BARRIERS TO APPROPRIATE BREAST FEEDING PRACTICES AMONG MOTHERS ATTENDING MATERNAL AND CHILD HEALTH CLINIC AT MBAGATHI DISTRICT HOSPITAL, NAIROBI.

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DECLARATION

I, Linda Kwamboka Mogambi declare that this research is my original work and has not been presented for a degree or any other award in any other University.

Signed

Date.MlllM".

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DEDICATION

I dedicate this work to my loving parents, Daniel and Bilha Mogambi. Thank you so much for the prayers, love and support you have accorded me throughout this process.

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SUPERVISOR'S APPROVAL

This research thesis is submitted in partial fulfilment for the award of the degree of Master of Science in Paediatric Nursing at the University of Nairobi with our approval as supervisors.

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Ante Natal Clinic
EBF	Exclussive Breast Feeding
HPM	Health Promotion Model
HIV	Human Immune Deficiency Virus
KNBS	Kenya National Bureau of Statistics
MCH	Maternal and Child Health
MOPHS	Ministry of Public Health and Sanitation
MTCT	Mother to Child Transmission
PMTCT	Prevention of Mother to Child Transmission
SPSS	Statistical Package for Social Sciences
UNICEF	United Nations Children's Fund
WHO	World Health Organization

OPERATIONAL DEFINITIONS

Breast feeding- Provision of nourishment to children through breast milk by direct suckling or of expressed human milk through any other means (WHO, 2003).

Appropriate breast feeding practice- Initiation within an hour of birth, exclusive breast feeding for six months and continued breast feeding up to two years or beyond (WHO, 2006).

Barrier- A problem or situation that prevents someone from doing something or makes something impossible (Oxford dictionary 2011).

Exclussive breast feeding- Requires the child to receive only breast milk from his/her own mother or wet nurse, or expressed breast milk and no other liquids or solid. The infant is however allowed to take drops or syrups consisting of vitamins, mineral supplements or medicine (WHO. 2006).

Complementary feeding- The process of starting other foods and liquids when breast milk alone or infant formula alone is no longer sufficient to meet the nutritional requirements of infants. These foods and liquids are needed, along with breast milk or a breast-milk substitute. The target range for complementary feeding is generally taken to be 6 to 23 months (WHO. 2006).

Knowledge of breast feeding- Extent of understanding conveyed about lactation and nourishment of an infant through breast-feeding (Johnson et.al, 2002).

Breast feeding support- Helping process to assist in initiating and maintaining successful breast feeding (Pillitteri et.al, 2007).

Under nutrition- The outcome of insufficient food intake and repeated infectious diseases. It includes being underweight for age, short for age (stunted), thin for height (wasted) and deficient in vitamins and minerals (micronutrient malnutrition) (WHO. 2006).

Replacement feeds- Feeding infants who are receiving no breast milk with a diet that provides the nutrients they need until the age when they can be fully fed on family foods (WHO, 2010).

ABSTRACT

Breastfeeding is a natural and recommended way of feeding all infants and young children Decline in this practice has resulted in increased morbidity and mortality of children under the age of five years globally and in Kenya. To address inconsistencies in breast feeding practice, it is necessary to understand maternal factors influencing the practice and role played by health facilities, the family unit, work environment and the community in acting as promoters or barriers to appropriate breast feeding practices.

The objective of this study was to determine barriers to appropriate breast feeding practices among breast feeding mothers and their perception of breast feeding support provided by health care workers necessary to breast feed successfully.

A descriptive cross sectional study involving 228 mothers to children below 12 months attending the MCH clinic at Mbagathi District Hospital was carried out between the months of April and June in the year 2011. Data was collected with assistance of two trained research assistants using a structured questionnaire consisting of open and closed ended questions. Analysis was done using SPSS version 15. Maternal characteristics were described and summarized using measures of central tendencies (mean, mode and median). Statistical measures of correlation (fisher's and chi-squared tests) were used to draw association between independent and outcome variables.

Findings of this study showed that most clients were married (89%) and aged between 22-28 years (58.8%). Most of the participants were first time mothers (56%). Majority had primary (34.7%) and secondary (39.7%) level of education and the mean age of the index child was 5 months. Maternal knowledge about breast feeding was influenced by age (p=0.001) and level of education (p=0.002) of the mother. Intended duration of breast feeding was influenced by level of education of the mother (p=0.49).

Initiation of breast feeding was low (59.2%) while exclusive breast feeding rates in infants of the age group 4-6 months was (40%). Bottle feeding was associated with early introduction of complementary feeds ($p<0.001$) while increased frequency of breastfeeding delayed introduction of complementary feeds ($p=0.009$).

Barriers to breastfeeding reported by mothers were work and breast feeding problems including painful and cracked nipples, inadequate milk supply, over supply of milk, breast engorgement and mastitis. Few mothers (29.5%) felt they were not adequately prepared by the health workers to breast feed their infants. Mothers reported lactation support from health care workers during immunization follow up of infants was minimal.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background information

Breastfeeding is a natural and recommended way of feeding all infants and young children (World Health Organization (WHO), 2010). Breast milk is cheap, convenient, hygienic, and has high concentration of growth and immunity factors. In developing countries, infants who are breast fed up to two years of age have been found to have reduced risk of morbidity from infectious diseases (Kramer. 2004). Breast feeding also has long-term benefits beyond infancy. These include lower mean blood pressure, lower total cholesterol, higher intelligence levels reduction of overweight/ obesity, type-1 diabetes and childhood cancers (WHO, 2007). For the mother, exclusive breastfeeding can delay the return to fertility (Labbok, 2001), and accelerate recovery of pre-pregnancy weight (Hatsu, Mc Dougald and Anderson, 2008). It also offers protection against breast (WHO, 2003) and ovarian cancer (Riman et al, 2004). Through the physical breastfeeding relationship, mothers and infants also find enhanced bonding and attachment which leads to improved social development of the child.

World Health Organization/United Nations Children's Fund (WHO/UNICEF) recommends that breast feeding should be initiated within an hour of birth. The baby should then be exclusively breast fed for six months. After the first six months of life, nutritionally adequate complementary feeds should be introduced in addition to breast feeding which should be continued up to the age of two years or beyond (WHO, 2007).

The Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) global pandemic has caused unique challenges to the breast feeding practice both locally and globally. An estimated 33.4 million people are living with HIV/AIDS globally, and there are 2.7 million new infections each year (WHO, 2010). Most of the people living with the disease are women of reproductive age (WHO, 2009). The risk of Mother to Child Transmission (MTCT) of HIV through breast milk led health workers to advice mothers

against breast feeding. However, breast feeding is considered a norm and mothers who do not breast feed face somatization. WHO/UNICEF now recommends that where antiretroviral treatment is available all infants born to HIV infected women should be exclusively breast fed. Additional complementary foods should be introduced at six months and breast feeding continued up to 12 months while the baby and mother continue to be regularly assessed. If the mother makes an informed choice not to breastfeed she is required to give her child replacement feeds which should be acceptable, feasible, affordable, sustainable and safe. (WHO, 2010).

Decline in breast feeding has emerged as a major public health concern in the 21^{SI} century. Currently there are approximately 40% of infants below six months of age being exclusively breastfed globally and 30% in sub Saharan Africa (WHO, 2009). Inappropriate breast feeding and infant and young child feeding practices has resulted in under nutrition, which is responsible directly or indirectly, for at least 35% of deaths in children below 5 years of age globally (WHO, 2010).

Breast feeding is a universal practice in Kenya. However the practice is sub optimal with an initiation rate of 58 % within the first hour of birth. Exclusive Breast Feeding (EBF) is not common, as only 32% of infants below the age of six months are exclusively breast fed (Kenya Demographics and Health Survey (KDHS), 2008/2009). The deteriorating trends in breast feeding practice have partly been attributed to fear of transmission of HIV from mother to baby through breast milk, increased inclusion of women into the work force, widespread belief that breast feeding alone is inadequate and lack of support for breast feeding mothers(Ministry of Public Health and Sanitation (MOPHS), 2007). These are further compounded by inadequate capacity building of health care workers leading to insufficient promotion of breast feeding practices (WHO, 2009).

Breast feeding is instinctive to the baby but a learned skill for the mother. In traditional African cultures, breast feeding is considered a norm and feeding skills were passed from female relatives and members of the community. With urbanization, family structures have transitioned from extended to nuclear families. These traditions have therefore become difficult to maintain in our current society. Support and skill of health care professionals during the antenatal and early postnatal period in addition to family and society support is needed to build mothers' confidence, improve feeding technique, and prevent or resolve breastfeeding problems (WHO, 2003).

In order to address inconsistencies in breast feeding practice, maternal factors influencing the practice and role played by institutions directly and indirectly in influencing the practice needs to be understood. These institutions include the health facilities, the family unit, work environment and the community at large. The aim of this study was to establish barriers to breast feeding experienced by mothers of children 0-1 years attending the Maternal and Child Health (MCH) clinic at Mbagathi District Hospital in Nairobi, Kenya and their perception of breast feeding support provided by health workers.

1.2 **Problem statement**

Inadequate breast feeding practices and early introduction of complementary feeds has contributed to increased cases of malnourished children in Nairobi province. According to the most recent demographic survey in Kenya, the proportion of children under the age of five years who are stunted in the province increased from 18.7% in 2003 to 22.7% in the year 2008. The number of children who are underweight in the province increased to 10% (KDHS, 2008/2009). Consequently, infant mortality rate in Nairobi is high (60 per 1000) and the province also had the highest neonatal mortality rate (48 per 1000) in the country (KDHS, 2008/2009).

Early nutritional deficits cause long-term impairment in growth and health. This causes impaired intellectual performance (Victoria et al, 2008), reduced capacity for physical work

(Haas JD et al. 2006) and reduced reproductive capacity (Martin et al, 2004). The implications of high prevalence of malnutrition in childhood are therefore a threat to social and economic development.

In Kenya, increasingly more women, including breast feeding mothers are joining the labour force and are involved both in formal and informal employment where they work for long hours. Lack of support from their families during breast feeding results in mixed feeding and early introduction of complementary feeds (MOPHS, 2007).

The support of health care workers is necessary to provide advice on infant feeding and practical management of breast feeding problems (Pilliteri, 2007). However, infant and young child feeding is not well addressed in the basic training of doctors, nurses and other allied professionals who therefore act as barriers to appropriate infant feeding practices (WHO, 2009).

1-3 Justification

Breast feeding is the most cost effective health care strategy necessary in promotion of nutrition, health and survival of infants and young children hence the need to promote, protect and support the appropriate practices. Inappropriate breast feeding and infant feeding practices has resulted in increased morbidity and mortality rates both globally and in Kenya. If the interventions are not put in place to reverse this trend, it would be difficult to reduce mortality rate of children below the age of five years by two thirds before the year 20l5(millennium development goal number four).

Appropriate breast feeding practices has the capacity to reduce occurrence of modem diseases in the paediatric population such as childhood cancers and type 1 Diabetes Mellitus. The burden of disease in the paediatric population has increased with emergence of such chronic conditions which are expensive to treat. In addition to infectious diseases, this has overstretched financial budget for both the families and the government. The health facilities are also over stretched as they are forced to admit children beyond their capacity resulting in

overcrowding in paediatric wards. This increases the risk of further strain on the limited resources available therefore compromising the quality of care.

Economic implications of poor infant and young child feeding practices to the society are numerous. Frequent hospitalization of children causes reduced productivity. Parents are admitted with their young ones leading to absenteeism from the work place. This results in less man power, time and human capital available both for production and service sectors of the economy. Children also fail to develop to their full potential in life. The productive capacity of the future generation is therefore at stake.

In Kenya, limited studies have been done on barriers experienced by mothers during breast feeding. Reasons for inappropriate breast feeding practices will provide insight in to what might be effective in helping women continue to breastfeed, hence facilitate the development of more effective breast-feeding promotion strategies. This will improve compliance with the WHO/UNICEF recommended breast feeding practices and reverse the deteriorating trends in the practice.

With breast feeding recognized as a learned skill for the mother, the role of health care workers in promotion of this practice is important. Reported perception of support mothers receive from health workers to facilitate breast feeding will help identify gaps in knowledge and enhance competency skills of health care providers.

1.4 Research questions

This study sought to answer the following questions;

- What are the breast feeding practices of mothers with infants between 0-1 years attending the MCH clinic at Mbagathi District Hospital?
- What is the level of knowledge on breast feeding of mothers attending the MCH clinic at Mbagathi District Hospital?

