ASSESSMENT OF EXCLUSIVE BREASTFEEDING AMONG POSTNATAL MOTHERS ATTENDING CHILDWELFARE CLINIC AT KAPSABET REFERRAL HOSPITAL - NANDI COUNTY, KENYA

BARBUCH. J. EUNICE

A THESIS SUBMITTED IN PARTIAL FULFILLMENT FOR THE REQUIREMENT OF MASTERS DEGREE IN MATERNAL AND NEONATAL HEALTH AND GENDER, MOI UNIVERSITY, COLLEGE OF HEALTH SCIENCE, SCHOOL OF NURSING AND DEPARTMENT OF MIDWIFERY AND GENDER.

DECLARATION

This thesis is my work and has not been presented for this degree or any other award in any other university.

Barbuch J. Eunice

SN/PGMNH/09/14

…… ……

Signature Date

Declaration by the supervisors

This thesis has been submitted with our approval as Moi University supervisors

1. Dr. Dinah Chelagat

Department of Midwifery and Gender,

School of Nursing

Moi University

…….. …..……

Signature Date

2. Dr. Susan Keino

Department of Human Nutrition

School of Public Health

Moi University

..…….. ……

Signature Date

DEDICATION

This research is dedicated to my Lord, Jesus Christ for His grace and sufficient provisions. To my family and siblings for the encouragement, support and motivation that I needed during the study to meet the requirements for this master's degree.

ABSTRACT

Introduction: Despite the benefits of exclusive breastfeeding (EBF), mothers globally have not reached the World Health Organization recommendation of six months. In many Low and Middle Income Countries (LMICs), other liquids are added to infant's diet in the first month of life, predisposing them to high morbidity and mortality. EBF for the first six months could reduce infant mortality rate by 25%. LMICs' EBF is at 39% and 32% in Kenya.

Objective: To assess EBF practices among postnatal mothers attending child welfare clinic at Kapsabet Referral Hospital- Nandi County, Kenya.

Methods: Simple random sampling was used. Data collection was by an interviewer administered questionnaire and recorded narratives from 5 conducted focused group discussions (FDGs). Both quantitative and qualitative research methods were used. Study site was Kapsabet Referral Hospital- Nandi County, child welfare clinic and population were postnatal mothers with infants' age 0-12 months old.

Data analysis: Quantitative data was coded and analyzed using statistical package for social sciences (SPSS) version 21.Chi-square was used to establish associations; Variance used to test for significant differences in the means. The critical value for significance was $p < 0.05$. Qualitative data (FGDs) were transcribed, coded using an Nvivo application software, common themes identified, analysed and inferences made by triangulation.

Results: Six months exclusive breast feeding (EBF) was 20%. Mean knowledge on EBF was 54%. There was association between knowledge and EBF (P = 0.0000, Chi-square=94.1614), between breast milk quantity and EBF (P = 0.0000, X2 = 261.08, OR = 3.00). Maternal parity influenced time of initiation of EBF and frequency of EBF (P = 0.0000, X^2 = 107.9767).Time of breastfeeding initiations was a good predictor of EBF (P-value = 0.0001 & variance = 0.0343).

Conclusions: EBF prevalence was at 20%, sub- optimal EBF was cited in FGDs to be associated with infants' ill health, the participants mean knowledge on EBF was at 54%, but the gap was in the practices of the same. Factors cited to hinder EBF were employment, insufficient breast milk, culture and family influences, predictors of EBF were mode of the delivery i.e. cesarean section and delays initiation of breastfeeding.

Recommendations: To the Ministry of Health Nandi County nurses / midwives and nutritionists; you have responsibilities to increase awareness, promote and protect EBF practices, address challenges faced by mothers in expressing and storing breast milk. Address hindrances to EBF practices, such as influences of the relatives, culture and ensure early initiation of breastfeeding regardless of mode of delivery.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENT

I would like to acknowledge my supervisors; Dr. Dinah Chelagat & Dr. Susan Keino for their tireless efforts, support, guidance, and constant encouragement during the period of this study. To the Medical Superintendent and the staff of Child Welfare Clinic, Kapsabet Referral Hospital -Nandi County; and all the participants who contributed to the success of this study. My research assistants Eric Rotich and Felix Sang, my biostatistician; Sheilah Abukoya, thanks for the support you offered during the entire period of this study.

DEFINITION OF TERMS

Breastfeeding practices are defined in this study using the World Health Organization's breastfeeding definitions, adopted for use in Kenya (WHO, 2015). The following terms used in this thesis are defined below:

Incidence of breastfeeding; The proportion of infants who were ever breastfed.

Prevalence of breastfeeding; The proportion of all infants being breastfed at any intensity at specified ages.

Breastfeeding initiation; It is the introduction of breast milk with in the first hour of infant's birth.

Breastfeeding duration; Is the total length of time infants received breast milk, from initiation all through until weaning is complete, regardless of whether other foods or liquids were introduced.

Prelacteal feeds; Is provision of any liquids other than mother's breast milk.

Exclusive breastfeeding; The infant has received only breast milk from his / her mother or a wet nurse, or expressed breast milk, and no other liquids or solids with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines.

Assessment; Is a set of selective procedures designed to evaluate the importance of something.

Child welfare clinic; Is a section in the hospital where the child's well being is monitored at certain intervals by the nurse, nutrionist and doctor's reception.

Postnatal; Is a term used to refer to a woman who has delivered from zero day to twelve months

County- Is a geographical region of a country used for administrative or other purpose. It is usually and not always, contains cities, towns, villages or other municipal corporations

Referral hospital- A hospital that provide tertiary care, and manage cases referred from primary and secondary care givers.

ACRONYMS

BF	Breastfeeding
BFHI	Baby Friendly Hospital Initiative
CDC	Centre for Disease Control
CWC	Child Welfare Clinic
DHS	Demographic Health Survey
EBF	Exclusive Breastfeeding
FAO	Food and Agricultural organization of the United Nations
HPM	Health Promotion Model
IREC	Institutional Research and Ethics Committee
IYCF	Infant and Young Child Feeding
KDHS	Kenya Demographic Health Survey
KNBS	Kenya National Bureau of Statistics
LMIs	Low and Middle Income Countries
MDG	Millennium Development Goal
MOH	Ministry of Health
NARESA	Network of AIDS in Eastern and Southern Africa
SDG	Sustainable Development Goals
TDHS	Tanzania Demographic Health survey
UN	United Nations
UNICEF	United Nations Children's Fund
WABA	World Alliance for Breastfeeding Action
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background information

Infant feeding practices such as breastfeeding, infant formulae and complementary foodstuffs (solids) constitute important aspects of early childhood growth (McQueen, Dennis, Stremler, & Norman, 2011) recommends that mothers need to breast feed exclusively for the first six months of infants' lives. This recommendation has been adopted and endorsed by many countries including Kenya (WHO, 2013). Poor infant feeding practices are among the most identified factors contributing to the early childhood malnutrition (WHO & UNICEF, 2015).

The global percentage of early initiation of breastfeeding rate is low. Data on prevalence rates in Latin American and Caribbean state is 48%, Middle East at 47%, Asia 31%, South Asia 21%, East and South Africa with 59%, North Africa 47%, West and central Africa 36%, over all standing of Africa is at 47% (Rollins et al., 2016). While the global data indicates very slow progress in improving the overall exclusive breastfeeding situation, countries that have shown strong commitment and invested heavily on infant and young child feeding(IYCF), had significant progress (Paintal, 2011).

Studies have shown an increase in EBF practices globally with early initiation of 34% in 1991 to 60% in 2013 (Motee, Ramasawmy, Pugo-Gunsam, & Jeewon, 2013). This is significant because it indicates that, it is possible to change infant feeding practices and counter the common perception that feeding practices are cultural and cannot be modified (WHO, 2013). East Asia and the Pacific states are at (27%- 30%), Central and Eastern

Europe / Common wealth of Independent States (CEE/CIS) at 29%, Middle East at 37%, south Asia at 42%, Asia with 42% (UNICEF, 2013 & DHS, 2013). Australia has 50.4% in terms of prevalence of exclusive breastfeeding, while majority of cities and provinces in China stood at 80% at the age of four months of age; however few manage to attain the national target of 80% of exclusive breastfeeding (Tyree, 2010) . Findings from an infant feeding survey in the United Kingdom (UK), established that initiation of breastfeeding at birth rose from 76% in 2005 to 81% in 2010. Across the UK, at three months the number of mothers practicing EBF was at 13% in 2005 and 17% in 2010. According to the prevalence rate of EBF studies have shown a declined with advancement of the infants age as follows 12% at four months and 1% at six months (Khanal, da Cruz, Karkee, & Lee, 2014).

Countries in Africa and especially Sub-Saharan African are lagging behind in accomplishing the WHO goal and recommendation on EBF (WHO, 2013). Poor feeding practices such as, sub optimal breast feeding are still pervasive and frequently lead to under nourishment of newborns, causing child deaths (Danso, 2014). In Sub-Saharan Africa, EBF is considered by far the best feeding option for women of unknown Human Immunodeficiency syndrome (HIV) status and for the HIV positive mothers, although it is challenged by low acceptability and feasibility (Parker et al., 2011). Initiation of breastfeeding has been made universal in Kenya, with 99% of infants below six months ever breastfed for long durations with 53.6% of children between 20 & 23 months old breastfeeding being enhanced (Roba, 2016). EBF for the recommended period of six month is however not common in most part of Kenya (KDHS, 2014). In Kenya studies have shown an increase in EBF rates from 13% in 2013 to 32% in 2014 (KDHS, 2014).

The health benefits of EBF for the first six months of the infants' lives are significant (Bai, Middlestadt, Peng, & Fly, 2010). These include, reduction of incidences of pneumonia, colds, other viral infections (Kemunto, 2015). There is reduction of risks in sudden infant death syndrome by about 50%, diarrheal diseases, low risks of chronic diseases such as diabetes type 1 and 2, celiac diseases and crohn's disease (Arthur et al., 2012). Breast milk is a live substance that fulfills all nutritional requirements of all the babies in the first six months of life and colostrum the first milk is the baby's first immunization (Asim, Mahmood, & Sohail, 2015). It has high levels of antibodies, Vitamin A, and other protective factors that strengthen the infants' immune system and reduce the chances of death in the neonatal period (Palmer, 2011). During the 2015 world breastfeeding week, breastfeeding was endorsed as a lifeline and a shield that protects infants in emergencies (Taylor, 2015)

Initiation of breastfeeding within an hour after delivery stimulates the release of the hormone oxytocin that helps the uterus to contract, hence lowers postpartum bleeding (Jay & Peace, 2014). Long term benefits include lower risks of premenopausal breast and ovarian cancers (Davies et al., 2013). Women, who practice exclusive breastfeeding, have 98% protection against pregnancy during the first six months after delivery (Horta & Victoria, 2013). EBF promotes weight loss during the postpartum period and consequently protect the mother against maternal overweight and obesity, thus facilitating rapid return to pre-pregnant weight (Monterrosa, 2010).

Studies across the globe have established enormous benefits of EBF, for both infants and mothers (Wambach & Riordan, 2014). Elimination of Mother-To-Child Transmission (EMTCT) risk of HIV infections is associated with effective EBF and its appropriate

option for many HIV infected mothers and especially those from a low resource setting like Sub-Saharan Africa (Tomlinson et al., 2014). The benefits, acceptability and feasibility need to be championed for (Ajetunmobi et al., 2015)

Challenges faced by mothers after the birth of their infants are well documented. Liet and Magnus in their study, established that attitudes and beliefs are among the challenges faced by mothers during breastfeeding period (Lutenbacher, Karp, & Moore, 2016). Redshow and Henderson established that physical feeding difficulties such as babies rejecting the breast, latching problems and nipple pains mastitis were attributes of failed exclusive breastfeeding (MacKean & Spragins, 2012). Twamley asserts that lack of confidence, breastfeeding perceived as time consuming, fatigue and exhaustion were some of the challenges nursing mothers face (Loewy, 2013)

Timely introduction of solid food consumptions remains a controversial topic, for the last two decades and the changes of commencing complementary foods from between 4-6 months to the actual 6 months (Cameron, Heath, & Taylor, 2012). The Ministry of Health- Kenya recommended the introduction of solids at the age of six months old (KDHS, 2014). While the debate and discussion surrounding introductions to solid food for infants, a number of issues have contributed to early complementary feedings before six months of infant age (CDC 2013). These include, advice from friends and relatives, parental perceptions that the infant is not satisfied with breast milk alone, parental anxiety and fatigue are among the established factors (Nielsen, Michaelsen, & Holm, 2013)

Promotion, protection and support of EBF were streamlined in a joint meeting by UNICEF-WHO in 1979 concerning infant and young child feeding practices. The World

Alliance for Nutrition and Human Rights acknowledged the importance of EBF at its first meeting in 1993. “Obstacles to EBF practices often serve as the human being’s and are the first hindrance to adequate nutrition, food and care.” It is beyond the child’s rights to survive and develop; therefore the scientific rationale for this decision was clearly established by the Lancet Series of 2015. The attainment of EBF recommended duration, continued breastfeeding with complementary feeding are viewed as factors that enhance child survival growth and development (Lancet, 2015).

1.2 Problem statement

Suboptimal EBF practices are contributing factors to the burden of infancy, childhood morbidities and mortalities across the globe, especially in Sub Sahara Africa. Kenya has

breastfeeding success story but still has huge challenges in achieving the WHO recommendation. The approximate 1.5 million children born in Kenya each year only 500,000 of them are EBF, meaning that, over a million children are exposed to unnecessary risks to malnutrition and burden of diseases. On average, Kenyan children are breastfed for 21 months and exclusively breastfed for 4.3 months (Korir, 2014). The reasons for the low uptake of EBF among mothers in Kenya are cited in studies as; poverty, insecurity, lack of social support, poor knowledge, health related challenges such as HIV/ AIDS, myths and misconception about breastfeeding practices in various communities (KDHS, 2014). These impacted on the Government efforts in achieving the Millennium Development Goal 4 by 2015.

Nutrition status of children is the best indicator for good health of all the children in Kenya (De Onis et al. 2012). However Kenya is faced by childhood mortalities which accounts for 11,000 nationally due to sub-optimal EBF (KDHS, 2014). Nandi County had 23% uptake of EBF as per the survey of KDHS, 2014. These contributed largely to infant mortality of 66/1000 live births, and 111/1000 live births of under five mortalities (KDHS, 2014). There is however challenges, hindrances, factors and gaps in accomplishing the success of EBF as stipulated in the health policies. Without effective interventional efforts by the Nandi County, Ministry of Health on EBF practices, the said challenges are likely to continue and retard the achievements of WHO recommendation. Thus the aim of this present study was to assess the practices of EBF in Nandi County.

1.3 Study Justification

"There seems to be a relatively limited focus on exclusive breastfeeding", this emerged from an analysis of political, financial and other commitments meant to advance the United Nations (UN) Global Strategy on Women and Children's Health (Bustreo, Hunt, & Organization, 2013). Globally mortality of more than a third of children below five years is attributed to malnutrition (Liu et al., 2015). The highest prevalence of child mortality is in Sub- Saharan Africa, where 1 in 9 children die before the age of five. This is more than sixteen times the average mortality rate for high income regions which is at 1 in 152 (Liu et al., 2015).

