PREVALENCE AND FACTORS INFLUENCING EXCLUSIVE BREASTFEEDING AMONG MOTHERS OF INFANTS UNDER SIX MONTH OF AGE ATTENDING WAJIR COUNTY REFERRAL HOSPITAL, WAJIR COUNTY, KENYA

BY

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DEPARTMENT OF HUMAN NUTRITION

MOI UNIVERSITY

DECLARATION

I, the undersigned, declare that this thesis is my original work and to the best of my knowledge has not been presented for a degree in any university. No part of this thesis should be reproduced without permission of the author and /or Moi University.

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DEDICATION

To my parents who always support me in terms of financial and psychological support and also whose support and encouragement have been outstanding.

To my supervisors; Prof. Grace Ettyang and Elizabeth Kimani-Murage, who helped me and encouraged me in this endeavour, thank you for your great support.

ABSTRACT

Background: Exclusive breastfeeding (EBF) for infants from birth to six months is regarded as one of the best practices for infant health and survival. However some cultural practices are influencing EBF in many sub-Saharan African countries. Factors affecting EBF from child birth to six months of age have not been well researched in Wajir County.

Objective: The main objective of the study was to determine the prevalence and factors that influence the practice of EBF among mothers of children aged 0-<6 months. The study further aimed to establish the perceptions and practices about EBF among the study participants.

Methods: Across-sectional study was conducted among 124 mothers with infants 0-<6 months visiting Wajir county referral hospital. Systematic sampling technique was used to get the desired sample size of 124 after sampling interval of 3. A researcher-administered questionnaire (structured and semi-structured) and in-depth interview guide were used to collect data. Ten in-depth interviews were conducted among mothers of infants 0-<6 to investigate infant feeding practices. All the analysis of the quantitative data was done through SPSS. Test on the relationship between various independent variables and EBF was done through Chi-square.

Results: Majority of the mothers interviewed were between 20-30 years, the youngest was 20 years and the eldest 39 years. The median age of the mothers was 25 years. Majority (88.7%) of the mothers were married, (5.6%) were divorced, and the same proportion were (5.6%) widowed. The mean age was 3.4 months, while the percent of female and male infants was, 55% and 45% respectively. Slightly less than half (44%) of the mothers practiced continuous EBF since the infants birth. The decision to practice EBF was influenced by grandmothers (39.3%), mothers own decisions (37.5%) and health workers (21.4%). Almost all (96%) of mothers knew the importance of colostrum to the health of the baby, while 58% stated that breast milk was sufficient for the child for the first six months. Delayed milk production (26%) and illness (22%) were two major reasons for the practice of mixed feeding**.** In the univariate analysis maternal EBF knowledge, place of delivery and maternal education were found to have significant association with EBF. There was a positive significant correlation between EBF and Maternal EBF knowledge (P=0.04), mother`s education (P= 0.02), the number of children ((P=0.029) and place of delivery (P =0.03).

Conclusion: Based on the findings, EBF in Wajir County is below the national level of (61%) and much lower than the recommended WHO threshold of 90%. Delayed milk production and insufficient breast milk should be addressed as they affect EBF

Recommendations: Maternal perception on insufficient milk production, delayed milk secretion should be addressed as they affect adherence to EBF. Community based health education approach should be used to reach mothers, infant grandmothers, husbands and community health workers.

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LIST OF ABBREVIATIONS AND ACRONYMS

ANC	Antenatal Care
ASAL	Arid and Semi-arid land
BF	Breastfeeding
BFCI	Baby Friendly Community Initiative
BFCI	Baby Friendly Community Initiative
EBF	Exclusive Breastfeeding
HIV	Human Immunodeficiency Virus
IQ	Intelligence Quotient
IREC	Institutional Research and Ethic Committee
IYCF	Infant and young child feeding
KAP	Knowledge, Attitude and Practice
KDHS	Kenya Demographic Health Survey
KNBS	Kenya National Bureau of Statistics
MCH	Mother Child health
OPD	Outpatient Department
SDG	Sustainable Development Goal
SPSS	Statistical Package for Social scientist
TBA	Traditional Birth attendant
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHA	World Health Assembly
WHO	World Health Organization

OPERATIONAL DEFINATION OF TERMS

Colostrum	Is the first fluid that comes from the breast immediately after birth. It is the yellowish, sticky breast milk produced at the end of pregnancy, is recommended by WHO as the perfect food for the newborn.
Complementary feeding	Refers to feeding a child with foods in addition to breast milk
Cultural factors	population beliefs, norms and local myths about breastfeeding and infant feeding practices.
Exclusive breastfeeding	refers infants are not given any other food or liquid including water during the first six months after delivery.
Infant and Young Child Feeding	early initiation (within one hour of birth) of exclusive breastfeeding, exclusive breastfeeding for the first six months of life, followed by nutritionally adequate and safe complementary foods while breastfeeding continues for up to two years of age or beyond.
Maternal characteristic	This refers to the mother's education level, marital status, parity, morbidity and mode and place of delivery.
Stunted	Stunted growth refers to low height-for-age, when a child is short for his/her age but not necessarily thin.
Under-weight	Under-weight refers to low weight-for-age, when a child can be either thin or short for his/her age.

Wasting	this is also known as ‘thinness’. It is a condition characterized by low weight for height that is caused by acute food shortage.
Wet Nurse	is a woman who breast-feeds a child that is not her biological child.

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My appreciation also goes to all mothers with children less than six month and caretakers whose voluntary participation made this study a reality. Thanks to Wajir County Referral Hospital administration and more so the maternal and child health section staff for their help and support during the data collection.

CHAPTER ONE

INTRODUCTION

1.1 Background

Breast feeding is an effective method of guaranteeing child survival. It represents one of the best approaches to preventing child mortality and morbidity. Optimum infant and young child feeding (IYCF) practices are essential for survival, growth and development of infants and young children. Mothers should breastfeed exclusively for the first six months of baby's life and complementary food should be introduce after six month but breastfeeding should continue as well until 24 months and beyond (WHO, 2002).

Breast milk provides nutrients infant require for a healthy growth and development. They also provide antibodies responsible for driving out illnesses and protecting children's health (UNICEF, 2006). The targets of achieving Sustainable Development Goals (SDG) 2 and 3 to improve nutrition and secure healthy lives for all starts with the first 1000 days of a child's life – which commences with breast feeding within the first hour of birth, and exclusive breast feeding (EBF) for the first six months of life, as a primer for a healthier life (WHO, 2015). Research shows that initiating breastfeeding immediately after birth goes to a great extent in reducing neonatal deaths. Breast milk alone is enough to nourish the child with every nutrient they require, therefore eliminating the need for any other solid or liquid food during the first six months. (Butte et al, 2002).