- What barriers do mothers experience during initiation, exclusivity and continuation of breast feeding at Mbagathi District hospital?
- What is the perception of the mothers on the breast feeding support they receive from health care providers to facilitate appropriate breast feeding practices?

1.5 Broad objectives

- To establish barriers to appropriate breast feeding practices among mothers attending the MCH clinic at Mbagathi District Hospital.
- To establish the perception of breast feeding support provided by health care workers among mothers attending the MCH clinic at Mbagathi District Hospital.

1.6 Specific objectives

- To establish the breast feeding practices of mothers.
- To establish the level of knowledge about breast feeding among mothers.
- To identify barriers to appropriate breast feeding practices among mothers.
- To establish the perception of breast feeding support provided by health care workers by mothers.

1.7 Expected benefits of the study

Most mothers were not able to breast feed their infants appropriately and reported breast feeding problems and work as the main barriers to appropriate breast feeding practices. This is important information for a health-care worker and the Ministry of Health (MOH) and can be used in development of strategies to address the deteriorating trends in breast feeding practices in Kenya. Addressing reasons for non practice of appropriate breast feeding and infant feeding practices will help prevent and reduce infant and child morbidity and mortality.

Knowledge and practice gaps in lactation management and support from health care workers were reported and a quarter of mothers in the study felt they did not receive adequate preparation on breast feeding from the health workers. This provides important information for the ministry of health on how to improve capacity building of health care workers hence strengthen their ability to promote appropriate infant feeding practices. The information is also helpful in curriculum development on lactation management and support for health care providers.

1.8 Theoretical Framework

ITie study utilized the Health Promotion Model (HPM). The model was developed by Nola J Pender. It provides a framework for integrating nursing and behavioural science perspectives which influence health behaviour. The central concept of the HPM is self efficacy and it describes the multi dimensional nature of persons as they interact within their environment to pursue health (Pender 2002). There are three components in this model (determinants) i.e. individual characteristics and experiences, behaviour specific cognitions and affect and behavioural outcomes.

Individual characteristics and experiences: These have a direct or indirect effect on perceived self efficacy (Pender, 2002). In this study, these are represented by the intervening variables and include prior breast feeding experience, prior maternal knowledge of breast feeding and mother's attitude towards breast feeding.

Behaviour-specific cognitions and affect: These are the primary motivational mechanisms to breast feeding (Pender. 2002). They include the dependent variables i.e. knowledge of mother on good breast feeding practices, actual breast feeding practice of the mother and barriers to breast feeding. These set of variables have important motivational significance and can be modified by the independent variables which, in this study include demographic characteristics of the mother and support from the health care workers, family, friends and employer.

Behavioural outcomes: This refers to the likelihood to engage in health promoting behaviour. It is the desired behavioural outcome and is the end point in the HPM, in this case, optimal breast feeding practice (Pender, 2002).

The model focuses on self efficacy of individuals as they interact with the environment in pursuit of health is useful in understanding maternal factors influencing breast feeding practices. For the purpose of this study it was further modified to create meaningful relationship within the study variables. The study variables are as presented in Figure 1.

FIGURE 1: CONCEPTUAL FRAMEWORK

Independent variables	Dependent variables	Outcome variables
Interpersonal influences. 1. Support from health care workers. **2.** Support from family/ friends/ employer. **Situational influences.** **3.** Demographic characteristics of mother (age, education, marital status, no of children)	I. Mother's knowledge on breast feeding. 2. Barriers to breast feeding. 3. Breast feeding practice of mother.	1. Optimal breast feeding practices.

Intervening variables

1. Prior maternal knowledge about breast feeding
2. Prior maternal breast feeding experience.
3. Maternal attitude towards breast feeding.

CHAPTER TWO

^2.0 Literature review

Inappropriate feeding practices have resulted in increased morbidity and mortality of children under the age of five years (WHO, 2009). As a result, several worldwide efforts have been mounted to reverse this trend. These include the Innocenti Declaration on the Protection. Promotion and Support of Breastfeeding (1990), Baby-friendly Hospital Initiative (1991), Global Strategy of Infant and Young Child Feeding (2003) and WHO declaration on breast feeding in the context of HIV infection (2006). All these efforts continue to address the impact of feeding practices on the nutritional status, growth and development, health, and thus the very survival of infants and young children. Kenya is a signatory to these global interventions. These efforts emphasize the need for optimal breast feeding as well as ensuring every mother is supported and helped to achieve her goal.

Support includes being given correct information about infant feeding and consequences of sub optimal practices. The mother also should be taught and supported by the health worker that helps her deliver to initiate, establish and maintain EBF, and continue to the required duration (MOPHS, 2007).

2.1 Barriers to appropriate breast feeding practices

2.1.1 Breast feeding problems

Despite the well documented benefits of breast feeding many mothers fail to reach their own breastfeeding goals because many factors discourage them. The most commonly cited breastfeeding difficulties in the early postpartum period include overactive let-down, engorged breast, latching difficulties, and infant feeding problems (Otoo et al. 2009). Compounding these perceived breastfeeding problems were maternal issues such as sleep deprivation, lack of time for self, postnatal blues and perceptions of being isolated and tied down (Flaking et al 2006).

In Australia, cessation of breastfeeding is associated with breastfeeding problems (Kohlhuber et al, 2008) including inappropriate positioning and attachment, nipple damage, low milk supply, painful feeding and perceived insufficient milk supply (Chin and Amir, 2008 and Mannan et al, 2008).

In Ghana breast and nipple problems including swollen and painful breasts, breast abscesses and sore nipples are important barriers to exclusive breast feeding (Otoo, Lartey and Eschamilia, 2009).

Similar findings have also been reported in Kenya where the most prominent, breastfeeding problems experienced by mothers included delayed milk production, insufficient milk supply, engorged breasts, sore or cracked nipples, and small or flat nipples (Naanyu, 2008).

Problems in milk production are a cause of early supplementation'and consequently cessation of breast feeding. In a study done in South Africa, perceived inadequate production of breast milk, and consequently a desire to supplement breast milk, was the main reason for using breast milk substitutes (Lindiwe et al, 2005). Delayed and insufficient milk supply was also reported in a study done in Japan as the main reason why mothers introduced complementary feeds early (Terrant et al. 2010). However it appears unlikely that many women truly experience insufficient milk, since physiologic studies have suggested that only 1%. to 5% of women have genuine problems with milk production and supply (Inch and Renfew. 1995). Mothers therefore need to be educated on basic physiology of milk production and given the assurance that breast milk alone can satisfy their babies' nutritional needs.

2.1.2 Socio cultural factors

Cultural taboos and beliefs can have a negative impact on breast feeding practices. A study done in Cameroon found that there are cultural and traditional beliefs and practices in the community which influence mothers to practice mixed feeding. These include pressure by village elders and families to supplement due to belief that breast milk is an incomplete food and does not increase the infants' weight (Kakute et al, 2005).

Sibeko et al (2005) reported mothers discard breast milk before feeding to rid any spirit the mother may have come into contact with. Mothers also stop breastfeeding on becoming pregnant for fear of harming the baby and give water to newborns just after birth (Shirima, Gebre-Medhin and Greiner, 2001).

In Kenya, there is wide spread belief that breast feeding alone is inadequate for nourishment of infants below the age of six months (MOPHS, 2007). This has resulted in early supplementation with 36 percent of infants below six months of age given complementary food, presumably mushy or semi-solid food (KDHS, 2008/2009).

Other socio cultural factors identified in studies include personal perceptions of the mother (Calen et al, 2004) and husband involvement (Garfield & Jsacco, 2006). Individual characteristics of the mother like maternal education, maternal age and maternal smoking have also been found to be associated with duration of breastfeeding (Kristiansen, 2010). There is therefore need for addressing these beliefs and clarifying such misconceptions about breast feeding, particularly through antenatal and maternal and child health clinics.

2.2 **Role of the health workers in support of breast feeding**

Health workers, especially the nurses, are the primary people to teach women about the benefits of breast feeding and provide anticipatory guidance for problems that may occur (Pilliteri. 2007). Their role in support of breast feeding varies with the time and place where patient care is provided. In each setting, however, they should play a significant role in helping the mother initiate breast feeding and to enjoy it, at the same time ensuring the recommended practices are adhered to. This includes:

- Providing knowledge to all pregnant women about the benefits and management of breast feeding.
- Helping women initiate breastfeeding within half an hour after birth.

- Assisting mothers to breast feed and maintain lactation even if they should be separated from their infant.
- Providing skilled counselling and help for infant and young child feeding, for instance at well-baby clinics, during immunization sessions, and in in- and out-patient services for sick children, nutrition services, reproductive health and maternity services;
- Providing guidance on appropriate complementary feeding with emphasis on the use of suitable locally available foods which are prepared and fed safely (WHO, 2009).

Knowledge refers to extent understanding conveyed about lactation and nourishment of an infant through breast feeding (Johnson et al, 2000). Indicators include ability of the client to describe benefits of breast feeding, basic physiology of lactation, early infant hunger cues and signs of adequately nourished infant. Others include proper technique of attachment, positioning, breaking infant sucking and expression and storage of breast milk. Also important is nipple evaluation, including signs and symptoms of mastitis, blocked ducts, nipple trauma and readiness to wean (Pilliteri et al, 2007).

Practical breast feeding support involves preparation of a new mother to breast feed. Important activities include providing early contact between mother and child after delivery, assisting mothers to identify infant arousal cues, instructing mothers on proper positioning techniques while observing the infant at breast for latching on, correct positioning, audible swallowing and suck/swallow pattern. The mother is also advised on normal characteristics of voiding and stool of breast fed babies. Nipple care, control of breast congestion, use of comfortable and supportive nursing bra and storage/warming of expressed milk is also addressed (Pillitteri et al. 2007).

23 Knowledge and practice gaps on breast feeding of health care providers identified in studies

Mother's attitude, health professional, family and general societal support are the most important factors that would influence successful initiation and maintenance of breast feeding

practice. Further, women have reported the value of advice and support that their physician and other healthcare providers give regarding the decision-making process for infant feeding. However, they report receiving scanty information from their health care providers about the act of breastfeeding. Furthermore the information has been reported to be conflicting with information received from other sources (Abba, Koninck and Hamelin, 2010, Wambach et al., 2005).

Antenatal interventions to prepare pregnant women to breast feed have also been found to be ineffective (Foster et al. 2004). Doung (2005) reported health workers lack the necessary knowledge and skills for practical counselling on breast feeding. Haider et al (2010) also reported knowledge-to-practice gaps in breastfeeding practice was as a result of lack of awareness of recommended breastfeeding practices, how to practice them and the benefits and risks of not practicing them due to low health workers' interactions in promoting and supporting optimal breastfeeding.

A study carried out in Nakuru. Kenya showed that one time counselling of mothers on infant feeding did not improve adherence to infant feeding recommendations hence need for constant re-emphasize during immunization and all other hospital visits (Mbuthia. Elmadfa and Mwonya, 2008).

There is therefore need to equip health personnel with both the knowledge and skills to guide mothers into successful breast feeding practices. It is also necessary to standardize sources of information on breast feeding available to our mothers to avoid provision of conflicting information. Continual emphasis of the same in the clinics frequently attended by mothers with children of breast feeding age is also necessary to encourage breast feeding as per recommended practices.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Study setting

This study was conducted at Mbagathi District Hospital, situated in Ngumo estate off Mbagathi road in Nairobi. Kenya during the period between April and June in the year 2011. Mbagathi is a District hospital. The hospital is located at the edge of one of the city's largest slum and is considered the best level of care available for patients unable to pay higher fees for medical services elsewhere. It has an inpatient bed capacity of 250 and is also a Tuberculosis (TB) centre. The hospital has outpatient services including Maternal and Child Health (MCH) clinic.

The study was done at MCH clinic located in Anderson hall near the entrance of the hospital. The clinic offers antenatal, child growth monitoring, immunization, family planning services and other reproductive health services. The clinic is opened daily on week days from 8.00 a.m. to 5.00 p.m. during which routine child welfare. Ante Natal Clinic (ANC) and family planning clinics are in operation. In addition special ANC clinic for high risk mothers is provided on Tuesdays and Gynaecological clinic on Fridays. The clinic receives an average of 25 mother-child dyad daily for immunization. Services at the clinic are provided byll health care providers attached to this clinic, comprising nine nurses, a nutritionist and a medical officer.

