

**FACTORS INFLUENCING EXCLUSIVE
BREASTFEEDING OF CHILDREN FOR THE FIRST SIX
MONTHS AFTER BIRTH. A CASE OF THIKA LEVEL
FIVE HOSPITAL, KIAMBU COUNTY, KENYA.**

BY

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**A research project report submitted in partial fulfillment of the
requirements for the award of degree of Master of Arts in Project
Planning and Management of the University of Nairobi**

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DECLARATION

This research project report is my original work and has not been presented for a degree in any other university.

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The project report has been submitted for examination with my approval as the university supervisor.

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DEDICATION

I wish to dedicate this research project report to my daughter Neema Munguti and husband Dr. John Kisengi who have inspired and supported me throughout my work.

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ABBREVIATIONS AND ACRONYMS

BFHI:	Baby Friendly Hospital Initiative
CBS:	Central Bureau of Statistics
FAO:	Food and Agriculture Organization
GOK:	Government of Kenya
HIV:	Human Immunodeficiency Virus
IYCF:	Infant and Young Child Feeding
KU – CFSVA:	Kenya Urban Comprehensive Food Security & Vulnerability Analysis
KDHS:	Kenya Demographic and Health survey
KNBS:	Kenya National Bureau of Statistics
MCH:	Maternal and Child Health
MDG:	Millennium Development Goals
MoH:	Ministry of Health
MoPHS:	Ministry of Public Health and Sanitation
MTMSGs:	Mother to Mother Support Groups
UNICEF:	United Nations Children’s fund
WHO:	World Health Organization

ABSTRACT

The World Health Organization (WHO) recommends exclusive breastfeeding during the first six months of life for optimal growth, development and health. Breastfeeding should continue up to two years or more and nutritionally adequate, safe, and appropriately-fed complementary foods should be introduced at the age of six months to meet the evolving needs of the growing infant. Little evidence exists on factors that influence breastfeeding practices especially the practice or non-practice of exclusive breastfeeding for children from birth to six months of life. According to The World breastfeeding trends Initiative, 2012, exclusive breastfeeding rates at less than six months are currently at 32%. Kenya targets to increase exclusive breastfeeding rate from 32% to 80% by 2017. However, various factors associated with sub-optimal breastfeeding and complementary feeding practices have been identified in various settings. The purpose of this study was to establish how these factors influence breastfeeding practices of children for the first six months of life. The study was guided by the following objectives; 1. To establish the influence of socioeconomic characteristics on exclusive breastfeeding of children for the first six months after birth. 2. To establish the influence of socio-cultural factors on exclusive breastfeeding of children for the first six months after birth. 3. To establish the influence of maternal characteristics on exclusive breastfeeding of children for the first six months after birth. The study adopted a cross sectional survey design. The study targeted children from birth to six months of age at the Maternal and Child Health Clinic. A sample of 183 respondents was used for this study. Data was collected using a researcher administered questionnaire and focus group discussion guide. The Statistical Package for Social Sciences was used for data analysis. Results were presented using tables. Of the sampled children 51% were males while 49% were females. The percentage of mothers with secondary education was the highest at 60.5%. Family contributions were the main source of income for households at 65.5%. The rate of exclusive breastfeeding was 28%. Maternal perception on insufficient milk production was responsible for 22.8% of the mothers that had given complementary feeds based on 24hour dietary recall. Advice of relatives and neighbors was also reported by 7.3% for the cases of early introduction of complementary feeding since birth. Married mothers however reported higher exclusive breastfeeding rates (71%) than single mothers (69.6%). Mothers with a higher number of children reported higher rates of exclusive breastfeeding. The exclusive breastfeeding rate at Thika Level Five Hospital (28%) is below the level recommended by WHO (90%) and below the national level (32%). Recommendations were that breastfeeding promotion messages by the health sector focus on alleviating the misconceptions mothers have on exclusive breastfeeding, establishment of mother to mother support groups and more facility based research to address specific needs of mothers. The findings and recommendations will be shared with stakeholders such as The Nutrition Steering Committee of Kiambu County and the Ministry of Health.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Exclusive breastfeeding of children for the first six months of life is globally recognized as the most effective preventive intervention for ensuring child survival. This intervention alone can reduce childhood mortality by up to 13%, thus contributing significantly to attainment of the millennium development goal number 4 (WHO, 2003).

UNICEF and WHO recommend that children be exclusively breastfed; fed only breast milk with no other liquids (including water) or food on demand for the first 6 months of life. Research also suggests that exclusive breastfeeding is associated with a lower risk of HIV transmission (UNICEF, 2006). Early introduction of foods and other liquids reduces breast milk intake, decreases the full absorption of nutrients from breast milk, and increases the risk of diarrhea and acute respiratory infections for infants. It also limits the duration of the mother's postpartum amenorrhea and may result in shortened birth intervals (WHO, 2001).

Poor breastfeeding and complementary feeding practices, together with high rates of morbidity from infectious diseases are the prime proximate causes of malnutrition in the first two years of life. Breastfeeding confers both short-term and long-term benefits to the child. It reduces infections and mortality among infants, improves mental and motor development, and protects against obesity and metabolic diseases later in the life course (Oddy *et al.*, 2003).

The WHO recommends exclusive breastfeeding in the first six months, beginning from the first hour of life, to meet the infant's nutritional requirements and achieve optimal growth, development and health. The mother is advised to continue breastfeeding up to two years of age or more and begin nutritionally adequate, safe, and appropriately-fed complementary foods at the age of six months in order to meet the evolving needs of the growing infant (WHO, 2002).

Various factors associated with sub-optimal breastfeeding and complementary feeding practices have been identified in various settings. These include maternal characteristics such as age, marital status, occupation, and education level; antenatal and maternity health care; health education and media exposure; socio-economic status and area of residence; and the child's birth characteristics including birth weight, method of delivery and birth order (Roig *et al*, 2006).

In Kenya, Exclusive breastfeeding rates remain low at 32 percent (KDHS, 2008- 09) and the challenge is how to scale it up to universal levels. The implication of this is that 97 percent of Kenyan infants are being exposed daily to an increasing risk of disease and have lowered immunity because they are given foods other than breast milk before the age of six months of age (Government of Kenya [GoK], 2008). In Kenya, complementary foods are introduced as early as the first month with 10 percent of infants younger than two months receiving some solid or semi solid food (KDHS, 2008- 09). Too early introduction of complementary feeds is likely to displace the more nutritive breast milk in the child's diet. This coupled with unhygienic preparation and storage conditions predisposes the many infants to diarrhoea, causing a negative impact on growth and development (KNBS, 2008).

The government of Kenya through the Ministry of Public Health and Sanitation has proposed the revitalization of the Baby Friendly Hospital Initiative (BFHI) and to support districts to implement the key elements of Infant and Young Feeding Practices (IYCF) strategy (Exclusive breast feeding up to six months, Complementary feeding with frequent feeds, adequate food, variety, hygienically prepared and support of breast feeding up to two years) as well as strengthen community support mechanisms. The aim of GoK was to have 50 percent of districts strengthen the IYCF programmes by 2010 (MoPHS, 2007). The greatest challenge to BFHI however is the implementation of the 10th step related to community based breast feeding promotion. Scientific based evidence demonstrates that community based initiatives of promoting breast feeding results in longer duration of exclusive breast feeding unlike BFHI that achieves high rates in the hospital and rapidly falls thereafter (UNICEF, 2008). Mother to mother support groups (MTMSGs) are intended to help mothers strengthen or modify certain attitudes and practices and to learn from each other. In addition, women can reflect on their experiences, doubts, difficulties, popular beliefs, myths, information and adequate breast feeding practices (AED/LINKAGES, 2004).

1.2 Statement of the problem

Poor breastfeeding and complementary feeding practices have been widely documented in the developing countries. Only about 39% of infants in the developing countries and 25% in Africa are exclusively breastfed for the first six months. Additionally, 6% of infants in developing countries are never breastfed (Lauer, 2004). In Kenya, according to Kenya Demographic and Health Survey 2008-2009, 32% of children under the age of six months are exclusively breastfed (CBS, 2003).

According to FAO (2005), there are still some inadequate practices particularly regarding exclusive breastfeeding and bottle-feeding. Only 29% of children under 2 months of age are exclusively breastfed. After 2 months, the percentage decreased sharply and overall only 13% of children under 6 months were exclusively breastfed (FAO, 2005). Bottle-feeding is a rather common practice in Kenya, concerning more than one-quarter of children less than one year of age (CBS, MOH & ORC Macro, 2004). Bottle-feeding may result in increased morbidity due to unsafe preparation techniques and because a large proportion of the population do not have access to improved water sources (UNICEF, 2005). As a result, substantial levels of child malnutrition and poor child health and survival have been documented in Kenya (CBS, 2003). It has been realised that Kenyan IYCF programmes increase the duration of breast feeding but do not necessarily improve the rate of exclusive breast feeding (UNICEF, 2003).

Mothers who deliver in a health facility in most cases receive breastfeeding counselling, especially with the revitalisation of the Baby Friendly Hospital Initiative (BFHI) from 2007 aimed at promoting optimal breastfeeding practices. The BFHI has been found to be effective in several settings in the developing world (Braun et al, 2003). BFHI, is being revitalized in Kenya in the National Strategy on Infant and Young Child feeding(MoPHS, 2007), and it may be playing a role in encouraging mothers to exclusive breastfeed their infants in the first 6 months of life. Since the BFHI initiative was introduced, there has been potential improvement in the proportion of children exclusively breastfed from 13% in 2003 to 32% in 2008 (KDHS, 2008-09). Despite this, the MDG 4 has not been attained yet.