The under-five mortality has fallen sharply elsewhere, reflecting the disparity of infant mortality rate, between the African regions and the rest of the world (UN, 2013). Malnutrition has been directly or indirectly responsible for the 60% of the 10.9 million

deaths that annually afflicts children under the age of five years (Jamro, Junejo, Lal, Bouk, & Jamro, 2012). Well over two thirds of these deaths, are often associated with inappropriate feeding practices that occur during the first year of life (Seid, Yesuf, & Koye, 2013). It has been established that for children living among the 42 countries with 90% of global child deaths, a package of effective nutritional intervention could save 25% of these deaths each year (Bhutta et al., 2013)

There are sufficient evidence that initiation of breastfeeding within an hour of birth coupled with EBF for the first six months of the infants' lives is beneficial both to the mothers and their infants (Balogun, Dagvadorj, Anigo, Ota, & Sasaki, 2015). It is estimated that EBF can prevent 13% of all the under five deaths and it's strongly correlated with increased infant survival (Chowdhury, Henderson, & Watson, 2013). An infant not EBF is 8 to 15 times more likely to die from illnesses such as diarrhea and respiratory infections (Rollins, 2013)

Millennium Development Goal (MDG) 4, on child survival and prevention of malnutrition, was not achieved by 2015, which was targeted by many countries, including the Kenyan Government (WHO, 2015). Studies have shown 61% of EBF practices among nursing mothers in Kenya, but the sustainability of the practices for a period of six months has not been attained and these explain the causes of high prevalence of infants morbidities and mortality rates experienced in the country (KDHS, 2014). The study finding is to inform policy makers on the gaps that require to be strengthened in order to achieve the WHO recommendations on EBF status.

1.4 Broad objective:

To assess exclusive breastfeeding practices among postnatal mothers with children aged 0 - 12 months old attending child welfare clinic at Kapsabet Referral Hospital- Nandi County

1.5 Specific objectives:

1. To determine the prevalence of exclusive breastfeeding among postnatal mothers.
2. To determine the level of knowledge among mothers practicing exclusive breastfeeding.
3. To determine factors that hinders the practice of exclusive breastfeeding.
4. To assess the predictors associated with exclusive breastfeeding and non-exclusive breastfeeding.

1.6 The Theoretical Frame Work

1.6.1 Health Promotion Model

While breastfeeding has been shown to promote the health of both mother and infant, it has not been widely viewed from the perspective of the Health Promotion Model (Dehdari et al., 2014). This study utilized the Health Promotion Model (HPM) which was developed by Nola J. Pender as a complementary model of health protection (Pender, Murdaugh & Parsons, 2006). It provides a framework for integrating nursing and behavioral science perspectives which influence health behaviors (Wambach et al., 2016).

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 (Berg et al., 2002). There are three components in this model determinants which includes; individual characteristics and experiences, behavior specific cognitions and affect and behavioral outcomes.

Individual characteristics and experiences: These have a direct or indirect effect on perceived self efficacy (Berg et al., 2002). In this study, it is represented by the intervening variables and include prior breast feeding experiences, prior maternal knowledge of breast feeding, influence of significant others, mother's attitude towards breast feeding and predictors of EBF success.

Behaviour-specific cognitions and affect: This is the primary motivational mechanism to EBF (Pender, Murdaugh & Parsons, 2006). It includes the dependent variable which are; knowledge of mothers on good breast feeding practices, actual breast feeding practices of the mothers 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 included demographic characteristics of the mother and support from the health care workers, family, friends and employers.

Behavioral outcomes: This refers to the likelihood to engage in health promoting behaviors. It is the desired behavioral outcome and the end point in the HPM, for this case it co-relate to optimal breast feeding practices (Pender, Murdaugh & Parsons, 2006). The model focuses on self efficacy of individuals as they interact with the environment in pursuit of health seeking behaviors during EBF practices (Schlickau & Wilson, 2005).

Health promotional model which was developed by Nola J. Pender will be used to relate the variables and independent variables of EBF practices in relation to promotional health care.

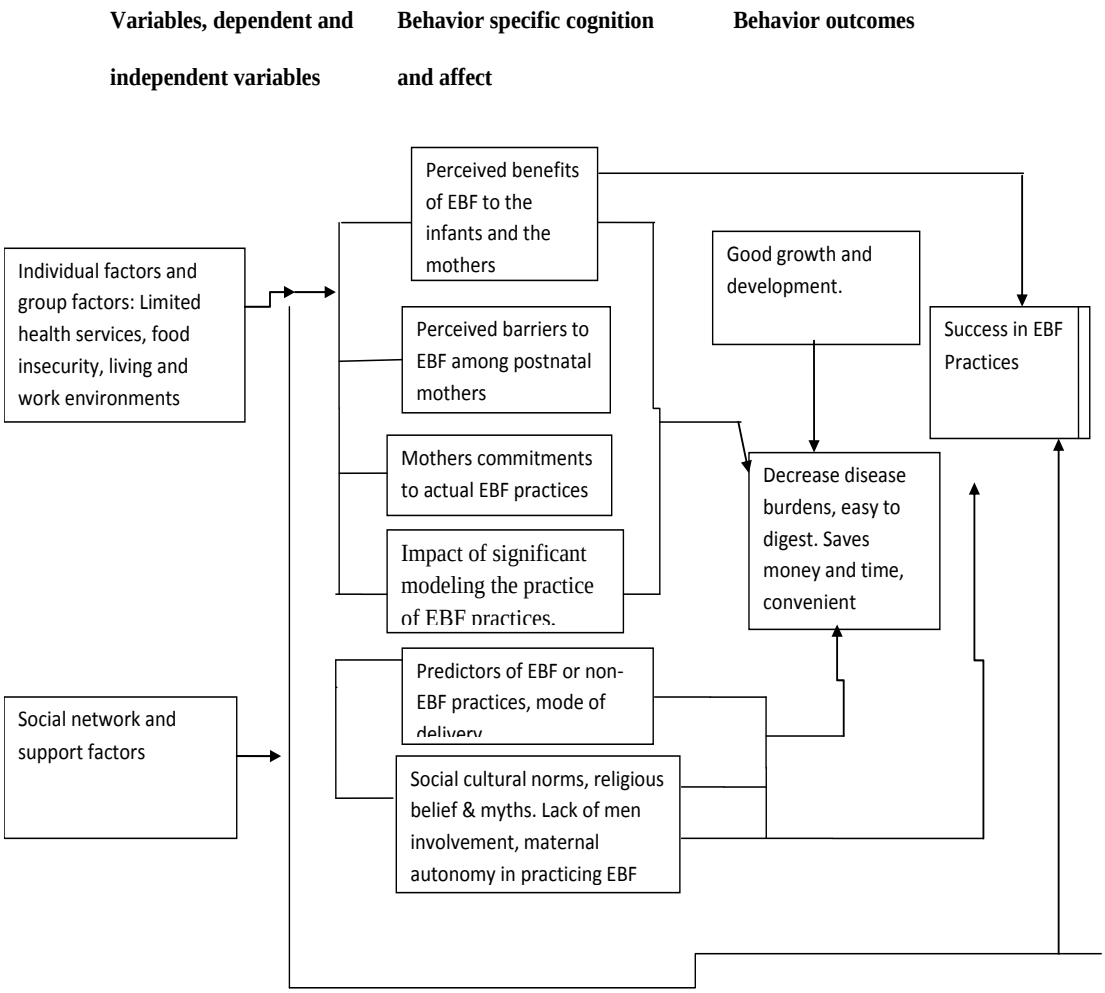

Figure 1: Adapted theoretical model (Pender, Murdaugh & Parsons, 2006) for the purpose of this study it was further modified to create meaningful relationships within the study variables.

CHAPTER TWO

LITERATURE REVIEW

This chapter highlights the literature supporting the whole study. It gives a detailed account of exclusive breastfeeding of infants aged 0 - 6 months old, and enhancement of breastfeeding practices up to the age of 12 months. It reflects on EBF status at global, Africa, sub- Saharan Africa, Kenya and its regional level in line with the objectives stated using established reports and previous studies.

The greatest gift a mother can give to herself and her new born is through exclusive breastfeeding. It fosters a bond to which nothing else can be compared; it can be stronger than the bond created between mother and baby in utero (Lawrence & Lawrence, 2010). Breastfeeding is an extension of maternal protection that transitions the young infant from the shelter of the utero environment to the life in the extra utero world, which has a variety of potential harmful exposures (Organization, 2013).

“Exclusive breastfeeding means that the infant receives only breast milk within the first hour of life up to six months of age” (WHO, 2015). No other liquids nor solids are given, not even water with the exception of oral rehydration solutions/drops/syrups vitamins/minerals or medicines (Linkages, 2012). Promotion, protection and support of EBF are an exceptionally cost effective strategy for improving child survival and reducing the burden of childhood diseases particularly in middle and low income countries (George , 2015).

WHO established the association of the impact of under nutrition - micronutrient and macronutrient deficiency and the health problems throughout the life cycles (Kau, Ahern,

Griffin, Goodman, & Gordon, 2011). The established health risks associated with suboptimal EBF practices are eminent, otitis media, respiratory tract infections, gastrointestinal infections, sudden infant's death syndrome, asthma, allergies, childhood and adolescent obesity (Ajetunmobi & Tappin, 2015).

At global level approximately 1.5 million infant deaths result from poor, sub optimal and non- EBF practices (Yotebieng, Chalachala, Labbok, & Behets, 2013). The WHO in collaboration with other organizations aims to promote EBF as one of the cost effective, low cost interventions and enhancer of child survival within five years of life (Rothman, 2015). Numerous awareness and campaigns have been launched by National governments, multilateral organizations, NGOs and private sector organizations across the globe to educate mothers and families about the benefits of EBF with the aim to encouraging the practices (Mutuli, Walingo, & Othuon, 2012).

Over the past two decades significant progress has been achieved in IYCF policies, practices, and programs (Liu, 2015). Global progress on EBF is based on the key indicators which are; malnutrition, children growth and development which are important to be monitored. These can be enhanced by; early initiation of breastfeeding within the first hour of life, EBF of infants for six months and continued breastfeeding after six months of the infants age. Studies establish that global state on early initiation of breastfeeding remains low. Latin American and Caribbean regions with 48%, Middle East at 47%, Asia at 31%, South Asia 21%, East and South Africa with 59%, North Africa 47% West and Central Africa at 36% , Africa's over all at 47% (Gupta, Dadhich, & Suri, 2013)

Global data indicates very slow progress in improving the overall EBF situation, with countries that have shown strong commitment and invested heavily in IYCF, making significant progress (Ayoya et al., 2014). There were significant increase of EBF rates in the countries which had invested on IYCF programs by 20% from 2005 to 2010, while other countries exhibited remarkable rise by 60% between 2003 and 2012 (WHO & UNICEF, 2013). These were significant because it revealed that it was possible to change infant feeding practices and later countered the common perceptions that feeding practices were cultural and couldn't be modified.

A study established that EBF in East Asia and the Pacific is at 27% - 30%, Central and Eastern Europe/Common Wealth of Independent States (CEE/CIS) with 29%, Middle East at 37%, South Asia at 42%, Asia with 42% (Mututho, 2012) , Australia at 50.4% (Ogbo, 2016). In the mid-1990s, China promoted EBF by designing 7000 hospitals "baby - friendly". But for the majority of the cities and provinces EBF at four months was at 28% in 2010, this was due to high investment of formula milk by companies associated with breast milk substitutes (Jamro, 2012). Findings of an infant feeding survey in the UK, Scientific Advisory on Nutrition, showed that breastfeeding initiation rates were high at 76%, and at one week 45% were still EBF, but reduces at six months to less than 1% (Gibson & Sidnell, 2014).

A study comparing South Asia, Caribbean and South American women had no variation in breastfeeding initiation, and EBF for up to six months of the infants' age. Over time the number of infants EBF declines dramatically, with only approximately 2% of them being EBF at six months of age (Islam, Baird, Mazerolle, & Broidy, 2017). The United States (U.S.) report of 2014 by the National Immunization Survey (NIS), suggest that

EBF varies considerably, from 26.3% to as low as 7.6%, averaging to 16.3 % by the year (CDC, 2013). However utilization of EBF is even lower in the United Kingdom, with less than 1% of women reporting EBF at six months (Nkala & Msuya, 2011).

Data on EBF practices vary widely in African countries and the findings have established that, EBF of the infants up to six months of age are reported to be at 39% from 34%, from 2010 to 2016. Eastern/South Africa had 39% and 46% respectively, being the region with the highest level of EBF rates. There are low EBF rates reported in West and Central Africa with 15% and 24% respectively, North Africa at 34% (Liu, 2015). The encouraging fact is the percentage of children still breastfeeding at 12-15 months in low income countries at 73% and at 20-23 months at 56 %. The rise in EBF practices was established between 2003 to 2010 findings that revealed an increase of 22%, from 68% - 90% in very low income countries where infants and young children face the greatest threat to survival (Lutenbacher, 2016)

A study conducted between 1999 – 2010 established the greatest gain in EBF were as follows, Benin increased from 10% - 44%; Philippines 25% - 37%; Sri-Lanka (17% - 76%); Uzbekistan (2.4% - 26%); Ghana (7% - 63%); Lesotho (16% - 54%); Senegal (6% - 34%); Mali (8% - 38%). Bangladesh EBF rates remained flat at around 45% (WHO, 2013), Zimbabwe at 17%, while Zambia at 23%, South Africa at 29%, Tanzania at 19%, and Uganda at 48% (Murugu, 2013).

The Nigerian Federal Ministry of Health, Maternal and Neonatal Health (MNH) in a report entitled ‘Saving New Born Lives’ reflected the lowest EBF uptake in African continent (WHO, 2015). With recent data indicating that the percentage of infants EBF

rates to the age of six months had decreased from 17% in 2003 to 13% in 2008. A report by WHO established that, median coverage of EBF had increased from 26% in 2000-2005 to 40% in 2011, in the 48 count down countries in African continent (George et al., 2015)

The Kenyan government established a comprehensive infant and young child feeding program in 2009 (KDHS, 2012). This and other efforts by other agencies may have contributed to the increase of EBF rates. However the prevalence of EBF in Kenya was at 32% (KDHS, 2014). It is three times lower in relation to the WHO goal of 90% and is below the global prevalence which is currently at 44% EBF rates. Studies revealed that Kenya has the lowest in East Africa region where EBF rate stands at 47% (Jones et al., 2014)

The Baby Friendly Hospital Initiative (BFHI) has had a measurable impact, on increasing EBF within 19000 facilities in 150 countries that have been designed as Baby-Friendly. Studies have shown that the impact of BFHI is only at the facility level and not sustained beyond it (Braun & Coutinho, 2013). The International Labor Organization (ILO), convention on maternity protection was implemented in 120 countries, with each country having set up its own legislations. The legislations however tends to narrow and exclude the informal sector in which nearly 80% of workers are women (Liamputtong, 2012). Studies have established that little consideration is accorded to the working population in terms of duration of stay post-delivery (Abdulrahim, 2016)

Consequences due to inadequate EBF is associated with various chronic diseases and obesity later in life, poor school performance, reduced productivity and impaired

intellectual and social development (Atwood, Nagpal, Mbuya, & Laviolette, 2014). Despite the over whelming benefits of EBF, only about one in three infants in Africa age 0- 6 months old are EBF. This could be due to lack of understanding of optimal breast feeding practices and lack of support from health service providers, community members and families. Infants who are not EBF in the early months have higher risk of deaths especially from various infections (Organization, 2013). Meta - analysis was undertaken by a collaborative study team who were assessing the impact of EBF on infection-specific mortality rate in Africa. An evidenced report made by the researchers showed a four-fold increase in neonatal mortality risk in infants who were partially rather than EBF and a two- fold higher mortality risk in infants who receive pre-lacteal feeds (Fwambo, 2012)

The MDG 4, which expired in September 2015, had made substantial progress in reducing mortality of the under-five children. By focusing on newborns and reducing socioeconomic disparities that were critical to further propel progress in child survival, the WHO decided on the new Sustainable Development Goals (SDGs), as an agenda for vision 2030 (UNDP, 2015). Concerted efforts have been made to increase the life expectancy and reduction of some of the common diseases associated with infant and child mortality (Fwambo, 2012)

Poor infant feeding practices such as sub-optimal breast feeding can lead to under nourishment that increases mortalities and morbidities. The MDG 4, which expired in September 2015, had made substantial progress in reducing mortality of the under-five children. By focusing on newborns and reducing socioeconomic disparities that were critical to further propel progress in child survival, the WHO decided on the new

Sustainable Development Goals (SDGs), as an agenda for vision 2030 (UNDP, 2015). Efforts were made to increase the life expectancy and reduction of some of the common diseases associated with infant and child mortality (Fwambo, 2012).