3.2 Study design

This is a descriptive cross-sectional study on barriers to appropriate breast feeding practices among mothers of infants 0-1 year attending the MCH clinic at Mbagathi District Hospital.

3.3 Study population

The study population comprised breast feeding mothers of infants 0-1 year attending the MCH clinic for immunization and child growth monitoring.

3.4 Study variables

Dependent variables

- Mother's knowledge about breast feeding.
- Breast feeding practices of mothers attending the MCH clinic.
- Barriers to appropriate breast feeding practices.

Independent variables

- Support from health care workers
- Support from spouse, family members and employer.
- Demographic characteristics of mothers i.e. age, level of education, employment status and marital status.

Intervening variables

- Maternal attitude towards breast feeding.
- Previous breast feeding knowledge of the mothers.
- Previous breast feeding practice of mothers.

Outcome variables

- Optimal Breast feeding practices of infants.

3.5 Inclusion and exclusion criteria

Inclusion criteria.

- Mothers attending the MCH clinic for immunization and growth monitoring of their infants.
- The infant being brought to the clinic was below the age of one year.
- Mothers who consented to participate in the study.

Exclusion criteria.

- Mothers who had children over the age of one year.
- Mothers who had children below one year and were not breast feeding.
- Mothers who declined to participate in the study.

3.6 Sample size determination

Sample size was determined using the following formula (Mugenda and Mugenda 2003):

$$n = \frac{Z^2pq}{}$$

Z is the standard normal deviate at required confidence level, set at 1.96 which corresponds to 95% confidence interval.

p is the proportion in the target population estimated to have the characteristics being measured (breast feeding mothers with children below the age of one year),

q is the target population estimated to have characteristics not being measured. (q= 1 -p)

d is the level of precision set at =+ 0.05

The study population was determined by estimating the number of children who are expected to attend the clinic this year, based on attendance in the previous year. The number of children who were fully immunized in the previous year i.e. those who received measles vaccine was 604. This was considered the number projected to attend clinic this year hence the target population.

The prevalence of mothers who attend the clinic was based on the number who received BCG and Measles vaccine. The hospital expected 1493 (the number who started immunization i.e. received BCG vaccine) but at the end of the year only 604 (the number who were fully immunized i.e. received measles vaccine) completed the immunizations. Estimated prevalence of attendance at the clinic was therefore:

604/1493 x 100 = 40.46%

Calculation of sample size: $n = 1.96^2 \times 0.4 \times 0.6/0.05^2 = 368.793$

n = 368.79

Since target population was less than 10,000, fisher's formula was used to adjust the sample size for populations less than 10,000.

$$nf = \frac{n}{1+n/N}$$

Where nf is the desired sample size (when population is less than 10,000)

N is the estimate population size (604)

Sample population was therefore: $\frac{368.79}{1+\frac{368.79}{604}} = 228.05$

Sample size = 228.05

3.7 Sampling procedure

Systematic random sampling was used to select participants for the study. A sampling factor N/n (604/228=3) was calculated determine the sampling frame. Every third mother to arrive at the clinic at the period of study that met the eligibility criteria and consented to participate in the study was interviewed. The process was repeated until the required sample size of was achieved.

3.8 Minimization of bias

- A pre test to ensure internal validity and reliability of study tool was carried out by the researcher at the MCH clinic at Kenyatta National Hospital.
- Recall bias was minimized by restricting the study population to mothers with children below one year.

3.9 Methods and procedure of data collection

A structured questionnaire consisting of closed and few open ended questions was used to collect data. The questionnaire was divided into seven sections: demographic characteristics,

pre- natal, post natal and breast feeding history, knowledge on appropriate breast feeding practices, barriers to breast feeding and assessment of support provided by employer, family, friends and health care providers. Written consent was obtained from the mothers before the interviews began. The interviews which were conducted in Swahili lasted approximately 20 minutes and took place in a room within the health facility. Only the respondent was present during the interview.

3.10 Training of research assistants

Two research assistants with experience in field data collection were recruited. They were further trained by the researcher on administration of the study questionnaire. Training included description of the study objectives, sampling technique, ethical considerations and entry of data.

3.11 Pre-testing of the questionnaire

The study questionnaire was pre-tested in the month of April, the year 2011. Twenty mothers attending the MCH clinic in Kenyatta National Hospital (KNH) were interviewed by the researcher. The hospital is within the same vicinity as Mbagathi district hospital. Both are public hospitals and serve the same catchment area and patients with similar characteristics. No difficulties were encountered with the questionnaire but it helped to modify some few questions which were open type into closed type. Data from the pre-test was analyzed but the findings were not included in the results.

3.12 Data management

After every field visit, raw data was cleaned, verified for completeness, correctness and validity. The researcher conducted debriefing meetings with the research assistants every two days to discuss field progress and make adjustments where necessary. Data was coded and entered into access spread sheet databases by the researcher.

3.13 Data analysis

Data was analyzed using **SPSS** version 15. An initial descriptive analysis was conducted to summarize the characteristics of all the mothers in the study sample. Analysis of mothers' demographic profile was done using measures of central tendencies including mean, mode and median and was tabulated in frequency tables.

Perinatal history of the most recent pregnancy including healthcare seeking during pregnancy, health education on breast feeding before, during and after birth were all described by calculating percentages of mothers reporting to have attended ANC or given information on breast feeding by the health workers respectively.

Knowledge on breast feeding was calculated as the percentage of mothers who knew at least one maternal and infant benefit of breast feeding. Knowledge was compared with maternal characteristic including age and level of education using chi-square tests or Fisher's exact test where the expected cell frequencies was five or less.

Breast feeding practices including complementary feeding were also described and compared with maternal factors using chi square test or Fisher's exact test when appropriate. Barriers to breast feeding were identified by maternal reports of breast problems and challenges encountered during breast feeding. These barriers were also summarized and presented as graphs or frequency tables. Chi square tests or Fisher's exact tests were used to identify factors that were significantly associated with reported barriers to successful breast feeding.

3.14 Data presentation

Data was presented in word, bar graphs, pie charts and frequency tables.

3.15 Study limitations

- Study population comprised mothers attending MCH clinic at Mbagathi District hospital during the period of study hence results may not be general izable to the entire country.

3.16 Ethical considerations

1. Clearance to conduct the study was obtained from the University of Nairobi and Kenyatta National Hospital Ethics and Research Committee (UoN/KNH-ERC), the Ministry of Science and Technology and Mbagathi District Hospital.
2. The nature and purpose of the study was explained to the respondents by the research assistants before a written consent form was obtained from the participants.
3. To assure confidentiality, mothers did not give their names and information obtained was used for the study analysis and write up only.

CHAPTER FOUR

4.0 RESULTS

4.1 Demographic profile of participants

A total of 228 mothers with infants attending the MCH clinic at Mbagathi District hospital participated in this study. The demographic characteristics of the mothers are as presented in Table 1 below. The mean age of the mothers was 26 years (6.3). The modal age group was 22 to 28 years representing 58.8% (n = 134) of mothers in the study. Only 5.7% (n=13) of the mothers were aged above 36 years while 16.2% (n=37) were aged below 21 years.

Most of the participants in the study were Christians (99.1%, n=226). Eleven percent of mothers (n=25) reported that they were single while 89% (n=203) were married. Majority of the mothers (39.5%, n=90) reported they had attained secondary school level of education while 34.7% (n=79) had primary education. Mothers who had trained in tertiary colleges accounted for 20.2% (n=46) of the total participants while only 5.7% (n=13) had university education.

Table 1: Demographic characteristics of mothers

Maternal age	Frequency(n)	Percent (%)
15-21 years	**37**	**16.2**
22-28 years	**134**	58.8
29-35 years	**44**	**19.3**
36-42 years	**13**	5.7
Total	**228**	**100**
Marital status		
Married	**203**	**89.0**
Single	**25**	Hi)
Total	**228**	**100**
Formal education		
Primary school	**79**	**34.7**
Secondary school	**90**	39.5
Tertiary institutions	**46**	**20.2**
University education	**13**	5.7
Total	**228**	**100**
Religion		
Christian	**226**	**99.1**
Muslim	**2**	0.9
Total	**228**	**100**

4.1.1 Number of children

As shown in Figure 2 below, the number of children born by mothers in the study including the most recent birth ranged from one to six children. Majority of the mothers (56.1%, n=128) reported they had only one child. Mothers who had two children accounted for 25.9% (n=59) of the study population while 18% (n=41) had three or more children.

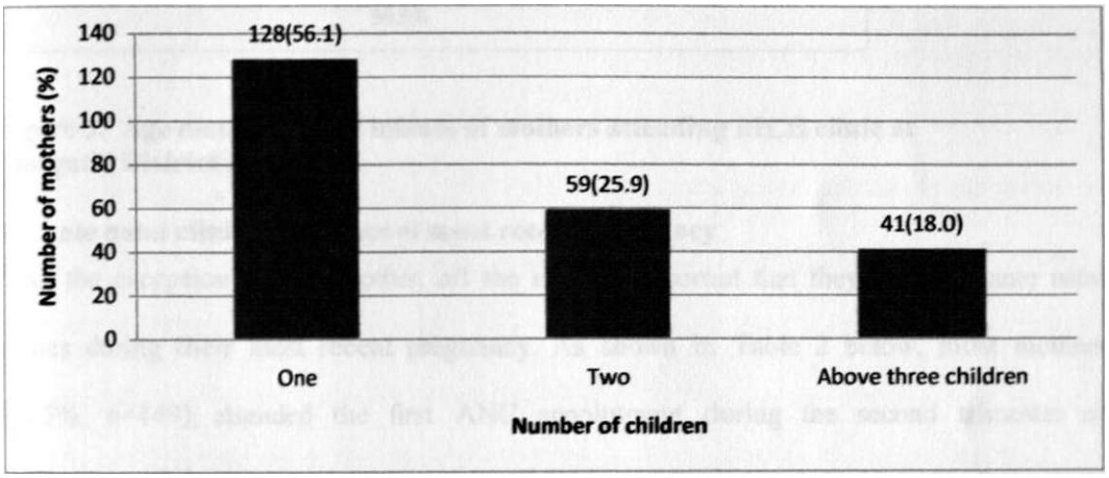

Figure 2: Number of children

4.1.2 Current age of child

The mean age of the index child was 5 months (2.96) with a range of 1 month to 12 months. There were 27.6% (n=63) infants who were between one and two months of age and 39.9% (n=75) above 6 months of age as shown in Figure 3 below.

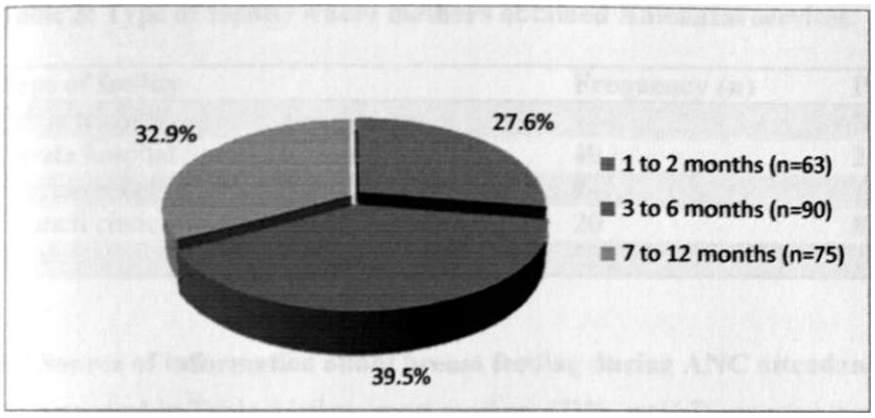

Figure 3: Age distribution of infants of mothers attending MCH clinic at Mbagathi District Hospital

4.2 Ante natal clinic attendance of most recent pregnancy

With the exception of one mother, all the mothers reported that they attended ante natal clinics during their most recent pregnancy. As shown in Table 2 below, most mothers (64.5%, n=149) attended the first ANC appointment during the second trimester of pregnancy. Majority of the mothers (55.26%, n=126) attended at least four ANC appointments as recommended during the most recent pregnancy.