In addition to advocating and supporting for exclusive breast feeding for infant under six months the WHO/UNICEF worldwide technique for newborn child and young child feeding (WHO, 2003) states that; Infants ought to be fed healthy, sufficient, safe

and age-fitting appropriate foods while being breast fed for up to two years to satisfy nutritional needs. The accord on the Rights of the Child states that for optimum infant feeding , access to adequate nutrition with appropriate family support is the right of every child This requires adequate maternal nutrition and health and proper support from both the community and the family and a functional good health care system. It also needs special care and attention in exceptionally difficult situation such as infant born to HIV-positive mothers, feeding of low birth weight babies or feeding malnourished children or other vulnerable children living in a hard environment. (WHO/UNICEF. 2002).With this regard, breastfeeding is considered as a fundamental factor for infant survival.

The WHO and UNICEF have established recommendations for breastfeeding practices. Although every mother decides how to feed her child, this decision is strongly influenced by economic, environmental, social, and political factors. Unfortunately, countries are not adequately protecting, promoting, or supporting breastfeeding through funding or policies. As a result, most children in the world do not meet these breastfeeding recommendations. (WHO/UNICEF 2017). Globally, only 38% of infants are exclusively breastfed (WHO 2016). Exclusive breastfeeding levels remain low across Africa. According to UNICEF, West Africa has one of the lowest rates in the world, with countries such as Chad recording 2% and Côte d'Ivoire 4%. In East Africa, the EBF rates are quite impressive with Rwanda (84.9%), Burundi (69.3%), Uganda (63.2%), Kenya (61.4%) and Tanzania (50%) all having more than half of the infants 0–5 months old exclusively breastfed (WHO,2016). Kenya has seen a remarkable growth in exclusive breastfeeding for children under six months old. In 2003 only 13% of mothers were breastfeeding exclusively. According to the Kenya National Demographic and Health Survey (KDHS) the rate has improved to

61%. Despite the recent increase in EBF to 61.4% (KDHS 2014) from 32% (KDHS 2010). , Kenya has the second lowest rate among the East African countries.

Kenya is among a handful of countries that were able to attain the 50% EBF target before 2025 as recommended by World Health Assembly (WHO 2016). However Kenya is far much behind the recommended target of WHO which is 90%. There are few published studies regarding factors influencing EBF in the county of Wajir, Kenya. This study aims to establish factors influencing EBF of infants aged 0->6 months attending Wajir County Referral Hospital.

1.2 Problem Statement

Wajir County is among the districts with the highest levels of malnutrition in the country and preventing malnutrition is essential to meeting the SDG goal 2 and 3 geared to improving child health and reducing child mortality. The reported 43.6% EBF rate for Wajir County (Islamic relief, KAP Survey, 2014) is way below the national rate and far much below the WHO recommended rate of 61% and 90% respectively. Social beliefs and practices are a portion of the basic reason for the low rate of selective breastfeeding in the County.

The WHO recommends exclusive breastfeeding (EBF) for the first six months of life, but the rate of breastfeeding still remains low throughout the world, more so in sub-Sahara Africa where it is as low as 30% (WH0, 2012).

Kenya stands at number 54 out of 79 nations on the global hunger index (Global hunger index report, 2012) and Northern Kenya (Garissa, Wajir, Mandera, Marsabit, Turkana, West Pokot and Samburu) has the highest malnutrition rates in the country (KDHS 2014). Wajir County contributes the highest level of severe wasting in

children at 4% and stunting at 26%. Children from poor households are more likely to be malnourished (KDHS 2008/2009). Breastfeeding rate is very low in the counties which contribute to the highest burden of malnutrition in the country, low rate of both EBF and continuous breastfeeding results in the high rate of malnutrition. (KDHS 2008-9)

The WHO promotes exclusive breastfeeding and it is one of its key strategies to curb malnutrition and is regarded as one of key low cost interventions for child survival. WHO and UNICEF use awareness campaigns, radio messaging and breastfeeding day in each annual calendar to educate the communities about the benefits of exclusive breastfeeding and with the purpose to promote the practice, however the efforts have not reached the success as anticipated and in practice many mothers don't practice breastfeeding as advocated. To improve exclusive breastfeeding in Kenya and precisely Wajir County, factors influencing its practice have to be studied and documented well in order to achieve the target goals for programs. In northern Kenya, determinants and factors influencing exclusive breastfeeding have not been well documented.

1.3 Rationale for the Study

Improvement of exclusive breastfeeding practices, adequate and timely complementary feeding, along with continued breastfeeding for up to two years or beyond, could save annually the lives of 1.5 million children under five years of age (Jones et al, 2003). Breastfed children have at least six times greater chance of survival in the early months than non-breastfed children. An exclusively breastfed child is 14 times less likely to die in the first six months than a non-breastfed child, and breastfeeding drastically reduces deaths from acute respiratory infection and

diarrhoea, two major child killers (Lancet 2008). Of all preventive health and nutrition interventions, Infant and Young Child Feeding (IYCF) has the single greatest potential impact on child survival (UNICEF, 2011**)**. This is delineated in proof introduced in the Lancet 2008 Series on Maternal and Child Under sustenance Series (Black RE 2008). Along these lines guaranteeing a high scope of IYCF interventions in a nation can build youthful child survival by near 20%. Optimal breastfeeding of infants under two years of age has the greatest potential impact on child survival of all preventive interventions, with the potential to prevent over 800,000 deaths (13 per cent of all deaths) in children under five in the developing world (Lancet 2013).

Each community has its unique factors that influence EBF practices and subsequent complementary feeding, such as culture that requires giving water and milk to new borns, social pressure to introduce mixed feeding (Shirma X, 2001). There are very few studies conducted on exclusive breastfeeding in Wajir County despite being one of the counties with the highest malnutrition rates. With this in mind, breastfeeding along with factors that influence it has not been studied or documented in any research work. Thus this study aims to fill this gap. The results of the study will contribute to evidence based policy formulation at the county level.

1.4 Research Questions

The main research questions are:

1. What proportion of mothers attending Wajir County referral hospital practice EBF during the first six months of the infant's life?
2. Among the mothers attending Wajir County Referral Hospital who and what factors influence how they breastfeed their infants?
3. How do mothers attending Wajir County Referral Hospital obtain knowledge on breastfeeding?

1.5 Objectives

1.5.1 Broad Objective

The main goal of this research was to determine prevalence and the factors that influence EBF among mothers of infants under 6 months attending Wajir County Referral Hospital.

1.5.2 Specific Objectives

1. To establish the prevalence of exclusive breastfeeding among infants under 6 months of age attending Wajir County Hospital
2. To determine whether maternal social-demographic factors are associated with exclusive breastfeeding among mothers in Wajir county referral hospital
3. To investigate mothers' perceptions and practices about exclusive breastfeeding among the study participants.

1.6 Significance of the Study

This study contains important data on factors that affect exclusive breastfeeding in Wajir County. This information will be helpful to the county government, national government policy makers and partners working in child nutrition, health and survival

programs. The study will further help researchers and will be reference point for partners that are working towards the improvement and up scaling of exclusive breastfeeding and child survival programmes.