Countries across the globe face numerous challenges in making EBF the norm. "We shouldn't be lauding the advantages of EBF anymore than we praise the practice of breathing air, but rather we should be articulating clearly the harm and disadvantages of any alternative" (Bhutta et al., 2014). Studies and evidence demonstrates that breast milk is the best food but has the worst marketing strategies (Fwambo, 2012). EBF benefits are enormous in relation to infant and child survival, yet it's accorded low priority, under supported, neglected, perceived with controversy, misrepresented, under- taught and countered by many forces (Kennedy, 2016). Unlike infant formula and other products, including beneficial products like ready to use therapeutic food, micronutrients, "breast milk" does not have a commercial advocate (Organization, 2013)

Studies have provided sufficient evidence in the context of HIV that infants who were fed on formula or powdered milk, or animal milk, in addition to breast milk were nearly twice as likely to be infected with HIV as opposed to those who got breast milk only (Marlow, 2017). For HIV positive mothers, EBF eliminates transmission of HIV from mother to her newborn, but the risk increases as soon as anything other than breast milk is fed to the infant (Obara, 2010). Studies on EBF in Sub-Saharan Africa established that breast milk is considered the best infant feeding option in the context of HIV, although it is challenged by low acceptability and feasibility (Okanda, Borkowf, Girde, Thomas, & Lecher, 2014)

A study conducted in Canada established that EBF practices increased from 17% in 2003 to 26% in 2012, while the prevalence rate for breastfeeding is at 89 % (Renfrew, McCormick, Wade, Quinn, & Dowswell, 2012). As stipulated in a study findings conducted in Canada, pain and discomfort associated with caesarean sections may prevent mothers from iniating breastfeeding within an hour of birth and establishing EBF though it's viewed that birth and breastfeeding exist in a continuum, for they are not discreet events (CDC, 2013).

Another study by Das & Banapurmath in New Delhi, established that maternal education had no significant association with EBF practice. It was noted in the New Delhi study that the participants were selected prime gravidas who were counseled during antenatal visits to practice EBF and the period of the study was over six months (Das & Banapurmath, 2016).

Misconceptions relating to duration of EBF and the inadequacy of breast milk to meet their child's nutritional needs were noted. Most mothers also had inadequate knowledge of the maternal benefits of exclusive breastfeeding. Emphasizing on the maternal benefits of EBF could help encourage mothers to exclusively breastfeed their infants (Issaka, Agho, Page, Burns, Stevens & Dibley, 2014). An important finding of this study was that most mothers were more likely to consult relatives and significant others to overcome breastfeeding challenges instead of consulting healthcare providers. Although consulting relatives and significant others may not be inappropriate, the accuracy and quality of advice and support given may not be guaranteed making mothers prone to inappropriate advice and support (Onah, Osuorah, Ebenebe, Ezechukwu, Ekwochi & Ndukwu, 2014).

Fathers and family members have important roles in decision making concerning infant feeding options and it is believed that the power lies within them to support infant feeding choices and durations of EBF (Kennedy, 2016). In another study it established that women regularly visited by relatives and friends have a positive attitude and confidence towards EBF therefore becoming more successful in maintaining breastfeeding (Reimers, 2009)

Maternal intention is believed to be early breastfeeding initiation and a longer duration of EBF (Nguyen et al., 2016). Donath in his study established that prenatal intention is the strongest predictor than any socio- demographic factors in breastfeeding initiation and duration and the young mothers with fewer years of completed education, intend to EBF but cease earlier than expected (Ogbo et al., 2016). Negative breastfeeding attitudes, with intention to EBF for a shorter time, perceived insufficient milk scores and planning to work outside home are among the hindrances to successful EBF (Muriithi, 2017). Whether women decide to EBF or not depends on many factors which are at times beyond their control (Khanal, 2016)

Competing responsibilities have had negative impacts on the EBF practices (Liamputtong, 2010). Women from higher social standing are likely to initiate breastfeeding and EBF for longer durations (Radwan, 2012). Maternal smoking habits negatively influenced breastfeeding initiations and duration of EBF and it was established in meta-analysis conducted that comprised 13 studies that, justified that maternal smoking affects EBF duration to 3 months (Nagulesapillai, 2013). Prematurity and gestational age heighten the risk for mothers opting for formula feeds. The risk increases

as maternal ages decrease and lower maternal age is identified by literature as a predictor of lower EBF rate (Kennedy, 2016).

A study establishes that young women perceived their breasts for beauty and attraction other than the function of feeding the infants (Meltzer & Williams, 2008). In another study the gestational age for the infants' influences the decision of family / mother in the initiation and duration of EBF (Bai et al., 2010). Msuya in his study established that work is perceived as a barrier to EBF due to the timing of the breastfeeding cessation that coincides with the mothers return to work (Marlow, 2017). A study done in Kenya established that women breasts are viewed to be for cosmetics purposes. These were cited among the young women who felt that their breasts would either sag or become too big if they breastfeed (Kimani-Murage et al., 2015). An anecdotal report by a community health worker in Nairobi, was quoted saying that, "we really like to EBF but we care for our beauty so much" (Cheptum et al., 2014)

Cultures and traditional beliefs have profound influence on EBF and breastfeeding practices from a decade ago. Colostrum in some cultures is viewed to be dirty for the newborn and is therefore discarded for the first few days (DaCosta, 2012). A study conducted in India established that the Indian communities believe that mother's milk is not yet ready until 2-3 days postpartum therefore causing delays of initiation of breastfeeding resulting in poor lactation and frustrations by the mothers to EBF. Among Lebanese women, concerns are that, "the mothers could potentially harm their infants through breastfeeding" owing to the assumption that mothers have an inherited inability to produce milk, having "bad milk" and transmission of abdominal cramps to infants through breast milk were rooted to their cultural beliefs (Cole, 2013)

A study conducted in Eldoret- Kenya established that the social risk factors of malnutrition resulting from poor EBF practices included single motherhood and some other social problems that included; child abuse and maternal deprivation (Ayaya, Esamai, Rotich, & Olwambula, 2004). When the house hold income decreases it is the woman trying to earn extra wages. This then causes the woman to have less time to care for the children. If the girl child is sent out to look for work, this will result in poor schooling, which will influence education, leading to poor knowledge and poor caring practices for their own families in future, all these was established to affect the mothers between the age of 15-25 years (Duflo, 2012). It is needful to identify factors influencing EBF in different set ups in order to develop contextual interventions to promote EBF (Ochola, 2008)

Food security is the driving force of good nutrition; the food should be safe, of high quality and the environment should be hygienic enough so that all members can enjoy good health. Food security is concentrated with aspects such as: availability of food, stability of food supply, access to food and food utilization these are attributes to good agricultural production, improving of infrastructure, markets increase income and maximal utilization of land for food production will increase the quality and quantity of food available (Pangaribowo, Gerber, & Torero, 2013)

According to the Muslim religion, it is recommended that, mothers ought to breastfeed their infants for two years as it is the right of the new born to be breastfed. If a mother can't breastfeed, she and her spouse can decide to have a wet nurse breast feed the child (Faircloth, 2013). Other religion support breastfeeding too, an example is the La Leche League International that was found by Catholic mothers to support breastfeeding.

Despite the fact that breastfeeding is one of the oldest practice recommended in the ancient Hindu scriptures a concern in the Indian community in recent years has been observed in the changing patterns on EBF. EBF is almost universal in India however, variation has been observed among different population within the Indian nations because urban women tend not to breastfeed because of their socioeconomic statuses, resorting to formula feeding believing it is civilization and hence demonstrating poorer performance on EBF than disadvantaged mothers (Striem-Amit, Dakwar, Reich, & Amedi, 2011). Findings reveal that most mothers in India have some understanding of superiority of breast milk over commercial formula and cow's milk but the lure of advertising artificial feeds has taken its toll hence failure by mothers to EBF their newborns (Petherick, 2010).

"We need a new world-birth and breastfeeding," women are mammals and the same things that disrupt bonding and breastfeeding for the mammals also apply to women (Greer, 2014). There are some things that support healthy births for mammals; for instance a normal, healthy, undisturbed birth that naturally leads to a normal, healthy and successful EBF process (Jay, 2014). Those who provide EBF support on new mothers are often left wondering; "where did breastfeeding go wrong?" Often the answer is, "during labor and birth." Interventions during labor and birth are over looked, while answers and mysteries of how breastfeeding became derailed are not understood yet (Asim, 2014).

A study by Michael established that there is association between labor and delivery and successful EBF practice (Wambach & Riordan, 2014). Failed EBF may start before or after the baby is born, due the impacts of birthing experiences; this could include mechanical force of labor, chemicals (drugs) used in labor, injuries to the mother or baby,

treatment of mother during labor, treatment of both mother and baby after birth, physical separation of mother and the baby after birth are procedures that alter EBF behavior (Brownell, 2012). Mother's confidence and trust in her body's ability to give birth is related to her confidence to EBF too. According to academy of breastfeeding medicine, "Non medicated, spontaneous, vaginal deliveries with immediate skin to skin contact raise the likelihood of baby-led breastfeeding initiation." Immediate skin to skin contact restores the biologic continuum to begin breastfeeding (Little, 2010)

Reviews on EBF practices have shown that their success can be achieved by implementing a complete package of interventions that is comprehensive, relevant, evidence based on assessment of needs and situations of the mothers and their infants. Designing effective strategies and ensuring quality implementation, working at all levels; national health systems and community, achievements, through universal coverage, and ensuring continuity by sustaining the implemented programs (Martinez, 2016)

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This study utilized both quantitative and qualitative study methods, where by data and results were integrated in a single study. This mixed design enabled the researcher to obtain rich data and sufficient findings of the study than a single method approach.

3.1 Study design for the quantitative research

A descriptive cross sectional design was used.

3.2 Variables

A variable is anything that has quantity or quality that varies.

3.2.1 Dependent variables

For this study the dependent variable was exclusive breastfeeding up to six months**.**

3.2.2 Independent variables

They are variables believed to affect the dependent variable and can be manipulated to confirm its effects on the dependent variable. They included: maternal socio-demographic determined by age, marrital status, education level of the participants. The maternal socio-economic characteristics were occupation, sources of income and breastfeeding complications and maternal morbidities. Other independent variables included; participants' knowledge on breastfeeding practices, other infant feeding practices and challenges experienced during exclusive breastfeeding. Contextual factors were determined by delivery history of the mother which included; place of delivery

whether home or health facility and birth type whether normal or caesarean. Infant characteristics were determined by; infant age in completed months, infant sex, and infant morbidity associated with feeding practices and the burden of non-exclusive breastfeeding.

3. 3 Study site

The study was conducted at Kapsabet Referral Hospital, Nandi county- Child Welfare Clinic. The hospital is situated in a central point of the County which constitutes six Sub-County regions. It is located near the central business area of the town, Kapsabet Municipality has a total population of 86, 803 as per census (KNBS, 2009), and the hospital is located 40 kilometers South West of Eldoret along Kisumu road.

3. 4 Target population

Target group were all postnatal mothers with their infants 0 - 12 months old, who were attending child well fare clinic during this period when data were being collected.

3. 4.1 Inclusion criteria

All the postnatal mothers whose infants were aged 0 - 12 months old, were willing to participate and residency was Kapsabet and its environs.

3. 4.2 Exclusion criteria

Postnatal mothers who met the criteria and were not willing to participate during the study period.

3. 5 Sample size

The desired sample size was determined using the formula for fisher *et al* (1991): [$n=z^2pq/d^2$]

n= the desired minimum sample size (assuming the population is >10,000)

z- Standard normal deviation, set at 95% confidence interval

P- The proportion of the target population estimate to have a particular characteristic. If there is no reasonable estimate then use 50%. (The study used 0.5)

d- Degree of accuracy / precision (0.05)

q- [1-p]; 1-0.5= 0.5

n = 1.96^{2*} 0.5 *0.5/0.05^2 = **384**

3. 6 Sampling

Simple random sampling technique was used. In a sample frame of the population, participants who were recruited for the study were assigned random numbers of Yes or No. The postnatal mothers with infants of age 0 -12 months were asked to pick from the random papers. All participants who happened to pick the (Yes), paper were interviewed**.**

3. 7 Data collection for quantitative study

Data collection in quantitative research is by use of numerical statistics whose focus is to generalize the findings across the groups (Bates, 2013).

3. 7.1 Data collection tools

Interviewer administered questionnaire was used as an ideal tool for the study. Simple precise questions were used and the questionnaires comprised of closed ended questions only. The researcher recruited 2 of the assistants who were sensitized and trained to competently interview the participants. A five part questionnaire was developed on the basis of objectives.

Part A - Bio and socio demographic data.

B. Delivery history

C. Knowledge of exclusive breastfeeding

D. Challenges that hinder exclusive breastfeeding

E. Cultural beliefs that influence exclusive breastfeeding

F. Burden of non- exclusive breastfeeding

G. Focus group discussion guide

The researcher had to collect data on identified clinic days, every week, for a period of one month after the approval by the Institutional Research and Ethics Committee (IREC) reviewers at Moi University and Moi Teaching and Referral Hospital (MTRH).

3. 8 Study design for qualitative.

There are various methods of data collection in qualitative research, including observations studies, interviews of groups or individuals and narrative. However methods

mostly used in healthcare research are individual interviews and focus group discussion (Creswell, 2014).

Focus group discussions (FGDs) and narratives were used to elicit more information on EBF practices and other infant feeding practices with special focus on attitudes, beliefs, cultural and religious influence, challenges that were experienced and economic factors influencing the practice of EBF among this population. The researcher conducted 5 successfully FGDs during the course of the study that constituted of homogeneous purposively selected postnatal mothers of infants age 0-12 months old. The groups constituted at least 8 to at most 12 participants each. The participants age were between 15 years - 49 years old, the total number of participants taken were 57; who consented for the discussions.

3.8.1 Study site for FGDs

The venue was within Kapsabet Referral Hospital- child welfare clinic, on selected clinic days.

3.8. 2 Data collection for qualitative study

The discussions were conducted and moderated by the researcher using FGDs guided question paper, all the questions formulated were open ended, and all data recording saving and note taking of quoted informations were done by the assistant using a tape recorder. Also narratives were used because various participants were able to share personal and lived experiences in breastfeeding practices.

3. 9 Pilot study

The research instrument was piloted at Nandi-Hills Sub - County Referral Hospital. The sample for the piloted group was 10% of the total sample size, deriving a total of 38 participants who had infants aged 0 - 12 months old. The participants were recruited through voluntary basis after consenting. The study took 7 hours, i.e. from 8am - 4pm each day for a period of one week. Nandi- Hills is the second largest hospital in the County after Kapsabet Referral Hospital. Before the era of devolution the two facilities were operating at the same level. The researcher chosed the facility because of its location, due to a large population coverage; also it had same geographical, environmental and social economic features. The purpose of the exercise was to enhance corrections, clarification of sensitive issues, inputs, assess feasibility, evaluation of the number of questionnaires that could have been possibly be completed in a day and highlighting omissions to improve and standardization of the research instrument.