Table 2: Gestational age at which mothers made First Ante natal clinic attendance and number of appointments made

Gestational age at First ANC attendance	Frequency (n)	Percent (%)
First trimester	**58**	**25.4**
Second **trimester**	**149**	**65.4**
Third trimester	**21**	**9.2**
Total	228	**100**
Number of ANC visits		
I to 2 visits	14	6.14
3 to **4** visits	**87**	**38.16**
More than **4** visits	126	55.26
Total	**228**	**100**

As presented in Table 3 below, majority of the mothers (58.8%, n=134) obtained antenatal care from public healthcare facilities while 21.5% (n=49) attended private hospitals. ANC services in mission health facilities were sought by 10.5% (n=24) of mothers while 8.8% (n=20) of mothers obtained ANC services from city council clinics.

Table 3: Type of facility where mothers obtained Antenatal services.

T> pe of facility	Frequency (n)	Percent (%)
Public hospital	134	58.8
Private hospital	49	21.5
Mission hospital	24	10.5
Council clinic	20	8.8
Total	228	100

4 J Source of information about breast feeding during ANC attendance

As presented in Table 4 below, most mothers (73%, n=l67) reported they had received some information about breast feeding during ANC. The breast feeding information was mainly provided by nurses (58.3%, n=97). Mothers also read breast feeding information displayed on posters at the clinics (21.5%, n=36) or were given brochures containing information on breast feeding (20.2%, n=34) to read at home. The information contained in breastfeeding messages included importance of exclusive breastfeeding for the first six months in an infant's life (48.3%, n=l 10), benefits of breastfeeding (22.8%, n = 52) and breastfeeding in mothers who are HIV positive (2.6%, n=6)

Of the 134 mothers who obtained antenatal care from public health facilities, 29.9% (n=40) received information on breast feeding compared to 28.6% (n=l4) and 20% (n=4) of those who obtained antenatal services from private facilities and city council clinics, respectively. The type of facility at which mothers obtained antenatal care services however did not influence whether mothers were given information on breast feeding (Fisher's exact = 0.133).

Table 4: Number of mothers who received information on breast feeding at Antenatal clinic and source of the information

Received breast feeding information	Frequency (n)	Percent (%)
Yes	**167**	**73.2**
No	61	26.8
Total	**228**	**100**
Source of breast feeding information		
Nurse	**97**	**58.3**
Poster	36	21.5
Brochure	**34**	**20.2**
Total	167	**100**

4.4 **Maternal knowledge about breast feeding**

Only half of the mothers (50.9%, n=l 16) were able to mention at least one maternal and infant benefit of breast feeding. As shown in Figure 4. mothers were however more likely to mention benefits of breastfeeding to the baby than to the mother. Overall, 96.5% (n=222) of mothers knew at least one benefit of breast feeding to the infant compared to 48.7% (n=l 11) of mothers who knew at least one maternal benefit of breastfeeding (Fisher's exact, $p < 0.001$).

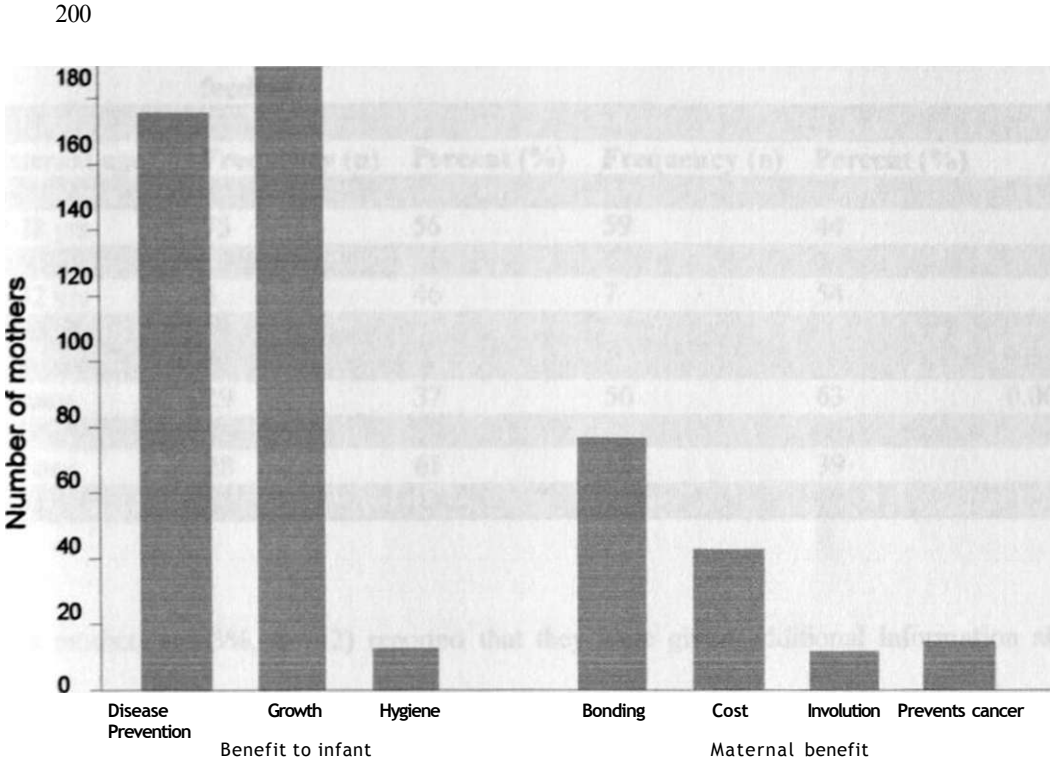

Figure 4: Knowledge about benefits of breast feeding among mothers

Knowledge about maternal and infant benefits of breast feeding was influenced by mother's level of education (Fisher's exact p=0.002) and age (Fisher's exact p=0.001). Table 5 below shows only 22% (n=8 out of 37) of mothers aged below 21 knew the benefits of breast feeding compared to at least 46% (n=87out of 191) of mothers in the older age groups.

Knowledge about breastfeeding was higher among mothers who had attained higher levels of education from 37% (n=29 out of 79) for mothers with primary level education to 85% (n=l lout of 13) for those with university education.

Table 5: Maternal age, level of education and knowledge on benefits of breast feeding

	Knows at least one maternal and infant benefit of breast feeding				P value
	Yes		No		
Maternal age	**Frequencv (n)**	**Percent (%)**	**Frequency (n)**	**Percent (%)**	
15-21 yrs	**8**	**22**	**29**	**78**	**0.001**
22-28 yrs	75	56	59	44	
29-35 yrs	**27**	**61**	**17**	**39**	
36-42 yrs	6	46	7	54	
Level of Education					
Primary	29	37	50	63	0.002
secondary	**48**	**53**	**42**	**47**	
Tertiary	28	61	18	39	
University	**11**	**11**	**2**	**15**	

Most mothers (62.3%, n=l42) reported that they were given additional information about breast feeding during the post natal period before discharge from the hospital. This information included how to breastfed the newborn (40.8%, n=58), importance of exclusive breast feeding in the first six months of an infant's life (38.7%, n=55) and need for mothers to maintain hygiene during feeding (10.5%, n=31).

4.5 Breastfeeding practices of mothers at Mbagathi District hospital

4.5.1 Initiation of breast feeding

As presented in Table 6 below, most (59.2%, n=135) mothers initiated breast feeding within one hour after delivery. Mothers who knew benefits of early initiation of breast feeding (55.6%, n = 75), initiated feeding within one hour of birth compared to mothers (44.4%, n = 60) who did not know (Fisher's exact p = 0.297).

Table 6: Breast feeding initiation

Initiation of breast feeding	Frequency(n}	Percent (%)
1/2- 1 **hour**	135	59 *2*
2 **-5** hours	41	18.0
6 -12 **hours**	52	22.8
Total	228	100

4.5.2 Exclusive breast feeding

There were 65.6% (n=84) infants who were exclusively breastfed. Table **7** shows the rate of exclusive breast feeding in infants below six months. The percentage of infants exclusively breast fed was high in infants below **7** weeks (80%, n=29). The rate of exclusive breast feeding however dropped to 40.5% (n=15) in infants of the age group between four and six months. Most mothers (39.5%, n=90) had reported that their index child was in this age group.

Table 7: Exclusive breast feeding rates at different age groups

Age **of** baby in weeks	Frequency(n)	Percent (%)
0 to 7 weeks	29	80.6
8 to 15 weeks	40	70.2
16 to 24 weeks	15	40.5
Total	84	

4.5.3 Age of infants and introduction of complementary feeds

In this study, the infant's age influenced the timing of introduction of complementary feeds (Fisher's exact $p < 0.001$), as shown in Table 8 below. Among the 128 infants aged below 6 months, 34% (n=44) had received complementary feeds. This percentage was lower compared to that of older infants where 94% (94 out of 100) of infants had been fed using complementary feeds. This percentage was lower compared to that of older infants where 94% (94 out of 100) of infants had been fed using complementary feeds.

Table 8: Age of infants and introduction of complementary feeds

	Complementary feed				P value
Age of infant	Yes (%) Frequency (n)	Percent (%)	No (%) Frequency (n)	Percent (%)	
Less than **2** months	**7**	**19.4**	**29**	**80.6**	**<0.001**
2-4 months	15	27.3	40	72.3	
5-6 months	**22**	**59.5**	**15**	**40.5**	
7-8months	47	90.4	5	9.6	
9-10 months	**30**	**96.8**	**1**	**3.2**	
11-12 months	17	100	0		
Total	**138**		**90**		

4.5.4 Types of complementary feeds introduced and infant age

The relationship between infant age and type of complementary feeds introduced is presented in Table 9. Children below 6 months were given water (20%, n=25). mashed foods and fruits (7%, n=9), infant formula (6%, n=8), porridge (5%, n=6) and cow's milk (3%, n=4).

Water in addition to breast milk was given to 20% (n=25) of infants below 6 months compared to 62% (n=62) of infants older than 6 months (pcO.OOl). Among the types of complementary feeds given, only infant formula feed was equally likely to be used before (6%, n=8) and after (10%, n=10) the age of six months (Fisher's exact p=0.330).

Table 9: Types of complementary feeds given to infants at different ages

Age of infant	Water		Total	Chi square /Exact p value
	Yes (%)	No (%)	n = 228	
Below 6 months	25 (20)	103 (80)	128(62)	<0.001
Over six months	62 (62)	38(32)	100(38)	
	Infant formula			
	Yes	No		
Below 6 months	8(6)	120 (94)	128 (62)	0.330
Over six months	10 (10)	80 (90)	100(38)	
	Cow's milk			
	Yes	No		
Below 6 months	4(3)	124 (97)	128 (62)	<0.001
Over six months	65(65)	35 (35)	100(38)	
	Porridge			
	Yes	No		
Below 6 months	6(5)	122 (95)	128(62)	<0.001
Over six months	86 (86)	14(14)	100(38)	
	Mashed foods and fruits			
	Yes	No		
Below 6 months	9(7)	119(93)	128(62)	<0.001
Over six months	35 (35)	65 (65)	100 (38)	

4.5.5 Frequency of breast feeding

Most mothers (65.8%, n=150) reported that their infants fed on both breasts during each feeding episode. As shown in Table 10 below, frequency of breast feeding in infants below six months varied from less than three feeds per day to breast feeding on demand. Majority of the mothers (61.7%, n=95) reported that they breast fed on demand and 18% (n=41) breast fed at least 8 to 10 times per day. Frequency of breast feeding was influenced by age of the infant. Infants aged below 2 months were more likely to be fed on demand compared infants between the ages of 3 to 6 ($P < 0.001$).

Table 10: Frequency of breast feeding of infants

Frequency of breast feeding per day					
Age	**<_3 times**	**4-7 times**	**8-10 times**	**On demand**	**P value**
1-2 months	0	10(15.9)	10(15.9)	43(68.2)	<0.001
3-6 **months**	1(1.1)	14(15.6)	23(25.6)	52(57.8)	
Total	1	24	33	95	

As shown in table 11 below, infants who were breast fed less frequently (less than 8 times a day) were given complementary feeds early compared with infants being breast fed more than 8 times or on demand (p = 0.009).

Table 11: Frequency of breast feeding of infants and introduction of complementary feeds

	Complementary feeds					
Frequency of breast feeding	**No**		**Yes**		**Total**	**Fisher Exact**
	Frequency (n)	**Percent (%)**	**Frequency (")**	**Percent (%)**		
<3 **times**	**0**		**10**	**100**	**10**	**0.009**
4-7 times	14	31.1	31	68.9	44	
8-10 times	**21**	**51.2**	**20**	**48.8**	**41**	
Demand	55	41.7	77	53.8	123	
Total					**228**	

4.S.6 Length of infant suckling on the breast

Most mothers (87%, n=187) reported that their babies stayed on the breast until they let go of the breast on their own. Mother's reported length of infant suckling at the breast is as shown in Table 12 below. The length of infant sucking did not result in early introduction of complementary feeds (p = 0.606).