1.3 Purpose of the study

The purpose of the study was to establish factors that influence breastfeeding practices of children for the first six months after birth at Thika Level Five Hospital.

1.4 Objectives of the study

This study was be guided by the following objectives.

1. To determine how socio-economic characteristics of mothers influence exclusive breast feeding of children for the first six months after birth.
2. To establish the influence of socio-cultural factors on exclusive breastfeeding of children for the first six months after birth.
3. To establish the influence of maternal characteristics on exclusive breastfeeding of children for the first six months after birth.

1.5 Research hypothesis

In order to respond to the objectives raised, the study sought to answer the following questions:

1. How does the socio-economic status influence exclusive breastfeeding of children for the first six months after birth?
2. How do socio-cultural factors influence exclusive breastfeeding of children for the first six months after birth?
3. How do maternal characteristics influence exclusivebreastfeeding of children for the first six months after birth?

1.6 Justification of the study

Exclusive breastfeeding rate is a nutritional indicator for reduction of infant mortality rate, a millennium development goal number 4. Exclusive breastfeeding is recommended because breast milk is uncontaminated and contains all the nutrients necessary for children in the first few months of life. In addition, the mother's antibodies in breast milk provide immunity to disease. Early supplementation is discouraged for several reasons. First, it exposes infants to pathogens and increases their risk of infection, especially disease. Second, it decreases infants' intake of breast milk and therefore suckling, which reduces breast milk production. Third, supplementary food is often nutritionally inferior to breast milk (WHO, 2003). This study sought to explore factors that influence exclusive breastfeeding and consequently the attainment of the 4th millennium development goal.

1.7 Significance of the study

The findings of this research will generate information on factors that influence exclusive breastfeeding of children from birth to six months of life. They will form a basis for training mothers and caregivers on the importance of adhering to breastfeeding recommendations. It will also be useful to the Ministry of Health and organizations concerned with infant and young child feeding in determining the type of interventions to design in order to improve maternal and child health.

1.8 Basic assumptions of the study

The study assumed that the respondents gave truthful and accurate information regarding their breastfeeding practices and the extent to which the various factors influence the practices.

1.9 Limitations of the study

The Republic of Kenya has a total of four thousand and one (4001) health facilities ranging from dispensaries to Referral hospitals. The study focused on factors influencing exclusive breastfeeding in only one facility, Thika Level Five Hospital. This was due to financial and time constraints.

1.10 Delimitations of the study

The study excluded beneficiaries of feeding programmes as this category of persons has the feeding practices strongly determined and influenced by the treatment regimen for the condition. The study only included mothers visiting the Maternal and Child Health Clinic of the Thika Level Five Hospital.

1.11 Definition of significant terms

- Birth characteristics:** Refer to birth related factors such as birth weight, method of delivery and birth order
- Complementary feeding:** Refers to feeding a child with foods in addition to breast milk
- Dietary intake:** Food or drink eaten or consumed in a day
- Exclusive breastfeeding:** Refers to feeding a child with breast milk alone and no other liquids (including water) or food on demand for the first six months of life.
- Maternal characteristics:** Refer to the mother's education level, parity, marital status, morbidity and mode and place of delivery.
- Pre-lacteal foods:** Refers to non breast milk feeds given before the initiation of breastfeeding.

- Replacement feeding:** Refers to cessation of or non practice of breastfeeding.
- Socioeconomic status:** An economic and sociological combined total measure of an individual's social position relative to others in that cohort based on income.

1.12 Organization of the study

Chapter one explains the background of the study while describing the problem from a global and local perspective. It also states the purpose and significance of the study. The chapter also highlights the limitations of the study and assumptions on which the study was based. Definition of given terms as used in the study is also given. Chapter two reviews relevant and related literature on exclusive breastfeeding and factors that influence its practice. It further gives a theoretical review, conceptual framework and states the knowledge gap that the study aimed to fill. Chapter three explains the methodology was used in the study. It describes the target population and the reason for choosing the group. In this chapter, Operationalization of variables is shown. It further describes the sampling method and data analysis. Chapter four contains data analysis, presentation and interpretation of the research findings. Chapter five gives a summary of key findings, discussion, conclusion and recommendations from the findings on factors influencing exclusive breastfeeding for the first six months after birth.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter two entails review of relevant literature on exclusive breast feeding. A general overview of breastfeeding is given. The chapter then describes the global situation of breast feeding in general and narrows down to exclusive breast feeding. Further on, it describes the situation from a continental, Sub Sahara Africa and Kenyan perspective.

2.2 Overview of breastfeeding and exclusive breast feeding practices

There is a universal consensus about the fundamental importance of breastfeeding for children's adequate growth and development and for their physical and mental health (WHO, 2002). Breastfeeding, particularly exclusive breastfeeding, and appropriate complementary feeding practices are universally accepted as essential elements for the satisfactory growth and development of infants as well as for prevention of childhood illness. This has culminated in a publication by the World Health Organization (WHO) recommending that infants up to 6 months of age should be exclusively breastfed (WHO, 1998).

Benefits of breastfeeding like a decrease in the incidence, severity of infectious diseases such as diarrhea, respiratory tract infections, otitis media and urinary tract infection; decreased incidence of types 1 and 2 diabetes mellitus, overweight, obesity and asthma were reported (Gartner LM, Morton J, Lawrence RA, *et al*, 2005). Too early introduction of breast milk substitutes and too late introduction of semi solid complementary feeds are common and are responsible for rapid increase in the

prevalence of under nutrition between 6-24 months (Ramachandran, 2005). Exclusive breastfeeding defined by World Health Organization (WHO) as practice of feeding only breast milk (including expressed breast milk) and allows the baby to receive vitamins, minerals or medicines and water, breast milk substitutes, other liquids and solid foods are excluded.

Some studies (Aidam *et al*, 2005) reveal factors, positively associated with exclusive breastfeeding, such as higher maternal educational level, gestational age greater than 37 weeks and mothers with previous experience of breastfeeding. There are also studies that relate factors leading to interruption of exclusive breastfeeding such as low family income, low maternal age, primiparity and mothers returning to work (Mascarenhas *et al*, 2006). Several studies intended to define determinant variables in the success or failure of breastfeeding (Losch *et al*, 1995), which could ease the planning of promotional strategies. Nevertheless, it is always prudent to consider that, as an eating habit, breastfeeding is intrinsically related to social, cultural and traditional patterns of a given population. This fact justifies need for regional studies that allows more efficient action in regard to measures for intervention, based on knowledge of local reality (WHO, 2002).

Based on WHO guiding principles for feeding breast fed and non breastfed children, the IYCF practices indicators is comprised of all the following three components: continued breastfeeding or feeding with appropriate calcium rich foods if not breastfed; feeding (solid/semisolid food) a minimum number of times per day according to age and breastfeeding status and feeding a minimum number of food groups per day according to breastfeeding status. The promotion and support of

optimal breastfeeding and complementary feeding practices (IYCF) is a global priority. WHO and UNICEF have for many years emphasized the importance of maintaining the practice of breastfeeding and reviving the practice where it is in decline. The twenty seventh world assembly in 1974 noted the general decline in breastfeeding in many parts of the world and in May 1981, the world health assembly adopted the /international code of marketing of breast milk substitutes (WHO, 1981).

This was to protect breastfeeding and to regulate the advertising and promotional techniques used to encourage artificial feeding. In Scientific evidence demonstrates lower infant mortality and morbidity rates, reduced prevalence of overweight among young children and reduced risk of breast and ovarian cancers among women (Jones and Steketee, 2003). WHO recommends exclusive breastfeeding for six months since from that age breast milk is no longer sufficient to meet all the nutritional needs of the growing infant (WHO, 2002). The period from birth to two years of age is widely recognized as a critical window for the promotion of optimal growth, health and development.

In Kenya and in much of Sub Sahara Africa, poor breast feeding and poor complementary feeding practices coupled with high rates of childhood illnesses are the principal causes of malnutrition during the first two years of life (UNICEF ESARO, 2007). Globally, exclusive breastfeeding of children less than six months of age has been increasing annually (UNICEF, 2009). The current prevalence is 37 percent (UNICEF, 2011). UNICEF has further documented this improvement in the developing world as 33 percent in 1995 and 37 percent in 2008. South Asia registers the highest rate at 44 percent (UNICEF 2011). The exclusive breastfeeding indicator

is the proportion of infants 0-6 months of age who are fed exclusively breast milk based on 24-hour recall. The national rate (both urban and rural) is 32.0 percent (KDHS 2008-09). The rate is yet to reach the WHO target of 90 percent. There are several factors that hinder proper IYCF practices among women in Kenya. Study findings show a poor knowledge of recommended breastfeeding practices among mothers (Ochola *et al*, 2008).

Early breastfeeding practices determine the successful establishment and duration of breastfeeding. It is recommended that children be put to the breast immediately or within one hour after birth. When a mother initiates breastfeeding immediately after birth, breast milk production is stimulated. During the first few days after delivery, colostrum, an important source of nutrition and antibody protection for the newborn, is produced and should be fed to the newborn while awaiting the production of regular breast milk. Prelacteal feeding, giving liquids or foods other than breast milk prior to the establishment of regular breastfeeding, deprives the child of the valuable nutrients and protection of colostrum and exposes the newborn to the risk of infection. According to KDHS, 2008- 09, 42% of children in Kenya are given prelacteal feeds.