1.7 Limitation of the Study

The study had a few limitations: the study participants were subjects attending Wajir referral MCH/OPD centre, hence a selection bias, thus they may not be representative of all residents of Wajir County. Recall bias with regard to what mothers fed their babies after birth, which some mothers could not remember accurately.

1.8 Conceptual Framework

Breastfeeding is a complex process governed by psychological and physiological factors, which in turn are conditioned by a wide spectrum of environmental, socioeconomic and cultural circumstances (Obermeyer and Castle, 1997). The physiological mechanisms involved in maintaining the supply of milk are influenced by intricate behavioural and cognitive factors (Lawrence RA et al 1999).

This conceptual framework (Figure 1.1) was used as a guide to investigate the maternal demographic factors (education, age and marital status), knowledge on breastfeeding, demographic factors and contextual factors (place of delivery) and attitudes and cultural beliefs about exclusive breastfeeding practices.

Many factor influences the practices of exclusive breastfeeding such as; maternal factors related to mother such us mother's intention to breastfeed, her knowledge and skills, health and risky status of the mothers and the infants, infant age and the mode and place of delivery. Each of these can directly influence initiation and duration of EBF. Social factors i.e. religion, beliefs and cultural norms also influence the practice

of EBF. The community and family members also influence the practice of EBF; the influence can either be positive or negative.

The study was guided by the following conceptual framework in figure 1.1

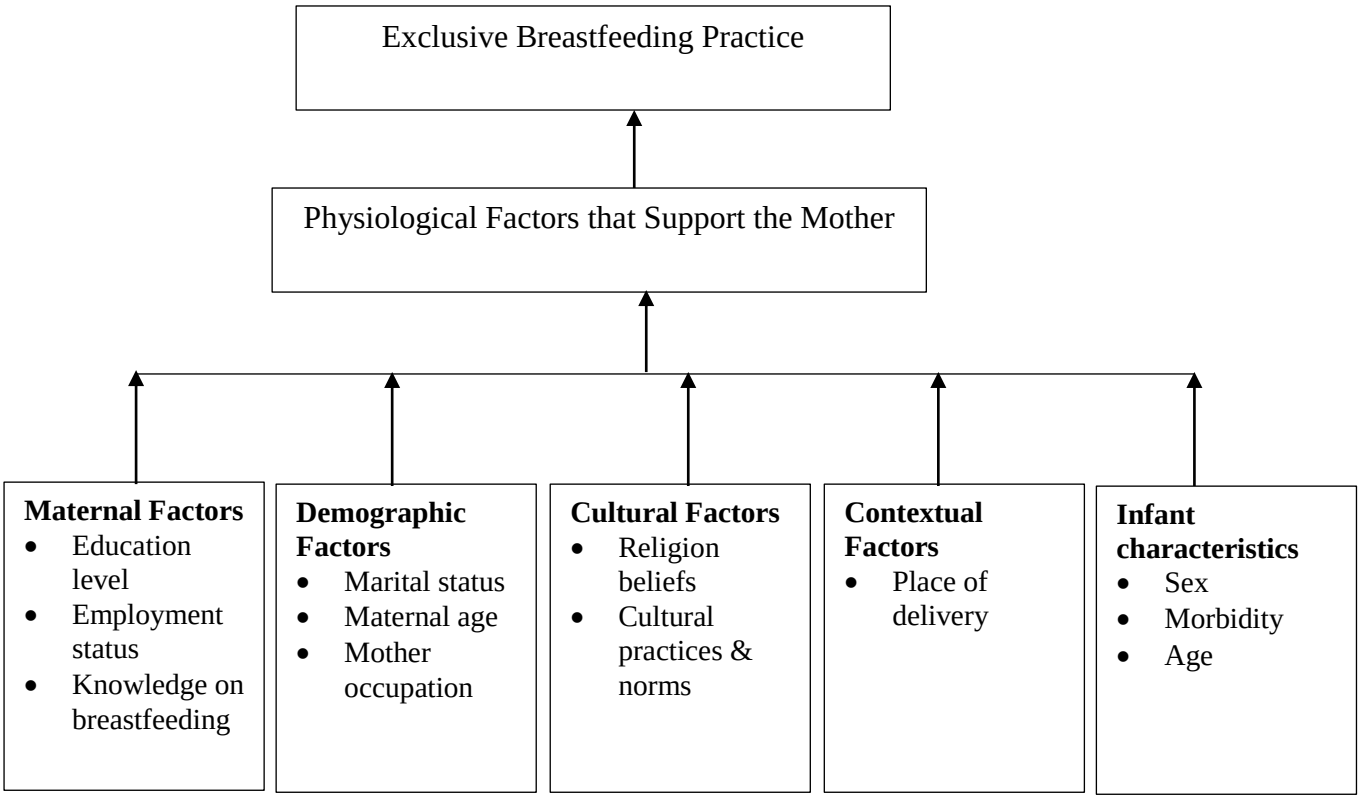

Figure 1.1: Conceptual Framework on factors associated with Exclusive breastfeeding practices

CHAPTER TWO

LITERATURE REVIEW

2.1 Historical Perspective of Breastfeeding

Breastfeeding is a deep rooted practice that is not just basic to the development and general prosperity of infants, additionally to the physiology and wellbeing of ladies. Breastfeeding hones in numerous old social orders were generally guided by customs, convictions and antiquated therapeutic writing among others (Seidu, 2013).

These recommendations on breastfeeding are also present in early religious scriptures such as the Bible and the Quran. Texts from both scriptures are seen to encourage breastfeeding of newborns for long durations as well as for the nourishment and comfort (Bible, Isiah 66:11; Quran 2:233). This was the norm until the 19th century; in almost all societies, economic standings and countries, where almost all children were breastfed (Sokol et al., 2007). In circumstances where the mother was not able or even available to breastfeed her child, the alternative was to look for another woman (commonly referred to as a wet nurse) who would breastfeed the infant. The main solution to challenges in breastfeeding was to seek breastfeeding services of another mother.

During the period of industrial revolution in the 19th century, the breastfeeding norm changed as a result of the development of various infant feeding products to either supplement or substitute for breast milk. Commercial breast milk substitutes were invented and were soon after intensively promoted to mothers and medical practitioners (Sokol et al., 2007; Seidu, 2013). As a result, breastfeeding rates dropped rapidly especially in Europe and North America as preference for the breast milk substitutes dominated from late 19th century to much of the 20th century. However, the

use of the breast milk substitutes in the place of breast feeding led to an increased infant mortality among those consuming them. This resulted from such infants suffering from increased infectious diseases and succumbing to them compared to their breastfed counterparts (Seidu I., 2013). Despite the improvements in the production and quality of breast milk substitutes beginning from early 20th century, studies show that children (under 6 months) fed on them still have a higher risk of morbidity and mortality globally (Kakuma, 2002). Furthermore, extensive research conducted over the past decades have documented that breastfeeding has greater effectiveness for improving health and saving lives (Quinn et al., 2006; Arifeen et al., 2001).