Table 12: Length of suckling at the breast and introduction of complementary feeds

	Complemc ntary feeds					P value
Length of sucking	**Yes** Frequency («)	Percent **(%)**	**No** Frequency **(n)**	Percent **(%)**	***Total***	**0.606 • • •**
< 10 minutes	**48**	**64**	**27**	**36**	**75**	
10-19 minutes	60	61	39	39	99	
20-29 minutes	**20**	**61**	**13**	**39**	**33**	
Over 30 minutes	10	**48**	11	52	21	
Total	**138**		**90**		**228**	

4.5.7 Intended duration of breast feeding

The intended duration of breast feeding among mothers in this study is as shown in Table 13 below. Only one mother did not plan to breast feed her infant beyond the first six months of life.

Table 13: Intended duration of breast feeding among mothers

Intended duration of breast feeding	Frequency (n)	Percent (%)
Less than **6** months	**1**	**0.4**
6 to 11 months	10	4.4
12-23 months	**50**	**21.9**
24 months and above	158	69.3
As long as baby continues breast feeding	**9**	**4.0**
Total	228	**100**

Maternal level of formal education influenced intended duration of breast feeding (Fisher's exact p=0.049), as shown in Table 14 below. Most mothers with primary (76%. n=60) or secondary (73%, n=65) education reported they intended to breast feed for at least 24 months compared to 56% (n=26) and 50% (n=7) of mothers with tertiary and university education, respectively.

Table 14: Mother's level of education and intended duration of breast feeding

Mother's level of education	Age of baby in months				Fisher's exact p
	6-11	**12-24**	Above **24**	Until baby stops	
Primary	3 (4%)	13(17%)	59(76%)	3 (4%)	0.049
Secondary	**3 (3%)**	**20 (22%)**	66 **(73%)**	**1 (1%)**	
Tertiary colleges	2 (4%)	15(33%)	26(56%)	3 (7%)	
University	**2(15%)**	**2(15%)**	**7(54%)**	**2(15%)**	

4.5.8 Use of pacifiers and feeding bottles

Use of pacifiers

Pacifiers were rarely used by mothers (5.7%, n=13). The use of pacifiers was not associated with maternal age (p=0.24) as shown in Table 15. The use of pacifiers did not influence the frequency of breastfeeding Fisher's exact p= 0.178) or result in early introduction of complementary feeds (Fisher's exact p=0.171).

Table 15: Use of pacifiers, frequency of breast feeding, early introduction of complementary feeds and maternal characteristics.

	Use of pacifier				P value
Breast feeding frequency	**Yes Frequency (n)**	**Percent (%)**	**No Frequency** J">	**Percent (%)**	
3 or less times	**1**	10	9	90	0.178
4-7 times	0	0	41	100	
8-**10** times	4	9	41	91	
On demand	8	6	124	94	
Complementary feeding					
Yes	10	7	128	93	0.171
No	3	3	87	97	
Maternal age					
15-21 yrs	3	8	34	92	0.204
22-28 yrs	9	7	125	93	
29-35 yrs	0	0	44	100	
36-42 yrs	1	8	12	92	

Use of feeding bottles.

Only 23.8% (n=54) of mothers reported that they used bottles in feeding their infants. Most infants who were breast fed three times a day (80%, n=8 out of 10) were being bottle fed compared to 23% (n=30 out of 100) and 5% (n=2 out of 39) of infants who were breast fed on demand or at least 8 times daily (Fisher's exact $p < 0.001$). As presented in Table 16 below, use of bottles for feeding resulted in early introduction of complementary feeds (Fisher's exact $p < 0.001$). Its use was however not influenced by maternal factors such as age (Fisher's exact $p = 0.259$), marital (Fisher's exact $p=0.224$) or employment status (Fisher's exact $p = 0.131$).

Table 16: Use of feeding bottles, frequency of breast feeding and early introduction of complementary feeds.

Breast feeding frequency	Bottle feeding				P value
	Yes Frequency (D)	Percent (%)	No Frequencv (n L	Percent (%)	
3 or less times	8	80	2	20	<0.001
4-7 times	14	32	30	68	
8-10 times	2	5	39	95	
On demand	30	23	100	77	
Complementary feeding					
Yes	49	36	89	65	<0.001
No	5	6	82	94	

4.6 Barriers to breastfeeding

4.6.1 Breast feeding problems

Breast feeding problems were reported by 38.2% (n=87) of mothers. The most common breast feeding problem reported by the mothers was painful breasts (14%, n=32), **as** shown in Figure 5 below. Other problems experienced included low milk production (12.7%. n=29), over supply of milk (11%, n=25) and cracked nipples (10.1%, n=23). Among 55 mothers who had experienced breast feeding problems, 40% (n=22) with infants below 6 months introduced complementary feeds compared to 73 mothers 30% (n=22) of mothers with infants in the same age group who had also introduced complementary feeding (x^2 = 1 -35. p =0.25).

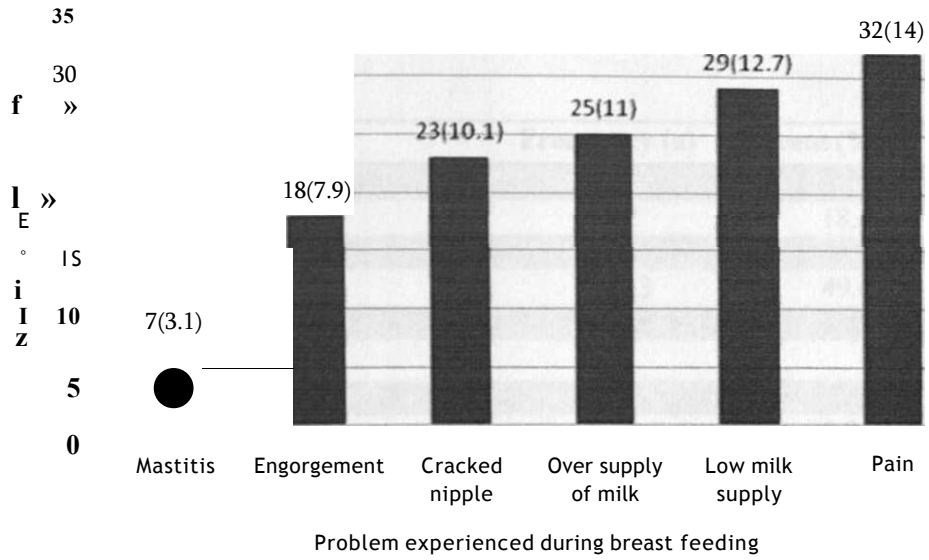

Figure 5: Breast feeding problems reported by mothers.

4.6.2 Work and breast feeding

As shown in Table 17, approximately half (49.6%, n = 113) of the mothers were unemployed. Among those in employment 28.1% (n=64) were self employed. 18.4% (n=42) were employed in private sector and 3.9% (n=9) were employed in the public sector. Most mothers who were employed spent 6 to 8 hours (39.1%, n=45) or 8 to 10 hours (28.7%, n=33) at work.

Majority of the employed mothers (96.5%, n=l 11) reported they had been granted maternity leave while 3.5% (n=4) of the mothers were not. Most employed mothers (55%, n=63) reported that the duration of their maternity leave was greater than 3 months.

Women who were self employed had longer maternity leave than those who were working in the private sector (Fisher's exact p= 0.006). Duration of maternity leave did not however influence introduction of complementary feeds in infants below the age of six months (Fisher's exact p= 0.684).

Table 17: Type of employment, duration of maternity leave and hours spent at work among mothers.

Type of Employment	Frequency (n)	Percent (%)
Self employed	**64**	
Private sector	42	18.4
Public sector	9	**4.0**
Unemployed	113	49.6
Total	**228**	**100**
Duration of leave (n = **115)**		
0-1 month	**4**	**3.6**
1-2 months	10	9.0
2-3 months	**36**	**32.4**
Over three months	61	55.0
Total	**111**	**100**
Duration spent at work per day (n = **115)**		
<6 hours	**13**	**11.3**
6 to 8 hours	45	39.1
8 to **10** hours	**33**	**28.7**
10 to 12 hours	17	14.8
> 12 hours	**7**	**6.1**
Total	115	100

As shown in Table 18, 57.9% (n=l 1) of infants receiving complementary feeds before six months were from mothers working in private sector compared to 42.1% (n=8) of infants receiving complementary feeds in the same age group whose mothers were self employed (x = 1.66. p = 0.266).

Table 18: Type of Employment and introduction of complementary feeds in infants below 6 months of age.

Introduction of complementary feeds	Type of employment		P value
	Private sector	**Self employed**	
Yes	11(57.9)	8(42.1)	0.266
No	**16(40)**	**24(60)**	
Total	27	32	

4.7 Family support and breast feeding.

Most mothers 94.8% (n=201) reported that their spouses were supportive of their decision to breast feed their infants. Majority of the mothers (82%, n=187) also reported that their family

members were supportive of their decision to breast feed their infants. Both spouses and family offered support in several areas as shown in Figure 6. Spouses (n=l 13) and family members (n=110) equally helped with household chores. Spouses were more supportive in encouraging mothers to breast feed and helping in household chores.

Most mothers intending to breast feed for more than one year had been encouraged to breast feed by their spouses and family members. Encouragement to breast feed did not however significantly influence the intended duration of breast feeding (p = 0.131).

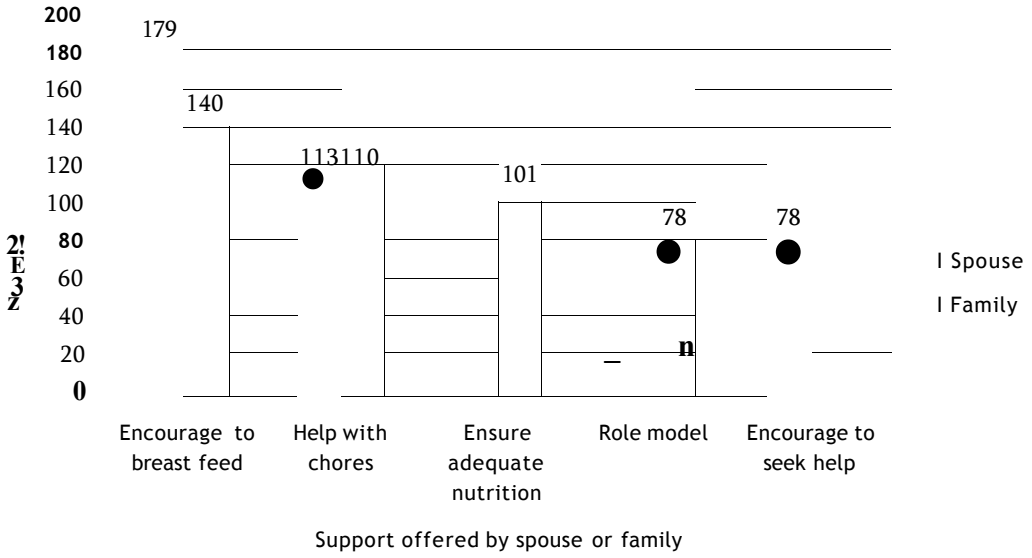

Figure 6: Family support for breast feeding mothers.

4.8 Perception of support provided by health workers to facilitate appropriate breast feeding

4.8.1 Post natal teaching on positioning and attachment of baby to the breast.

Most mothers (69.2%, n=l57) reported they were shown by the attending health care worker how to position and attach their baby to the breast after delivery. Post natal teaching of latch (Fisher's exact p=0.76) and positioning (Fisher's exact p=0.686) of infants at the breast during feeding did not however reduce occurrence breast feeding problems among mothers.

Table 19: Relationship between post natal teaching on attachment, positioning and occurrence of breast feeding problems.