2.3 Socioeconomic factors and exclusive breastfeeding

On maternal education level, evidence of the association between a mother's level of education and the duration of breastfeeding varies (Pascale 2007). In a study by Kimani, 2011 lower than secondary level education was associated with earlier cessation of breastfeeding. While it is not very clear why this is the case, higher education may be associated with higher knowledge and practice of positive health behavior. Higher HIV prevalence among those with less than secondary level

education; especially those with no education at all in our setting (Ziraba *et al.*, 2011) may be associated with early cessation of breastfeeding.

The socioeconomic status influences the mothers' choice to introduce formula milk. This was indicated in a study by Rejesh, 2011 in South Gujarat region of India. Mothers who worked away from home were more likely to introduce formula milk and start complementary feeding before the infant attained six months of age. A mother returning to work was reported to have led to early complementary feeding (Mascarenhas *et al.*, 2006). Mothers also cited challenges to exclusive breastfeeding to include return to work after maternity leave forcing them to introduce complementary feeds before the children are six months of age (Ochola *et al.*, 2008), and caregivers left with the child while the mother goes to work introducing these foods when they perceive that the babies are hungry, (Kimani, 2011). In Tanzania according to Shirima, Gabre-Medhin and Greiner (2001) duration of exclusive breastfeeding is mainly associated with information and knowledge about breastfeeding.

Urban settings present unique challenges with regards to breastfeeding and infant and young child feeding practices due to their physical and socio-economic characteristics. In these settings, basic government services including health care services are limited and this may be coupled with financial constraints and lead to a substantial proportion of women in these giving birth at home or at informal private health facilities (Fotso *et al.*, 2009). This means that most of these women are systematically excluded from government initiatives such as those aimed at promoting optimal breastfeeding and infant feeding practices, based at health facilities such as the BFHI which involves counseling of mothers on infant and young child feeding

around the time of delivery. A potential intervention to counteract the systematic exclusion from basic government services may include, home-based counseling of mothers on infant and young child feeding by community based health workers and/or supporting the (informal) private service providers for instance through training programs to offer services according to established government guidelines such as those on breastfeeding. The effectiveness of such interventions in health care delivery, including promotion of optimal infant feeding practices in resource-constrained settings has been indicated (Haider et al, 2000).

2.4 Socio- cultural factors and exclusive breastfeeding

A range of factors have been reported to hinder exclusive breastfeeding; a study reports cultural norms of giving infants concoctions and customs such as giving water to every stranger entering the house including newborn (de Paoli, 2001) . Study from West Africa reported cultural practice of giving infants herbal mixture for their protection and also that breast milk does not contain adequate nutrients for the growth of the young infant which make it necessary to give infant extra food before the recommended age (Adejuyigbe, 2008). Another study reports that family members and social pressure to introduce other liquids and to mixed feed to infant has been known to have a strong influence on infant-feeding practices, particularly for young mothers (Petri *et al*, 2007). In Tanzania studies reveal that the use of pre lacteal feeds is a norm in both rural and urban settings with belief that it calms the crying baby (Shirima *et al*, 2001). A study in Ethiopia indicated that apart from close family members, influence like that of husband and neighbors imposition have also been reported to pressure mothers to practice mixed feeding, whereas mothers reported increasing pressure from family members to introduce other liquids, and most

importantly the fear of being uncovered as HIV positive as reasons for non adherence to exclusive breastfeeding (Maru,2009).

In a study using data from Botswana which examined the association between breastfeeding, morbidity, and malnutrition, it was found that children aged four months or younger who had been weaned had more than eleven times the odds of having diarrhea compared with those who were still being breastfed (Chikusa, 1991). The main reason cited for introducing complementary food early was the mother's perception of insufficient breast milk. This finding is in line with other studies from other settings which have shown that the perceived lack of sufficient breast milk is a main reason for early breastfeeding cessation or early introduction of complementary foods (Roy, 2009). Furthermore according to the Kenya Urban Comprehensive Food Security & Vulnerability Analysis (KU-CFSVA) and Nutrition Assessment (2010), the main reason given for the children not breastfed was the mothers' perception that they had no milk. To enhance adequacy of milk produced by the mothers, potential interventions may be to enhance maternal nourishment through ensuring food security. This may be through appropriate income generating activities to enhance livelihoods. Food supplementation has also been found to enhance breast milk volume (Jelliffe, 1978). Additionally, interventions that empower the new mother by demonstrating correct breastfeeding techniques, ways of stimulating breast milk production, and counselling on proper nutrition may improve breastfeeding practices (Mellin *et al.*). Predictors of early introduction of complementary foods include the child's sex; the mother's marital status, her ethnicity, and her level of education; the desirability of the pregnancy of the index child, the place of delivery and the slum setting. Boys are more likely to be introduced to complementary feeding early

compared with girls. Anecdotal evidence indicates that boys are introduced to complementary foods early because breast milk alone does not meet their feeding demands (Kimani, 2011).

2.5 Maternal characteristics and exclusive breastfeeding

Mothers who get pregnant while breastfeeding are more likely to stop but, also mothers who breastfeed for longer period have lower chances of getting pregnant (Kennedy, 1998). The association between birth size and the duration of breastfeeding has not been studied in depth. The study by Kennedy, 2008 found that children who were perceived to be larger at birth were less likely to be stopped from breastfeeding earlier.

The association between marital status and early cessation of breastfeeding has been reported in many studies with conflicting results (Thulier, 2009). In a study by Alemayehu *et al.* in Ethiopia in 2005 exclusive breastfeeding was associated significantly with, current marital status, and economical status (Alemayehu *et al.*, 2009). In a study by Kimani, 2011 in urban informal settlement in Nairobi, women who were not in union, particularly those who were formerly married were more likely to stop breastfeeding their infants than women who were in union. It has been suggested that the association between marital status and breastfeeding cessation may be due to the presence or absence of social, emotional and economic support of a partner (Giugliani, 1994). Having never been in union/married was associated with higher risk of early introduction of complementary foods.

A positive association between being married and exclusive breastfeeding has been documented in a study by Lande, 2003. As in the case of the duration of breastfeeding, this may be associated with social, emotional and economic support of a partner (Giuglian, 1994). A more plausible reason in Kenya, where HIV is high, is that a disproportionately large number of formerly married women are HIV positive and many women in this situation were until recently advised to exclusively breastfeed their infant for six months and then to rapidly wean (MoH,2006).

Studies have reported mode of delivery as one of the predictors of exclusive breastfeeding. In a study by Coovadia et al, on mother to child transmission of HIV infection during exclusive breastfeeding in the first six months of life, among other factors vaginal delivery was a predictor of exclusive breastfeeding. Furthermore, in a study done by Zanardo *et al*, to determine whether elective caesarean delivery has negative effect on breastfeeding they report that, emergency and elective caesarean deliveries are similarly associated with a decreased rate of exclusive breastfeeding compared with vaginal delivery.

In addition, Maru and Haidaru report in their study that mothers who delivered by caesarean section were 80% times less likely to practice exclusive breastfeeding. In a study done in Guatemala, it is reported that, place of delivery is associated with early initiation of breast feeding; that is mothers who gave birth at health facility initiate breast feeding early (Dearden *et al*, 2002) Moreover; the role of Baby Friendly Hospital Initiation (BFHI) was assessed in a study conducted in Nigeria and it was found that there was increased duration of exclusive breastfeeding of up to 75% from mothers who deliver at BFHI facility as compared to 35% from non BFHI

facility(Laar AS and Govender V, 2011). Another study which was done in Ghana by Aidam et al reports further that delivery in maternity homes, private clinics, at home, or with Traditional Birth Attendant (TBA) or spiritual leaders poses a risk for not practicing exclusively breastfeeding within the first six months of life as opposed to delivering in government health facilities (Aidam et al, 2005).

2.6 Theoretical review

According to WHO, 2007, indicators of Infant and Young Child Feeding are as follows; Early initiation of breastfeeding: Proportion of children born in the last 24 months who were put to the breast within one hour of birth, Exclusive breastfeeding of infants under six months of age: Proportion of infants 0–6 months of age who are fed exclusively with breast milk, Continued breastfeeding at 1 year: Proportion of children 12–15 months of age who are fed breast milk, Introduction of solid, semi-solid or soft foods: Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods, Minimum dietary diversity: Proportion of children 6–23 months of age who receive foods from four or more food groups, Minimum meal frequency: Proportion of breastfed and non-breastfed children 6–23 months of age who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children), Minimum acceptable diet: Proportion of children 6–23 months of age who receive a minimum acceptable diet (apart from breast milk) and Consumption of iron-rich or iron-fortified foods: Proportion of children 6–23 months of age who receive an iron-rich food or iron-fortified food that is specially designed for infants and young children, or that is fortified in the home.