3. 10 Ethical considerations

The researcher sought approval of the proposal from IREC reviewers at Moi University and MTRH before commencing the study. Permission from the Medical Superintendent of Kapsabet Referral Hospital was further obtained to facilitate the process of the study. Consents were sought from the participants who accepted to be recruited for the study. Information about the study was provided in (Appendix 1), the consent forms in (Appendix 11); and were availed to the participants for them to consent for the interview. The FGDs consent procedures were guided by the form in (Appendix 111). Confidentiality was assured to all the participants recruited.

3. 11 Mode of data analysis

3.11.1 Analysis for quantitative data

Entry and analysis of data were done using statistical package for social science (SPSS) version 21. Chi-square was used to establish significant associations between maternal demographic characteristics age, marital status and education; socio-economic characteristics occupation, income and house type and EBF practices.

The univariate associations between the various factors and their effects to EBF were identified and multiple logistic regressions were used to construct the model and to examine the independent association of these factors to exclusive breastfeeding while simultaneously controlling potential confounders.

Multivariate analysis was used to test for significant differences in the mean knowledge scores for mothers in different age categories, marital status, different occupations and education levels and the critical value for significance test was set at $p < 0.05$ for all the analysis.

3.11.2 Qualitative data analysis

The FGDs data were analysed through NVivo software application for qualitative and mixed method research. Data were transcribed, responses arranged in general categories identified in the discussion guide and coded. Common themes were identified, inferences made from each theme final, data was triangulated with the findings from the quantitative study. Data was kept in a lockable safe and strong security password was used to protect.

3.12 Validity / Reliability

3.13 Definition of validity / Reliability

Both are concepts that are important for controlling biases and distortions. Validity is an indication of how sound the research is, while reliability refers to the consistency of the study findings.

3.14: Validity and reliability for quantitative data; was ensured through a well-designed and structured research instrument. A pilot study was conducted to test on the accuracy of the questionnaires to ensure the answers obtained from the study were true and consistent. The research instruments, questionnaires and interview schedules were also presented after outlining them to the reviewers.

3.15: Credibility

3.16: Definition of credibility

It involve establishing whether the results of the research are believable and it depends on the richness of the information gathered rather than amount of data gathered (Pearson, 2015)

3.17 Credibility for qualitative data; was ensured through triangulation which was achieved by interviewing participants at different point in time and utilizing data from the same source. Member checking, where by data, results were returned to the participants for clarification and correction of errors.

CHAPTER FOUR

4.0 Results for the quantitative study

4.1 Introduction

This chapter presents, explains and interprets the findings of the quantitative study in line with the stated objectives and the literature. The aim of this analysis was to assess EBF among the postnatal mothers with infants' age 0 - 12 months old attending Kapsabet Referral Hospital- Nandi County.

4.2 Demographics

4.2.1 Distribution of parity amongst participants

From these population 102 (25%) were first time mothers, while 86 (20%) had their second borns, 58 (13%) had their third borns while the rest of 44% had > 4 children.

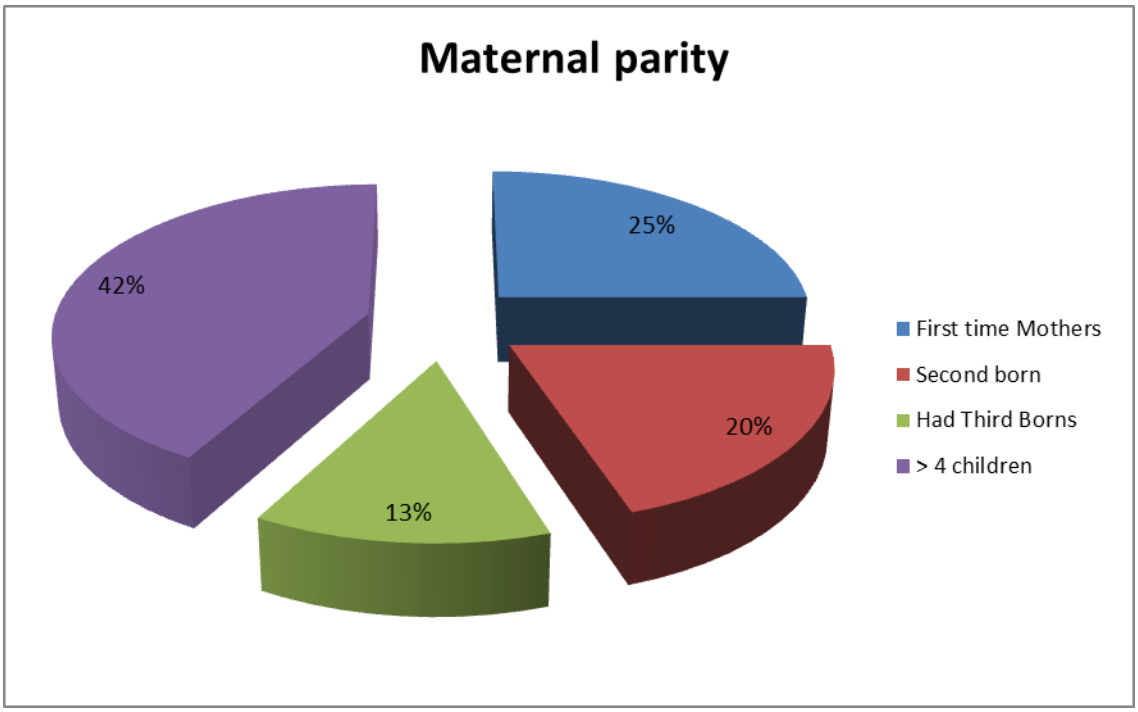

Figure 2: Distribution of parity amongst participants

4.2.2 Gender distribution of infants aged between 0 - 12 months old.

Out of 384 participants interviewed 162 (42%) had female infants while 222 (56%) were participants with male infants.

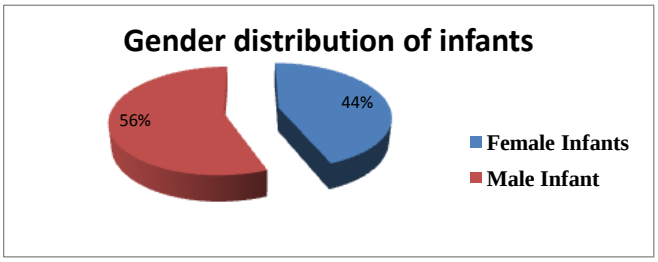

Figure 3: Gender distribution of infants aged between 0 - 12 months old.

4.2.4 Association between infant's base line weight and EBF

In this study it was established that there were variations between infants' birth weight and baseline weight, which showed significant health growth among the infants of the participants attributed to EBF practices.

Table 1: Association between infant's base line weight and EBF

Variables	N	Mean	Median	Coef	Std error	P-value	95%CI
Birth weight	384	3.14	3.2	0.43641	0.011875	0.000	0.020227-0.067005
Baseline weight	384	6.08	5.7	0.19926	0.050779	0.000	0.099135-0.299385

The graph to infants and child growth were depicted by the difference between birth and baseline weight which were good indicators for good nutrition.

4.3 The educational levels amongst participants

From this study the researcher established that respondents who were illiterate were 11 (3%), whereas 137 (38%) attained primary education, those with secondary education were 117 (31%) and those who completed tertiary education were 105 (28%).

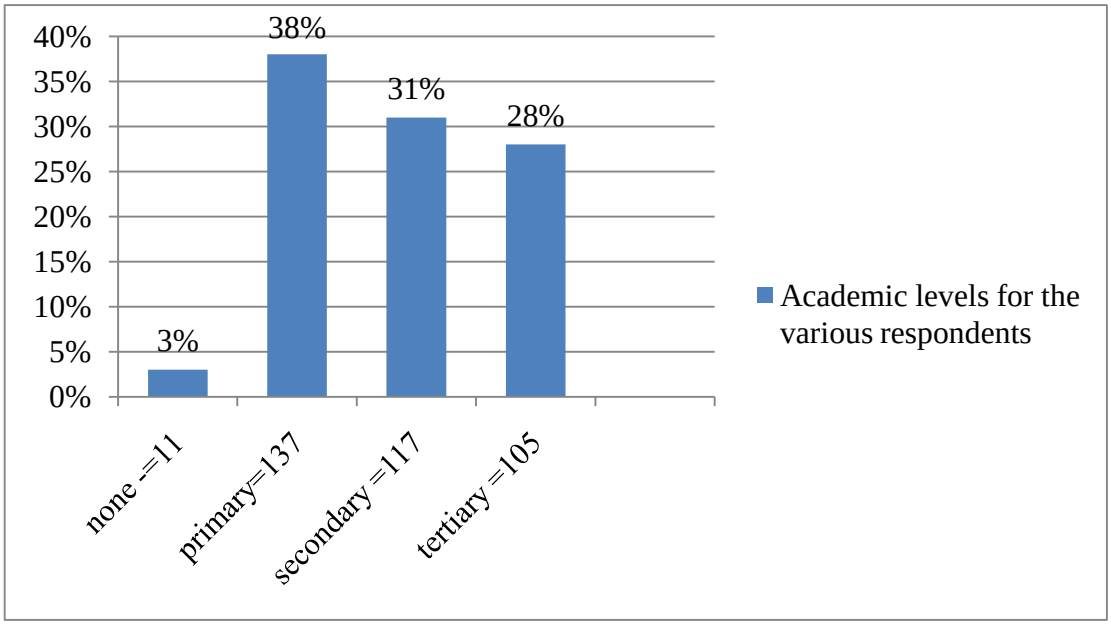

Figure 4: Distribution of educational level amongst participants

4.4 Distribution of EBF prevalence rate among the different ages of the participants

Minority of the respondents were < 15 years at 3(1%), while 15-29 years were 239 (60 %), 111 (30%) were 30-39 years, 22 (8%) were at 40-45 years, and those > 45 years were 9 (1%).

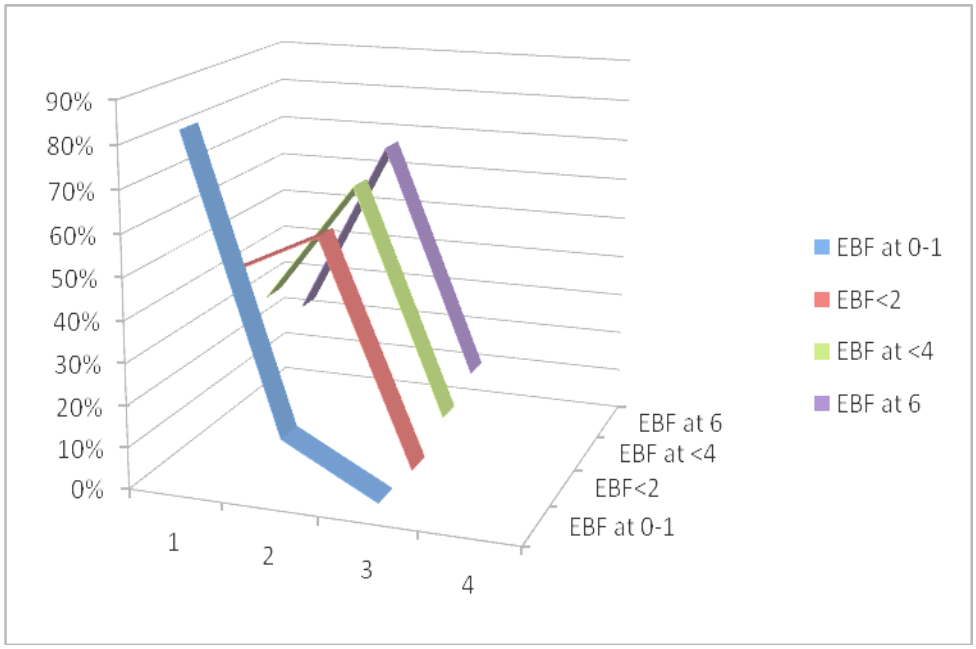

Figure 5: Distribution of EBF prevalence rate

The study findings established infants prevalence rate of 83% EBF practices among the participants at age 0-1 month , and as the months went by the prevalence declines owing to other challenges established in the study and at 6 months the prevalence rate was down to 20%.

Table 2: Distribution of demographic characteristics in relation to EBF practices

Indicator	**EBF**	**None EBF**	**p-value**
Participants age	**N (%)**	**N (%)**	**0.799**
<15	1(33%)	2(67%)	
15-29	50(21%)	189(79%)	
30-39	28(25%)	83(75%)	
40->45	5(58%)	10(75%)	
Resident			**0.000***
Urban	79(51%)	77(49%)	
Rural	131(63%)	78(37%)	
Unknown			
Education			**0.006***
None	2(33%)	4(67%)	
Primary	60(51%)	57(49%)	
Secondary	84(61%)	53(39%)	
Tertiary	63(60%)	42(40%)	
Unknown			
Marital status			**0.026***
Single	46(50%)	45(50%)	
Married	165(60%)	110(40%)	
Unknown	0(0%)	0(0%)	
Occupation			**0.000***
None	50(59%)	35(41%)	
Farming	48(59%)	42(42%)	
Business	69(55%)	56(45%)	
Formal employment	30(59%)	21(41%)	
Casual labourer	8(87%)	1(13%)	
Unknown			

From the table above it was found that the area of residence, level of education, marital status and occupation had an association with EBF ($P < 0.05$).

4.4 Maternal knowledge in relation to benefits of EBF

Table 3: Distribution of maternal knowledge in relation to benefits of EBF

EBF as a better option	Odds Ratio	Std. Error.	P < 0.005	[95% Conf. Interval]	
The benefits of EBF to the mother					
Emotional satisfaction	3.499642	2.2761	0.050*	0.9782	12.52054
Saves time & money	0.2005797	0.1596	0.043*	0.0422	0.9536564
Promote uterine involution	0.7558783	0.4482	0.637	0.2364	2.416484
Decrease incidence of ovarian and breast cancers	1.698626	0.9538	0.345	0.5651	5.105705
The contraceptive benefits	0.2883609	0.2728	0.189	0.0452	1.841157
The benefits of EBF to the infants					
Easy to digest	15.82769	12.292	0.000*	3.4544	72.52131
Available at all times	0.8175152	0.5574	0.768	0.2149	3.110687
Constitute immunity agents	1.609036	0.958	0.424	0.5009	5.168589
Increase emotional satisfaction	0.7092285	0.412	0. 005*	0.2272	2.21431
Breast milk decreases incidence of diabetes	11.23115	6.8609	0.000*	3.3919	37.18866
Colostrum benefit to the infants	2.198579	1.4811	0.242	0.5871	8.233075
Quantity of milk depends on the type food stuffs the mother takes	3.89374	2.3272	0.023*	1.2068	12.56326
Lactation depends on breast size	0.9629077	0.5596	0.948	0.3082	3.007981
Impacts of prelacteal feeds to the infants.	0.472575	0.3003	0.238	0.136	1.641851

There was statisticcal significant association of the participants knowledge and benefits of EBF to the mothers and the infants. This study established that participants had kowledge that, EBF provided emotional satisfaction to the mothers, safes time and money ($P < 0.005$). The participants knowledge on EBF and colostrum benefits to the infants

were identified as; easy to digest, decreases incidences of diabetes, increases emotional satisfaction ($P < 0.005$).

