
Male	166(79.8%)	42(20.2%)	0.76[0.46-1.26]	0.59[0.31, 1.12]
Female	112(75.2%)	37(24.8%)	1.0	1.0
Marital status				
married	256(78.3%)	71(21.7%)	0.76[0.32,1.78]	0.42[0.12, 1.42]
not married	22(73.3%)	8(26.7%)	1.0	
Monthly income				
<=500	43(81.1%)	10(18.9%)	0.90[0.41,1.98]	1.0
500-1000	90(80.4%)	22(19.6%)	0.94[0.51,1.73]	2.17[0.75, 6.23]
>1000	128(79.5%)	33(20.5%)	1.0	2.68[0.939, 7.66]
Mother's educational level				
No education	85(73.9%)	30(26.1%)	1.68[0.93-3.03]	1.54[0.70, 3.39]
Primary	64(74.4%)	22(25.6%)	1.64[0.86-3.10]	
Secondary and higher	129(82.7%)	27(17.3%)	1.0	1.0
Employment status				
Employed	183(75.0%)	61(25.0%)	1.75[0.98-3.14]	1.02[0.48, 2.20]
unemployed	95(84.1%)	18(15.9%)	1.0	1.0
History of ANC visit				
Yes	263(79.9%)	66(20.1%)	3.45[1.56, .61]**	2.99[0.86,10.32]
No	15(53.6%)	13(46.4%)	1.0	1.0
Place of delivery				
Home	41(57.7%)	30(42.3%)	3.53[2.01,6.21]***	3.7[1.81, 9.33]***
Health institution	237(82.9%)	49(17.1%)	1.0	1.0
Mode of delivery				
Vaginal	229(86.7%)	35(13.3%)	8.571[3.5, 20.9]***	14.4[4.8,43.7]***
S/C	8(33.3%)	16(66.7%)	1.0	1.0
Birth attendant				
non health professional	42(58.3%)	30(41.7%)	3.440[1.96, 6.02]*	3.5[1.21, 8.53]*
health professional	236(82.8%)	49(17.2%)	1.0	

*p<0.05 **p<0.01 ***p<0.001

COR- crude odds ratio **AOR**- Adjusted odds ratio **CI**= confidence interval

5.4 Determinants of exclusive breastfeeding practice

From the socio-demographic variables, age of mothers was not statistically associated with exclusive breastfeeding. But there was a variation in proportion of exclusive breastfeeding among age group of mothers. Seven (77.8%) of mothers who were in the age group 35+ practiced exclusively breastfed followed by mothers in the age group 15-19 (66.7%). The proportion of exclusive breastfeeding was similar among mothers who had monthly income<=500 as those having monthly income 500-1000EBr (64 %% versus 63.9).

Bivariate binary logistic regression analysis showed that, mothers working condition (employed Vs not employed) was found significantly associated with exclusive breast feeding rate. Mothers who were unemployed had 4.8 times higher chance of exclusively breastfeeding for six months as compared with those who were employed(COR=4.83(95% CI=2.54,9.19)); this difference has also maintained in the multivariate analysis (AOR=4.81(95% CI=2.27,10.16)). Child's age was associated with exclusive breast feeding practice. Infants within the age group 0-1 months were 2.9 times more likely to be exclusively fed as compared to infants in the age group4-6 months(COR=2.9(95%CI=1.17,7.41)). Likewise infants in the age group 2-3 months were 2.5 times more likely to be exclusively breastfed than those in the age group 4-6 months(COR=2.5(95%CI=1.16,5.71)). The time of breastfeeding initiation also has association with exclusive breastfeeding. Infants who initiated breast feeding after one hour were 0.4 times less likely to exclusively breastfeed as compared to those who initiated timely (COR=0.40(95%CI=0.12,0.99)). In the final model (multivariate analysis); employment status, unemployed (AOR=4.81[95%CI=2.27, 10.16] and age less than 1 month (AOR=3.42[95%CI1.36, 8.59] were positively associated with exclusive breastfeeding practice **(Table 4).**

Variables like current marital status, religion, ethnicity, educational level, media access, mode of delivery and place of delivery were not significantly associated with exclusive breastfeeding. Similarly there was no significant difference in practicing exclusive breastfeeding among primi-para and multi-para mothers & male and female children **(Table 4)**.

Table 4: Socio-demographic and obstetric factors versus exclusive breastfeeding among mothers Mekelle town MCH clinics, (N=181) Northern Ethiopia, 2011

Variables	Exclusive breastfeeding(24 hours recall)			
	Yes N (%)	No N (%)	COR[95%C.I]	AOR[95%C.I]
Age				
15-19	6(66.7%)	3(33.3%)	0.57[0.07, 4.64]	
20-24	48(62.3%)	29(37.7%)	0.47[0.09, 2.43]	0.29[.01,5.83]
25-29	31(54.4%)	26(45.6%)	0.34[0.06, 1.78]	0.46[.02,9.11]
30-34	18(62.1%)	11(37.9%)	0.46[0.08, 2.66]	0.19[0.01,3.97]
35+	7(77.8%)	2(22.2%)	1.0	1.0
Maternal educational level				
No education	25(64.1%)	14(35.9%)	1.0	1.0
Primary	27(67.5%)	13(32.5%)	1.16[0.45,2.9]	2.12[0.32,13.64]
Secondary and above	58(56.9%)	44(43.1%)	0.73[0.34,1.58]	0.46[0.06,3.13]
Employment status				
Employed	29(39.2%)	45(60.8%)	1.0	1.0
Unemployed	81(75.7%)	26(24.3%)	4.83[2.54,9.19]***	4.81[2.27,10.16]***
Access to Media				
Yes	64(60.4%)	42(39.6%)	1.0	1.0
No	46(61.3%)	29(38.7%)	1.04[0.56,1.90]	1.18[0.27,5.16]
Monthly in come				
<=500	16(64.0%)	9(36.0%)	1.25[0.49,3.15]	
500-1000	39(63.9%)	22(36.1%)	1.25[0.63, 2.45]	1.29[0.22,7.33]
>1000	51(58.6%)	36(41.4%)	1.0	1.0
Child's age(months)				
0-1	65(64.4%)	36(35.6%)	2.9[1.17,7.41]*	3.42[1.36,8.59]*
2-3	31(67.4%)	15(32.6%)	2.5[1.16,5.71]*	2.53[0.89,7.20]
4-6	14(41.2%)	20(58.8%)	1.0	1.0
Mode of delivery				
Vaginal	102(59.6%)	69(40.4%)	0.37[0.07, 1.79]	0.10[0.02,4.87]
C/S	8(80.0%)	2(20.0%)	1.0	1.0
Initiation of BF				
within 1 hr	89(57.4%)	66(42.6%)	1.0	1.0
after 1 hr	20(79.2%)	6(20.8%)	0.40[0.12,0.99]*	0.32[0.09,1.2]