Optional indicators include, Children ever breastfed: Proportion of children born in the last 24 months who were ever breastfed, Continued breastfeeding at 2 years: Proportion of children 20–23 months of age who are fed breast milk, Age-appropriate breastfeeding: Proportion of children 0–23 months of age who are appropriately breastfed, Predominant breastfeeding under 6 months: Proportion of infants 0–6 months of age who are predominantly breastfed, Duration of breastfeeding: Median duration of breastfeeding among children less than 36 months of age, Bottle feeding: Proportion of children 0–23 months of age who are fed with a bottle and Milk feeding frequency for non-breastfed children: Proportion of non-breastfed children 6–23 months of age who receive at least two milk feedings

Of these indicators, this study focused on exclusive breastfeeding of children less than six months of age. Several factors have been documented to influence the practice or non practice of exclusive breast feeding. Socioeconomic characteristics, socio-cultural factors and maternal characteristics directly influence the practice.

2.7 Conceptual framework

The study will be guided by the following conceptual framework

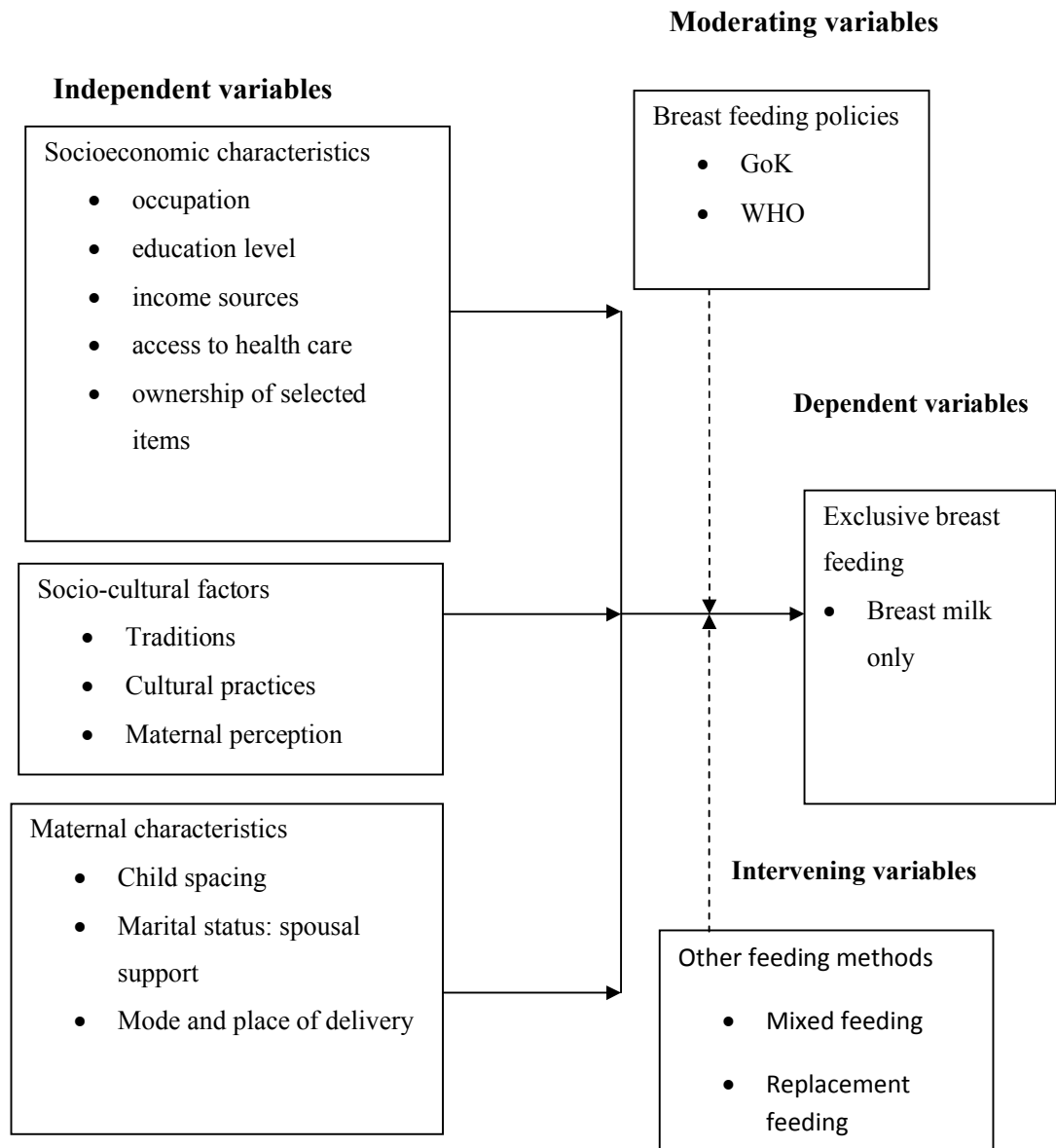


Figure 2.I: Conceptual framework

2.7.1 Discussion of conceptual framework

The conceptual framework illustrates the association of exclusive breastfeeding and social economic characteristics, social-cultural factors and maternal characteristics as factors that influence its practice. The practice or non practice of exclusive breast feeding is further influenced by breast feeding policies such as WHO's policy on Infant and Young Child Feeding and the strategies adopted at the national level to

promote its implementation. However, those not adhering to the exclusive breastfeeding recommendation may practice mixed feeding; giving the child other foods alongside the breast milk or may practice replacement feeding especially in the context of HIV/AIDS whereby the child is never breast fed but rather is given formula milk or other type of breast milk substitute.

2.8 Knowledge gap

There is limited information on the extent to which various factors influence the practice or non practice of exclusive breastfeeding at facility level. By describing how the factors influence exclusive breast feeding, nutrition interventions can be tailored towards meeting the unique needs of the mothers.

2.9 Summary of chapter two

This chapter contains a review of related literature on exclusive breastfeeding. An overview of breastfeeding is given and a global, regional and national perspective of exclusive breastfeeding status outlined. Review of literature on variables related to this study formed the basis of discussion of findings. Variables discussed include maternal socioeconomic and socio-cultural characteristics, and maternal education level, mode and place of delivery. A conceptual framework illustrates the relationship between the study variables.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter includes the methodology for the study. It describes the research design adopted for the study, the study population, sampling procedure, methods of data collection and discusses how validity and reliability were ensured. Further on, the chapter describes the method that was used for data analysis.

3.2 Study design

The study adopted a cross sectional survey design. The design was appropriate for the study as it gave an overview of the status of exclusive breastfeeding as influenced by the variables of interest. It described the exclusive breastfeeding situation at that particular time of study at Thika Level Five Hospital. This entailed collection of data on the study variables and the establishment of the extent to which the variables influenced exclusive breast feeding.

3.3 Description of study area

The study was carried out at Thika Level Five Hospital in Thika sub-county. Thika sub-county has an area of 2024 square kilometers and an approximate population of 701,664 (GoK, 2001). The main economic activities are agriculture and industrial production (Thika district strategic Plan 2005- 2010). The population of Thika sub-county is 139,853 and has a compound annual growth rate of 2.74 percent Thika sub-county is inhabited mostly by persons working in industries, institutions, small business enterprises as well as in flower farms as casual laborers (Ministry of Nairobi Metropolitan Development, 2011).

3.4 Target population

The study targeted mothers or caregivers of children from birth to six months of age at Thika Level Five Hospital's Maternal and Child Health Clinic (MCH). According to the hospital administration, three hundred and fifty (350) mothers visit the MCH clinic every week.

3.5 Sample size and Sampling procedure

This section presents sample size determination and sampling procedure.

3.5.1 Sample size determination

Thika Level Five's MCH clinic attends to 350 mothers weekly. According to Mugenda and Mugenda, 1999; when dealing with a finite population of less than 10,000, the following formula is applicable:

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Where

n_0 = required sample size for a target population greater than 10,000

n = the sample size for a small population

N = the population size

$$n = \frac{384}{1 + \frac{(384 - 1)}{350}}$$

= 183

The sample size for this study was 183 mothers or guardians and their respective children. To address the possibility of non response 10% was added therefore the sample used for the study was 200.

3.5.2 Sampling procedure

Mothers or guardians of children less than six months of age were selected from the Thika Level Five Hospital's MCH clinic. The first mother was selected randomly. Systematic sampling was then be used to select every second mother with a child less than six months old starting with the one randomly selected. This exercise went on daily until the desired 200 mothers were interviewed.

3.6 Data collection instruments

Data for this study was collected by use of researcher administered questionnaires and focus group discussion guide. The questionnaires were administered to the sampled mothers. The questionnaire entailed information on the following key indicators: socioeconomic characteristics, socio- cultural factors and maternal characteristics. The focus group discussion guide was used to obtain information on socio-cultural factors that influence exclusive breastfeeding. It provided an in-depth understanding of the influence of culture, traditions and maternal perception breastfeeding practices as reported quantitatively.

3.7 Pretesting of data collection instruments

Data collection instruments were pretested on ten mothers at the MCH clinic prior to data collection. The questionnaire was then adjusted and questions rephrased

accordingly. The focus group discussion guide was administered to the same mothers used in the pretest to verify that the information given explained the quantitative findings.

3.8 Validity of instruments

To ensure that the data obtained represents the variables of the study and that research measures what it is intended, standard data collection tools and methods were used. A structured questionnaire was used to collect data. Dietary recall was based on 24hours and morbidity data based on two weeks retrospectively. Triangulation was used to ensure quality of data by asking similar questions to the respondents in different ways. The research assistants engaged had a minimum training of diploma in nutrition hence conversant with nutrition terminologies. The purpose of the study was fully explained to the respondents so that they would not withhold vital information.