4.5: Assessing Participants knowledge on factors that affect EBF practices

Table 4: Association between participants knowledge on factors that affect EBF

Stopped EBF practices	Odds Ratio	Std. Err.	P < 0.005	[CI =95%]	
Factors for not adopting EBF					
Was not feeling well	8.49568	7.52561	0.016*	1.4969	48.2177
Baby unwell &breast problems	8.341387	6.76874	0.009	1.7003	40.92214
Perceived it was the appropriate time	17.76452	14.1789	0.000*	3.7167	84.90787
The in-laws/ relatives	54.86053	78.4937	0.005*	3.3218	906.0395
Reasons for stopping EBF					
It was time to stop	3.243237	3.16955	0.229	0.4777	22.02122
Advice by the husband	6.009442	7.41653	0.146	0.535	67.50593
Had insufficient milk	7.178401	7.10785	0.047*	1.0308	49.98778
Got pregnant again	1.117348	1.38755	0.929	0.098	12.7419
Because of job	2.570393	2.78445	0.383	0.3075	21.48268
Factors that hinder EBF practices					
Participant is sick	0.724746	0.68015	0.732	0.1152	4.560437
Participants is menstruating	1.398348	1.97589	0.812	0.0877	22.30381
Baby has fever/cold	1.874067	2.20383	0.593	0.187	18.78309
Baby has diarrhoea/vomiting	0.632561	0.68715	0.673	0.0752	5.318105
Non supportive spouse/ parents/ friends/employer.	2.431573	2.08703	0.301	0.4522	13.07608
Lack of confidence concerning EBF	1.472462	1.27981	0.656	0.268	8.088658
Inadequate breast milk	1.315544	0.91729	0.694	0.3354	5.15971
It is time consuming and unavailability of the mother	1.422281	1.06081	0.637	0.3297	6.135589
Culture/ belief support	1.522716	1.28007	0.617	0.2931	7.910071
Out dated practice	1.985777	1.52831	0.373	0.4394	8.975103
EBF inconvenient	0.2915062	0.18163	0.048*	0.086	0.9886072
Challenge of food supply	4.871225	4.7588	0.105	0.7179	33.05181
Assisted with domestic chores	1.055953	0.43765	0.895	0.4687	2.379215

The factors cited for not adopting EBF were; mothers not feeling well, the in-laws, relatives' influences and the mothers' perception that it was appropriate time to stop EBF. All were statistically significantly associated with sub optimal EBF ($P < 0.05$).

4.11 Participants Knowledge on breastfeeding initiation time frame

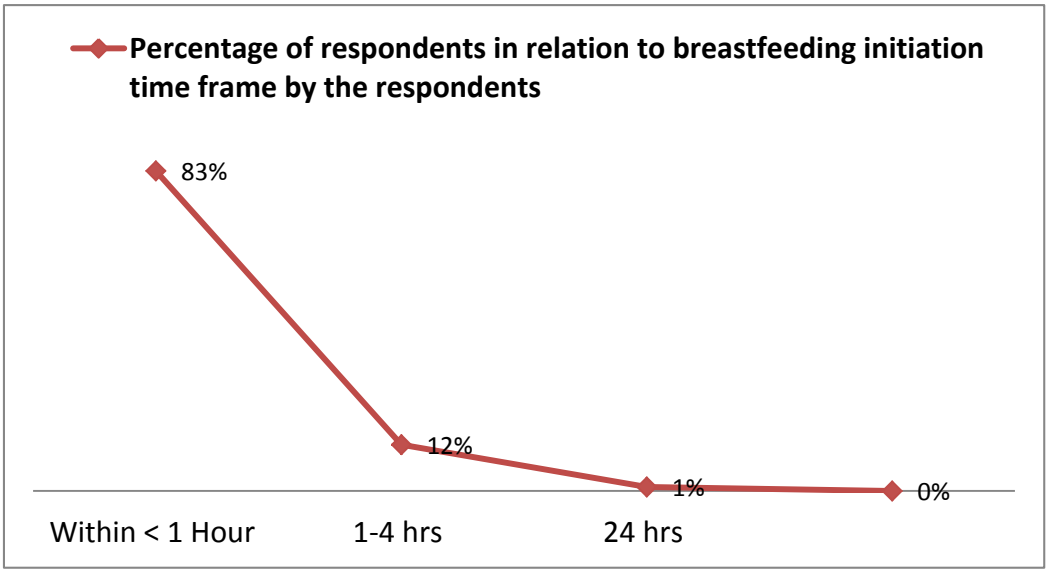

Figure 6: Participants knowledge on initiation of breastfeeding time frame

The participants had high knowledge on the time of initiations which was 83 %, compared to late initiation which was at 13%.

4.5 Predictors of EBF practices among the participants

Table 5: Predictors of EBF practices

EBF	Coef.	Std. Err.	Z	P < 0.005	[95% Conf.	
Delivery place						
Hospital	0.1202326	0.3306855	-0.46	0.7180	-0.7683327	0.5279088
Home	0.1202116	0.3306745	-0.36	0.7160	-0.7683217	0.5278986
TBA'S place	0.0290007	0.3456645	0.08	0.9330	-0.6484893	0.7064907
Delivery Mode						
Caesarean Section	13.64785	0.5231594	26.09	0.0000*	12.62248	14.67322
Spontaneous vertex delivery	13.81036	0.4944008	27.93	0.0000*	12.84135	14.77937
Assisted delivery	14.24007	0.5638133	25.26	0.0000*	13.13502	15.34513
Unknown	14.88162	0.5561292	26.76	0.0000*	13.79163	15.97161
type of cessation						
Gradual	-1.280717	0.1313545	-9.75	0.0000*	-1.538167	-1.023267
Abrupt	-0.2488474	0.1620354	-1.54	0.1250	-0.5664309	0.0687361
Other	0.0219465	0.0656903	0.33	0.7380	-0.1068041	0.1506972
Time of BF initiation.	-0.8615324	0.4137373	-2.08	0.0370*	-1.672443	-0.0506222
Cultural support	-13.83242	0.4848265	-28.53	0.0000*	-14.78266	-12.88218

Among the predictors of EBF, it was shown that the mode of delivery, type of EBF cessation, the time of breastfeeding initiation and cultural support were predictors associated with EBF ($P < 0.05$).

4.6: Demographic findings from the Focused Group Discussions

The findings were based on recorded verbatim and field notes taken during the discussion period. Participants were purposively selected from postnatal mothers, and those with infants of age 0- 12 months old were recruited to the study groups. The FGDs comprised of mothers between the ages of 15 years to 49 years old. Approximated numbers of participants were 57 mothers derived from five FGDs. Each group had at least 8 or at most 10 participants who consented for the study. Nearly all participants were literate, some resided in the rural of Kapsabet town and the rest were town residence. The participants in the study had either formal or informal employment and minority was house wives.

4.6.1 Themes were derived from FGDs findings as follows

Theme 1: It is natural that a woman gives life and provides the best food for her baby.

- **Infant health and well-being**

Participants described breastfeeding as the superior feeding option to ensure the highest level of infant health, preventing illnesses, infections, and allergies while promoting growth and development. *"They will get higher immune system especially from the yellow milk.'' It reduces the risks of diseases such as breast cancer in the women. "The infant seems to be very active, very attentive compared to what we have seen with family members that never breastfed their babies."* Most participants felt that their infants were emotionally satisfied with breastfeeding over other feeds.

- **Maternal health and well-being**

Mothers described the physical benefits of breastfeeding such as; *quicker recovery, postpartum weight loss and delayed return of menses. Many described the psychological benefits of breastfeeding as feeling content, self-confident in their ability to breastfeed, and most important, emotional closeness with their infant.* Participants also reported infants' continued growth and development as motivation. *"Before i said i would stop breastfeeding soon. Now, i say i will breastfeed until 6 months, and beyond. Seeing the baby get bigger motivates me."* Mothers who had previously breastfed already felt confident, but first-time mothers were more likely to question their ability to successfully exclusively breastfeed. However, continued milk production and successful infant feeding enhanced their feelings of security and confidence.

- **Maternal–infant bonding**

All mothers cited an increased sense of connectedness with their infants when breastfeeding, describing it as happiness, love, affection, closeness, and joy. A teen mother who experienced difficulties breastfeeding her first child, due to pressures of school and the ease of obtaining formula, found that with maturity, greater information, and support for breastfeeding, she was able to exclusively breastfeed her second child for 3 months. An anecdote from a participant noted was that, *"when a mother carries her baby to breastfeed they get closer to each other all the time and bonding begins."*

Well with my first baby obviously I just hold her and give her the bottle, wrap her, and put her to bed and with him, he's obviously right there, and I can see every single detail of him and how he's doing and he's satisfied. And it just makes me feel so good. A participant expressed during the discussions.

Theme 2: Breastfeeding is ultimately a woman's decision but is influenced by traditions, guidance, and encouragement

- **Cultural and traditions**

Most participants pointed cultural beliefs, practices, and values of their ethnicity as origin of influence to their breastfeeding decisions. Two participants described how breastfeeding is the social and familial norm of the Nandi community. Majority of participant described how cultural differences influence the breastfeeding decision: "Because in our area women work more outside the home hence has little commitment to EBF the children. One spends the entire day without her child. Majority of the participants conveyed that breastfeeding is an important aspect of motherhood but is often devalued in our society."

- **Social/familial and professional support**

All participants cited that social and familial support contributed to their breastfeeding decisions. Many participants identified that they were able to exclusively breastfeed since their husbands/partners supported the decision, believing breastfeeding was the best. Husbands/partners also were primary financial providers, thus allowing mothers to remain close to their infants. An anecdotal report by one of the participant who cited that; *"it was during ante-natal clinic when the nurse provided me with breastfeeding informations."*Another report by a different participant cited that, *"I managed to start breastfeeding immediately within an hour of birth because the nurse told me it will minimize bleeding and enhances mother baby bonding".*

Overall, participants described female family members and friends, particularly the grandmother, were primary role models and sources of support. Participants described

support as emotional support; advice and guidance; provision of information, demonstration, and example; and sharing of breastfeeding stories and beliefs. *One participant* reported *that, "I was told by my mother in-law to give herbs to the baby to prevent a bad eye."*

Majority of participants identified professional information for instance literature, clinic posters and guidance from counsellors, nurses, and nutritionist, in influencing their decisions and/or experiences of breastfeeding. The most noted supporter was the nurse who provided guidance during the initial attempt to breastfeed. One participant did not think she would have breastfed, "but a nurse came out and asked me, if i did breastfed, and I said no. And she asked me, do you know how? I responded no, that was how everything started."

- **Maternal identity**

Participant narratives revealed the importance of maternal identity in making EBF decision and maintaining the determination to continue. Maternal identity was described in terms of empowerment, ownership, pride, and responsibility in being the infant's primary source of nourishment. Mothers reported that, because of breastfeeding, they felt that their infants were completely reliant on them for food; this increased their belief in their abilities to protect their babies and to help them grow strong and healthy. One participant stated, "*Yes, it was a very happy feeling, like a mother's pride. I felt more womanly and a feeling of maturity that I can provide for my baby."*

Theme 3: Breast milk is superior but life circumstances can challenge one's ability to exclusively breastfeed.

- **Work and school**

Returning to work and school were reported as the most significant challenges to exclusive breastfeeding. O*ne participant during the discussion reported that, "my mother was the first one to motivate me to breastfeed my baby immediately after birth."* Some participants wished to pump breast milk and viewed that the practice would have worked well if there were employers or schools support, a place and how to refrigerate breast milk. A report from one of the participant; *"I'm afraid because the breast milk will be dirty. I don't know how to express and have no knowledge on how to store when I go to work."*

Other participants stated that exclusive breastfeeding was just not possible with work. Another stated that her working friends "always use formula because they work and they say that formula is better for them." Returning to school seemed to have the greatest challenges with continuing exclusive breastfeeding. As shared by one of the participants' *I was at work. I could not provide enough milk to store for him to drink when I was gone; i was compelled to feed him formula. The work would not let me pump… There was not time, no place, and I did not have enough milk to pump out…. They said they could be flexible, but it's not that way.*

- **Insufficient milk production and other personal concerns**

Insufficient milk production was described as a source of distress and uncertainty among participants and a reason for formula supplementation. Four participants stated that they ended up supplementing within the first few days of the infant's life. As one participant

described, *"Those first days after giving birth i cried because i was not producing milk, and the baby was hungry and crying too."* Five participants reported that, *breastfeeding were challenged by maternal illnesses and treatment, and the mothers were afraid to have medication go through her milk to the baby.*

4.7 Dissemination of findings

The researcher disseminated the findings to Moi University, MTRH IREC. The same findings were disseminated to the Kapsabet Referral Hospital of Nandi County, the unit of Child Welfare Clinic in the form of continuous professional education and feedback was provided to all the participants in form of groups**.**

CHAPTER FIVE

DISCUSSIONS

5.1 Prevalence of exclusive breastfeeding among postnatal mothers

According to this study it was noted that 83% of participants in Nandi County initiated breastfeeding within an hour of birth. On the contrary, prevalence rate of EBF is at 20 % as per the current study findings and it is relatively lower compared to the national prevalence which was at 32% (KDHS, 2014) report. The current study established that 1% of participants were under 15 years, 60% were between 15 – 29 years, while 30% were between 30-39 years and the remaining 9% were between 40-49 years. Out of the total participants, 65% resided in the rural areas while 35% resided in the urban areas. From the study findings, out of the total interviewed participants 60 % were married, while 40% were single parents. It was further established that 50% of the participants were farmers while 34% had formal employment and only 7% were casual laborers. WHO report of 2015 data showed that the prevalence of EBF in the LMICs was at 39%, and 47% overall standing in Africa, while in Kenya it was at 32% as per KDHS 2014 Report. The established variations between the current study and these reports could be due to the cited influencers and hindrances of EBF practices(Nkala & Msuya, 2011). This study finding are similar with the study findings in UK, Scientific Advisory on Nutrition, which established breastfeeding initiation rates at 76%, and a drastic decline on EBF to 45% at one week, and reduced significantly to less than 1% by six months of infants age (Gibson &Sidnell,2014). Whereas this study findings are not similar with findings of a study conducted in Canada which established that EBF practices increased

from 17% in 2003 to 26% in 2012, while the prevalence rate for early initiation of breastfeeding is at 89 % (Renfrew, McCormick, Wade, Quinn, & Dowswell, 2012).

A study in U.S by the National Immunization Survey (NIS), established an increasing EBF rates. These was seen among infants born in 2013,where 4 out of 5, 81.1% were initiated on breastfeeding , while 51.8% were EBF at 6 months, and almost one third, 30.7% were breastfeeding at 12 months, their EBF rates were almost three times the findings of the current study (CDC 2015). A study comparing South Asia, Caribbean and South American women had no variation in breastfeeding initiation, and EBF for up to six months of the infants' age. Over time the number of infants EBF declines dramatically, with only approximately 2% of them being EBF at six months of age, their findings were ten times lower than the findings of this study (Islam, Baird, Mazerolle, & Broidy, 2017).

5. 2 Level of knowledge among mothers practicing exclusive breastfeeding

There was statistical significant association of the participants knowledge and benefits of EBF to the mothers and the infants. Some of the cited benefits were; both emotional satisfaction to the mothers and their infants, promotes uterine involution and that it saves time and money.