*p<0.05 **p<0.01 ***p<0.001

COR- crude odds ratio **AOR**- Adjusted odds ratio **CI**= confidence interval

CHAPTER SIX: DISCUSSION

The purpose of this study was to assess determinants of breastfeeding practice among mothers of children aged less than 24 months in Mekelle town governmental MCH clinics.

The dominance of breast milk over any other nourishment to infant and young children is clearly recognized, and over the years it has become more and more evident that it is the most ideal, safe and complete food that a mother can provide for her child. Breastfeeding will have the intended outcome if it is initiated timely, be exclusive for the first six months, pre-lacteal feed discouraged and colostrums provided to the neonate and continue on demand feeding up to two years.

In this study, it was found that majority (98.9%) of mothers practiced ever breastfeeding. This result is more or less similar with the study in Ghana, 1998(49) which was 100%; Cameroon in 2004(50) 98% and Ethiopian ever breast feeding rate in 2006(5) (96%). But it is higher than the ever breastfeeding rate in Nigeria, 2006(25) (82%), and ever breast feeding rate in United States of America in 2004(46) (73.8%). This high rate of breastfeeding could be due to the fact that breast feeding is a norm in the society

The timely initiation rate of breastfeeding found in this study was 78%. This finding was better when compared to the study conducted in Turkey, 2000(18) (35.2%); in Burkina Faso, 2003 (33.3%), in Chad, 2004 (43.3%), and in Colombia, 2005 (48.9%). But this finding is similar with the finding in Eritrea, 2002 (77.9%); in Namibia, 2000 (80.9%) (28). It is also by far better than the result from the study in rural communities of Tigray 2005(33), in which only 20% of the mothers initiated breastfeeding within one hour and the regional prevalence of timely initiation(52.9%) according to the Ethiopian demographic and health survey, 2005(5).

The better prevalence rate (78%) of timely initiation of breastfeeding in this study could possibly be explained interms of higher proportion of mothers attended ANC which could be the important service delivery point to establish timely initiation of breastfeeding. In addition, majority of them delivered via normal vaginal delivery which could help them to initiate breastfeeding early.

Although Global strategy on infant and young child feeding recommends feeding colostrum and discourages pre-lacteal feeds, two hundred ninety three (82%) of mothers gave colostrums to their baby. This finding was consistent with the finding in Nepal, 2005(22) where colostrum was given as the first fed in 86% of babies, Vietnam, 2002(30) and south Gonder zone, 2007(15) in 85.6 %. But by far higher than the data from Nigeria, 1997(26) where only 24%, in Ethiopia, 2005(5) 45% of mothers provided colostrums for their babies.

The prevalence of pre-lacteal feeding in this study was 10.4% which is much lower than the Rajasthan (Jaipur) district, India pre-lacteal feeding rate in1997 (17) (65.2%); Nigeria in 2006(25) (75%); rural communities of Tigray in 2005(33) (80%); Gursum, Somali region in 2006(15) (79%), and the Tigray regional prevalence in 2005 (30.6%) (5,) but it is in line with the finding in south Gonder zone, Amhara region in 2007(15) where the prelacteal feeding rate was 11.1%. This encouraging result might be justified in terms of the high proportion of respondents from urban area in which the tradition of introducing pre-lacteal feeding and discarding colostrum would be lower than in rural area.

A study conducted in Gonder university hospital in 2006(32) found that the commonest pre-lacteal food reported was Butter followed by sugar solution which is in agreement with the current finding as Butter was the commonest pre-lacteal food reported by 32.4% of the mothers

followed by sugar solution and cow's milk (27.0% each); it was also consistent with the finding in the rural communities of Tigray in 2005(33).

This study showed that the prevalence of exclusive breastfeeding for infants less than six months was 60.8%.This result is by far better when compared with the findings from India in 2006(37) which was 7.8%, in Saudi Arabia, 2010 (20)(12.2%), Timor-Leste, Southeast Asia, 2003 (24) (30.7%), Nigeria in 2006 (21.2%) (25), Ethiopian national prevalence, 2006(49%) and Adwa town, Tigray 2006 (41.8%) (43, 44).The reason for this might be the result of the current policy implementation on the use of health extension workers in urban areas to promote breastfeeding.

In this study mothers were asked about the frequency and duration of breastfeeding and it showed that on demand breastfeeding rate was found to be 85.3%. This finding is more or less similar with the finding Kenya, 2010(31) where on demand breastfeeding was given for 90.6% of babies and with the study in rural communities of Tigray, 2005(33) where on demand breastfeeding rate was 88% but it is relatively lower than the on demand breastfeeding found from Vietnam, 2002(30) which was 96.7%. Similarly the continued breast feeding rate at one year and at two years in this study was 95.7% and 65.6% respectively. This finding was much higher than the result from United State of America, 2004(46) where the continued breastfeeding rate at one year was 20.9% and Egypt, 1997(51) where the continued breastfeeding rate at one year and at two years was 64.4% and 33.9% respectively. This could be due to the fact that breastfeeding is a common tradition in Ethiopia in general and in the region in particular

In the binary logistic regression mode association test was done to identify the determinant factors of timely initiation and exclusive breast feeding practices. In this study place of delivery was found to be a significant predictor of timely initiation of breastfeeding ($p< 0.001$). Mothers

who delivered at home were 3.7 times more likely to initiate breastfeeding within one hour as compared to those who delivered at health institution (AOR=3.7[95%CI=1.81, 9.33]) This result is consistent with the finding from Guatemala City, Central America, 1999(16) where children born at home were significantly more likely to initiate within one hour than children born at hospitals. Likewise it is congruent with the Ethiopian demographic and health survey result, 2005 (5) which showed mothers who gave birth at home had high chance of initiating breastfeeding within one hour than those delivered at health institution.