3.9 Reliability of instruments

Reliability of research instruments refers to the extent to which the results of the study can be reproduced when a similar methodology is used. The instruments used in this study were developed from tools used in the assessment of infant and young child feeding from various studies around the world. As the study was cross sectional survey and test conditions were to be maintained, the split - half method was used to ensure reliability of the instrument. The instrument was divided into two halves. The split - half test reliability coefficient was then be determined. A coefficient of reliability of above 0.86 was obtained meaning that the instrument was reliable. Pretesting of the instruments was done on the same mothers on two occasions to

ascertain consistency of responses before data collection commences. To prevent respondent maturity, the questions were rephrased on the second occasion. Furthermore, triangulation was done to ascertain consistency of information obtained.

3.10 Methods of data analysis

Data was cleaned, coded and entered into the Statistical Package for Social Sciences, SPSS, for analysis. Percentages were used to describe socioeconomic status, socio-cultural practices, maternal characteristics and infant feeding practices.

3.11 Operationalization of variables

The Operationalization of variables is given in Table 3.1

Table 3.1: Operationalization of variables

Objective	Independent Variable	Indicators	Measurement Scale	Type of Statistical Analysis
To find out how socio-economic characteristics of mothers influence exclusive breast feeding of children less than 6 months of age at Thika Level Five Hospital.	Influence of socio-economic characteristics of mothers on exclusive breast feeding of children less than 6 months of age	Occupation Education level Income sources Access to health care Ownership of selected items	Nominal	Descriptive
To establish the influence of socio-cultural factors on exclusive breastfeeding of children less than 6 months of age at Thika Level Five Hospital.	Influence of socio-cultural factors on exclusive breastfeeding of children less than 6 months of age	Traditions Cultural practices Maternal perception	Nominal	Descriptive
To establish the influence of maternal characteristics on exclusive breastfeeding of children less than 6 months of age at Thika Level Five Hospital	Influence of maternal characteristics on exclusive breastfeeding of children less than 6 months of age	Child spacing Marital status Mode of delivery Place of delivery	Nominal	Descriptive
	Dependent Variable Exclusive breast feeding	Child fed on breast milk only from birth to six months of age	Ordinal	Descriptive

3.12 Summary of chapter three

Chapter three explains the methodology was used in the study. It describes the target population and the reason for choosing the group. In this chapter, operational definition of variables is given. It further describes the sampling method and data analysis.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter contains data analysis, presentation and interpretation of the research findings.

4.2 Response rate

A total of 183 women were interviewed during data collection representing 100% response rate. The focus group discussion was undertaken on 10 women at the MCH clinic on the last day of data collection.

4.3 Demographic and socioeconomic characteristics of respondents

The study sought to determine the demographic and socioeconomic characteristics of the respondents based on age and sex of the children; marital status, education level, occupation, source of income of the mothers and monthly household level of income. This would enable the study analyse their influence on exclusive breastfeeding.

4.3.1 Age distribution of sampled children

Respondents were required to indicate the age of the sampled children. Findings are shown in Table 4.1.

Table 4.1: Age distribution of sampled children

Age of children in complete months	Frequency	Percentage distribution
1 Month	49	24.5
2 Months	45	22.5
3 Months	41	20.5
4 Months	24	12
5 Months	34	17
6 Months	7	3.5
Total	200	100

The age distribution of the sampled children was; 24.5% were aged one month, 22.5% were 2 months old, 20.5% were 3 months old, 12% were 4 months old, 17% were 5 months and 3.6% were 6 months old.

4.3.2 Sex of the sampled children

Respondents were required to indicate the sex of the children. The findings are shown in Table 4.2.

Table 4.2: Sex of the sampled children

Sex of the children	Frequency	Percentage distribution
Males	102	51
Females	98	49
Total	200	100

Table 4.2 shows the sex of the sampled children where 51% were male and 49% were female.

4.3.3 Marital status of mothers

Mothers were required to indicate their marital status. The findings are shown in Table 4.3.

Table 4.3: Marital status of mothers

Marital status of mothers	Frequency	Percentage distribution
Married	175	87
Single	25	13
Total	200	100

Table 4.3 shows the respondents' marital status whereby 87% were married while 13% were single.

4.3.4 Mother's education level

Mothers were required to indicate their highest level of education. The findings are shown in Table 4.4.

Table 4.4: Mother's education level

Mother's education level	Frequency	Percentage
Primary level	44	22
Secondary level	121	60.5
College level	23	11.5
University level	11	5.5
No education	1	0.5
Total	200	100

Table 4.4 shows mother's highest level of education. The percentage of mothers with secondary education was the highest at 60.5%, followed by mothers with primary education at 22%, college education at 11.5%, and mothers with university education at 5.5%.

4.3.5 Mother's occupation

Mothers were asked to indicate their occupation. The findings are indicated in Table 4.5.

Table 4.5: Mother's occupation

Mothers' occupation	Frequency	Percentage distribution
Housewives	82	41
Business women	44	22
Employed/Salaried	20	10
Waged labor	1	0.5
Petty trade	1	0.5
Domestic help	1	0.5
Unemployed	41	25.5
Total	200	100

Table 4.5 shows mothers' occupation; 41% of the mothers were housewives 22% were in business, 10% were employed/salaried, 0.5% were in waged labor, petty traders represented 0.5% of the mothers and domestic helps were 0.5%. Mothers who were unemployed constituted 25.5%.

4.3.6 Mother's source of income

Mothers were required to indicate their sources of income. The findings are indicated in Table 4.6.

Table 4.6: Mothers' source of income

Mothers' source of income	Frequency	Percentage
Employment	21	10
Family contribution	128	65.5
Petty trade	2	1
Own saving	47	23.5
Donations	2	1
Total	200	100

Table 4.6 shows mothers' source of income. The most common source of income was family contribution at 65.5%, followed by own saving at 23.5%, employment at 10%, petty trade at 1%, and donations at 1%.

4.3.7 Monthly household level of income

The respondents were required to indicate the household level of income. The findings are shown in Table 4.7.

Table 4.7: Monthly household level of income

Monthly household level of income	Frequency	Percentage
Less than 2000	12	6
2001-4000	29	14.5
4001-6000	45	21
6001-8000	30	15
8001-10000	34	17.5
10001-20000	30	15.5
20001-30000	15	8
30001-40000	5	2.5
Total	200	100

Table 4.7 shows the level of income per household in the previous one month; the most common level of income was 4001-6000 at 21%, followed by 8001-10000 at 17.5%, 10001-20000 at 15.5%, 6001-8000 at 15%, 2001-4000 at 14.5%, 20001-30000 at 8%, 2000 or less at 6% and 30001-40000 at 2.5%.

4.4. Delivery experience

The study sought to determine the delivery experience of the mother i.e. whether the baby was born normally or through caesarian session. This would enable the study analyse its influence on infant feeding. The findings are shown in Table 4.8.

Table 4.8: Type of delivery

Type of delivery	Frequency	Percentage
Normal	157	78.5
Caesarian	43	21.5
Total	200	100

Children who were born normally were 78.5% while 21.5% were born through caesarian section. 99% of the children were born at a health facility and 1% at home.

4.5 Infant feeding practices

The study sought to establish infant feeding practices based on initiation of breastfeeding, infant feeding in the first three days after birth, the prevalence of exclusive breastfeeding, types of food given for early complementary feeding and reasons for early initiation of complementary feeding. Dietary intake of infants for the previous 24 hours was established based on whether or not the child had been given complementary feeds, types of feed given and reasons for giving the foods. This would enable the study analyse the dietary intake of the children.

4.5.1 Initiation of breastfeeding

Mothers were required to indicate how soon after delivery that breastfeeding was initiated. The findings are shown in Table 4.9.

Table 4.9 Infant feeding practices

Period of time taken to initiate breastfeeding after delivery	Frequency	Percentage distribution
Immediately/within the first hour	125	62.5
After the first hour	55	27.5
Couldn't remember	20	10
Total	200	100

Infants who were breastfed within the first hour of delivery were 62.5%, 27.5% were breastfed after the first hour and 10% of the respondents could not remember the time they first breastfed their infants.

4.5.2 Infant feeding in the first three days after birth

The respondents were asked to indicate the infant feeding in the first three days after birth. The findings showed that 82% of the children were given breastmilk and therefore consumed colostrum while 18% had not breast fed for the first three days after delivery. It was also reported that 9.9% of infants had received prelacteal feeds before breast feeding was initiated while 90.1% had not. Of those who received prelacteals 40% were given formula milk, 15% received plain boiled water and 5% were given glucose water. Those that gave prelacteal feeds were asked to indicate the reasons for doing so. The findings are shown in Table 4.10.

Table 4.10: Reasons for introducing prelacteal feeds

Reason for giving the baby prelacteal feeds	Frequency	Percentage of children for each feed
Infant perceived unwell	8	38
Mother unwell	8	38
Delayed milk production from the mother	3	18
Immunization	1	6
Total	20	100

It was reported that 38% of mothers introduced the feeds as the baby was perceived unwell, 38% mothers felt unwell, 18% experienced delayed milk production and 6% of the children received immunization before initiation of breastfeeding.

4.5.3 Prevalence of exclusive breastfeeding since birth

Mothers were required to indicate whether they had introduced any food or liquid since initiating breastfeeding. This would enable the study establish the prevalence of exclusive breastfeeding. The findings are shown in Table 4.11.