In relation to the knowledge on benefits of EBF to the infants, the study further showed that, the participants new that milk was easy to digest and decrease incidences of diabetes. However, they were not aware that breast milk were readly available at all times, that it would provide bonding of mothers and the infants and could provide immunit to the infants against the various infections. These study findings agrees with the

findings by Atwood et al, which established that participants had knowledge on the consequences of inadequate EBF namely, chronic diseases and obesity later in life, poor school performance, reduced productivity and impaired intellectual and social development (Atwood, Nagpal, Mbuya, & Laviolette, 2014).

The current study findings established mothers' knowledge on the benefits of EBF both to the baby and the mother which was highly demonstrated at 77%. While a study by Das & Banapurmath, 2016 from New Delhi, established that maternal education had no significant association with EBF practice. Their findings agrees with this current study however it was noted in the New Delhi study that the participants were selected prime gravidas who were counseled during antenatal visits to practice EBF and their period of the study was over six months while the current study was conducted in a period a month and the parities of each participants varied, this brought the variations amongst the two studies.

A similar study by Agho et al., established that, 68% of the mothers had inadequate knowledge on the maternal benefits of exclusive breastfeeding infants, this findings disagree with the findings from the current study. (Issaka, Agho, Page, Burns, Stevens & Dibley, 2014) A study in Ghana by Onah et al., established that the mothers were consulting their concerns on EBF from relatives and significant others hence getting the accurate, quality of advice and support given was not guaranteed making mothers prone to inappropriate advice and support, their findings agree and were similar with the present study findings (Onah, Osuorah, Ebenebe, Ezechukwu, Ekwochi & Ndukwu, 2014).

5.3 To determine factors that hindered the practice of EBF.

All the factors cited for not adopting EBF were all associated with sub optimal EBF. According to this study it was established that factors cited for not adopting EBF included the baby not feeling well, breast problems, inappropriate time to start breast feeding and waiting for the green light from the in-laws to adopt EBF. This agree with the findings of a similar study in Western Nepal by Khanal who established that, whether the women decide to EBF or not depends on many factors which are at times beyond their control (Khanal, 2016).

As stipulated in a study findings conducted in Canada, pain and discomfort associated with caesarean sections was associated with poor early initiation of breastfeeding by mothers hence limiting the chances of good establishment of EBF though it's viewed that birth and breastfeeding exist in a continuum, for they are not discreet events (CDC, 2013). Their findings disagree with the present findings.

The findings of the current study contradicts the findings by Nkala & Msuya in Tanzania where they established that men and traditional birth attendants perceived EBF was for HIV- positive women and it was worrying because it deterred EBF success (MOHSW, 2014). Msuya in his study established that work was perceived as a barrier to EBF due to the timing of the breastfeeding cessation that coincides with the mothers return to work (Marlow, 2017) .It further established that the gestational age for the infants' influences the decision of family / mother in the initiation and duration of EBF (Bai et al., 2010), this agrees with the present study findings.

The findings from this study disagree with the findings of a similar study in Kenya, established that women breasts were viewed for cosmetic, attraction and beauty purposes. These were cited among young women who felt that their breasts would either sag or become too big if they breastfed their infants (Kimani-Murage et al., 2015). An anecdotal report by a community health worker in Nairobi, was quoted saying that, "we really like to EBF but we care for our beauty so much" (Cheptum et al., 2014)

Cultures and traditional beliefs have profound influence on EBF and breastfeeding practices from a decade ago. In this study participants were well versed on the benefits of colostrum milk to the infants' immunity. Whereas colostrum in some cultures is viewed to be dirty for the newborn and is therefore discarded for the first few days (DaCosta, 2012). A study conducted in India established that the Indian communities believe that mother's milk is not yet ready until 2-3 days postpartum therefore causing delays of initiation of breastfeeding resulting in poor lactation and frustrations by the mothers to practice EBF, and their study disagree with the present study.

This study elicited information from the participants on early use of herbs as a protection to the infants; this hindered in some way EBF practices. However this findings disagree with the findings of a similar study in Lebanon, where Lebanese women concerns were that, "the mothers could potentially harm their infants through breastfeeding" owing to the assumption that mothers have an inherited inability to produce milk, terming it has "bad milk" and could transmit abdominal cramps to infants through breast milk, all these were rooted to their cultural beliefs (Cole, 2013)

The present study established participants' socio-economic factors as a hindrance to successful EBF practices. The findings agree with a similar study conducted in Eldoret-Kenya, which established social risk factors of malnutrition to be as a result of poor EBF practices. The identified factors in their study findings included; single motherhood and some other social problems such as; child abuse and maternal deprivation (Ayaya, Esamai, Rotich, & Olwambula, 2004).

5.4 To assess the predictors associated with EBF

According to this study, it was established that cultural support and the type of cessation in the past was a good predictor of EBF practices. However, it was noted that influence from the peers, spouses, health worker, food insecurity and availability of assistance were not good predictors of EBF practices. This study findings disagree with a similar study by Kennedy at Chris Hani which established that Prematurity and gestational age heighten the risk for mothers opting for formula feeds. It further established that, the risk increases as maternal ages decrease and lower maternal age is identified by literature as a predictor of lower EBF rate (Kennedy, 2016)

In this present study findings; spouses, relatives and health care workers had a profound influence on EBF practices, hence mothers supported during pregnancy to delivery was a good predictor to EBF. This agree with the finding of a study in Vietnam which established that women regularly visited by relatives and friends have a positive attitude and confidence towards EBF therefore becoming more successful in maintaining breastfeeding. Maternal intention is believed to be early breastfeeding initiation and a longer duration of EBF, therefore it is a good predictor (Nguyen et al., 2016).

This study findings agree with the a study by Donath in Sydney, Australia which established that prenatal intention is the strongest predictor than any socio- demographic factors in breastfeeding initiation and duration and the young mothers with fewer years of completed education, intend to EBF but cease earlier than expected (Ogbo et al., 2016). Negative breastfeeding attitudes, with intention to EBF for a shorter time, perceived insufficient milk scores and planning to work outside home are among the hindrances to successful EBF (Muriithi, 2017).

This present study established that the mode of delivery and place of delivery was a good predictor of successful EBF practices. This agree with a similar study by Michael which established that there was association between labor and delivery and successful EBF practices (Wambach & Riordan, 2014). The present findings agree to the findings from a similar study in the U.S, which established that failed EBF may start before or after the baby is born, due the impacts of birthing experiences; such as mechanical forces of labor, chemicals or drugs used in labor, injuries to the mother or baby, treatment of mother during labor, treatment of both mother and baby after birth, physical separation of mother and the baby after birth are procedures that altered EBF behavior (Brownell, 2012)

5.5 The study findings supporting assumptions of Pender's Health Promotion Model

1. Individuals seek to actively regulate their own behaviour. This was well demonstrated in this study through descriptions of physical and emotional support garnered through interactions with different participants and through the recounting of their own breastfeeding experiences. For participants, breastfeeding was central to maternal identity and provided a sense of accomplishment. Participants were adamant that they independently chose to breastfeed and others were influenced by significant others.
2. Individuals interact with their environment with reciprocal progression of transforming the environment and being transformed over time. The findings demonstrated how participants believed that the decision of Nandi women and other ethnicities in Nandi County to use formula was often based on working outside the home, convenience, and/or thinking formula was as good as breast milk. Participants found breastfeeding to be the culturally preferred method. Most participants believed that breastfeeding was practical, convenient, and economical.
3. Health professionals constitute the environment. This was evident because the majority of the participants identified nurses/midwives, lactation specialists, community health workers, and health materials as influencing their decisions or experiences. It appeared that health professionals added to the synergistic effect of interpersonal support along with exposure to breastfeeding women during childhood and adolescence.

CHAPTER SIX

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

- The study established that initiation of breastfeeding was at 83% and the prevalence of EBF was at 20%. According to FGDs findings, majority of the participants associated poor EBF feeding practices to disease burden and frequent hospitalization of the infants.
- The study also showed that the mothers in Nandi County had high knowledge on EBF. However factors that were cited by the participants for not adopting EBF included the infants not feeling well, breast problems, inappropriate time to start breast feeding and waiting for the green light from the in-laws on the infant feeding practices. Advice from the spouses, a subsequent pregnancy, getting an employment and insufficient breast milk were reasons for stopping EBF.
- On the factors that hindered EBF practice, it was noted that sickness, diseases and menstrual circles did not affect EBF. Similarly non supportive spouses, lack of confidence and belief that EBF was outdated practice did not hinder the practices. Cultural practices also dictated if a mother could successfully EBF, because early initiation of prelacteal feeds, such as water and herbs influences early initiation and enhancement of EBF
- The study established that the mode of delivery was a predictor for successful EBF. Examples cited were, mothers who underwent difficult deliveries by caesarean section was likely to delay initiating breastfeeding which was influencing the success of EBF.

6.2 Recommendations:

6.2.1 The Ministry of Health Nandi County Government: nurses, midwives and nutritionists

1. To achieve successful EBF practices among all post-natal mothers in Nandi County, there is need to urgently strengthen public awareness on infant and young child feeding programs, promote and protect EBF practices in the region.
2. There is need to strengthen health education on EBF practices, address challenges faced by the mothers in expressing breast milk and ways of storage in order to attain 100% practices in the community.
3. There is urgent need to strengthen the policies on infant and young child feeding program established by the ministry of health Kenya and address hindrances to EBF practices, such as influences of relatives and cultural impact.
4. The health team in all maternity wings and Child Welfare Clinics should counsel all mothers, support them to initiate breastfeeding within an hour of birth and EBF for the first six months of infant's life regardless of their mode of delivery but unless medically contra- indicated.

6. 3 Limitations of the study

The main limitation of this research study was time, after proposal approval by IREC reviewers, data collection didn’t kick off as was planned by the researcher because of the health workers strike in Nandi County which took several weeks.

REFERENCES

Abdulrahim, M. A. (2016). *Socio-cultural determinants of Malnutrition among children aged below 5 years in Garissa Sub County, Kenya.* Jomo Kenyatta :University of Agriculture and Technology.

Ajetunmobi, O. M., Whyte, B., Chalmers, J., Tappin, D. M., Wolfson, L., Fleming, M., . . . Stockton, D. L. (2015). Breastfeeding is associated with reduced childhood hospitalization: evidence from a Scottish Birth Cohort (1997-2009). *The Journal of pediatrics, 166*(3), 620-625. e624.

Asim, M., Mahmood, B., & Sohail, M. M. (2015). Infant health care; practices in pakistan: a systematic review. *Professional medical journal, 22*(8).

Atwood, S., Nagpal, S., Mbuya, N., & Laviolette, L. (2014). Nutrition in Bhutan: Situational analysis and policy recommendations. *The International Bank for Reconstruction and Development/The World Bank: Washington, DC, USA Journal*.Vol. 1

Ayaya, S., Esamai, F., Rotich, J., & Olwambula, A. (2004). Socio-economic factors predisposing under five-year-old children to severe protein energy malnutrition at the Moi Teaching and Referral Hospital, Eldoret, Kenya. *East African medical journal, 81*(8), 415-421.

Ayoya, M. A., Heidkamp, R., Ngnie-Teta, I., Mamadoultaibou, A., Daniel, E. F., Durandisse, E. B., . . . M'mbakwa, B. E. (2014). Précise of nutrition of children and women in Haiti: analyses of data from 1995 to 2012. *Annals of the New York Academy of Sciences, 1309*(1), 37-62.

Bai, Y., Middlestadt, S. E., Peng, C.-Y. J., & Fly, A. D. (2010). *Predictors of continuation of exclusive breastfeeding for the first six months of life.* Journal of Human Lactation, 26(1), 26-34.

Balogun, O. O., Dagvadorj, A., Anigo, K. M., Ota, E., & Sasaki, S. (2015). *Factors influencing breastfeeding exclusivity during the first 6 months of life in developing countries: a quantitative and qualitative systematic review*. Maternal & child nutrition, 11(4), 433-451.

Bhutta, Z. A., Das, J. K., Rizvi, A., Gaffey, M. F., Walker, N., Horton, S., . . . Black, R. E. (2013). *Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost?* The Lancet, *382*(9890), 452-477.

Brownell, E. A. (2012). *The Effect of Immediate Postpartum Depo Provera on Early Breastfeeding Cessation.* New York: University of Rochester.

Cameron, S. L., Heath, A.-L. M., & Taylor, R. W. (2012). *How feasible is baby-led weaning as an approach to infant feeding?* A review of the evidence. Nutrients, 4(11), 1575-1609.

CDC National Immunization Surveys 2012 and 2013, Data, 2011 births. http://www.cdc.gov/ breastfeeding/data/NIS_data/index.htm.

Chapman, D. J., Morel, K., Anderson, A. K., Damio, G., & Pérez-Escamilla, R. (2010). *Breastfeeding peer counseling: from efficacy through scale-up.* Journal of Human Lactation, 26(3), 314-326.

Cheptum, J. J., Gitonga, M. M., Mutua, E. M., Mukui, S. J., Ndambuki, J. M., & Koima, W. J. (2014). *Barriers to access and utilization of maternal and infant health* services in Migori, Kenya. Internationl Journal of Africa Science Nursing.

Chowdhury, Z. T., Henderson, M. A., & Watson, R. R. (2013). *Breastfeeding and infant health in the Indian subcontinent*: Problems and solutions: Nutrition in Infancy. Springer (pp. 51-56). 8.

Cole, S. (2013). *Breastfeeding challenges made easy for late preterm infants: the go-to guide for nurses and lactation consultants*: New York: Springer Publishing Company; 1st edu.

DaCosta, S. (2012). *Ethno-cultural factors that influence infant feeding : Findings from stakeholder consultations*, analyst, research and policy: *South Asians in the region of Peel.* Policy document:Family health.

Danso, J. (2014). *Examining the practice of exclusive breastfeeding among professional working mothers in Kumasi metropolis of Ghana*. International journal of nursing, 1(1), 11-24.

De Onis, M., Onyango, A., Borghi, E., Siyam, A., Blössner, M., & Lutter, C. (2012). *Worldwide implementation of the WHO child growth standards*. Public health nutrition, 15(9), 1603-1610.

Dehdari T, Rahimi T, Aryaeian N, Gohari Mr. (2014): *Effect of nutrition education intervention based on Pender's Health Promotion Model in improving the frequency and nutrient intake of breakfast consumption* Public health nutr: 17(3):657-66. Epub 2013 Jan 30.

Fwambo, M. M. (2012). *Factors influencing infant feeding practices of mothers in Kabwata Township, Lusaka, Zambia:* School of Public Health annual report:University of the Western Cape.

George, C. M., Vignola, E., Ricca, J., Davis, T., Perin, J., Tam, Y., & Perry, H. (2015). *Evaluation of the effectiveness of care groups in expanding population coverage of Key child survival interventions and reducing under-5 mortality*: A comparative analysis using the lives saved tool (LiST). BMC public health, 15(1), 835.

Gibson S & Sidnell A (2014) *Nutrient adequacy and imbalance among young children aged 1–3 years in the UK.* Nutrition Bulletin 39: 172–180.

Gupta, A., Dadhich, J., & Suri, S. (2016). *How can global rates of exclusive breastfeeding for the first 6 months be enhanced?* ICAN: Infant, Child, & Adolescent Nutrition, 5(3), 133-140.

Islam, M. J., Baird, K., Mazerolle, P., & Broidy, L. (2017). *Exploring the influence of psychosocial factors on exclusive breastfeeding in Bangladesh.* Archives of women's mental health, 20(1), 173-188.