This difference by place of delivery could be explained that health professionals may not focus on the initiation of breast feeding after delivery of the baby rather they may give emphasis on the activities like cleaning, warming, cord tie and other activities which could contribute for the delay of breast feeding initiation.

Other characteristics of the mother, such as History of ANC visit ($P<0.01$) and mode of delivery ($P<0.001$) were factors associated with timely initiation of breastfeeding practices. This result is congruent with the finding in Nepal, 2006(23) and Turkey, 2000(18) where Caesarean deliveries were associated with delay in timely initiation of breastfeeding and in Guinea-Bissau, 1986(27), where no prenatal care was determinant factor for delaying breast feeding. The effect of caesarean delivery on the delay of initiation could be explained in such a way that mothers may not be aware to feed their baby post operatively

On the other hand, this study revealed that there was no difference in the timing of breastfeeding initiation by age and educational status. This result is in line with the finding in Turkey, 2000 (18) in which maternal age and educational status had no influence on the timing of breast feeding initiation. But it contradicts with the finding in Alhassa Saudi Arabia, 2010(20) where

increased maternal age was positively associated with timely initiation; in Guinea-Bissau, 1986(27) where young age was a factor to delay initiation; and in Ethiopia 2005(5) where highly educated mothers were less likely to initiate breast feeding within one hour.

As to the associated factors with exclusive breastfeeding, the binary logistic regression model showed that employment status, initiation of breastfeeding and child's age were closely associated with exclusive breastfeeding practice.

This finding is in conformity with the result in Guatemala City, 1999 (21) where unemployed mothers were more likely to exclusively breast feed for six month than employed (women who did not work outside the home were 3.2 times more likely to exclusively breast-feed than women who worked outside the home) but it contradicts with the finding in Ethiopia, 2006(43) where employment status had no association with exclusive breastfeeding. This difference could be explained that in the current study majority of the respondents were housewife's by occupation. So, they might have high chance of staying with their baby than those employed.

Age of infants was positively associated with exclusive breast feeding in the current finding which is inconformity with the result in Ethiopia, 2006(43) where infants less than 2 months were high likely to be fed exclusively when compared to age 4-6 months. This may be due to the misunderstanding of mothers in which they may not consider the importance of exclusive breastfeeding but they refer to the ability of the child to take additional food, so as the child's age increases the ability of the child to take additional food also increases.

In this study there was no association between mother's monthly income and exclusive breastfeeding practice and it disagrees with the study in Saudi Arabia, 2010(20) where low

income mothers were more likely to breastfed exclusively. On the contrary, in Ethiopia, 2006(43) high income mothers were more likely to exclusively breastfed for six months.

Strength of the study

The strengths of this study include:

- The high response rate to the survey interviews (100%),
- Questionnaire was pretested
- Child feeding indicators examined were based on standard definitions formulated by WHO.

Limitation of the study

- A mother may have difficulty of remembering when she initiated breastfeeding for her child; as a result, timely initiation of breastfeeding is subjected to potential recall bias.
- During the determination of exclusive breastfeeding using a 24-hour recall period that measures current status, may cause the proportion of exclusively breastfed infants to be slightly overestimated, since some infants who were given other liquids regularly may not have received them in the 24 hours before the survey.

CHAPTER SEVEN: CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

This study revealed that the timely initiation of breastfeeding and exclusive breast feeding rate was better as compared to the national and regional prevalence. But mothers tend to introduce pre-lacteal foods due to some perceived and traditional practices as18% of them threw the colostrum and 10.4% of mothers gave pre-lacteal food to their infants.. Determinants of timely initiation of breastfeeding were assessed. Residence, History of ANC visit, Place of delivery, mode of delivery and birth attendant were closely associated with timely initiation of breastfeeding in the bivariate analysis. Of those variables place of delivery, mode of delivery and birth attendant were the independent determinant factors for timely initiation of breastfeeding in the multivariate analysis.

The practice of exclusive breastfeeding was lower as compared to that of timely initiation of breastfeeding. Employment status, child's age and timely initiation of breastfeeding were associated with exclusive breastfeeding practice in the bivariate analysis. Of those variables employment status and child's age were retained associated with exclusive breastfeeding in the multivariate analysis.

7.2 Recommendations

Based on the study findings the following recommendations are forwarded

- The result suggested on educational programs at health institutions and in the community level aimed to correct traditional inappropriate breastfeeding practices
- The study suggested coordination, strengthening and sustaining of the existing strategies, and approaches for further improvement of optimal breastfeeding practice

- Training to health professionals working in delivery unit to focus on early initiation of breastfeeding and favorable working environment for mothers are recommended
- Further study that mainly addresses all areas of associated factors (individual level, group level and societal level factors) that may significantly affect TIBF and EBF are needed.

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ANNEXES

Annex I: Information sheet

Addis Ababa University, college of health sciences, Centralized School of Nursing and Midwifery

Study on determinants of breast feeding practice in MCH clinics of Mekelle town

Greeting:

Hello, My name is_____. I am here today to collect data on determinants of breast feeding practice. The study is being conducted by Mr. Hailemariam Berhe from Addis Ababa University, Centralized school of Nursing and Midwifery, post graduate program. The objective of this study is to assess breast feeding practice and its associated factors here in Mekelle town MCH clinics. I request you to take part in this study and to respond genuinely. Your cooperation and willingness is greatly helpful in identifying problems related breast feeding practice in infants and young children. The study will be conducted through interviews and you are being asked for a little of your time, about 25 min, to help us in this study.

Your name will not be written in this form and will never be used in connection with any information you tell us. There is no possible risk associated with participating in this study except the time spent for responding to the questionnaire. All information given by you will be kept strictly confidential. Your participation is voluntary and you are not obligated to answer any question you do not wish to answer. If you feel discomfort with the question, it is your right to drop it any time you want. If you have questions regarding this study or would like to be informed of the results after its completion, please feel free to contact the principal investigator.