In 1990 the Innocenti Declaration on the promotion, Protection and support of Breastfeeding set a global agenda with ambitious goals for action. The Declaration stated that improved breastfeeding practices are a means to achieve a child's right to the highest realistic standard of health. To actualize the implementation of the declaration, policies and strategies have been developed such as Baby Friendly hospital initiative (BFHI) and subsequent the Baby Friendly Community initiative (BFCI), international code of marketing of breast milk substitute, the worldwide methodology for newborn child feeding which states babies ought to solely breastfeed for the underlying six months of life to accomplish ideal development, improvement and wellbeing and there after ceaseless breastfeeding and also sufficient and safe correlative bolstering for up to two years old (WHO 2003).

2.2. Health Benefits of Breastfeeding

2.2.1. Benefits to the Baby

According to different studies, exclusively breastfed infants are protected against major childhood diseases and causes of death such as diarrhoea, gastrointestinal infections, sepsis, allergic diseases, acute respiratory infections, obesity, meningitis among others (Quinn et al., 2006; Seidu, I., 2013).

Exclusive breastfeeding of an infant for more than 4 months reduces the risk of hospitalization from lower respiratory tract infections by 72% during the infant's first year (Seidu, 2013). Exclusive breastfeeding is also essential for optimal growth and development during the first six months as it boosts the immune system and provides all the required fluid and nutrients. The Lancet's 2013 maternal and child nutrition series identified a consistent association between breastfeeding and an increase in infants IQ of about 3 points (Black et al., 2013). Likewise, evidence by Victora et al. (2015) shows that the length of exclusive breastfeeding plays a part in improving intelligence quotient and educational attainment, which further effect income attainment in adulthood (Victora et al., 2015).

A study by (Vennemann, 2009) showed that breastfeeding was protective by reducing the risk of sudden infant death syndrome by 50% in all infancy stages, with the benefit exhibiting dose-response relationship. Within the first six months after birth, newborn children who are not breastfed are 6 times and 2.5 circumstances more inclined to bite the dust from loose bowels and intense respiratory contamination individually (UNICEF, 2010). Breastfeeding diminishes newborn children's danger of unending conditions sometime down the road. These conditions incorporate asthma, overweight and stoutness (Grammar-Strawn et al, 2004), cancers (Shu et al 199),

diabetes (Jones et al 1998), heart diseases (J.W. et al) and cardiac risk factors such as hypertension (Martin, 2004).In addition, infants who are breastfed for more than six months are less likely to have mental health problems during their teenage years (Venneman, 2009).

2.2.2 Benefits to the Mother

Early initiation and exclusive breastfeeding are both associated with improved maternal-infant bonding as well as rapid establishment of effective suckling and feeding behaviours (Quinn, 2006). Once an infant attaches well at the breast, it is able to suckle effectively and remove milk efficiently. This in turn stimulates an adequate milk supply that can satisfy the infant's nutritional needs. To the contrary, poor attachment can lead to ineffective suckling that may cause insufficient intake of breast milk by the infant. This may also cause breast conditions such as breast engorgement, sore and cracked nipples, breast abscesses and mastitis.

A report by the (WHO, 2001) showed that women who practice exclusive breastfeeding tend to have an advantage of prolonged lactation amenorrhea. This delay in the return of fertility provides a natural birth control technique and also reduces their exposure to health risks which are associated with short birth intervals. Studies have shown that breastfeeding can aid a more rapid return to pre-pregnancy weight. Moreover, the women who practice breastfeeding have a lower risk of pre-menopausal breast and ovarian cancer in the long term compared to the ones who don't practice breastfeeding (UNICEF, 2010). According to various studies, exclusive breastfeeding reduces the risk of mother-child HIV transmission compared to mix feeding (Seidu I., 2013).

2.3 Exclusive Breastfeeding and its Trends

Exclusive breastfeeding among infants younger than six months in developing countries increased from 33% in 1995 to 39% in 2010 (UNFPA& UNICEF 2012). The prevalence of exclusive breastfeeding has increased most of developing countries. The most significant improvements was evident in parts of Western and Central Africa where the prevalence doubled over from 12 percent to 28 percent in the 1995-2010 period (UNICEF 2010). Likewise, Southern and Eastern Africa also saw some improvements with prevalence increasing from 25 percent to 47 percent in the same period. On the other hand, Southern Asia experienced an improvement of 5 percent from 40 percent in 1995 to 45 percent in 2010 (UNICEF, 2012).

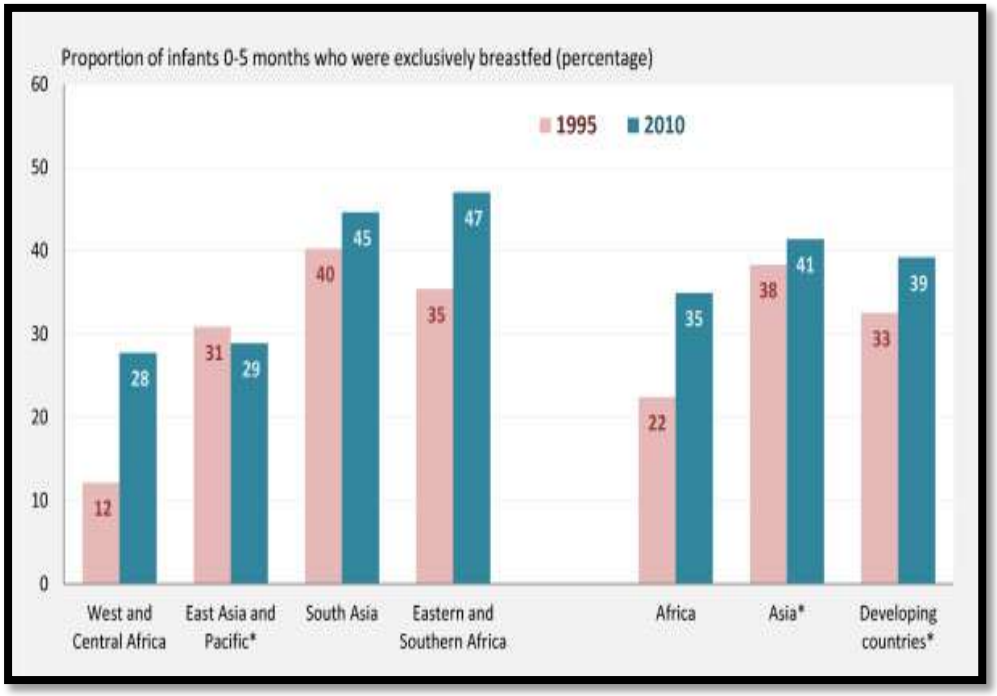

Figure 2.1: Exclusive Breastfeeding Trends in Infancy – 0 to 6 months.
Source: (UNICEF, 2012)

It is evident that breast milk is the most suitable nourishment to support an infant's growth and intellectual development for 0-6 months of age (Kakuma, 2002). Breast milk is a perfect, natural and protective food for new born infants. Moreover, different

studies have demonstrated that mothers who initiate exclusive breastfeeding at early stages are less prone to infant mortality (Cai et al., 2012; Seidu I., 2013).