Shown attachment	Breast problem					P value
	No		Yes		*Total*	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)		
Yes	**96**	**62**	**59**	**38**	**115**	**0.76**
No	41	60	27	40	68	
Yes	98	63	58	37	116	0.686
No	**42**	**60**	**28**	**40**	**70**	

4.8.2 Advice on frequency and duration of breast feeding.

Most mothers (67.1%, n=153) reported they did not receive any advice from health workers on the recommended frequency of breast feeding their infants after delivery. Only 16.2% (n =37) of the mothers reported they were advised to breast feed on demand while 16.7% (n=38) were advised to breast feed their infants at least 8 to 12 times per day.

More than half (57%, n=130) of the mothers reported that they were not advised on the recommended duration of breast feeding by health workers. Those who were advised (43%, n=98) reported durations ranging from 6 months up to 5 years.

4.8.3 General care of the breast during breast feeding.

As shown in Table 20, 74% (n=169) of mothers reported they were taught about care of the breast during breast feeding. Mothers reported that they were advised to wash and dry breasts properly before feeding their infants (74.1%, n=169) and were counselled on appropriate diet to aid in milk production (64%, n=146). Use of oils and lotions on the breasts was discouraged (33.8%. n=77) and only 24.1% (n=55) of mothers were shown how to examine their breast.

Table 20: Information on care of the breast during breast feeding.

Advice given	Frequency (n)	Percent (%)
Wash breast and dry breast properly	169	74.1
Diet that promotes milk production	146	64
Wear well fitting/ supportive bra	98	43
Don't use oil/ lotions on breast	77	33.8
Self breast exam	55	24.1

4.8.4 Information on expression and storage of breast milk.

Only 36.8% (n=88) of the mothers reported that they were taught how to express breast milk by hand and store for their babies to be fed in case they may be separated from their infants before they attain the age of six months.

4.8.5 Mothers' perception of breast feeding support provided by health workers.

Less than half of the mothers (43.9%, n=100) reported they received health education talks about breast feeding when attending the clinic at Mbagathi hospital for immunization of their infants. Overall 69.6% (n=158) mothers felt that health workers had prepared them adequately for breast feeding. A few mothers (10.6%, n=24) were not sure whether they were given enough guidance by the health workers to help them breast feed successfully while 18.9% (n=43) of the mothers felt they were not adequately prepared by health workers to breast feed their infants.

CHAPTER FIVE

5.0 DISCUSSION

The main focus of the study was to establish barriers to appropriate breast feeding practices among mothers with infants between the ages of 0-12 months. Health promotion model was adopted as a framework to identify and understand factors that influence breast feeding practices of mothers and their role in acting as promoters or barriers to optimal breast feeding practices.

Self efficacy is central to the health promotion model. The model asserts that an individual takes an active role in engaging in health promoting behaviour (Marriner & Raile, 2005). The determinant of health promoting behaviour according to the model is an individual's desire to engage in health promoting behaviour (behaviour specific cognition and affect). This is modified by personal, situational and interpersonal factors which influence the individual's participation in health promoting behaviour (Potter & Perry, 2006). The results of the study showed maternal knowledge and practice of breast feeding was influenced by individual characteristics of the mother such as age and level of education (personal factors), type of employment (situational influences) and support offered by health workers, spouse and family members (interpersonal influences). Similar findings have been reported in Latin America where a review of literature on factors influencing breast feeding practices of mothers were found to be the same as the determinants of health promoting behaviour according to the health promotion model (Schlickau & Wilson, 2005).

5.1 Knowledge on breast feeding.

Step three of the ten steps to successful breast feeding requires that all pregnant women are informed by health care workers about benefits and management of breast feeding (WHO/UNICEF, 2009). In this study, the main source of information on breast feeding was from health care providers. A study done in Uganda also reported that most mothers learnt about breast feeding from health care workers (Lakantree et al, 2011). This shows that health

workers are a vital source of information on breast feeding. However, despite most mothers attending the minimum four appointments to the antenatal clinics, 41.7% did not receive information about breast feeding directly from the health care providers. Breast feeding information on printed materials such as posters and brochures increased breast feeding awareness among mothers in the study. Provision of such materials is however not enough. Direct counselling of mothers enables health workers to answer questions mothers may have and correct misconceptions about breast feeding. This has been found to have more impact than printed and audio visual material (Gunasekaran et al, 2008). When breast feeding information obtained directly from the nurses is considered, very little has changed since release of the country's most recent health demographics survey which had reported that only 53% of mothers received information on breast feeding during ANC attendance (KDHS, 2008/2009).

Focused antenatal care requires that at every visit, an expectant mother should undergo complete head to toe examination, including breast examination. This presents an important opportunity for individual counselling of mothers on breast feeding and teaching on how to examine the breast. Nipple evaluation should also be done to prevent breast feeding problems such as inverted and non- protractile nipples. Only 22% of mothers reported they were shown how to examine their breast. This raises concern on whether the content of breast feeding information given to mothers at the health facilities addresses all aspects of lactation management. Similar findings were reported in India, where information on breast feeding during antenatal counselling was found to be inadequate for the population (Gunasekaran et al. 2008).

In this study most mothers were not aware of benefits of breast feeding to their own health. Less than half (48.7%) of the mothers sampled could mention at least one maternal benefit of breast feeding. This was way below the WHO/UNICEF standards which indicate that at least

70% of randomly selected mothers should mention at least two benefits of breast feeding to both the infant and the mother (WHO, 2009). A study done in Nakuru Kenya reported a large percentage of mothers were not aware of maternal benefits of breast feeding. In addition, they believed health problems would occur in women who practice exclusive breast feeding (Webb-Girad et al, 2010). This could imply that more emphasis has been placed on benefits of breast milk to the baby and women are unaware of benefits of the practice to their own health. The situation is however different in Australia where all mothers sampled in a study believed breast feeding improved the well being of the mothers (Marewa et al, 2009). The health promotion model postulates that individuals are more likely to engage in health promoting behaviour if they are fully aware of its benefits (Marriner & Raile, 2005). If maternal benefits of breast feeding were similarly emphasized, it might have an impact on improving mothers' attitudes to breast feeding and therefore increase the rates of the practice. Age was identified as a barrier to acquisition of knowledge about breast feeding. Older and more educated mothers knew benefits of breast feeding. The researcher hypothesized that this group of mothers was more eager to learn and receptive of the information given by the health workers during antenatal visits. Young and less educated mothers however, had less knowledge on breast feeding. Young people generally are reluctant to seek health service for their sexual and reproductive health needs. A study done in Uganda revealed that adolescent mothers made fewer visits and had poorer care of the newborn compared to adult mothers (Atuyambe et al, 2008).

5.2 Breast feeding practice of mothers attending MCH clinic at Mbagathi District Hospital

Most mothers did not practice appropriate breast feeding practices. Breast feeding initiation was low with slightly over half of mothers starting to breast feed within half an hour to one hour of birth. The rate of initiation was similar to Kenya's national statistics (KDHS, 2008/2009). Similar findings have also been reported in a study done in Nairobi where more

than a third of mothers interviewed did not initiate breast feeding within the first hour after birth (Murage et al. 2011). Researchers have reported an initiation rate of 91% in Tanzania (Nkaya and Msuya, 2011), and 15% in Ghana (Agyemang et al, 2008).

Studies have shown health education programs on benefits of breast feeding are effective in increasing initiation rates (Guise et al, 2003, Kronborg &Vaeth, 2004). In this study lack of information on importance of early initiation during the ante natal period was a barrier to early initiation of breast feeding. Mothers who were advised on importance of early initiation during ANC visits were more likely to initiate breast feeding early compared to mothers who did not receive the information. A study done in Ethiopia also reported provision of inadequate information by health workers at delivery was associated with delayed initiation of breast feeding (Horii, Guyon and Quinn, 2011).

Exclusive breast feeding requires that the mother gives only breast milk to the baby for the first six months of life. Most mothers were not able to practice exclusive breast feeding. Exclusive breast feeding rate was high (80%), in the first two months of an infant's life but dropped to 40% in the 4-6 months age group. A study done in western Kenya also reported 34.5% of mothers had introduced complementary feeds by the fourth month after birth (Mbagaya, 2009). Furthermore women in Kenya have reported difficulty in following health care workers recommendation on exclusive breast feeding (Webb-Girard et al, 2010). Similar rates have been reported in sub-Saharan Africa (WHO, 2009) and other parts of the world (Heinig. et al. 2006, Tiwari, 2006). This shows that despite mothers knowing the need to practice EBF for six months, it has been difficult to achieve this from the third month after birth.

Milk production during breast feeding is increased by breast feeding frequently. A study done in the United Kingdom showed that exclusively breast fed infants required to be fed more frequently than infants who were bottle or mixed fed (Casiday et al, 2004). Most mothers

breast fed their infants on demand. Demand feeding resulted in delayed introduction of complementary feeds in this study. Infants below six months of age should be breast fed a minimum of eight to ten times during the day. Few mothers could approximate the number of times they feed their current baby in twenty four hours. Out of these, only 18.0% fed their infants eight to ten times per day. Most mothers (n=153) were however not informed by the health care workers on either the recommended frequency or length of suckling of infants.

The eighth step to successful breast feeding as provided by WHO/UNICEF requires that artificial teats and pacifiers should not be used in breast feeding children (WHO, 2009). Use of pacifiers has been associated with reduced breast feeding rates (Karabulut, 2009). It is also difficult to maintain hygiene of such equipments, putting the babies at risk of diarrheal diseases (USAID, 2001, Jane & Scott, 2006). Pacifier use among participants in this study was not common. Its use was not influenced by maternal characteristics and did not result in early introduction of complementary feeds.

Bottle feeding causes "nipple confusion' by interfering with sucking and swallowing reflexes hence causing early cessation of breast feeding (Gomes et al, 2006). In this study 54 mothers reported they used bottles in feeding their infants. Its use was a barrier to breast feeding as it was associated with reduced frequency of breast feeding and resulted in early introduction of complementary feeds. Similar findings have been reported in the United Kingdom (Casiday et al. 2004). There is therefore need to discourage mothers from using feeding bottles. Unlike the popular belief that use of bottles is common in mothers of higher socio economic status, the findings in this study showed that maternal characteristics did not influence choice of feeding the baby with bottles.

Formal education with resultant increasing inclusion of women into the workforce was a barrier to appropriate breast feeding practice in this study. Highly educated mothers intended to breast feed their infants for a shorter period compared to mothers less educated. Similar

findings were reported in the United States where exclusive breast feeding was more common in younger and less educated mothers (Li et al, 2002). A study done in Nairobi. Kenya however reported women with secondary and tertiary education to have lower risk of stopping breast feeding (Murage et al, 2011). Maghoup et al (2002) however reported maternal characteristics such as age, socioeconomic status and level of education have no impact on breast feeding.

53 Barriers to appropriate breast feeding

Breast feeding problems was reported by 32.8% of mothers in the study. Mothers who had breast feeding problems were more likely to introduce complementary feeds early compared to mothers who had not had breast feeding problems. However the relationship was not statistically significant. Breast problems were also reported to be a challenge for the mothers and they felt it was preventing them from achieving their breast feeding goals. The most common lactation problem was painful breast, insufficient milk production and nipple problems. Similar findings have been reported in a study done in Eldoret, Kenya where breast feeding difficulties was a hindrance to exclusive breast feeding (Naanyu, 2008). In Ghana, a study reported breast problems as a barrier to exclusive breast feeding (Otoo, et al, 2009). However, despite available evidence of negative impact of feeding difficulties on breast feeding practices, health workers lack knowledge and necessary skills to support breast feeding women experiencing lactation problems (Amir and Ingram. 2008).

With breast feeding increasingly recognized as a learned skill for the mother, the support of trained health care providers on technique of breast feeding is very important. However, only 69.2% of mothers were taught how to position and latch the baby at the breast. Incorrect breast feeding technique has been associated with occurrence of breast feeding problems (Ingram et al, 2002). In this study there was no difference in occurrence of breast problems among mothers who were taught how to attach and position their infants at the breast and mothers who were not. This could imply that a single intervention post natally may not be

effective hence the need for follow up and emphasis during immunization visits and paediatric outpatient departments.

The need for resumption of work after delivery for mothers who are employed has been reported to be a barrier to breast feeding (Cattaneo et al, 2005). Similar findings were reported in this study where most mothers reported work to be the major challenge hindering them from achieving their breast feeding goals. A study done in Nakuru also reported maternal separation from the infant due to work was one of the reasons why mothers did not practice exclusive breast feeding (Webb-Girard et al, 2010). Approximately half of the mothers were working, and most of them were granted maternity leave. Mothers who were self employed were however less likely to introduce complementary feeds early than mothers who were employed in the private sector. This is probably due to flexibility at the work place which enabled them get longer maternity leave and possibly breaks during working days to breast feed their infants.