Address of the principal investigator:

Hailemariam Berhe Kahsay

Cell phone: +251 912 73 23 92/914 00 60 41, E-mail: **aidhbk@gmail.com**

Address of Addis Ababa University, Faculty of Medicine, Institutional Review Board:

Telephone number: 0115538734, E-mail: **aaumfirb@yahoo.com**

Are you willing to participate in this study?

1. Yes - …….. Continue to the next page
2. No- …… Skip to the next participant

Annex II: Consent form

In signing this document, I am giving my consent to participate in the study titled "Determinants of breast feeding practice among mothers of children aged less than 24 months attending governmental Maternal and Child Health clinics in Mekelle town*"*.

I have been informed that the purpose of this study is to assess breast feeding practice and its associated factors in infant and young children. I have understood that participation in this study is entirely voluntarily. I have been told that my answers to the questions will not be given to anyone else and no reports of this study ever identify me in any way. I have also been informed that my participation or non-participation or my refusal to answer questions will have no effect on me. I understood that participation in this study does not involve risks.

I understood that Hailemariam Berhe is the contact person if I have questions about the study or about my rights as a study participant.

Respondent's signature_____

If no, skip to the next participant

Date of interview: _____ Time started: _____ Time finished: _____

Interviewer Name_____Signature_____Date_____

Supervisor's name _____ signature _____

Results of interview questionnaire

1. Completed
2. Refused
3. Partially completed

Annex III: English version Questionnaire

Addis Ababa University, college of health sciences, Centralized School of Nursing and Midwifery

Questionnaire for assessment of factors associated with breastfeeding practice of infant and young children less than 24 months age in Mekelle town MCH clinics

001. Questionnaire ID number_____

002. Address: kebele _____

003. Name of health facility_____

Note: Encircle from the given option and write if any other idea or answer is given

PART I. Socio-demographic characteristics of mothers with their index child (age 0-24 years)

No	Question	Response	Skip
101	Mother's age (in years)	_____Years	
102	Marital status	1. Married 2. Single 3. Divorced 4. widow 5. Separated 6. cohabitated	
103	What is your religion?	1. Orthodox 2. Muslim 3. Catholic 4. Protestant 5. Others(specify)_____	
104	Ethnicity	1. Tigray 2. Amhara	

		3. Others (specify)_____	
105	Maternal education	1. No education 2. Primary 3.Secondary and higher	
106	Occupation of mother	1. Housewife 2. Government employee 3. Business woman 4. Private Organization 5. Daily laborer	
107	Paternal education	1. No education 2. Primary 3. Secondary and higher	
108	Do have: A radio A TV Do you read magazines, news or books	 1. Yes 2. No 1. Yes 2. No 1. Yes 2. No	
109	Monthly income of the household	1. <=500 2. 501-1000 3. 1001-1500 4. 1501-2000 5. 2000&above 6. Don't Know	
110	How many children do you have	_____ number	
111	Child's sex	1. Male 2. Female	
112	Child's age	_____ Months	

113	Birth order	_____th	
114	Birth interval between the youngest and his/her immediate elder	1. nullipara 2._____years	
PART II. Maternal health related factors			
201	Did you visit health facility for ANC during your pregnancy for this child?	1. Yes 2. No	If no skip to 205
202	If yes how many times did you receive (number of antenatal care) during your time of pregnancy for this child?	1. 1-3 2. 4-8 3. >8 4. Don't know	
203	Did you get health education on breast feeding at any of your visit?	1. Yes 2. No	If no skip to 205
204	What was the information that you acquired during your visit(more than one answer is possible)	1.Continue breast feeding even during maternal or child illness 2. Breast feeding should be initiated within one hour 3. Prelacteal feeds should not be given 4. EBF should be practiced for the first six months 5. Breast feeding should continue until 2 years 6.Other (specify)_____	

205	Where did you gave birth to this child/Place of delivery	1. Home 2. Hospital 3. HC 4. Other (specify)___	If the answer is 1 skip to 207
206	If the place of delivery is hospital or health center was(name) delivered by:	1. Vaginal delivery 2. Caesarean section	
207	Who helped you during delivery?	1. TBA 2. HEW 3. Health professional 4. Relatives 5. Other (specify)_____	
208	Did you receive advice/ information on BF at PNC	1. Yes 2. no	
	PART III. Breast feeding practice of infant and young children		
301	Have you ever breast fed the child?	1. Yes 2. No	If yes, skip to 303
302	If no, reason for not breastfeeding? (More than one answer is possible)	1. Breastfeeding takes too much time. 2. Breastfeeding means you can't go back to work or school. 3. Breastfeeding will make my breasts sag 4. Breastfeeding is painful 5. My breasts are too small to breastfeed 6. With bottle feeding, the mother knows that the baby is getting enough to eat. 7. Other(specify)_____	

303	How long after birth did you first put the Child to breast?	1. within 1 Hour 2.1- 24hr 3.1-3days 4.after 3days	
304	Did you give the child pre-lactation food/fluid?	1. Yes 2. No	if no skip to 307
305	If yes, what did you gave him (her)?	1. Butter 2. Sugar solution 3. Salt solution 4. Cow's milk 5. water 6. Other (specify)_____	
306	What was the reason for introducing prelacteal feed	1.Breast milk insufficiency 2.culture/tradition 3. maternal illness 4. C/S delivery 5. child abdominal cramp 6. painful breast 7.others(specify)_____	
307	Did you squeeze out and throw the first milk?	1. Yes 2. No	If no skip to 309
308	Why didn't you give it for your child?	1. it is dirty 2. it creates abdominal pain to the baby 3.others(specify)_____	

309	Was the child breastfed yesterday during the day or at night?	1. Yes 2. No	If no skip to 315
310	How many times did you breast feed in 24 hours?	_____ times	
311	Did you give the child additional food or fluid other than breast milk in the past 24 hours?	1. Yes 2. No	If no skip to 314
312	What ingredients did you gave?	1. Cow's milk 2. juice 3. Sugar solution. 4. Formula milk. 5. porridge 6. Injera 7. Other (specify)_____	
313	What was the reason for giving additional diet	1. age >6months 2. mothers felt breast milk alone was insufficient 3. mother was sick 4. child was sick 5. Mother left home for work 6.other(specify)_____	
314	When do you breastfeed?	1. on demand 2. when child cries 3. on schedule 4. on convenience	