Table 4.11: Infant feeding practice since birth

Infant feeding since birth	Frequency	Percentage of children
Exclusive breastfeeding since birth	56	28
Non-exclusive breastfeeding since birth	144	72
Total	200	100

Table 4.11 shows whether infants had received anything else other than breast milk since breastfeeding was initiated; 72% of the children had received foods and other liquids other than breast milk while 28% had not received anything. The prevalence of exclusive breastfeeding was therefore 28%.

4.5.4 Foods and liquids given for early complementary feeding

The respondents that had introduced complementary feeds were required to indicate the type of food and liquid given to the children. The findings are shown in Table 4.12.

Table 4.12: Foods or liquids given for early complementary feeding

Type of food or liquid	Frequency	Percentage of children
Plain boiled water	77	54
Glucose water	19	13.5
Formula milk	14	10
Gripe water	14	9.5
Cereals/porridge	11	7.5
Mashed vegetables/fruits	5	3.5
Pumpkin/ potatoes	2	1.3
Pumpkin	2	0.8
Total	144	100

Table 4.12 shows the liquids/solids that were given to children since breastfeeding was initiated. Plain boiled water was the most common at 54% followed by glucose water at 13.5%, formula milk at 10%, gripe water at 9.5%, cereals/porridge at 7.5%, mashed vegetables/fruits at 3.5%, pumpkin, potatoes and porridge at 1.3% and pumpkin alone at 0.8%.

4.5.5 Reasons for early introduction of complementary feeding

The respondents were required to indicate the reasons for introducing complementary feeds before the children were six months old. The findings are shown in Table 4.13.

Table 4.13: Reasons for early introduction of complementary feeding

Reasons for early initiation of complementary feeding	Frequency	Percentage
Baby gets hungry	28	19.5
Mother not producing enough milk	28	19.5
Advised by relative or neighbors	11	7.3
Advised by health care providers	7	4.9
To sooth stomach pain	70	48.8
Total	144	100

Table 4.13 shows the reasons for giving the infants foods or liquids since breastfeeding was initiated. Soothing stomach pain was the most common reason at 48.8% followed by alleviating baby's hunger at 19.5% and mother not producing enough milk at 19.5%. Advice given by health care providers was the least common reason at 4.9% and advice given by relatives or neighbors was the second least common reason at 7.3%.

4.5.6: Infant feeding based on 24hour dietary recall

Mothers were required to indicate whether they had given the infants feeds other than breast milk in the previous 24 hours.18% of infants had received foods other than

breast milk while 82% had only received breast milk. Those that had given their infants other feeds were asked to indicate the reasons for doing so. The findings are shown in Table 4.14.

Table 4.14: Type of feeds given based on 24hour dietary recall

Type of feeds given in the previous day	Frequency	Percentage
Plain boiled water	16	43.3
Gripe water	5	13.3
Pumpkin	5	13.3
Formula milk	4	10
Glucose water	2	6.7
Fruits	2	6.7
Porridge	2	6.7
Total	36	100

Table 4.14 shows the foods or liquids that were given to children the previous day; plain boiled water was the most common at 43.3%, followed by gripe water at 13.3% and pumpkins at 13.3%, formula milk at 10%, glucose water at 6.7%, fruits at 6.7% and porridge at 6.7% .

4.5.7 Reasons for giving the infants liquids/solids

Respondents were asked to indicate the reason for giving the infants foods other than breast milk. The findings are shown in the Table 4.15.

Table 4.15: Reasons for giving the infants the liquids/solids

Reasons for giving infants other liquids/solids based on 24hour recall	Frequency	Percentage
Soothing stomach pain	11	31.6
Insufficient milk production by the mother	8	22.8
Alleviating baby's hunger	8	22.8
Mother working far away from home	2	3.8
Unavailability of the mother during day time	2	3.8
Ending hiccups	2	3.8
Advice given by relatives or neighbors	2	3.8
Preventing convulsion	1	3.8
Baby was born premature there needed more food	1	3.8
Total	36	100

Table 4.15 shows the reasons for giving babies the liquids/solids; soothing stomach pain was the most common reason at 31.6%, followed by insufficient milk production by the mother at 22.8%, and alleviating baby's hunger at 22.8%. Unavailability of the mother during day time, mother working far away from home, ending hiccups, dealing with premature baby, following the advice given by relatives or neighbors and preventing convulsion each reported by 3.8% of the mothers .

4.6 Maternal and child health in the previous two weeks

The study sought to establish whether the mothers and the infants had been unwell in the previous two weeks.

4.6.1 Infant morbidity in the previous two weeks

Respondents were required to indicate whether the infants had been unwell in the previous two weeks. The findings are shown in Table 4.16.

Table 4.16: Infant morbidity in the previous two weeks

Infant Morbidity status in the previous two weeks	Frequency	Percentage
Sick	104	52
Not sick	96	48
Total	200	100

Table 4.16 shows whether the baby has been unwell in the last two weeks. 52% had been unwell while 48% had not been unwell.

4.6.2 Effect of infant's illness on breastfeeding

Mothers were asked to indicate whether the infants' illness interfered with breastfeeding. The findings are shown in Table 4.17.

Table 4.17 Effect of infant's illness on breastfeeding

Effect of illness on breastfeeding	Frequency	Percentage
Interference	20	19.4
No interference	84	80.6
Total	104	100

Table 4.17 shows whether the illness interfered with breastfeeding. Interference was reported in 19.4% of the cases and no interference in 80.6% of the cases.

4.6.3 Maternal morbidity in the previous two weeks

The mothers were asked to indicate if they had been unwell in the previous two weeks. The findings are indicated in Table 4.18.

Table 4.18 Maternal morbidity in the previous two weeks

Maternal morbidity status in the previous two weeks	Frequency	Percentage
Sick	16	8
Not sick	184	92
Total	200	100

8% of the mothers had been sick while 92% had not been sick in the previous two weeks.

4.6.4 Effects of mother's illness on breastfeeding

Mothers were asked to indicate whether their illness had interfered with breastfeeding. The findings are shown in Table 4.19.

Table 4.19: Effect of mother's illness on breastfeeding

Effect of mother's illness on breastfeeding	Frequency	Percentage
Interference	4	19.4
No interference	12	80.6
Total	16	100

The illnesses interfered with breastfeeding in only 10% of the cases while in 90% of the cases, it did not. All mothers that reported interference cited discomfort during breastfeeding.

4.7 Breastfeeding problems

The study sought to establish whether mothers experienced any challenges when breastfeeding. This would enable the study analyse the influence of breastfeeding problems on exclusive breastfeeding. The findings are shown in Table 4.20.

Table 4.20: Breastfeeding problems experienced by mothers

Breastfeeding problems	Frequency	Percentage
Yes	12	6
No	188	94
Total	200	100

Table 4.20 shows that 6% of the mothers experienced problems breastfeeding while 94% did not. Problems experienced by mothers during breastfeeding included inadequate breast milk at 53.3%, refusal by the baby to breastfeed, at 33.3%, and pain in breasts at 13.3%.

4.7.1 Effect of breastfeeding problems on breastfeeding

Mothers were asked to indicate the effect of the problems on breastfeeding. The findings are shown in Table 4.21.

Table 4.21: Effect of breastfeeding problems on breastfeeding

Effect of breastfeeding problems on breastfeeding	Frequency	Percentage
Reduced breastfeeding	9	75
Early complementary feeding	3	25
Total	12	100

Table 4.21 shows that 75% of the mothers experienced reduced breastfeeding and 25% introduced complementary feeding early due to breastfeeding problems.

4.8 Factors associated with exclusive breastfeeding

Univariate analyses were done on independent variables to determine their association with exclusive breastfeeding. Maternal socioeconomic status; income level, education level, access to healthcare and ownership of selected items was examined. Maternal characteristics; marital status and mode and place of delivery were investigated. Socio-cultural factors such as maternal perception, cultural practices and traditions were also investigated. Results showed the following independent variables had significant association with exclusive breastfeeding since birth.

4.8.1 Relationship between maternal level of income and exclusive breastfeeding

The study sought to establish the association of maternal level of income and exclusive breastfeeding. The findings are shown in Table 4.22.

Table 4.22: Association of level of income and exclusive breastfeeding

Level of income	Responses on whether the infant had received anything else to eat or drink besides breast milk since birth			
	Yes	%	No	%
less than 2000	7	58.3	5	41.7
2001-4000	9	33.3	18	66.7
4001-6000	9	31	29	69
6001-8000	10	33.3	20	66.7
8001-10000	7	21.2	26	78.8
10001-20000	7	24.1	22	75.9
20001-30000	6	46.1	7	53.9
30001-40000	0	0	4	100

Mothers in 41.7% of the households that had an income of less than 2000 practiced exclusive breastfeeding while 58.3% did not; mothers in 66.7% of the households that had an income of 2001-4000 practiced exclusive breastfeeding while 33.3% did not; mothers in 69% of the households that had an income of 4001-6000 practiced exclusive breastfeeding while 31% did not; mothers in 66.7% of the households that had an income of 6001-8000 practiced exclusive breastfeeding while 33.3% did not; mothers in 78.8% of the households that had an income of 8001-10000 practiced exclusive breastfeeding while 21.2% did not; mothers in 75.9% of the households that had an income of 10001-20000 practiced exclusive breastfeeding while 24.1% did not; mothers in 53.9% of the households that had an income of 20001-30000 practiced exclusive breastfeeding while 46.1% did not; and mothers in all the households that had an income of 30001-40000 practiced exclusive breastfeeding.