Issaka AI, Agho KE, Page *AN*, Burns P, Stevens GJ, Dibley MJ. (2014). *Determinants of early introduction of solid, semi-solid or soft foods among infants aged 3-5 months in four Anglophone West African countries*. *Nutrients*. Jul 14;*6*(*7*)*:2602-18*. doi: 10.3390/nu6072602. PubMed PMID: 25025297; PubMed Central

Jamro, B., Junejo, A. A., Lal, S., Bouk, G. R., & Jamro, S. (2012). *Risk factors for severe acute malnutrition in children under the age of five year in Sukkur.* Pakistan Journal of Medical Research, 51(4), 111.

Jay , A & Peace , M. (2014) . *Effective postnatal care* . in I Peate & C Hamilton (eds) , The *Student's Guide to Becoming a Midwife* . 2nd edu. Wiley Blackwell , Chichester , pp. 172-197 .

Jones, A. D., Ickes, S. B., Smith, L. E., Mbuya, M. N., Chasekwa, B., Heidkamp, R. A., . . . Stoltzfus, R. J. (2014). *World Health Organization infant and young child feeding indicators and their associations with child anthropometry: a synthesis of recent findings.* Maternal & child nutrition, 10(1), 1-17.

Kemunto, n. C. (2015). *Prevalence of anemia in infants 3-6 months in relation to breastfeeding practises: a case of mama lucy kibaki hospital, Nairobi: Kenya.* University of Nairobi.

Kennedy, Y. P. (2016). *An assessment of infant feeding knowledge, attitude and intended practice of women delivering at Chris Hani Baragwanath hospital:* Johannesburg: Research gates.

Khamis, A., Omar, A., Suleiman, S., & Ali, F. (2017). *Prevalence of Exclusive Breastfeeding and its Predictors among mothers in Micheweni, Chake-Chake and North 'A'districts, Zanzibar.* Clinics Mother Child Health, 14(259), 2.

Khanal, V. (2016). *Breastfeeding practices and lactation mastitis in Western Nepal: A prospective cohort study.* Australia: Curtin University. Breastfeeding Medicine; 10 (10): 481- 487.

Khanal, V., da Cruz, J. L. N. B., Karkee, R., & Lee, A. H. (2014). *Factors associated with exclusive breastfeeding in timor-leste: findings from demographic and health survey 2009–2010*. Nutrients, 6(4), 1691-1700.

Kimani-Murage, E. W., Wekesah, F., Wanjohi, M., Kyobutungi, C., Ezeh, A. C., Musoke, R. N., Griffiths, P. (2015). *Factors affecting actualisation of the WHO breastfeeding recommendations in urban poor settings in Kenya*. Maternal & child nutrition, 11(3), 314-332.

Korir, J. K.(2013). *Determinants of complementary feeding practices and nutritional status of children 6-23 months old.* Korogocho slum, Nairobi County:Kenya. Journal of nutrition and food sciences.

Lawrence, R. A., & Lawrence, R. M. (2010). *Breastfeeding E-Book, 7 th edu. A Guide for the Medical Professional*:University of Rochester: New York; Elsevier Health Sciences.

Liamputtong, P. (2010). *Infant feeding practices; a cross-cultural perspective*, E-BOOK Springer Science & Business Media link.

Liamputtong, P. (2012). Infant Feeding Practices. *Evolution, Early Experience and Human Development: From Research to Practice and Policy*, 277.

Little, A. (2010). *Transitions, the risk and the relationships: a comprehensive literature review exploring the postpartum breastfeeding journey*. Advancing normal birth: Journal of perinatal eduction: Lamaze international publisher.

Liu, L., Oza, S., Hogan, D., Perin, J., Rudan, I., Lawn, J. E., Black, R. E. (2015). *Global, regional, and national causes of child mortality in 2000–13, with projections to inform post-2015 priorities: an updated systematic analysis*. The Lancet, 385(9966), 430-440.

Loewy, P. (2013). *Nursing bodies: social and cultural constraints on the ac of breastfeeding in western society*. Union institute & University, online library Montpelier: United States, New York.

Lutenbacher, M., Karp, S. M., & Moore, E. R. (2016). *Reflections of black women who choose to breastfeed: influences, challenges and supports*. Maternal and child health journal, 20(2), 231-239.

MacKean, G., & Spragins, W. (2012). *The challenges of breastfeeding in a complex world. Alberta*: Alberta Health Services.

Marlow, M. B. (2017). *Infant feeding practices in the context of HIV: A qualitative exploration of the barriers and facilitators to exclusive breastfeeding in one rural and one peri-urban community in South Africa.* Stellenbosch: Stellenbosch University.

Martinez, J. L. (2016). *Predictors of Exclusive Breastfeeding Behavior in Low-Income Women Attending the Special Supplemental Nutrition Program for Women, Infants, and Children.* New Haven : Yale University. Journal of nutritional education and behaviour.

McQueen, K. A., Dennis, C. L., Stremler, R., & Norman, C. D. (2011). A pilot randomized controlled trial of a breastfeeding self-efficacy intervention with primiparous mothers. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 40*(1), 35-46.

Meltzer, D., & Williams, M. H. (2008). *The apprehension of beauty: The role of aesthetic conflict in development, art and violence*:Mexico. Karnac aesthetic books online

Menon P, Nguyen PH, Saha KK, Khaled A, Kennedy A, Tran LM. (2016). *Impacts on breastfeeding practices of at-scale strategies that combine Intensive interpersonal counseling, mass media, and community mobilization*: Results of cluster-randomized program evaluations in Bangladesh and Viet Nam. PLoS Med 13(10): e1002159. doi:10.1371/Journal.Pmed.1002159.

Monterrosa, E. (2010). *The influence of maternal fatness, knowledge, and diet on infant and young child feeding.* Mexico.Maternal child and nutrition; 6:4-8, 11.

Motee, A., Ramasawmy, D., Pugo-Gunsam, P., & Jeewon, R. (2013). *An assessment of the breastfeeding practices and infant feeding pattern among mothers in Mauritius*. Journal of nutrition and metabolism, 2013.

Muriithi, M. N. (2017). *Compliance to exclusive breastfeeding of children by mothers seeking for maternal/child health services in Mathira Sub-county Hospitals, Nyeri County.* Kenyatta University:Kenya.

Murugu, D. K. (2013). *Effect of Amaranth (Amaranthus cruentus L.) Supplementation on Nutritional Status and Body Composition of HIV Infected Lactating Mothers.*African university: Mutare Zimbabwe 6 (6): 639-643, IDOSI publishers.

Mutuli, L. A., Walingo, M. K., & Othuon, L. A. (2012). *Psychosocial factors influencing breastfeeding Behaviour of mothers attending home-based clinics in the Western Kenya.* ICAN:Infant and child adolescent nutrition. International breastfeeding Journal, Sage pub.com.

Mututho, L. N. (2017). *Factors influencing exclusive breastfeeding among infants less than 6 months in Kasarani informal settlement, Molo District, Kenya:* International Journal of Community Medicine & Public Health.

Nagulesapillai, T.**,** McDonald, S.W., Fenton, T, Mercader, H., Tough,S.C.(2013): Breastfeeding difficulties and exclusivity among late preterm and term infants: Results from the All Our Babies Study**.** *Canadian Journal of Public Health*, 104(4):e351-356.

Nguyen, P. H., Kim, S. S., Nguyen, T. T., Hajeebhoy, N., Tran, L. M., Alayon, S., . . . Menon, P. (2016). *Exposure to mass media and interpersonal counseling has*

additive effects on exclusive breastfeeding and its psychosocial determinants among Vietnamese mothers. Maternal & child nutrition, 12(4), 713-725.

Nielsen, A., Michaelsen, K. F., & Holm, L.(2013). *Parental concerns about complementary feeding: Differences according to interviews with mothers with children of 7 and 13 months of age.* European journal of clinical nutrition, 67(11), 1157.

NIVIVO [computer program] Cambridge, MA: QRS International Ltd; 2011. Version 9.0.

Nkala,T. E., & Msuya, S. E. (2011). *Prevalence and predictors of exclusive breastfeeding among women in Kigoma region, Western Tanzania:* A community based cross-sectional study. International breastfeeding journal, 6(1), 17.

Obara, S. C. (2010). *Feeding practices for children aged 0-24 months and feeding alternatives for those born to hiv positive mothers and their association with nutritional status: a case study of kisii district hospital-kenya.* Nairobi University:College of Agriculture and Veterinary report

Ochola, S. A. (2008). *Evaluation of two counseling strategies improving exclusive breastfeeding among HIV-negative mothers in Kibera Slum, Nairobi, Kenya: A randomized controlled trial.* Stellenbosch: Stellenbosch University.

Ogbo, F. A., Eastwood, J., Page, A., Arora, A., McKenzie, A., Jalaludin, B., . . . Noble, J. (2016). *Prevalence and determinants of cessation of exclusive breastfeeding in the early postnatal period in Sydney, Australia*. International breastfeeding journal, 12(1), 16.

Okanda, J. O., Borkowf, C. B., Girde, S., Thomas, T. K., & Lecher, S. L. (2014). *Exclusive breastfeeding among women taking HAART for PMTCT of HIV-1 in the Kisumu Breastfeeding Study.* BMC pediatrics, 14(1), 280.

Organization, W. H. (2013). Essential nutrition actions: *Improving maternal, newborn, infant and young child health and nutrition*. Geneva: United Nations standing committee on nutrtion. European Journal of Clinical Nutrition.

Organization, W. H. (2015). *World health statistics 2015*: World Health Organization.

Parker, M. E., Bentley, M. E., Chasela, C., Adair, L., Piwoz, E. G., Jamieson, D. J., . . . Mkhomawanthu, C. (2011). *The acceptance and feasibility of replacement feeding at 6 months as an HIV prevention method in Lilongwe, Malawi: results from the BAN study*. AIDS Education and Prevention, 23(3), 281-295.

Pender NJ, Murdaugh C, Parsons MA (2006): *Health Promotion in Nursing Practice.* 5. Upper Saddle River, NJ: Prentice Hall Health; Inc

Petherick, A. (2010). Mother's milk: a rich opportunity. *Nature, 468*, S5.

Radwan, H. (2013). *Patterns and determinants of breastfeeding and complementary feeding practices of Emirati Mothers in the United Arab Emirates:* BMC Public Health,13: 171.

Reimers, P. (2009). *The influence of the workplace environment on breastfeeding practices of working mothers returning to work: a case study of two companies in KwaZulu-Natal.*Unicef;BBPC. Nursing mothers.

Renfrew, M. J., McCormick, F. M., Wade, A., Quinn, B., & Dowswell, T. (2012). *Support for healthy breastfeeding mothers with healthy term babies.* Cochrane Database Systemic Review, 5(5).

Rollins, N. C., Bhandari, N., Hajeebhoy, N., Horton, S., Lutter, C. K., Martines, J. C., . . . Victora, C. G. (2016). *Why invest, and what it will take to improve breastfeeding practices?* The Lancet, 387(10017), 491-504.

Rollins, N. C., Ndirangu, J., Bland, R. M., Coutsoudis, A., Coovadia, H. M., & Newell, M.-L. (2013). *Exclusive breastfeeding, diarrhoeal morbidity and all-cause mortality in infants of HIV-infected and HIV uninfected mothers: an intervention cohort study in KwaZulu Natal, South Africa.* PloS one, 8(12), e81307.

Rothman, A. M. P. (2015). *Nutritional status, feeding practices and motor development of 6-month-old infants.* North-West University (South Africa), Potchefstroom Campus.

Schlickau, J.M., Wilson, M.E. (2005): *Breastfeeding as a health-promoting behaviour for Hispanic women; literature review.* Journal of Advanced Nursing; 52(2):200–210.

Seid, A. M., Yesuf, M. E., & Koye, D. N. (2013). *Prevalence of Exclusive Breastfeeding Practices and associated factors among mothers in Bahir Dar city, Northwest Ethiopia:* a community based cross-sectional study. International breastfeeding journal, 8(1), 14.

Taylor, A. M. (2015). *"It's a relief to talk…": Mothers' experiences of breastfeeding recorded in video diaries.* United Kingdom: Bournemouth University. [Doctorate Thesis].

Tiwari S, Bharadva K., Yadav B, Malik S, Gangal P, Banapurmath CR. (2016): *Infant and young child feeding guidelines.* Indian Pediatric Journal. 2016;53 (8):703-13

Tomlinson, M., Doherty, T., Ijumba, P., Jackson, D., Lawn, J., Persson, L. Å., . . . Nkonki, L. (2014). *Goodstart: a cluster randomised effectiveness trial of an integrated, community‐based package for maternal and newborn care, with prevention of mother‐to‐child transmission of HIV in a South African township*. Tropical medicine & international health, 19(3), 256-266.

UNICEF. Infant feeding. https://data.unicef.org/topic/nutrition/infantand-young-child-feeding/# (accessed 8 Mar 2017).

Wambach K, Domian EW, Page-Goertz S, Wurtz H, Hoffman K. (2016). *Breastfeeding and human lactation*: Jones & Bartlett Learning; 5th edu. Journal of Human Laction 32(1):103-11. Epub 2015 Aug 19.

Wambach, K., & Riordan, J. (2014). *Breastfeeding and human lactation:* Jones & Bartlett Learning.; 4 th edu. Journal of Human Lactation June 9, ... Published on September 24, 2014.

Yotebieng, M., Chalachala, J. L., Labbok, M., & Behets, F. (2013). *Infant feeding practices and determinants of poor breastfeeding behavior in Kinshasa, Democratic Republic of Congo*: a descriptive study. International breastfeeding journal, 8(1), 11.

APPENDICES

Appendix 1: Consent Procedure

Title: ***Assessment of exclusive breastfeeding among postnatal mothers attending maternal child welfare clinic in Nandi County Referral Hospital – Kapsabet.***

Investigator:

Eunice. J.Barbuch

Moi University College of Health Science, School of Nursing

Tel: 0728-365485

Purpose and background

The purpose of this study is **"assessment of exclusive breastfeeding among postnatal mothers attending childwelfare clinic in Kapsabet Referral Hospital - Nandi County, Kenya."** With the hope that the findings will help to strengthen the support structures that will enhances achieving successful exclusive breastfeeding among these population.

Procedure

You are expected to participate to answer questions asked from the questionnaire which has been structured to give us the information we need, but incase of clarity of things the investigator will answer all.

Benefits and risks

You will not benefit in terms of monetary, for participating in the study, neither will you be exposed to any risk or get harmed. Findings and recommendations will be beneficial to the community at large.

Confidentiality

All the information you will give in the study will be kept confidential and it will be used only for the purpose of the study.

Voluntary participation

You are requested to voluntarily participate in the study; and you are also free to withdraw from participation, accept or not to participate without coercion or penalty**.**

Appendix 11: Interview Consent Form for Participant

I have read and understood the above information. I agree to take part in the above named study as i have been made aware that there is no monetary gain or monetary involvement. I understand that i will be going through an interview that asks for my views on exclusive breastfeeding practices. I am aware of the entitlement to take part in the study or withdrawal at any time without penalty. I consent/agree to take part in the study.

Signature of participant / thumbprint…… Date & Time……..

---------- ---------- ----------

Name of person Obtaining Consent Signature Date

---------- ---------- ----------

Name of Investigator Signature of Investigator Date

Appendix I11: Consent To Participate In a Focused Group Discussion

You are kindly requested to participate in a focused group discussion conducted by a student researcher from Moi University School of Nursing-Eldoret. The purpose of this group discussion is to obtain information on exclusive breast feeding practices and burden of non exclusive among postnatal mothers whose infants are 0-12 months of age.

You can choose to participate or not. You can withdraw from participation without coercion or penalty. The discussion will be taped and recorded, however your responses will remain anonymous and no names required or ever mentioned in the report.

There are no rights or wrong answers in the discussion, therefore we would like to hear many different views and everyone is urged to participate actively. The researcher is asking that only one individual person speaks at a time. All responses are valid and it will be kept confidential.