According to the Lancet 2003 child survival series, exclusive breastfeeding can save the lives of up to 1.3million children globally if implemented to scale (Jones et al., 2003). The Lancet 2008 series further confirmed the importance of exclusive breastfeeding to child survival; this series found that exclusive breastfeeding has the potential to forestall 1.4 million passings consistently among kids under five years old out of the 10 million tyke mortalities estimated globally (Black et al, 2008). Additionally, a study coordinated by the WHO revealed that young infants in the early months who were non-breastfed had an increased risk of death that was approximately six times greater compared to the breastfed ones (WHO, 2000). Similarly, Edmond et al (2006) showed that infants who were partially breastfed had a four-fold increase in neonatal risk of death compared to those who were exclusively breastfed. Generally, all this has brought about a spur in the promotion of exclusive breastfeeding over the past decades, as the best feeding method for newborn infants.

Child malnutrition is known to be a major cause of more than half of deaths of children under five; especially in developing countries, which is commonly due to poor and sub-optimal breastfeeding and complementary feeding practices (Sokol et al., 2007; Seidu, 2013). Studies show that malnutrition increases infants' risk to infections, illnesses and death (Quinn et al., 2006). Therefore, the implementation of simple practices such as exclusive breastfeeding could save the lives of many children under five globally. As a result, exclusive breastfeeding is considered to be vital for infants' survival, more so in resource limited settings which are common in developing countries.

2.3.1 Prevalence of Exclusive Breastfeeding in the Developing World

Generally, modest improvements on the prevalence of exclusive breastfeeding have been made in some regions globally. However, the prevalence in many areas especially in the developing countries remains too low. The study by Cai et al (2012) estimated that less than 40% of infants below 6 months of age in developing countries were exclusively breastfed in 2010. The accepted 'universal coverage' target for exclusive breastfeeding is 90% (Jones et al 2003) indicating an urgent needs to increase the programs promoting the practice of exclusive breastfeeding. For infants younger than 4 months, the coverage of exclusive breastfeeding was estimated at 53% (Seidu I., 2013).

The vast majorities of babies in Africa are breastfed, but coverage of breastfeeding practices remains sub-optimal according to the recommended practices of early initiation and exclusive breastfeeding (Quinn et al., 2006). It is estimated that less than one in three infants in Sub-Saharan Africa is exclusively breastfed (Quinn et al, 2006). Therefore, a large number of infants are still exposed to risks of morbidity and mortality. The regions of West and Central Africa have had the highest increments on the coverage of exclusive breastfeeding; with more than twofold increase on the coverage from 12% in 1995 to 28% in 2010 (Seidu I., 2013; Quinn et al., 2006). However, the two regions still have some of the lowest prevalence rates in Africa. The Eastern and Southern Africa regions also saw some moderate improvements on the coverage of exclusive breastfeeding from 35% in 1995 to 47% in 2010. As a result, more effort needs to be made in order to improve the low prevalence of exclusive breastfeeding; considering the highest rates of malnutrition in children are still experienced in the developing world.

2.3.2 Situation of Exclusive Breastfeeding in Kenya

In Kenya, 61 percent of children less than six months are exclusively breastfed. More than half of children in Kenya are still breastfeeding at age 20-23 months (51 percent). The proportion of breastfed children declines with age; breastfeeding is nearly universal in a child's first month of life, but the proportion breastfed drops to 61 percent by the time a child is 18-23 months (KDHS, 2014). The coverage of the practice of exclusive breastfeeding in Kenya has greatly improved over the past decade. The prevalence of exclusive breastfeeding in children below six months of age is 61%, according to the Kenya Demographic and Health Survey of 2014. This is an increase from 13% in 2003 and 32% in 2008-09 (KDHS, 2014). This has been as a result of massive efforts to promote breastfeeding in Kenya. Firstly, the Kenyan government established a comprehensive infant and young child feeding programme in 2007. Then it set up projects such as the Baby Friendly Hospital and the Baby Friendly Community Initiatives, and in conjunction with efforts by other agencies contributed to the recorded increase in exclusive breastfeeding (Kimani-Murage ., 2015; Njeri M. L., 2012).

These activities have figured out how to make mass consciousness of breastfeeding, as the Government focuses to expand exclusive breastfeeding to 80% by 2017. In any case, lactating ladies in Kenya are still confronted by various difficulties that prevent them from ideally breastfeeding their babies. These difficulties incorporate work, absence of information, myths and originations, wellbeing related difficulties, inadequate nourishment and poor social and expert support. Thus, more should be done; particularly in guaranteeing the privileges of moms and youngsters are acknowledged, to enhance breastfeeding rehearses (Kimani-Murage 2015; Kimani-Murage et al. 2014).

Despite the great achievement in breastfeeding in Kenya as a whole, malnutrition is still a major cause of morbidity and mortality in Kenya, especially in arid and semi-arid lands (ASAL) including most of the North Eastern region of the country. It is estimated that 45% of all child deaths in Kenya is as a result of malnutrition, with about 26% (one quarter) of Kenyan children below 5 years of age being stunted (KDHS, 2014). As a result, the Kenyan Government in conjunction with other agencies has embarked on a larger resilience building program. This saw the launch of the four year maternal and child nutrition program that aims to alleviate the impact of recurrent food shortages in ASAL areas and improve health systems. This calls for the implementation of initiatives like breastfeeding which have the potential to greatly reduce malnutrition and mortality, especially in children. However, there is need to better understand the factors affecting breastfeeding practices among women in different societies or settings. This will enable interventions to be designed and effectively implemented.

2.4 Factors Influencing the Practice of Exclusive Breastfeeding

Currently, the prevalence of exclusive breastfeeding is still low in developing countries despite the vast evidence of benefits that can be derived from the practice (Quinn et al., 2006). According to different studies, a number of factors have been found to affect the practice of exclusive breastfeeding; ranging from maternal, cultural, socio-economic and contextual factors (Njeri M. L., 2012; Kimani-Murage et al 2014). Breastfeeding is a social behaviour rather than a medical practice and as a result faces particular challenges that are differentiated. Therefore, differentiated interventions from the conventional health systems are required in order to promote, support and protect optimum breastfeeding practices (UNICEF, 2010).

Maternal characteristics such as education, economic status, age and marital status among others have been found to have an association with breastfeeding (Patel et al 2006, Kristiansen et al, Kimani-Murage et al 2011). Evidence from various studies have indicated that exclusive breastfeeding practices are to some extent affected by maternal level of education or the level of awareness of the benefits of the practice. For instance, the prevalence of exclusive breastfeeding in Togo among women who were educated was higher compared to those who had no education (UNICEF, 2008). The amount of information and knowledge about breastfeeding has been found to be positively linked to the initiation, exclusivity and duration of exclusive breastfeeding (Njeri, 2012).