4.8.2 Relationship between mother’s education level and exclusive breastfeeding

The study sought to establish the relationship between the mother’s education level and exclusive breastfeeding. The findings are shown in table 4.23.

Table 4.23: Mother’s education level and exclusive breastfeeding

Mother’s level of education	Responses on whether the infant had received anything else to eat or drink besides breast milk since birth			
	Yes	%	No	%
Primary level	12	27.9	31	72.1
Secondary level	34	28.1	87	71.9
College level	8	34.8	15	65.2
University level	2	20	8	80

The study established that 72.1% of mothers with primary education had exclusively breastfed while 27.9% had not; 71.9% of mothers with secondary education had exclusively breastfed while 28.1% had not; 65.2% of mothers with college education had exclusively breastfed while 34.8% had not; and 80% of mothers with university education had exclusively breastfed while 20% had not.

4.8.3 Relationship between marital status and exclusive breastfeeding

The study sought to establish the relationship between marital status and exclusive breastfeeding. The findings are shown in Table 4.24.

Table 4.24: Marital status and exclusive breastfeeding

Marital Status	Responses on whether the infant had received anything else to eat or drink besides breast milk since birth			
	Yes	%	No	%
Married	49	28.2	125	71.8
Single	7	30.4	16	69.6

Table 4.24 shows how marital status influenced exclusive breastfeeding whereby 71.8% of mothers who were married exclusively breastfed while 28.2% did not; 69.6% of mothers who were single exclusively breastfed while 30.4% did not.

4.8.4 Relationship between number of siblings and exclusive breastfeeding

The study sought to establish the relationship between the number of siblings and exclusive breastfeeding. The findings are shown in Table 4.25.

Table 4.25: Number of siblings and exclusive breastfeeding

Number of siblings	Responses on whether the infant had received anything else to eat or drink besides breast milk since birth			
	Yes	%	No	%
0	34	27	92	73
1	14	31.8	30	68.2
2	7	33.3	14	66.7
3	1	20	4	80
4	0	0	1	100

The study established that 73% of children without siblings were exclusively breastfed while 27% were not; 68.2% of children with only one sibling were

exclusively breastfed while 31.8% were not; 66.7% of children with two siblings were exclusively breastfed while 33.3% were not; 80% of children with 3 siblings were exclusively breastfed while 20% were not; and 100% of children with 4 siblings were exclusively breastfed. From the results, it is evident that the higher the number of siblings, the more likely the practice of exclusive breastfeeding.

4.8.5 Socio-cultural influence on exclusive breastfeeding

The study established that 7.3% of the mothers who initiated complementary feeding before six months did so following the advice of relatives or neighbors. Based on 24 hour dietary recall, 3.8% of mothers that gave infants complementary feeding were also advised to do so by relatives and neighbors and 22.8% perceived insufficient milk production. From the focus group discussion, all the mothers had received breastfeeding advice from the health facilities. Some mothers who had initiated complementary feeding early claimed that their babies cried a lot and giving the baby food or water helped to calm the baby. One mother however reported that her child developed constipation after being fed on a mashed potato and pumpkin dish. Another mother reported that the child's grandmother had given the child porridge when her four month old child was left under her care. Most mothers agreed that exclusive breastfeeding was a new concept in their community. One mother reported that she had been informed by a relative that children of the family she had married into begin complementary feeding at four months of age. Challenges experienced by mothers when breastfeeding were reported to be; inadequate milk production, returning to work after maternity leave posed a challenge on exclusive breastfeeding. Most mothers perceived expressing breast milk to be a potential solution to encourage exclusive breastfeeding. However, one mother deemed expressing human breast milk

to be unnatural. Only two out of the 10 mothers had expressed breast milk for their babies.

CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSION, CONCLUSION AND
RECOMMENDATIONS

5.1 Introduction

This chapter gives a summary of key findings, discussion, conclusion and recommendations from the findings on factors influencing exclusive breastfeeding for the first six months after birth.

5.2 Summary of findings

This section summarizes the key findings based on the stated objectives of the study.

5.2.1 Maternal socioeconomic indicators and exclusive breastfeeding

According to this study, all the mothers interviewed owned mobile phones, television sets or radios and had access to healthcare yet only 28% practiced exclusive breastfeeding.

5.2.2 Socio-cultural indicators and exclusive breastfeeding

Maternal perception on insufficient milk production was responsible for 22.8% of the mothers that had given complementary feeds based on 24hour dietary recall. Advice of relatives and neighbors was also reported by 7.3% for the cases of early introduction of complementary feeding since birth.

5.2.3 Maternal characteristics and exclusive breastfeeding

Married mothers reported higher exclusive breastfeeding rates (71%) than single mothers (69.6%). This implies that spousal support is significant in achieving

exclusive breastfeeding of infants. Mode and place of delivery was mostly normal delivery at a health facility therefore these two parameters did not differ much among the sampled mothers. Mothers with a higher number of children reported higher rates of exclusive breastfeeding.

5.3 Discussion of the study

This section presents the discussion of the key findings with respect to the stated objectives of the study based on empirical and theoretical literature.

5.3.1 Socioeconomic characteristics and exclusive breastfeeding

Maternal socioeconomic characteristics were not significantly associated with exclusive breastfeeding. Findings of this study are consistent with those of a study carried out in India in which socio-economic status was not associated with exclusive breastfeeding (Chudasama *et al.*, 2009) and in Kasarani informal settlement, Molo District, Kenya (Mututho, 2012). In contrast to the findings of the present study, a study by Ochola (2008) in Kibera, Kenya found a positive relationship between socio-economic status based on ownership of television and exclusive breastfeeding similarly, in one study Venancio and Monteiro (2006) found that exclusive breastfeeding is positively associated with socio-economic status with exclusive breastfeeding being more prevalent among women with higher incomes while in another study, economic status was identified as one of the key factors influential in breastfeeding decision making (Henry *et al.*, 2010). In Ethiopia, women in the wealth index ranking middle and above were two times more likely to exclusively breastfeed than the reference category ($P= 0.001$) (Alemayehu *et al.*, 2009). Findings of this

study support the hypothesis that maternal socio-economic factors have no association with exclusive breastfeeding practice.

5.3.2 Socio-cultural factors and exclusive breastfeeding

Socio- cultural factors such as maternal perception on insufficient milk production and advice of relatives and neighbors contributed to early introduction of complementary feeding since birth. These findings are similar to those of Mututho, (2012) where negative attitudes and beliefs negatively influenced exclusive breastfeeding and other infant feeding practices. Viewing expressing of breast milk as a taboo denied the mothers the opportunity to express and leave breast milk for their infants as they left their homes to go to work. Another common belief was that mothers do not have adequate breast milk to sustain their infants for six months and also the belief that the child must take water to quench thirst and stop hiccups. It was also a common belief that when infants cry a lot even after breastfeeding the child is either hungry or has stomach pains and once given something else they calm down. Some mothers believed that breastfeeding would cause their so breasts to sag or lose shape while others believed if they conceived while the child was still breastfeeding they had to stop breastfeeding.

Studies in other contexts have identified different factors as predictors of exclusive breastfeeding. In a study in Eldoret, reported barriers to EBF were among others; breast milk unsatisfying to the infant and mother resuming to work, which were attributed to inadequate breastfeeding knowledge among mothers (Cherop, Kaverenge-Ettyang and Mbagaya, 2009).

5.3.4 Maternal characteristics and exclusive breastfeeding

Marital status, mode and place of delivery were investigated to establish their influence on exclusive breastfeeding. Married mothers reported higher exclusive breastfeeding rate than single mothers. In a study by Alemayehu *et al.* in Ethiopia in 2005 exclusive breastfeeding was associated significantly with, current marital status, and economical status (Alemayehu *et al.*, 2009). In a study by Kimani, 2011 in urban informal settlement in Nairobi, women who were not in union, particularly those who were formerly married were more likely to stop breastfeeding their infants than women who were in union. It has been suggested that the association between marital status and breastfeeding cessation may be due to the presence or absence of social, emotional and economic support of a partner (Giugliani, 1994). Having never been in union/married was associated with higher risk of early introduction of complementary foods.

5.4 Conclusion

The exclusive breastfeeding rate at Thika Level five Hospital(28%) is below the level recommended by WHO(90%) and below the national level(32%) . From the study, socio-cultural factors greatly influenced the practice especially the perception of having insufficient milk production by the mothers. Maternal education level, socioeconomic status and maternal characteristics were less likely to negatively influence the practice. Mothers had adequate knowledge on breastfeeding benefits, had received advice on infant feeding and could all access health care but still reported mixed feeding. The strongest predictor therefore for this study was socio-cultural factors.

5.5 Recommendations

The following recommendations were made from this study;

1. Breastfeeding promotion messages by the health sector should focus on alleviating the misconceptions mothers have on exclusive breastfeeding such as the perception of insufficient breast milk production and inappropriateness of expressing breast milk for infants to consume when mothers are away.
2. Mother to mother support groups are important for the success of exclusive breast feeding as they will offer a platform for mothers to share challenges of breastfeeding and also success stories to motivate them to exclusively breastfeed their infants for the first six months after birth.
3. More facility based research is necessary especially since infant feeding practices are unique for communities as evidenced by the various studies carried out by different researchers. This way, interventions will target the specific needs of the communities.