315	Why was the child not breastfeed	1. weaned 2.maternal illness 3. breast problem 4.others (specify)_____	
316	At what age did the child stop breast feeding?	1. not weaned 2. _____months	
317	What is your reason for cessation	1. pregnancy 2. oral contraceptive use 3. felt it was time to stop 4. inadequate breast milk 5. maternal illness 6. other(specify)_____	
318	What did you use to feed the child?	1. not supplemented or weaned 2. Bottle 3. Cup 4. Spoon 5. hand/finger 5. Others (specify)_____	

Annex IV: መብርሂ ቅድመ መሕትት

አዲስ አበባ ዩኒቨርሲቲ ኮሌጅ ጥዕና ሳይንስ ክፍሊ ትምህርቲ ነርሲንግን ሚድዋይፈርን

መፅናዕቲ አመጋግባ ህፃናት ጡብ አዶን ንተግባራውነቱ ዝጎድኡ ተዛመድቲ ጉዳያትን

ሰላም- ከመይ ውዒለን

አነ ሸመይ----------ይባሃል፡፡ ኣብዚ ዕለት እዚ ኣብዚ ዝተረከብኩሉ ምክንያት ኣብ አመጋግባ ህፃናት ጡብ አዶን ንተግባራውነቱ ዝጎድኡ ተዛመድቲ ጉዳያትን ሐበሬታ ንምእካብ እዩ፡፡ ፅንዓቱ ዝካየድ ብኣቶ ሃይለማርያም በርሀ እንትሸውን ኣብ አዲስ አበባ ዩኒቨርሲቲ ነርሲንግ ክፍሊ ትምህርቲ ናይ ካልኣይ ዲግሪ ተምሃራይ እዩ፡፡ ዕላማ ናይዚ መፅናዕቲ ኣብ ከተማ መቐለ ኣብ ዝርከባ ትካላት ጥዕና፣ ማእከላት ጥዕና ኣዴታትን ህፃናትን አመጋግባ ህፃናት ጡብ አዶን ንተግባራውነቱ ዝጎድኡ ተዛመድቲ ጉዳያትን ንምፍታሽ እዩ፡፡ ኣብዚ መፅናዕቲ ንክትሳተፉን ትክክለኛ ሐበሬታ ክትህባን ብትሕትና ይሐትት፡፡ ናትክን ምትሕብባርን ድሌትን ኣብዚ ዝግበር መፅናዕቲ ኣብ አመጋግባ ህፃናት ጡብ አዶ ዘለው ፀገማት ንምፍላይ ኣዝዩ ጠቃሚ እዩ፡፡ እዚ መፅናዕቲ ብቃለ መሕትት ዝካየድ ኮይኑ ንኣስታት 15 ደቒቓ ግዜኽን መስዋእቲ ንክትገብራይ ይላበ፡፡ እዚ መጠይቅ ዝምላእ ብዝሰልጠነ ሐታታይ ክከውን ከሎ አብ ኩሉ ክይዲ ምምላእን ሐበሬታታት ምስጢሩ ዝተሐለወ ምኻኑ ከረጋግፅ ይፈቱ፡፡

ናይ ውልቀ ሰባት መልሲ ዝተሓዝ ብዝወሃብ ኮድ ቁፅሪ ክሽውን ከሎ ናይ ውልቀ ሰብ ሽም ይኹን ኣድራሻ ኣይተሐዝን፡፡ ውፅኢት እውን ዝግለፅ ብጥቅሉል እምበር ናይ ውልቀ ሰባት ዝግለፅ ኣይኮነን፡፡

እዚ ቃለ መሕትት ብድሌት ጥራሕ ዝግበር እዩ፡፡ ስለዚ ኣብዚ ሕቶን መልስን ብምስታፍክን ኮነ ብዘይምስታፍክን ኣብ ቀፃሊ ንባዕልክን ይኹነ ኣብ ስድራክን ኣብ ዘድልየክን ኣገልግሎት ዝፈጥሮ ምንም ዓይነት ፅዕንቶ ከምዘየለ የረጋግፅ፡፡ ኣብ ዝቀርብ ሕቶ ጥርጣረ እንተሓዲሩወን ኣብ ዝኾነ እዋን ናይ ምቁራፅ መሰለን ዝተሐለወ እዩ፡፡ ነዚ መፅናዕቲ ዝምልከት ሕቶ እንተለወን ወይ ድማ ናይዚ መፅናዕቲ ውፅኢት ከፈልጣ እንተደልየን ከይተሰከፉ ንበዓል ዋና እዚ መፅናዕቲ ብዝስዕብ ኣድራሻ ምጥያቕ ይክእላ እየን፡፡

ኣድራሻ በዓል ዋና መፅናዕቲ

ሃይለማርያም በርሀ ካሕሳይ

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እሞ ንምስታፍ ፍቃደኛ ድየን?

1. እወ---------- ናብ ዝቅፅል ገፅ ቀፅል/ሊ

2. ኣይፋለይን----------ናብ ዝቅፅል ተሳታፋይ ቀፅል/ሊ

Annex V: ናይ ስምምዕነት ቅጥዒ ቅድመ መፅናዕቲ ሕቶን መልስን

ኣብ ከተማ መቐለ ኣብ ዝርከባ ትካላት ጥዕና፣ ማእከላት ጥዕና ኣዴታትን ህፃናትን ኣመጋግባ ህፃናት ጡብ ኣዶን ንተግባራውነቱ ዝጎድኡ ተዛመድቲ ጉዳያትን ኣብ መንጎ ትሕቲ 2 ዓመት ህፃናት ብዝብል ስያሜ ኣብ ዝካየድ መፅናዕቲ ንምስታፍ ዝተሰማማዕኹ ኮይነ፣ ነዞም ዝስዕቡ ዋኒናት ኣብ ግምት ብምእታው እዩ፡፡