Learning how to breast feed for both the mother and baby can be a challenging process. Mothers have been reported to value the support they receive from immediate family members and their opinions may influence the feeding practice of the mother (Bezner et al. 2008. Aubel et al, 2004). Fathers who advocate for breast milk for their infants positively influence breast feeding practice of their partners (Wolfberg et al, 2004). Furthermore, fathers have expressed the need to be involved more in breast feeding of their children (Rempel and Rempel, 2010). In this study, spousal and family support was available for most mothers. Mothers who reported their spouses or family members encouraged them to breast feed intended to breast feed for longer periods than mothers who were not encouraged to breast feed.

5.4 Mother's perception of support offered by health workers to facilitate breast feeding

Mothers require access to professional support to enable them initiate and sustain appropriate breast feeding practices. WHO recommends that knowledgeable practitioners should be available to offer education and practical guidance during the ante natal period and continued support in follow up appointments in the postnatal period (GS1YCF, 2009). Breast feeding support in the post discharge period has been associated with increased duration and length of exclusivity (Sikorski et al, 2005). Most mothers reported they received information from health workers during ANC attendance and immediately after delivery. Few mothers (43.9%) were however given further information in subsequent clinic visits when they took their children for immunization.

Expression of breast milk is one of the ways of ensuring lactation is maintained in case the mother may need to be separated from her child. However, despite approximately half of the mothers being employed, only 36.8% reported they were given information on how to express and store milk. A study done in Nairobi among working breast feeding mothers showed expression of breast milk increased the rate of exclusive breast feeding in infants below the age of six months (Lakati et al, 2002). Similar findings were also reported in Australia (Win et al, 2006).

Breast feeding rates in this study was reported to decrease as the child grows. However conspicuously missing was information on continuation of breast feeding after the first six months of exclusive breast feeding. Most mothers were not aware of how long they should continue breast feeding their children and reported they had not been given such information at the clinics. Similar findings were also reported by Lawrence & Lawrence (2008). After birth, the role of midwifes decline and the paediatric nurses role increase. Paediatric nurses are the most ideal persons to ensure lactation is maintained during infancy. In Mozambique, nurses working at MCH clinics expressed that lack of time to do individual counselling and

inadequate job aids were some of challenges that impacted negatively on their role of ensuring mothers maintained lactation (Maaike et al, 2011).

In general approximately 29.5% of mothers felt they were not adequately prepared or were unsure whether the information given by health workers was adequate to enable them breast feed. The researcher hypothesizes that a woman who is inadequately prepared or unsure of how to breast feed will be frustrated leading to loss of self efficiency. Such mothers will therefore have more difficulties in practicing appropriate breast feeding practices.

CHAPTER SIX

6.0 CONCLUSION

The study involved 228 mothers attending the MCH clinic at Mbagathi district hospital between the months of April and June in the year 2011. Most of the participants were first time mothers with the index child's mean age being five months old. The modal age group was between 22 and 28 years, a reflection of national peak fertility age group in the urban areas in Kenya. Kenya's most recent health demographics survey reported the fertility rate in Nairobi province to be 2.8 children per woman. The mothers are therefore likely to have other children and barriers identified are significant as they may influence future breast feeding practices of the mothers.

Knowledge on appropriate breast feeding practices was influenced by individual characteristics of the mothers and pre natal preparation by health workers. Knowledge gaps on breast feeding were however identified in the study. Most mothers were not aware of maternal benefits of breast feeding, how to examine their breast and expression and storage of milk in case the mother is separated from her infant before the first six months of exclusive breast feeding are over.

The study revealed that most mothers did not breast feed their infants appropriately. Just over half were able to initiate within half an hour to one hour of birth. Exclussive breast feeding rates declined to as low as 40% by the fourth month of the infant's life. This is of concern since inappropriate infant feeding practices have been shown to increase the risk of child hood infections and diarrhoeal diseases (Mihrshai et al, 2008). Bottle feeding reduced frequency of breast feeding and was associated with early introduction of complementary feeds.

Breast feeding problems were identified as barriers to appropriate breast feeding practices. Breast and nipple problems were the main cause of problems with breast feeding. Other

factors that may cause interrupted or delayed establishment of lactation include general state of health of both the mother and the baby. These were however not addressed by the study. Most mothers reported their spouses and family members were supportive of their decision to breast feed their infants. Spousal and family support had a positive influence on the breast feeding practices of the mothers. This shows the importance of the role played by family members in breast feeding practice of mothers hence need for incorporation in promotional strategies.

Mothers reported work was a challenge in their breast feeding practice. Almost half of the mothers were in employment with majority being granted maternity leave. Self employed mothers were less likely to introduce complementary feeds early than mothers working in the private sector.

Health workers gave little information on breast feeding during immunization appointments. Most mothers were unaware of the recommended frequency and duration of feeding and very few were taught how to express and store milk. Approximately a third of mothers felt they were not adequately prepared by the health workers to breast feed their infants.

6.1 RECOMMENDATIONS

1. The Knowledge and practice gas in lactation management and support identified in this study need to be addressed by the National curriculum development bodies for health professionals to enhance capacity building of health workers to promote adequate breast feeding practices.

2. The Ministry of Health also needs to evaluate effectiveness of breast feeding support provided by health care workers at health facilities to determine whether breast feeding education requires strengthening.

3. Some mothers reported they were not given adequate breast feeding support by health workers during antenatal clinic attendance and when they took their infants for immunization. This needs to be addressed by the hospital and the Ministry of Health.

4. Breast feeding difficulties were reported to be a barrier to breast feeding. Further research is needed on breast feeding problems and health professionals' knowledge on management of such problems.

5. Work was identified as a barrier to breast feeding among mothers. Employers need to be sensitized and guided more on ways to support breast feeding mothers.

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ANNEX 1

TABLE 1.1: TIME SCHEDULE AND WORK PLAN FOR THE ENTIRE STUDY FOR THE YEAR 2010-2011

Month ^	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Activity												
Concept paper	xxx											
Proposal writing and literature review		xxx	xxx									
Forwarding proposal to supervisors			xxx	xxx								
Correction of final proposal and forwarding to KNH-ERC				xxx	xxx	xxx						
Questionnaire pretesting						xxx						
Data collection						xxx	xxx					
Data processing and analysis							xxx	Xxx				
Report writing									xxx			
Draft report presentation and correction										xxx		
Final report presentation and submission										xxx	xxx	
Thesis defense												xxx

ANNEX 1

TABLE 1.2 BUDGET

Component	Activity description	Item	Unit of measurement	Unit cost	Total cost
Proposal preparation phase	Search for literature in libraries	Transport and sustenance	20 days	@300	6000
	Internet services	Modem credit	20 days	@200	4000
	Stationeries	A4 notebooks	2	@100	200
		Pens	10	@20	200
		Proposal typing	3 drafts	@450	1350
		Proposal printing	3 drafts	@225	675
		Photo copying	6 drafts	(2)90	540
Sub total					12965
Research implementation and Data Analysis phase.	Pre-testing	Transport and subsistence	1 day	@300x3	900
		Printing and photocopying	20 copies	@10	200
	Questionnaires	Photocopying	240 copies	@10	2400
	Data collection	Transport and subsistence	30 days	@150	4500
		2 Research assistants	30 days	@500	15000
	Data processing and analysis				15000
Sub total					38000
Report writing phase	Draft reports	Typing and printing	200 pages	@20	4000
		Photocopying	5 copies	@400	2000
	Final reports	Correction and printing	200 pages	@10	2000
		Photocopying	5 copies	@400	2000
		Binding	5 copies	@500	2000
		Transport and subsistence	30 days	@150	4500
Sub total					14500
		Contingency (10% of total)		6546	
Grand Total					72,011

ANNEX 1

Consent explanation for breast feeding mothers

I am Linda Kwamboka Mogambi, a second year postgraduate student at the University of Nairobi, School of Nursing Sciences pursuing a Masters degree in Paediatric Nursing.

Dear participant.

I intend to carry out a study on **'Barriers to appropriate breast feeding practices among mothers attending the MCH clinic at Mbagathi District Hospital',** as part of the requirement for the award of Masters Degree in Paediatric Nursing. The study seeks to identify factors that hinder mothers from practicing optimal breast feeding practices for their infants.

Participation in the study is voluntary. We will require you to fill a questionnaire which will take approximately 20 minutes and you will be guided through. We will also request you to provide your child's clinic card. There is no harm or pain that will be inflicted on you during this process since there will not be any invasive procedure. The study may not benefit you directly but the findings will provide information that will be used to intensify efforts to safeguard breast feeding which is important for child nutrition, health and survival.

The information you provide will be kept confidential and anonymous therefore, you will not write any of your personal particulars on the questionnaire. Should you feel like withdrawing from the interviews at any time, you will be free to do so without any victimization or bias in the subsequent treatment that you will receive.

Your participation will be highly appreciated. In case of any questions or clarifications feel free to contact the principle investigator, Linda Kwamboka (School of Nursing Sciences, University of Nairobi, Mobile no 0734144523). You may also contact the Secretary for ERC, KNH/UoN at the following address: University of Nairobi, College of Health Sciences, P.O. Box 30197, GPO 00100, Tel no. 2726300 (EXT 44102).

Thank you

Linda. K. Mogambi (Principal Investigator)

ANNEX 4

Informed consent form for the mothers

I have read the consent form and have been explained to the nature of the study and the benefits. I have had a chance to ask all questions regarding this study. I voluntarily agree to participate in this study on Barriers to appropriate breast feeding practices among mothers attending the MCH clinic at Mbagathi district hospital.

Date. . . . . Signature of the Participant

Date. . . . . Signature Investigator

ANNEX 1

LETTER TO THE ETHICS AND RESEARCH COMMITTEE

Linda Mogambi Kwamboka
Admission no. H56/76464/09
P.O. Box 4315-30100,
Eldoret.

The chairman.
Ethics and Research Committee,
P.O. Box 20723-00202,
Nairobi.
Dear Sir/Madam.

Ref: Permission to conduct research at the MCH clinic at Mbagathi District Hospital.

1 am a second year postgraduate Student at the University of Nairobi pursuing a Masters degree in Paediatric Nursing.

I would like to request your permission to carry out research at Mbagathi District hospital in Nairobi. This is a requirement for qualification of the course. My topic of interest is assessment of barriers to appropriate breast feeding practices among mothers who attend the MCH clinic at Mbagathi District Hospital.

1 look forward to your favourable response.

Yours faithfully,
Linda Mogambi Kwamboka.
Email address: lindakwamboka@vahoo.com
Mobile no. 0734144523

ANNEX 1

LETTER TO THE MEDICAL SUPERITENDENT, MBAGATHI DISTRICT HOSPITAL

Linda Mogambi Kwamboka
Admission no. H56/76464/09
P.O. Box 4315-30100,
Eldoret.

The Medical superintendent,
Mbagathi District Hospital,
Nairobi.
Dear Sir,

Ref: Permission to conduct research at the MCH clinic at Mbagathi District Hospital.

I am a second year postgraduate Student at the University of Nairobi pursuing a Masters degree in Paediatric Nursing.

I would like to request your permission to carry out research at Mbagathi District hospital in Nairobi. This is a requirement for qualification of the course. My topic of interest is assessment of barriers to appropriate breast feeding practices among mothers who attend the MCH clinic at Mbagathi District Hospital.

I look forward to your favourable response.

Yours faithfully,

Linda Mogambi Kwamboka.

Email address: lindakwamboka@vahoo.com

Mobile no. 0734144523

ANNEX 1

LETTER TO THE MINISTRY OF HIGHER EDUCATION, SCIENCE AND TECHNOLOGY

Linda Mogambi Kwamboka
Admission no. H56/76464/09
P.O. Box 4315-30100,
Eldoret.

The chairman.
Ministry of I ligher Education Science and Technology,
P.O. Box
Nairobi.
Dear Sir/Madam,

Ref: Permission to conduct research at the MCH clinic at Mbagathi District Hospital.

I am a second year postgraduate Student at the University of Nairobi pursuing a Masters degree in Paediatric Nursing.

I would like to request your permission to carry out research at Mbagathi District hospital in Nairobi. This is a requirement for qualification of the course. My topic of interest is assessment of barriers to appropriate with appropriate breast feeding practices among mothers who attend the MCH clinic at Mbagathi District Hospital.