5.6 Suggestions for further research

The following suggestions are made for further research

1. Based on the reported low prevalence of exclusive breastfeeding further research should be conducted to investigate the role of community participation in promoting sound infant feeding practices as socio-cultural influence on exclusive breastfeeding practice was reported in this study.
2. Similar research is necessary at private health facilities in order to compare the infant feeding practices with public facilities as this will enable assessment of outcomes of nutrition interventions in both set ups.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

BETTY MAKENA GITONGA

P.O BOX 342 – 01000

THIKA

Dear Respondent,

My name is Betty Gitonga, and I am pursuing A Master of Arts degree in Project Planning and Management at The University of Nairobi. I am carrying out a study on ‘Factors influencing exclusive breastfeeding of children for the first six months after birth. A case of Thika Level Five Hospital.’

You have been selected to participate in this study. If you agree, you will be interviewed. I wish to assure you that your responses will be handled with utmost confidentiality and will only be used for purposes of this study. The findings of the study will be availed to any interested respondents.

Thank you

Yours Faithfully,

BETTY MAKENA GITONGA

L50/76937/2009

APPENDIX II: QUESTIONNAIRE

FACTORS INFLUENCING EXCLUSIVE BREASTFEEDING OF CHILDREN FOR THE FIRST SIX MONTH AFTER BIRTH. A CASE OF THIKA LEVEL FIVE HOSPITAL.

Section 1: Identification information

- 1.1 Interviewer's name _____
- 1.2 Date of interview _____ 1.3 Location/Estate _____

Section 2: Demographic and socio-economic status

- 2.1 Respondents relationship with index child _____
- 2.2 Marital status of mother _____
- 2.3 Telephone of caregiver (if appropriate; for follow up) _____
- 2.4 Index child's date of birth _____
- 2.5 Age in months _____ 2.6 Sex: _____ 1. Male 2. Female

Section 3: Household* Profile

3.1 Name	3.2 Age**	3.3 Sex	3.4 Relationship to index child	3.5 Highest level of education	3.6 Occupation See codes below	3.7 Source or income See codes below

*Household= Members living together and sharing the same pot. **Record age in months for the <5 and complete years for persons >5years old.

Codes for 3.6

1= Employed (salaried) 2= Waged labour (casual) 3= Business person 4= House wife
5= Petty trade

6= Domestic help 7= Unemployed 8= other (specify)

Codes for 3.7

1= Employment 2= Family contributions 3= Petty trade 4= Own savings 5=Donation

6= other (specify) _____

3.8. Income level

Please indicate the level of income earned by the household in last one month.

- | | | | |
|-----------------|-----|-------------------|-----|
| 1. <2000 | [] | 7. 20001- 30000 | [] |
| 2. 2001- 4000 | [] | 8. 30001- 40000 | [] |
| 3. 4001- 6000 | [] | 9. 40001- 50000 | [] |
| 4. 6001- 8000 | [] | 10. 50001- 100000 | [] |
| 5. 8001- 10000 | [] | 11. >100001 | [] |
| 6. 10001- 20000 | [] | | |

3.9 Property ownership

Does your household own any of the following household items?

Item	1=Yes 2=No	Item	1=Yes 2=No
Vehicle		Telephone	
Refrigerator		Mobile phone	
Oven/cooker/meko		Radio	
Television		Other (specify)	
Computer			

3.10 Materials used construct the house

Please indicate the materials the house is made of

a) Walls _____

1: Mud 2. Wood 3. Stones 4. Iron sheets 5. Off cuts 6. Any other specify _____

b) Roof _____

1: Iron sheets 2. Grass 3. Concrete 4. Any other specify _____

c) Floor _____

1: Mud 2. Wood 3. Concrete 4. Any other specify _____

Section 4: Water hygiene and Sanitation

4.1 What is your main source of water?

1: Piped into the house 2. Piped to a tap on property outside the house 3. Rain tanks on property 4: Communal tap

4.2 Do you have a toilet/latrine in your home or property? 1. Yes 2. No

a. If yes, specify

Traditional latrine []

Flush toilet []

VIP toilet []

4.3 Please indicate your main source of fuel

1. Firewood 2. Charcoal 3. Kerosine stove 4. Any other (specify) _____

Section 5: Delivery experience

5.1 Where was the index child born?

1- Home []

2- Health facility []

3- At a TBA's house []

5.2 1- Normal []

2- Cesarean []

5.3 Did you breastfeed the baby?

1-Yes []

2- No []

If yes go to 5.5

5.4 If NO, Why? _____

5.5 If YES, how soon after delivery did you first breastfeed?

1-Immediately/within first hour after birth []

2-After the first hour []

3-Don't remember/don't know []

5.6 During the first three days after delivery, did you give the baby the fluid/liquid that came from your breasts?

1-Yes [] 2- No []

3-Not sure []

5.7 Did your baby receive anything to drink before he/she was first put to the breast?

1-Yes [] 2- No []

5.8 If YES, what liquid was given?

1- Glucose water [] 2- Plain boiled water []

3- Formula milk [] 4- Other milk []

5- Medicine []

5.9 What was the reason for giving the baby this liquid?

1-Infant perceived unwell []

2-Mother unwell []

3- Delayed milk production from the mother []

4-Other reason (specify) _____

5.10 Has the infant received anything else other than breast milk, since breast feeding was initiated?

1-Yes [] 2- No []

5.11 If yes, what liquids/solids were given?

- 1-Plain boiled water []
- 2-Glucose water []
- 3-Formula milk []
- 4-Juice/tea []
- 5-Other non-maternal milk []
- 6-Cereals/porridge []
- 7-Mashed vegetables/fruits []
- 8-Other (specify) _____

5.12 Why did you give the baby these liquids/solids? (Tick all applicable responses)

- 1- Baby gets hungry []
- 2- Mother not producing enough milk []
- 3-Advised by relatives/friends/neighbors []
- 4-Advised by health care providers []
- 5-Advised by TBA []
- 6-To sooth stomach pain []
- 7-Other (specify) _____

5.13. Are you still breastfeeding the baby?

- 1-Yes []
- 2- No []

Section 6: Infant feeding based on 24-hour recall

6.1 Could you first please tell me if you breastfed {Name} at any time during the day or night in the past 24 hours.

- 1). Yes, breastfed
- 2). No, did not breastfeed

If NO go to question 6.3 and 6.4

6.2 (a) How many times was (Name of child) breastfed yesterday during day and night?

- 1) Number of times during the day _____
- 2) Number of times during the night _____

6.3 Why did you not breastfeed your baby?

1-The baby has been unwell []

2- Had to go back to work []

3- Mother unwell []

4-Other reason (specify) _____

6.4 Do you intend to resume breastfeeding?

1-Yes []

2- No []

3-Not sure

6.5 Could you now please tell me if (*Name*) had any foods or liquids other than breast milk to eat or drink yesterday?

1. Yes, ate or drank something

2. No, did not eat or drink anything

6.6 If yes, what liquids/s was he/she given?

1- Glucose water [] 2- Plain boiled water []

3- Formula milk [] 4-other milk []

5- Medicine []

6-Other (specify) _____

6.7 Why did you give the baby these liquids/solids? (Tick all applicable responses)

1- Baby gets hungry []

2- Mother not producing enough milk []

3-Advised by relatives/friends/neighbors []

4-Advised by health care providers []

5-Advised by TBA []

6-To sooth stomach pain []

7-Other (specify) _____

1-Yes [] 2-No []

7.7 Has the illness interfered with the baby's breastfeeding?

1-Yes [] 2- No []

If YES go to question 7.8

If NO go to question 7.9

7.8 How has the illness of the BABY affected breastfeeding?

7.9 Have you (mother) experienced any problems in breastfeeding your baby?

1-Yes [] 2-No []

If YES go to question 7.10 to 7.12

If NO go to question 7.13

7.10 What problems have you experienced?

1-Inadequate breast milk []

2-Baby refusing to breastfeed []

3-Pain in breasts []

4-Other (specify) _____

7.11 Have the problems interfered with breastfeeding?

1-Yes [] 2- No []

7.12 If yes, how have the problems interfered with breastfeeding?

7.13 Have you (mother) been sick in the last two weeks?

1-Yes [] 2-No []

7.14 If YES, what were you suffering from?

7.15 Did/ has the illness interfered with breastfeeding of the baby?

1-Yes []

2-No []

7.16 If YES, how did the illness affect breastfeeding?

APPENDIX III: FOCUS GROUP DISCUSSION GUIDE

1. What are the reasons for breastfeeding children?
2. From where did you mothers get infant feeding advice?
3. Is it possible to feed a child on breast milk alone for the first six months of life?
4. Is exclusive breastfeeding a common practice in your community?
5. Does your family influence infant feeding in the household?
6. Does your community influence infant feeding practices for the first six months of life?
7. What challenges do you face when breast feeding an infant in the first six months of life?
8. What are the reasons mothers give for not practicing exclusive breastfeeding?
9. Are there suggestions you would give to encourage the mothers to exclusively breastfeed?
10. Is it appropriate to express breast milk for the baby to consume when you are away?

APPENDIX IV: TEN STEPS TO SUCCESSFUL BREASTFEEDING

Every facility providing maternity services and care for newborn infants should:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within half an hour of birth.
5. Show mothers how to breastfeed, and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breast milk, unless medically indicated.
7. Practise rooming-in - that is, allow mothers and infants to remain together - 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic.

Source: *Protecting, Promoting and Supporting Breastfeeding: The Special Role of Maternity Services*, a joint WHO/UNICEF statement published by the [World Health Organization](#).