ዕላማ ናይዚ መፅናዕቲ ኣብ ከተማ መቐለ ኣብ ዝርከባ ትካላት ጥዕና፣ ማእከላት ጥዕና ኣዴታትን ህፃናትን ኣመጋግባ ህፃናት ጡብ ኣዶን ንተግባራውነቱ ዝጎድኡ ተዛመድቲ ጉዳያትን ንምፍታሽ ምኻኑ ብምርዳእ፣ እዚ ቃለ መሕትት ብድሌት ጥራሕ ዝግበርን ምሽጥሩ ዝተሓለወን ምኻኑ ብምእማን ከምኡ ውን ምስታፈይ፣ ዘይምስታፈይ ወይ ምንፃገይ ኣባይ ምንም ዓይነት ተፅዕኖ ከምዘይብሉ ኣብ ግምት ብምእታው፣ ኢሉ ውን ኣባይ ዘምፅኦ ሳዕቤን ከምዘየለ ብምርዳእ፣ ኣብ መወዳእታ እውን ነዚ መፅናዕቲ ዝምልከት ሕቶ እንተለኒ ወይ ድማ ናይዚ መፅናዕቲ ውፅኢት ክፈልጥ እንተደልየ ንበዓል ዋና እዚ መፅናዕቲ ኣቶ ሃይለማርያም በርሀ ኣብ ላዕሊ ብዝተጠቀሰ ኣድራሻ ምጥያቕ ከምዝከእ ብምእማን ፤ ኣብዚ መፅናዕቲ ንምስታፍ ፍቃደኛ እየ፡፡

ፍቃደኛ እንድሕር ዘይኮይነን ናብ ዝቅፅል ተሓታታይ ይሕለፉ/ፋ

ዝተሐተተሉ ዕለት----------ዝተጀመረሉ ሰዓት----------ዝተወደአሉ ሰዓት----------

ናይ ሐታታይ ሽም---------- ፊርማ----------

ሽም ተቆፃፃሪ---------- ፊርማ----------

<u>ውፅኢት ቃለ መሕትት</u>

1. ዝተማልአ
2. ዝተነፀገ
3. ዘይተማለአ

Annex VI: ትግርኛ መሕትት

አዲስ አበባ ዩኒቨርሲቲ ኮሌጅ ጥዕና ሳይንስ ክፍሊ ትምህርቲ ነርሲንግን ሚድዋይፈርን

ኣብ ከተማ መቐለ ዝርከባ ትካላት ጥዕና ኩነታት ኣመጋግባ ህፃናት(ትሕቲ 24 ኣዋርሕ) ፀባ ጡብ ኣዶን ተዛመድቲ ጉዳያትን ንምፅናዕ ዝተዳለወ መሕትት

001. ኣድራሻ/ ቀበሌ----------

002. ቁፅሪ መሕትት----------

003. ስም ጥዕና ትካል----------

መዘኻኸሪ- ካብቶም ዝተውሃቡ መማረፅታት ሕረ/ዩ፤ ካሊእ ሓሳብ እንተሃልዩ ኣብቲ ክፍቲ ቦታ ይፅሓፉ/ፋ

ክፍሊ ሓደ- ማሕበራውን ስነህዝባውን ኩነታት ኣዴታትን ህፃናትን

ተ.ቁ	ሕቶ	መልሲ	ናብ ዝቕፅል ሕለፍ/ፊ
101	ናይ ኣዶ ዕድመ ክንደይ እዩ?	----------ዓመት	
102	ኩነታት ሓዳር	1. ባዓልቲ ሓዳር 2. ዘይተመርዐወት 3. ዝተፋተሐት 4. በዓል ገዝአን ዝሞተን 5. ተፈላልዮም ዝነብሩ 6. ዘይሕጋዊ ሓዳር	
103	ሃይማኖትክን (እምነትክን) እንታይ እዩ?	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቲስታንት 4. ካቶሊክ 5. ካልእ ይግለፁ----------	
104	ብሄረሰብክን እንታይ እዩ	1. ትግራይ 2. ኣምሓራ 3. ካልእ ይግለፁ----------	
105	ናይ ኣዶ ደረጃ ትምህርቲ	1. ዘይተምሃረት 2. ምንባብን ምፅሓፍን ትከእል	

		2. ቀዳማይ ደረጃ 3. ካልኣይ ደረጃን ልዕሊኡን	
106	ናይ ኣዶ ቀንዲ መተሓዳደሪ ስራሕ	1.ሙሉእ እዋን ኣብ ገዛ 2. ናይ መንግስቲ ሰራሕተኛ 3. ነጋዴ 4. ናይ ባዕለይ ስራሕ/ትካል ኣለኒ 5. መዓልታዊ ስራሕ 6. ካልእ ይግለፁ----------	
107	ናይ በዓል ገዛ ደረጃ ትምህርቲ	1. ፈፂሙ ዘይተምሃረ 2. ቀዳማይ ደረጃ 3. ካልኣይ ደረጃን ልዕሊኡን	
108	ሓበሬታ ካበይ ይረኽባ? ቴሌቪዥን ሬድዮ መፂሄት፣መፅሓፍ	 1. እወ 2. ኣይፋልን 1. እወ 2. ኣይፋልን 1. እወ 2. ኣይፋልን	
109	ወርሓዊ ናይ ገዛ እቶት	----------ናይ ኢትዮጵያ ቅርሺ	
110	ክንደይ ቆልዑ ኣለውወን?	----------ቁፅሪ	
111	ናይ ህፃን ፆታ	1.ተባዕታይ 2. ኣንስታይ	
112	ናይ ህፃን ዕድመ	----------ወርሒ	
113	እዚ ህፃን መበል ክንደይ እዩ?	----------ይ	
114	ኣብ ሞንጎ እዚ ህፃንን ምዕባዩን ዘሎ ናይ ዕድመ ኣፋላላይ	1. ቀደማይ ህፃን እዩ 2.----------ዓመት	
ክፍሊ ክልተ- ኩነታት ጥዕና ኣዶ ኣብ እዋን ጥንሲ			
201	ነዚ/ነዛ ህፃን ጥንስቲ እናሃለዋ ቅድመ ወሊድ ክትትል ዶ ገይረን ይፈልጣ?	1. እወ 2. ኣይፋለይን	ኣይፋለይን፣ ናብ ተ.ቁ 205
202	ናይ ተ.ቁ 201 መልሲ እወ እንተኾይኑ ክንደይ ግዜ ክትትል ገይረን?	1. በዝሒ ክትትል------- 2. ኣይዝክሮን	
203	ኣብ እዋን ክትትለን ብዛዕባ ኣመጋግባ ፀባ ጡብ ኣዶ ትምህርቲ ዶ ረኺበን ይፈልጣ?	1. እወ 2. ኣይፋለይን	ኣይፋለይን፣ ናብ ተ.ቁ 205