Generally, a lack of understanding of optimal infant and young child feeding practices as well as insufficient support from family, community members, health service providers and work environments negatively affects exclusive breastfeeding practices. The occurrences of breastfeeding problems during lactation have also been found to have an effect on breastfeeding as a whole. Moreover, breastfeeding is a learned behaviour and mothers need skilled support in order to learn suitable techniques of ensuring the baby is breastfed optimally (Quinn *et al*., 2006).

Cultural beliefs and practices have been shown to greatly have an impact on the practice of initiation and exclusive breastfeeding in different countries and regions. These beliefs include colostrum being harmful to new-borns, the transmission of disorders or diseases to infants via breast milk and mothers having insufficient breast milk among others (Njeri M. L., 2012, Kimani-Murage et al. 2014). Such beliefs have led to mothers discontinuing exclusive breastfeeding in favour of complementary foods. Many cultural practices on breastfeeding do not agree with the recommended

period of 6 months for exclusive breastfeeding. However, these practices vary from one region to another, thus exclusive breastfeeding promotion efforts need to be tailored to counter the negative myths and practices according to the targeted region (Quinn et al., 2006; UNICEF, 2010).

The developed policies on infant and young child feeding and the implemented programs have also been found to affect the practice of exclusive breastfeeding. A report by (UNICEF, 2010) indicated that such interventions do not receive the attention and resources required to deliver the desired impact often enough. These programs have been faced by challenges of lack of coordination, unsustainability, failure to take into consideration the socio-cultural behaviours and barriers; and are focused on short term improvements. These interventions need to inform and empower health practitioners tending to the mother and community at large in ensuring optimal breastfeeding practices are embraced.

Moreover, many countries are yet to fully enforce the International Code of Marketing of Breast-milk Substitutes which mainly aims to protect and promote breastfeeding as well as the proper use of breast milk substitutes. Therefore, if these factors can be considered in line with the underlying challenges during implementation of interventions, breastfeeding stands a chance to becoming the most important child survival intervention especially in developing countries (Sokol et al., 2007).

2.5 Summary of Literature

Globally, exclusive breastfeeding prevalence for infants younger than 6 months of age has increased in the past years. The prevalence increased almost in all regions in the developing world with considerable improvement made in Sub-Sahara Africa (1995-

2010). However the prevalence of exclusive breastfeeding remains far too low in many areas of the developing world far below the widely accepted "universal coverage" target of 90% coverage (Jones et al 2003) and suggests the need for an urgent acceleration of efforts to scale up effective programs in promoting exclusive breastfeeding (UNICEF 2010). Studies that have been done in Kenya have shown that the social-cultural factors, maternal characteristics, beliefs and norms that influence exclusive breastfeeding vary in different setting and communities. A search in the literature has also shown many studies related to factors influencing exclusive breastfeeding carried out in other counties in Kenya. However there are information gaps in the factors influencing exclusive breastfeeding in Wajir County. In this regard, this study aimed to investigate the factors influencing exclusive breastfeeding and establish the prevalence of exclusive breastfeeding in Wajir County, Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Study Setting and Population

3.1.1 Study area

The study was carried out in Wajir County which is the second biggest County in the Republic of Kenya after Turkana County with a surface range of 56,501 Sq. Km roughly 10% of the nation's territory mass. Wajir County is in North Eastern Kenya and is mainly inhabited by the Kenyan Somalis who have common cultural and religion practices. The predominant livelihood activity among the Somalis is Pastoralism. The County is characterized by chronic food insecurity, high rates of malnutrition, illiteracy and high infant and maternal mortality. The county is gazetted as part of arid and semi –arid lands of Kenya where rainfall is unpredictable, erratic and inadequate. Wajir County has a poverty rate of 84.0%, almost double the national rate of 47%. Wajir is ranked the 45th poorest county out of 47 counties in Kenya. Wajir County is one of the counties with the highest burden of malnutrition among the under-fives in Kenya with over 26% of the children having stunted growth, 14% wasted and 21% underweight (KDHS-2014). The study was conducted in Wajir County Referral hospital in Kenya which is in Wajir town and geographical centre of the County.

3.1.2 Study Population

The study participants were mothers of infants aged 0-<6 months from both rural and urban area who are resident of Wajir County and attending Wajir County Referral Hospital during the study period. The mothers/care-provider of these children was the source of information for the questionnaire. The target population for the study was 124 mothers with children 0-<6 months.

3.1.2.1 Inclusion Criteria

- Women of reproductive age (15-49 years) who are biological mothers of infants aged 0->6 months, attending Wajir County Referral Hospital, MCH and OPD section.
- The mother must be resident from the study area or must have been living in the area for the last one year before the study.

3.1.2.2 Exclusion Criteria

- Refusal to participate in the study
- Mothers with infants 0-<6 months but not willing to disclose information related to breastfeeding.
- Mothers of infants with illness that contra-indicate breastfeeding or those with medical condition in which breastfeeding was contraindicated.

3.2 Study Design

Cross-sectional descriptive study was conducted in Wajir County Referral Hospital MCH and OPD section; both qualitative and quantitative methods of data collection were employed. The variables that were used in this study were current breast-feeding practices, use of complementary liquids and foods in the past 24 hours and feeding frequency.

3.3 Sampling Technique and Procedure

Wajir County Referral Hospital was purposively selected since it is the largest referral Hospital with the highest attendance of patients or medical seekers in the County and it is assumed that many patients from all over the County come to the Hospital. This government hospital was selected because it has MCH and OPD sections; it also has large number of clients. Systematic sampling procedure was employed to choose the

study participants and this was done by picking the first participant randomly and every subsequent 3rd mother/child pair until the specified sample size was achieved. The average mother with infants 0-<6 months of age that visited the clinic daily was 30 as reported by the medical officer. During the pre-test it was established that at maximum 10 participants can be interviewed per day. The sampling interval was calculated by dividing 30 by 10 to get interval of 3. The first mother to be interviewed was selected by simple random sampling using Random number Table to select the first mother to be sampled, then the sampling interval was used for the next respondent. All mothers with infants aged 0-<6 month's visiting the MCH or OPD for vaccination, PNC or any other purposes were included in the study.

3.4 Sample Size Determination

The sample size selected for this study was 124 mothers with children 0<6 months old.

The sample size was calculated using this formula

NO= $Z^2p\ (100\text{-}p) / e^2$

NO= the desired sample size

Z = the standard normal deviation at 95% confidence interval (1.96)

P = the proportion of the target population that are estimated to be exclusively breastfeeding. This is estimated using national prevalence of exclusive breastfeeding which is 61% according to Kenya demographic health survey (KDHS, 2014-15)

e= desired level of precision or margin error on P

NO= $\underline{(1.96)^2 61(100\text{-}61)/9^2 =}113.$

10% was added to cater for non-response. So the final sample size estimated was 124

In-depth interviews were held with mothers with children less than six months and their response were recorded.