I look forward to your favorable response.

Yours faithfully,

Linda Mogambi Kwamboka.

Email address: lindakwamboka@vahoo.com

Mobile no: 0734144523

ANNEX 1

QUESTIONNAIRE

100	**DEMOGRAPHIC DATA**	
101	Mother's age (in years) 1.15-21 [ ] 2. 22-28yrs [ ] 3. 29-35yrs [ ] 4. 36-42yrs f 1 5.43-49yrs [1	
102	How many children do you have?	
103	What is the age of your baby in months?	
104	Which religious affiliation do you belong to? I.Christian [ ] 2.Muslim [ ] 3.Hindu [ ] 4,Other [ ]	
105	What is your marital status? 1. Married [ ] 2.Divorced [ ] 3.Widowed [ ] 4.Single [ ]	
106	What is your level of education? 1. None [ ] 2.Primary school 3.Secondary school 4.Tertiary institutions [ ] 5.University education [ ]	
107	**PERINATAL HISTORY**	
1.	Did you attend ANC clinic during this pregnancy? 1. Yes [ ] 2. No [ ]	
2.	If yes, where did you get these services? 1 .Public hospital [ ] 2.Private hospital [ ] 3.Mission hospital [ ] 4.Council clinic [ ]	
3.	If no, why?	
4.	If yes, at what time in pregnancy did you start ANC clinic?	
5.	How many visits did you make to the ANC clinic during your pregnancy? 1.1-2 visits [ ] 2. 3-4 visits [ ] 3. More than four visits [ ]	
6.	Did you receive any information on breast feeding at the ANC clinic? 1. Yes [ ] 2. No [ ]	
7.	If yes, what kind of information were you given on breast feeding at the clinic? 1. Benefits of breast feeding [ ] 2. Importance of breast feeding soon after delivery [ ] 3. Importance of exclusive breast feeding for six months after birth [ ] 4. How to examine your breasts [ ] 5.None [ ] 6. Other(specify) [ ]	

8.	Who gave you this information *{probe)?* **1.** Nurse [ ] 2. Health information posters at the clinic [ ] 3. Brochures distributed at the clinic [ ]	
9.	Where did you deliver your baby? 1. Home [] 2. Health centre [ ] 3. Private hospital [ ] 4. Public hospital [ ] 5. Mission hospital [ ]	
10.	Type of delivery 1. Normal vaginal [ ] 2. Caesarean [ ] 3. Vacuum delivery [ ] 4. Other (specify) f 1	
108	**KNOWLEDGE OF BREAST FEEDING**	
1.	Had you ever received information on breast feeding before delivery of your baby? 1. Yes [ ] 2. No [ ]	
2.	Where did you get this information? 1. Relatives [ ] 2. Friends [ ] 3. Health care providers [ ] 4. Media [ ]	
3.	What are the benefits of breast feeding to your child (no *probing)?* 1. Breast milk is hygienic and safe for the baby [ ] 2. Helps to protect baby from diseases [ ] 3. Needed for healthy growth and development of baby [ ] 4. Other(s), specify [ ] 5. None [ ]	
4.	What are the benefits of breast feeding to you *(no probing)?* **1.** Breast feeding may protect against breast and ovarian cancer [ ] 2. Aids uterine involution and prevents excessive bleeding after delivery [ ] 3. Reduces cost of feeding and preparation time [ ] 4. Enhances bonding between mother and child [ ]	
5.	Did you receive information on breast feeding from health workers after delivery? 1. Yes [ ] 2. No [ ]	
6.	If yes which information?	
109	**BREAST FEEDING PRACTICES**	
1.	When did you make the decision to breast your baby in your last pregnancy?	
2.	When did you put your baby to breast after delivery? 1.1/2-1 hour [ ] 2. 2 -5 hours 3. 6 -12 hours [**1** 4. 12-24 hours [ ] 5. After 24 hours [ ]	
3.	For how long do you intend to breast feed (duration)?	
4.	Approximately how many times do you feed your baby in a day?	
5.	Does your baby feed on both breasts at each feeding? l.Yes [ ] ' 2. No [ ]	
6.	Does your baby let go of breast by himself/herself?	

	••Yes [ ] 2.No [ ] 3. Sometimes [1	
7.	Approximately how long does the baby stay on each breast? 1. Less than 10 minutes [ ] 2. 10-19 minutes [ ] 3. 20-29 minutes [1 4. Over 30 minutes [ ]	
8.	Has your baby been given anything other than breast milk since it was bom *(probe)?* 1. Plain water [ ] 2. Infant formula [ ] 3. Fresh milk [ ] 4. Solid/semi-solid food [ ] 5. Other(s) specify [ ] 6. None [ ]	
9.	Since this time yesterday, did your baby drink anything from a bottle with a nipple/teat? 1. Yes [ ] 2. No [ ]	
10.	If Yes, what was the baby fed?	
11.	Do you use a pacifier to sooth your baby? 1. Yes [ ] 2. No [ ]	
12.	Are you happy/satisfied with your breast feeding practice? 1. Yes [ ] 2. No [ ]	
13.	Give reasons for your response above	
14.	What other challenges do you face that hinder you to breast feed your child as you would have wished/wanted to *(probe)?*	
110	**BREAST FEEDING PROBLEMS**	
1.	Have you ever experienced the following breast problems while you were breast feeding your baby *(probe)?* 1. Low milk supply [ ] 2. Breast pain [ ] 3. Engorgement [ ] 4. Nipples pain/cracked nipples [ ] 5. Too much milk [ ] 6. Mastitis [ ] 7. None [ ] 8. Others (specify) [ ]	
2.	If yes, did you get the help that you needed? 1 .Yes [ ] 2. No [ ]	
3.	If yes, please describe what help you received.	
4.	If no, why did you decide so?	
5.	Who provided you with this help? 1. Doctor [ ] 2. Nurse [ ] 3. Nutritionist [ ] 4. Traditional healer [1 4. Other (specify) [ ]	
111	**SUPPORT FROM FAMILY AND EMPLOYER**	

1.	Type of employment. 1. Public sector [ ] 2. Private sector [ ] 3. Self employed [ ] 4. Unemployed [ ] 5. Other (specify)	
2.	How many hours do you work in a day? 1. Less than six hours [] 2. 6-8 hours [] 3. 8-10 hours [] 4.10-12 hours [] 5. More than 12 hours f]	
3.	Were you given maternity leave when you delivered your baby? 1. Yes f 1 2. No f 1	
4.	If yes, how long was the maternity leave? 1.0-1 month [ ] 2. 1-2 months [ ] 3. 2-3 months [ ] 4. Over three months [ ]	
5.	Has your spouse been supportive of you breast feeding your baby? 1. Yes [ ] 2. No [ ]	
6.	If yes, does he *(probe)* 1. Encourage you to breast feed [ ] 2. Encourage you to seek help when you have problems with breast feeding [ ] 3. Offer help with chores around the house [ ] 4. Ensure you have adequate nutrition to enable you breast feed [ ] 5. Other specify [ ]	
7.	Have your family members been supportive of you breast feeding your baby? 1 .Yes **f**] 2. No [ ]	
8	If yes, do they *(probe)* l.Offer help with chores to ensure you get enough rest to breast feed [ ] 2.Ensure you have adequate nutrition to help you breast feed [ ] 3.Encourage you to breast feed [ ] 4.Serve as role models and help you when you have problems on breast feeding [ ] 5.0ther (specify) [ ]	
9.	Have your friends been helpful in assisting you to breast feed your child? 1. Yes [ ] 2. No [ ]	
10.	If yes, are they *(probe)* **1.** Supportive of your decision to breast feed your baby *(appropriately) [ ]* 2. Offer help in taking care of the baby when needed [ ] 3. Encourage you to seek professional help when having questions on breast feeding [ ] 4. Other (specify) [ ]	
112 PERCEPTION OF SUPPORT PROVIDED BY HEALTH WORKERS TO FACILITATE BREAST FEEDING.		
1.	After delivery of your baby, did the staff show you how to position your baby at the breast? 1. Yes [1 2. No [ ]	
2.	After delivery were you shown how to attach your baby to the breast? 1. Yesf] 2. No [ ]	
3 L	If no, explain what you did to put your baby to the breast.	

4.	What advice were you given on how long you should suckle your baby during each feed?	
5.	What advice were you given on how often you should feed your baby?	
6.	What advice were you given by health workers on how long (duration) you should breast feed your baby?	
7.	What information on keeping your breast healthy during breast feeding were you given *(probe)?* 1. Wash breast properly and dry breast properly [ ] 2. Eat nutritious food to help milk production 3. Wear well fitting/ supportive bra [ ] 4. Search for lumps [ ] 5. Don't use oil/ lotions on breast [ ] 6. None [ ] 7. Other (specify) [ ]	
8.	When did the staff tell you is the right time to introduce other foods to the baby?	
9.	Did the staff show you/ give you information on how you could express your milk by hand and how to store it? 1. Yes [1 2. No [ ]	
10.	Do you sometimes get lessons on breast feeding during your visits to the clinic? 1 .Yes [ ] 2. No [ ]	
11.	Do you feel the health workers adequately prepared to breast feed your baby? 1. Yes [ ] 2. No [ ] 3. Not sure [ ]	
12.	What additional help do you feel you needed?	

THANK YOU FOR ANSWERING THE QUESTIONS

APPENDIX 9

RESEARCH AUTHORIZATION FROM MINISTRY OF HIGHER EDUCATION, SCIENCE AND TECHNOLOGY

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

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18* May. 2011

OurlUf

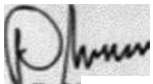
Linda Kwamboka Mogambi
University of Nairobi
P.O Box 30197
NAIROBI

RE: RESEARCH AUTHORIZATION

Following your application for authority' to cam out research on "Barriers to appropriate breast feeding practices among mothers attending the maternal and child health clinic at Mbagathi District Hospital I am pleased to inform you that you have been authorized to undertake research in Nairobi West District for a period ending** *3tf* September, 2011.*

You arc advised to report to the District Commissioner, the District Education Officer of Nairobi West District and the MoH of Mbagathi District Hospital before embarking on the research project.

On completion of the research, you arc cxpcctcd to submit one hard copy and one soft copy of the research report/thesis to our office.



P.N NYAKUNDI
FOR: SECRpTARY/CEO

Copy to:
The District Commissioner
Nairobi West District

The District liducation OfTiccr
Nairobi West District

MoH of Mbagathi District Hospital

APPENDIX 10

APPROVAL LETTER FROM KNH/UON- ETHICS AND RESEARCH COMMITTEE

KENYATTA NATIONAL HOSPITAL
Hospital Rd along Ngong Rd
P O Box 20723 Nairob
Tel 726300-9
Fax 725272
Telegrams M6DSUP*. Narob
Email KNHolan^Ken Heallhnet org

Ref KNH-ERC/ A/100

26*" Apn! 2011

.Kla Kwambofca Mogambi
Softool of Nursing Sciences
-ottege of Health Sciences
Jnrvecytvo* Nairobi

Dear Linda

RESEARCH PROPOSAL: "BARRIERS TO APPROPRIATE BREAST FEEDING PRACTICES AMONG MOTHERS ATTENOWIG THE MATERNAL ANO CHILD HEALTH CLWC AT MBAGATHI DISTRICT HOSPITAL* (P7yV2Q11)

Th« s to intorm you lhal the KNH/UON-EtNcs A Research Committee has reviewed and •porovd your above revised research proposal for the period 26* April 2011 - 25* Aortl 2012

You \mR be required lo request lor a renewal of the approval if you irlend to continue with tie study beyond !he deadline given Ctearwice lor export of bwtog*^* speomens must also be ototaned from KNK^JON«*S & Research Committee far each batch

On behatf of the Committee I vwsh you a fruitful research and look forward to recennng a summary of the research findings upon completion of the study

This nformation w* form pwt of the data base tfiat wi* be consulted m future when processing retaMd research study so as to nvrvmize chances of study duplication.

Yours sincerely,
PROF A N GUANTAI
SECRETARY. KNHJUOM-ERC

c c The Deputy Director CS. KNH
The MOO Records KNH
Supervisors Dr. Waifhra Mine School of Nursing Sciences UON
Dr. Jemffer Oyiefce. School of Nursing Sciences UON
Mrs Eunice Odhiambo School of Nursing Sciences. UON