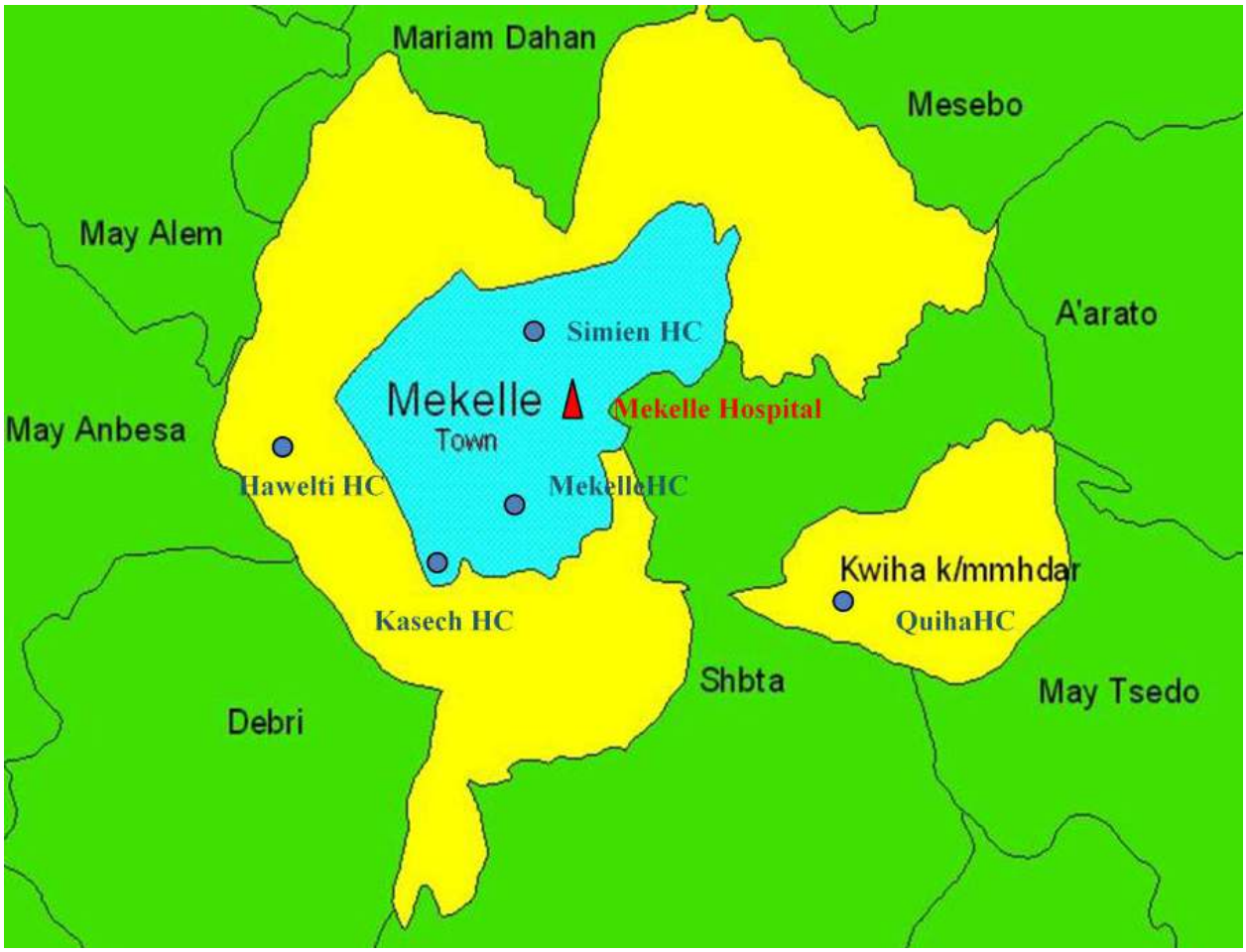
204	ዝረኸብኦ ትምህርቲ ብዛዕባ እንታይ ነይሩ?(ካብ ሓደ ንላዕሊ መልሲ ይከኣል እዩ)	1. ኣብ እዋን ሕማም እውን እንተኮነ ምጥባው ክቅፅል ከምዘለዎ 2. ፀባ ጡብ ኣዶ ድሕሪ ወሊድ ኣብ ውሽጢ ሓደ ሰዓት ክጅምር ከምዘለዎ 3. ቅድሚ ፀባ ጡብ ኣዶ ካልእ መግቢ ክወስድ ከምዘይብሉ 4. ፀባ ጡብ ኣዶ ጥራሕ ንϬተ ወርሒ ክወስድ ከምዘለዎ 5. ፀባ ጡብ ኣዶ ን2ተ ዓመት ክቐፅል ከምዘለዎ 6. ካልእ ይግለፃ----------	
205	እዚ ህፃን ዝተወለደሉ ቦታ	1. ኣብ ገዛ 2. ሆስፒታል 3. ጥዕና ጣብያ 4. ካልእ ይግለፃ----------	መልሱ ኣብ ገዛ እንተኮይኑ ናብ ተ.ቁ 207
206	እዚ ህፃን ዝተወለደሉ ቦታ ኣብ ጥዕና ትካል እንተኮይኑ ዓይነት ወሊድ	1. ብትክክለኛ መስመር ወሊድ 2. ብቀሳሪያዊ መጥባሕቲ	
207	ዘዋለዶ ኣካል	1. ናይ ልምዲ መዋለዲቲ 2. ጥዕና ፓኬጅ 3. ጥዕና በዓል ሞያ 4. ቤተሰብ(ዘመድ፣ጎረቤት) 5. ካልእ ይግለፃ----------	
208	እዚ ህፃን ምስ ወለዳ ድሕሪ ወሊድ ኣገልግሎት ረኺበን ዶ ይፈልጣ?	1. እወ 2. ኣይፋለይን	
ክፍሊ ሰለስተ- ኣመጋግባ ህፃናት			
301	እዚ/እዛ ህፃን ፀባ ጡብዶ ሂበንኦ/ኣ ይፈልጣ?	1. እወ 2. ኣይፋለይን	እወ፣ ናብ ተ.ቁ 303