3.5 Research Tools

3.5.1 Questionnaires

A questionnaire with both closed and open ended questions was used to gather data regarding maternal demographic characteristic i.e. age, marital status and sex, knowledge of breastfeeding by the mothers, source of breastfeeding information, delivery history e.g mode of delivery and infant characteristics (age and sex).

3.5.2 In-depth Interview Guides

The in–depth interviews were meant to obtain information regarding exclusive breastfeeding and infant feeding practices with a special focus on mother's knowledge and beliefs on exclusive breastfeeding. Also it was to elicit factors that affect exclusive breastfeeding and knowledge of colostrum; the first breast milk.

3.5.3 Pre-testing of the Questionnaire

The questionnaire was pre-tested and the necessary adjustment were made to the questionare before the actual data collection.The questioniare was pre-tested for clarity and reliability in Habaswein Sub Count Hospital in Wajir south. During the pre-test the principal investigator also ensured research assistants understood the questionnaire properly and interviews were conducted in consistent manner. Ten respondents from the target population were interviewed and responses assessed by principal investigator. Some questions were re-framed after the pre-testing in order to add necessary and vital information.

3.5.3.1 Validity of the Tool

Research assistants were trained and were taught on standardized way of asking questions and recording responses. The research assistants did the pre-testing with lead investigator to ascertain their understanding on the questionnaire, responses

recorded by the research assistants were compared with the ones recorded by the lead investigator and specific observations and adjustments were recommended. Questionnaires were checked on a daily basis during the data collection to ensure they were filled properly and an incomplete one was checked before the next day interview.

3.6 Data Collection Techniques and Procedures

Structured and semi-structured questionnaires were used in data collection in order to obtain all the necessary information regarding the research. The questionnaires were developed and designed in English and afterwards translated into the local language (Somali) for consistency by research assistants when asking questions to participants. Mothers were asked for informed consent before administering any question and upon agreeing to take part in the study. A total of 124 mothers were interviewed and their responses recorded in this questionnaire, most of the interviews took 30 minutes. The interviews were conducted in a private room at the MCH in Wajir County Referral Hospital. The principal investigator alone interviewed 10 participants for in-depth interview. The interviews were tape-recorded and observations were recorded on a note book. Open ended and close ended questionnaires were used in collecting data.

3.6.1 Training of Research Assistants

Two research assistants were trained for the data collection exercise, the research assistants were selected from Wajir County and precisely Wajir town where the study was being conducted, those selected spoke English and Kiswahili fluently and Somali was their mother tongue. They had also good experience in data collection on previous assessments and surveys related to nutrition and health. A comprehensive three days training was conducted which was followed by practical exercise of filling

the questionnaire from the field. The aim of the training was to make them comprehend well the aim of the study and how to ask and record responses of the study participants correctly. The ethics of the study was mentioned and the trainer (investigator) emphasized the importance of asking for consent and respecting participants' views and choice during the data collection.

3.6.2 Quantitative Methods

Questionnaire-based interviews of mothers of the index children (*n*) who came to the selected health centre were conducted. The researcher and his assistant asked face to face questions to the selected mothers and recorded the correct responses as given by the mother.

Questionnaires were administered on infant feeding practices; all the respondent responses were captured in the questionnaire. All the respondents who participated in the study were mothers visiting the hospital during the data collection exercise and who fulfilled the inclusion criteria.

3.6.3 Qualitative Methods

An in-depth interview guide containing questions related to infant and young child feeding was used. In-depth interviews were used to get in-depth information on the attitudes, cultures and religious beliefs about exclusive breastfeeding and all in-depth interview guides were translated to local language. The interviews were tape-recorded, and additionally the responses were recorded on a note-book. Ten (10) in-depth interviews were held by the lead investigator with mothers of infant aged 0-<6months to illicit more information on exclusive breastfeeding and to give extra explanations to the quantitative data, most of interviews took 20-25 minutes. The data

from the quantitative interview and qualitative were analysed differently but combined during the data interpretation.

3.6.4 Data Management

Data obtained through interviews during the field were audio taped through sound recorder. Data were transcribed and responses arranged in categories and were then transferred to computer with protected password. All the data collected through the questionnaire for the quantitative data were kept by principal investigator (researcher) in a safe place. At the end of the data collection all the data were transported to Nairobi by the investigator with utmost care for data entry. Data was checked, cleaned and entered into SPSS software for analysis, data entry was done by the investigator and a research assistant.

3.6.5 Variables

3.6.5.1 Dependent Variables

Exclusive breastfeeding for the first six month among mothers of infant 0-<6 months of age of life was the dependent variable. Exclusive breastfeeding is defined as giving an infant no other food or drink, not even water, except breast milk (including milk expressed or from a wet nurse) for 6 months of life, but allows the infant to receive ORS, drops and syrups (vitamins, minerals and medicines) (WHO 2001).

3.6.5.2 Independent Variables

The independent variables were many and included knowledge of the mother on exclusive breastfeeding, beliefs, social- cultural influence, age, education level, perception and occupation. Also place of delivery, source of breastfeeding information, mode of delivery. Infant characteristic was determined by recording age

of the infant in month and infant sex. Other independent variables included source of breast-feeding information and maternal knowledge on breast-feeding practices.

3.7 Data analysis and Presentations

In the study, Quantitative data checked, cleaned and coded by the using Statistical Package for Social Sciences (SPSS) software latest version 20.

Means, median, range and standard deviation was calculated for continuous variables. Histograms or pie charts were used to display the data. Descriptive statics (Frequencies, Percentages, mean and standard deviations) were used to describe infant characteristics (sex and age), infant feeding practice, and source of breastfeeding information, exclusive breastfeeding, maternal delivery history and maternal socio-demographic characteristics. Chi-square test was used to test the association between practice of exclusive breastfeeding and categorical variables. A P-value of 0.05 was used as standard for statistical significance.

For the qualitative analysis data from the in-depth interviews was recorded and all responses arranged in categories and then coded manually, data was also translated from Somali to English. Data were then triangulated with the main data from the questionnaire and presented based on the study objectives. Words frequency query was run first to have a feel of what people were saying before creating themes and categories.

3.8 Dissemination of Results

The results of this research will be shared with both the County Health Management Team and the Hospital administration. A special meeting will be organized for the county executive in charge of health and hospital administration and the final results of the research will be presented. The findings will also be shared with the national

government through the ministry health to guide it for future nutrition intervention in Wajir County.

3.9 Ethical Considerations

Ethical clearance was sought from Institutional Research and Ethic Committee (IREC) of Moi University and thereafter further permission was sought from the Wajir County Referral medical officer. Participants were informed that taking part in the study was voluntary and were free to withdraw from the study at any time. The study aim, objectives, risks and benefits were explained to the participants and informed consent was sought before their participation or interviews. The researcher and assistant informed the respondents about their right to withdraw from the study or decline to respond to any question they considered as unsuitable. Women aged 15-17 years who have children are considered emancipated minors and therefore able to give consent. Therefore, consent was sought from them but we also sought permission to have them participate in the study from their guardian/parent or spouse whichever was appropriate. In order to keep confidentiality of the participants, no names were recorded rather an identity number was assigned to each participant. All participants were assured anonymity that the information they gave would be used only for research purpose.