I understand all these information and I am willing to participate fully and provide my views under the instructions stated above.

Sign…….

Date……

Appendix 1V: Budget

ITEM	QUANTITY	UNIT COST	TOTAL
Stationary			
Printing paper	4, reams	500	2,000
Pens	10	20	200
Pencils	10	10	200
Internet browsing	-	-	5,000
Flash disk	2	1000	2,000
Incentive for research assistants	5	1000	10,000
Photocopy	800 pages	3	2,600
Printing	500pages	10	10,000
Binding	10	50	2,000
Ethical committee	1	1000	1,000
Lunch	5people (A researcher and 4 research assistants)	500*12 days	8,000
Cost for translations	*5 FGD	5*2000	10,000
Transcription	*5 FGD	5*2000	10,000
Analysis	*5FDG	5*2000	20,000
Miscellaneous			10,000
Total			83,000
Grand Total			93,000

Appendix V: Questionnaire

ASSESSMENT OF EXCLUSIVE BREASTFEEDING AMONG POSTNATAL MOTHERS ATTENDING CHILD WELFARE CLINIC IN KAPSABET REFERRAL HOSPITAL – NANDI COUNTY

Questionnaire…… interviewer's no……... Date……

A. Bio and socio demographic characteristics

(*Ask* ***for the clinic attendance card for the infants and use it to counter check the information)***

1. Date of birth for the baby ------/------/------- and age in months [ ]

2. Sex of baby: Male ["1''] Female ["2''] & Birth order ["3'']

3. Height in (cm) ["1''] Weight at birth (kg) ["2''] Weight at now (kg) ["3'']

3. Age of the respondent in years

["1"] < 15 ["2"] 15 - 29 ["3"] 30 - 39 ["4"] 40 - > 45

4. Residence of the respondent

["1''] Urban ["2"] Rural

5. What is your highest level of education?

["1''] None ["2"] Primary ["3''] Secondary ["4"] Tertiary

6. Marital status

["1''] Single ["2"] Married monogamous ["3"] Married polygamous ["4"] Divorced / separated/widowed

7. Religious background

["1"] Protestant ["2"] Muslim & Hindu ["3"] Others specify

8. What do you do to earn for a living?

[“1’’] None [“2’’] Farming [“3”] Business [“4”] Formal employment

9. Who is the bread winner in your house hold?

[“1”] Self [“2”] Husband/ Relatives and friends [“3”] Others / specify

10. What is the main source of food in your house hold?

[“1”] Purchase [“2”] House hold / Farm garden [“3”] Others / specify

11. Have you been without food for more than a day in the past six months?

[“1”] YES [“0”] NO

12. Do you have a house help or a relative to assist you with your house chores and care of the baby?

[“1’’] YES [“0”] NO

B. Assessing delivery history

13. During your antenatal visit were you advised on hospital delivery by the health care provider?

[“1”] YES [“0”] NO

14. Who provided you with breastfeeding informations?

[“1”] Midwife [“2”] TBA [“3”] Others

15. During which period were you counselled on EBF?

[“1”] Antenatal [“2”] After delivery [“3”] On discharge home [“4”] During child welfare clinic visit [“5”] others specify…….

16. Did you deliver in the hospital?

[“1”] YES [“2”] NO

17. If no; where did you deliver?

["1"] Home ["2"] At a TBA's place

18. What was the mode of delivery?

["1"] Breech delivery ["2"] Cesarean section ["3"] Spontaneous vertex delivery

["4"] Assisted delivery

19. Were you attended during the birth process of your baby by a skilled health provider?

["1"] YES ["2"] NO

C. Assessment of maternal knowledge on exclusive breastfeeding and behavior patterns

20. The benefits of exclusive breastfeeding to the mother

[1] Emotional satisfaction to the mother ["1"] Know ["2"] don't know ["3"] Not sure

[2] Saves time & money ["1"] Know ["2"] don't know ["3"] Not

[3] EBF help mothers return to normal after delivery ["1"] Know ["2"] don't know

[4]Promote uterine involution ["1"] Know ["2"] Don't know ["3"] Not sure

[5] Decrease incidence of ovarian and breast cancers ["1"] Know ["2"] Don't know

[6] The contraceptive benefits of breastfeeding ["1"] Know ["2"] Don't know

21. The benefits of exclusive breastfeeding to the newborn

[1] Easy to digest ["1"] Know ["2"] Don't know ["3"] Not sure

[2] Right temperature ["1"] know ["2"] Don't know ["3"] Not sure

[3]Available at all times ["1"] Know ["2"] Don't know ["3"] Not sure

[4]Constitute immunity agents that prevent infection ["1"] Know ["2"] Don't know

[5] Increase emotional satisfaction ["1"] Know ["2"] Don't know ["3"] Not sure

[6] Breast milk decreases incidence of diabetes mellitus ["1"] Know ["2"] Don't know

22. Knowledge of the participants on the contraindications of EBF.

[1] Any maternal conditions [“1”] know [“2”] Don’t know [“3”] Not sure

[2] Breast conditions & surgery [“1”] know [“2”] Don’t know [“3”] Not sure

[3]Mothers on any drugs [“1”] Know [“2”] Don’t know [“3”] Not sure

[4]Congenital conditions of the infants [“1”] Know [“2”] Don’t know [“3”] Not sure

[5]Diarrhoea & vomiting in infants [“1”] Know [“2”] Don’t know [“3”] Not sure

23. Participants knowledge in regard to the time of initiation of breastfeeding.

[1] < 1hr [“1”] Know [“2”] Don’t know [“3”] Not sure

[2] 1-4 hrs [“1”] Know [“2”] Don’t know [“3”] Not sure

[3] > 4 hrs – >12 hrs [“1”] Know [“2”] Don’t know [“3”] Not sure

[4] > 24hrs [“1”] Know [“2”] Don’t know [“3”] Not sure

24. The length and duration of EBF

[1] 0-1 months [“1”] Know [“2”] Don’t know [“3”] Not sure

[2] 2 months [“1”] Know [“2”] Don’t know [“3”] Not sure

[3] 4 months [“1”] Know [“2”] Don’t know [“3”] Not sure

[4] 6 months [“1”] Know [“2”] Don’t know [“3”] Not sure

[5] >6 - 12 months [“1”] Know [“2”] Don’t know [“3”] Not sure

[6] >12 months [“1”] Know [“2”] Don’t know [“3”] Not sure

25. Frequency of EBF in the first six months

[1] On demand [“1”] Know [“2”] Don’t know [“3”] Not sure

[2] < 8 time [“1”] Know [“2”] Don’t know [“3”] Not sure

[3] >8 times [“1”] Know [“2”] Don’t know [“3”] Not sure

[4] < 12 times [“1”] Know [“2”] Don’t know [“3”] Not sure

[5] > 12 times [“1”] Know [“2”] Don’t know [“3”] Not sure

26. The best feeding option for the infants?

[1] EBF [“1”] Know [“2”] Don’t know [“3”] Not sure

[2] Bottle feeding with cow’s milk [“1”] Know [“2”] Don’t know [“3”] Not sure

[3] Breastfeeding & home prepared formula [“1”] Know [“2”] Don’t know [“3”] Not sure

[4] Bottle feeding with formula feeds [“1”] Know [“2”] Don’t know [“3”] Not sure

27. Colostrum (first milk) is only what the baby needs for the first few days of life?

[“1”] Know [“2”] Don’t know [“3”] Not sure

28. EBF protects infants from all illnesses

[“1”] Know [“2”]Don’t know [“3”] Not sure

29. The quantity of breast milk depends on the mother’s food

[“1”] Know [“0”] Don’t know [“3”] Not sure

30. Both large and small breasts produce milk in sufficient quantities?

[“1’’] Know [“2’’] Don’t know [“3”] Not sure

31. Prelacteal feeds should be given to the infant in the first hour of life?

[“1”] Know [“2”] Don’t know [“3”] Not sure

D. Challenges that hinder EBF

32. Have you stopped EBF?

[“1”] YES [“0”] NO

33. At what how many months or years did you EBF?

[“1”] < 1- 6 months [“2”] 7- 12 months [“3”] 1 year – 1 ½ years [“4”] 1 ½ years > 5 years

[“5”] Others specify

34. Do you have any reasons for not adopting EBF?

["1"] Was not feeling well ["2"] Baby was not feeling well &breast problems

["3"] Perceived it was not the appropriate time ["4"] Waiting for the in-laws / relatives

35. What were the reasons for stopping EBF if it happens that you have stopped?

["1"] Baby was unwell & baby lost interest ["2"] It was time to stop

["3"] Advice by the husband ["4"] Had insufficient milk ["5"] Got pregnant again

["6"] Because of job

36. What was the type of cessation?

["1"] Gradual ["2"] Abrupt

37. Is breastfeeding an outdated practice?

["1"] YES ["0"] NO

38. Is breastfeeding inconvenient for you?

["1"] YES ["0"] NO

40. If yes; could the following be the reasons?

["1"] It causes embarrassment to breastfeed in public/church/social places

["2"] It makes the breast loose shape ["3"] Makes me tied down socially

41. Do you have any challenge of food supply?

["1"] Yes ["0"] No

42. Do you have any one to assist you with domestic chores?

["1"] Yes ["0"] No

43. Who influenced your decision on the type of infant feeding practices that you chosed?

["1"] Health worker / Peer counselor ["2"] Husband ["3"] Mother in-law

["4"] Relatives / friends ["5"] Others / specify…….

44. What hindered EBF?

["1"] Mother is sick ["2"] Mother is menstruating

["3"] Baby has fever / cold ["4"] Baby has diarrhoea / vomiting

45. What are the factors that discouraged you from EBF?

["1"] Non supportive husband / parents / friends/employer

["2"] Lack of confidence concerning exclusive breastfeeding

["3"] Having inadequate milk

["4"] It is time consuming and unavailability of the mother

E. Cultural / believes and barriers that influences EBF

46. Do your culture/ belief support EBF?

["1"] YES ["0"] NO

47. Were you encouraged by your partner/husband to EBF?

["1"] YES ["0"] NO

G. Burden of non- EBF

48. Has the baby been sick?

["1"] YES ["0"] NO

49. Has the baby suffered from any of the following illnesses?

["1"] Diarrhoea ["2"] Fever ["3"] Vomiting ["4"] Malaria ["5"] Others specify…….

50. Was the illness associated to any of the following?

["1"] EBF ["2"] Non- breastfeeding ["3"] others, specify….

Appendix VI: Focused Group Discussion Guide

1. In your own way, tell me what you understand by exclusive breastfeeding. How did you learn about exclusive breastfeeding? And what time does breastfeeding commence?
2. You have been exclusively breastfeeding?. What are the benefits of EBF to the baby and mother are you aware of? Kindly identify any challenges experienced?
3. Have you been expressing breast milk? If so explain to me how you do it. How do you store baby's breast milk after expressing and for how long?
4. When did you start weaning? Does breastfeeding continue during weaning? Probe
5. What kind of food stuff do you introduce during weaning? Probe
6. What are the benefits of breastfeeding both to you and the baby? What other factors can encourage you to exclusively breastfeed for the recommended period?
7. Why do some of the mothers choose not to practice exclusive breastfeeding?
8. Kindly tell me some of the cultural, religious believes about breastfeeding that you know? Probe. Who decides the best infant feeding method for your child / children? Probe. What are the role of husbands and family members, health workers and community in breastfeeding?
9. What do you think of a mother who does not breastfeed? Probe. Are there times/cases when mothers are not allowed to breastfeed? Probe
10. Children under five years suffer from various childhood illnesses. What could be the reasons and what are these childhood illnesses and what could be the cause?. When the neonate/infants and child are sick, what are some of the challenges that parents and families face? Probe

Appendix VII: IREC Approval

INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 33471//2/3

MOI UNIVERSITY
SCHOOL OF MEDICINE
P.O. BOX 4606
ELDORET

13th April, 2016

Reference: IREC/2015/219
Approval Number: 0001606

Ms. Eunice Barbuch,
Moi University,
School of Public Health,
P.O. Box 4606-30100,
ELDORET-KENYA.

INSTITUTIONAL RESEARCH & ETHICS COMMITTEE
13 APR 2016
APPROVED
P. O. Box 4606-30100 ELDORET

Dear Ms. Barbuch,

RE: FORMAL APPROVAL

The Institutional Research and Ethics Committee has reviewed your research proposal titled:-

"Assessment of Exclusive Breast Feeding among Postnatal Mothers attending Child Welfare Clinic in Nandi at Kapsabet Referral Hospital – Nandi County."

Your proposal has been granted a Formal Approval Number: ***FAN: IREC 1606*** on 13th April, 2016. You are therefore permitted to begin your investigations.

Note that this approval is for 1 year; it will thus expire on 12th April, 2017. If it is necessary to continue with this research beyond the expiry date, a request for continuation should be made in writing to IREC Secretariat two months prior to the expiry date.

You are required to submit progress report(s) regularly as dictated by your proposal. Furthermore, you must notify the Committee of any proposal change (s) or amendment (s), serious or unexpected outcomes related to the conduct of the study, or study termination for any reason. The Committee expects to receive a final report at the end of the study.

Sincerely,

PROF. E. WERE
CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE

cc CEO - MTRH Dean - SOP Dean - SOM
Principal - CHS Dean - SON Dean - SOD

INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC)

MOI TEACHING AND REFERRAL HOSPITAL
P.O. BOX 3
ELDORET
Tel: 33471/2/3

MOI UNIVERSITY
SCHOOL OF MEDICINE
P.O. BOX 4606
ELDORET

Reference: IREC/2015/219

29th March, 2016

Ms. Eunice Barbuch,
Moi University,
School of Medicine,
P.O. Box 4606-30100,
ELDORET-KENYA.

INSTITUTIONAL RESEARCH & ETHICS COMMITTEE
29 MAR 2016
APPROVED
P. O. Box 4606-30100 ELDORET

Dear Ms. Barbuch,

RE: PROVISIONAL APPROVAL

The Institutional Research and Ethics Committee has reviewed your research proposal titled:-

"Assessment of Exclusive Breast Feeding among Postnatal Mothers attending Welfare Clinic in Nandi County Referral Hospital-Kapsabet"

Your proposal has been granted ***one month provisional approval*** from 29th March, 2016 subject to ratification by IREC Full Board. Note that this is a preliminary approval and you are only allowed to set-up in readiness for the study but no recruitment should take place within this period until formal approval is granted.

Sincerely,

PROF. E. WERE
CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE

cc Director - MTRH Dean - SOP Dean - SOM
Principal - CHS Dean - SON Dean - SOD

Appendix VIII: Hospital Approval

COUNTY GOVERNMENT OF NANDI

DEPARTMENT OF HEALTH

Telegrams; MEDICAL;
Telephone; 52081, 52623
When replying please quote
Ref:R.I/VOL.I/16/14

The Medical Superintendent office
Kapsabet County Referral Hospital.
P.O Box 5 - 30300
KAPSABET.
27/04/2016

BARBUCH J. EUNICE
P.O. BOX 3
ELDORET

Dear Madam,

RE: REASERCH APPROVAL

Following your request to conduct a research on "assessment of exclusive breast feeding among postnatal mothers with infants lest than 12 months attending child welfare clinic" at MCH Kapsabet County Referral Hospital has been approved by the management.

Yours

MEDICAL SUPERINTENDENT
KAPSABET DISTRICT HOSPITAL

DR. KEMEI S. K
MEDICAL SUPERINTENDENT
KAPSABET COUNTY REFERRAL HOSPITAL