302	ናይ ተ.ቁ 301 መልሲ ኣይፋለይን እንተኮይኑ ምክያቱ እንታይ እዩ?(ካብ ሓደ መልሲ ንላዕሊ ይካኣል እዩ።)	1. ምጥባው ብዙሕ ግዜ ይውድእ 2. ምጥባው፣ ስራሕ ከምኡ ውን ትምህርቲ የተኣንጉል 3. ምጥባው ጡቢይ ክወድቅ ይገብሮ 4. ምጥባው ቃንዛ ኣለዎ 5. ጡቢይ ንእሽተይ እዮ 6. ጡጦ እኩል እዩ 7. ካልእ ይግለፅ----------	
303	ምስተወለደ ድሕሪ ክንደይ ሰዓት ምጥዋብ ጀሚሩ?	1. ሽዑ ንሽዑ 2.--------ሰዓት 3.--------መዓልቲ	
304	ቅድሚ ፀባ ጡብ ኣዶ ካልእ መግቢ ዶ ሂበንኡ/መጊበንኡ?	1. እወ 2. ኣይፋለይን	ኣይፋለይን፣ ናብ ተ.ቁ 307
305	ናይ ተ.ቁ 301 መልሲ እወ እንተኮይኑ እንታይ ሂበንኡ?	1. ጠስሚ 2. ሽኮር ኣሕቂቀ 3.ጨው ኣሕቂቀ 4.ናይ ላሕሚ ፀባ 5. ማይ 6. ካልእ ይግለፅ----------	
306	ቅድሚ ፀባ ጡብ ኣዶ ካልእ መግቢ ንምንታይ ሂበንኡ	1. ፀባ ጡብ እኹል ስለዘይኮነ 2. ሉሙድ/ባህሊ ስለዝኾነ 3. ኣዶ ስለዝሐመመት 4. ብቀሳሪያዊ መጥባሕቲ ስለዝወለደት 5. ናይ መጀመሪያ ፀባ ከብዱ ክቆርፆ ስለዝከኣል 6. ጡቢይ ስለዝሕመኒ 7. ካልእ ይግለፅ----------	
307	ምስወለዳ ልግዐ ኣፍሲሰንኡዶ?	1. እወ 2. ኣይፋለይን	ኣይፋለይን፣ ናብ ተ.ቁ 309

308	ናይ ተ.ቁ 307 መልሲ እወ እንተኾይኑ ንምንታይ ንህፃን ዘይተወሃቦ	1. ረሳሕ ስለዝኾነ 2. ከብዱ ክቆርፆ ስለዝከእል 3. ካልእ ይግለፁ----------	
309	እዚ/ዛ ህፃን ኣብ ዝሐለፉ 24 ሰዓታት ጡብ ጠቢው/ዋ ዶ?	1. እወ 2. ኣይፋለይን	ኣይፋለይን፣ ናብ ተ.ቁ 315
310	ኣብ ዝሐለፉ 24 ሰዓታት ክንደይ ግዜ ጠቢው/ዋ?	----------ግዜ	
311	ኣብ ዝሐለፉ 24 ሰዓታት ተወሳኪ መግቢ ወይ ፈሳሲዶ ወሲዱ/ዳ ነይሩ/ራ?	1. እወ 2. ኣይፋሉን/ላን	ኣይፋለይን፣ ናብ ተ.ቁ 314
312	እንታይ ዓይነት መግቢ ሂበንኣ?	1. ናይ ላሕሚ ፀባ 2. ፅማቐ 3. ስኮር ሕቃቅ 4. ናይ ፋብሪካ ፀባ 5. ስቆ 6. እንጀራ 7. ካልእ ይግለፁ----------	
313	ንምንታይ ተወሳኺ መግቢ ሂበንኣ?	1. ዕድሚኡ ልዕሊ 6ተ ወርሒ ስለዝኾነ 2. ፀባ ጡብ ጥራሕ እኹል ኣይኮነን ኢለ ስለዝሐስብ 3. ስለዝሐመምኩ 4.ህፃን ስለዝሐመመ 5. ናብ ስራሕ ስለዝተመለስኩ 6. ካልእ ይግለፁ----------	
314	መዓዝ፣መዓዝ እየን ዘጥብብ ኣ	1. ኣብ ዝደለዮ እዋን 2. እንድሕር በኽዩ 3. ብፕሮገራም 4. ኣብዝመቸወኒ	
315	እዚ/ዛ ህፃን ትማሊ ዘይጠበወሉ/ትሉ ምክንያቱ እንታይ እዩ?	1. ጡብ ሓዲጉ/ጋ 2. ኣዶ ስለዝሐመመት 3. ናይ ጡብ ፀገም	

		4. ካልእ ይግለፃ----------	
316	ኣብ ክንደይ ዕድመ ጡብ ሓደጉ?	1. ኣይሓደገን 2.----------ወርሒ	
317	ንጡብ ምሕዳግ ምኽንያቱ እንታይ እዩ?	1. ጥንሲ 2.በኣፍ ዝውሰድ መከላከሊ ጥንሲ ስለዝወስድ 3. ጡብ ምጥባው ዝሐድገሉ ዕድመ እዩ ኢለ ስለዝኣመንኩ 4. ፀባ ጡብ እኹል ስለዘይኮነ 5. ኣዶ ስለዝሓመመት 6. ካልእ ይግለፃ----------	
318	ህፃን ንምምጋብ እንታይ ዓይነት መሳርሒ ይጥቀማ?	1. ህፃን ጡብ ኣይገደፈን/ተወሳኺ መግቢ ኣይጀመረን 2. ጡጦ 3. ኩባያ 4. ማንካ 5. ብኢድ 6. ካልእ ይግለፃ----------	

Annex VII: Map of the study area



Annex VIII: Declaration:

I the undersigned, declare that "this 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".

Name of student_____

Signature _____

Place of submission: Addis Ababa University, Centralized School of Nursing and Midwifery.

Date of submission _____

Advisor: This thesis work has been submitted for examination with my approval as University advisor.

Name _____ signature_____