3.9.1 Beneficence and risk

The study has no immediate benefits to the participants. However, it was envisioned the study outcome will help health policy makers in the county to define the most important question and look for strategy for promotion of exclusive breastfeeding in the county. The study equally had no risk to the participants at all and the researcher made sure that no element that poses any risk was included in this study.

CHAPTER FOUR

PRESENTATION OF THE FINDINGS

This chapter covers the analysis part of the research. It gives the general information of the respondents which includes the socio demographic characteristics. It also tackles the research questions where each of the questions is answered by the analysis of the obtained data and presented through figures and tables.

4.1 Characteristics of the Study Population

4.1.1 Maternal Socio-Demographic Characteristics

Maternal socio-demographic characteristics such as age, marital status, occupation and education were investigated. A total of 124 participants with children 0-<6 months were interviewed with majority of them being between 20-30 years, the youngest were 20 years and the eldest 39 years. The median age of the mothers was 25 years. Majority (88.7%) of the mothers were married, 5.6% were divorced, and the same proportion of 5.6% widowed. The majority of the mothers (66.1%) had non-formal education, followed by 13.7% that had primary education, the next group had a representation of 8.9% and had obtained secondary school education while just 4.8% of the respondents had university education and above. Majority of the participants, (64.5%) were house wives while 16.9% were business women, less than 1% of the respondents were students. This information is presented in Table 4.1.

Table 4.1: Demographic Characteristics of the mothers

Demographic characteristic of mothers		N=124
	Response (n)	%
Maternal age(years)		
Median(range)	25(19-25)	
Marital status	No=124	100%
Married	110	88.7
Divorced	7	5.6
Widowed	7	5.6
Education level	No=124	100%
Non formal education	82	66.1
Primary	17	13.7
Secondary	11	8.9
College	8	6.5
university and above	6	4.8
Mother's occupation	No=124	100%
Housewife	80	64.5
Pastoralist	3	2.4
Business woman	21	16.9
Employed	19	15.3
Student	1	0.8

4.1.2 Infant Characteristics

A total of 124 children were included in the study, the mean age of the children in months was 3.4 months, with the median 3 months. Of the children included in the study, 55% were female while the male children accounted for 45%.

Table 4.2: Infant Sex and Age

Statistics: Infant Characteristic Age of Infant in months		
N		**124**
Mean		**3.5**
Median		**3.0**
Sex of the baby	**N**	n
	124	%
Female	68	54.8
Male	56	45.2

4.2 Place and Mode of Delivery

Majority of the participants (90%) reported to have delivered their babies at the health facility/hospital and (10 %) had their babies delivered at home. Majority of the reported deliveries (89.5%) were conducted by health workers, 8.1% were assisted by relatives at home while the rest, 2.4% were assisted by TBA (Figure 4.1).

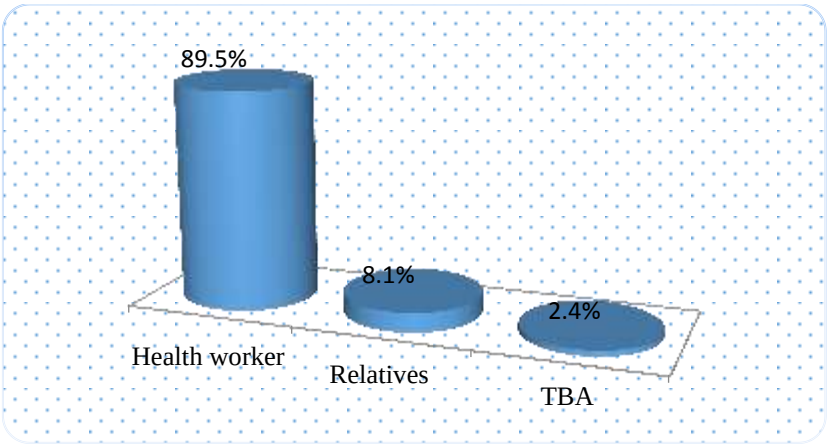

Figure 4.1: Person who Assisted Mother During Delivery

Most of the mothers (83.9%) had normal delivery which were assisted by skilled birth attendant, 13.7% went through caesarean delivery while the rest, (2.4%) developed complications but were successfully assisted to deliver by health care workers (Figure 4.2).

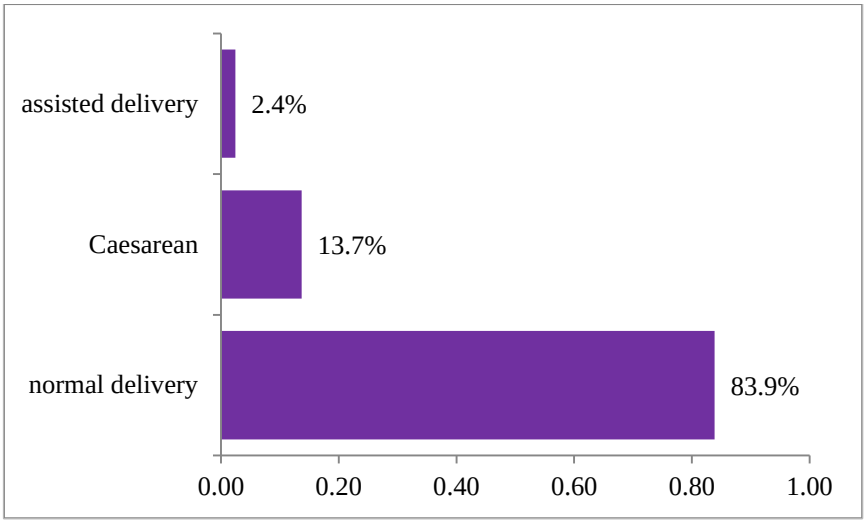

Figure 4.2: Mode of Delivery

4.3 Infant Feeding Practices among Study Participants

Information and data on infant and young child feeding practices was gathered with a major focus on exclusive breastfeeding. Data was collected on how soon breast feeding was initiated, reasons behind delay in breastfeeding, cases of replacement or supplementary feeding and thereof. In this study majority of the infants 92% were breastfed while 8% were never breastfed since birth.

4.3.1 Infant Feeding Practices Since Birth

The figures 4.3, 4.4 and 4.5 present information on infant feeding practices since birth. Majority of the mothers (92%) reported to be breastfeeding their children while 8% of the mothers indicated that they were not breastfeeding their children. Of all the mothers who breastfed their children after birth, 38% indicated that they breastfed their children immediately after delivery while 19% cited they initiated breastfeeding with an hour, while 10% could not remember.

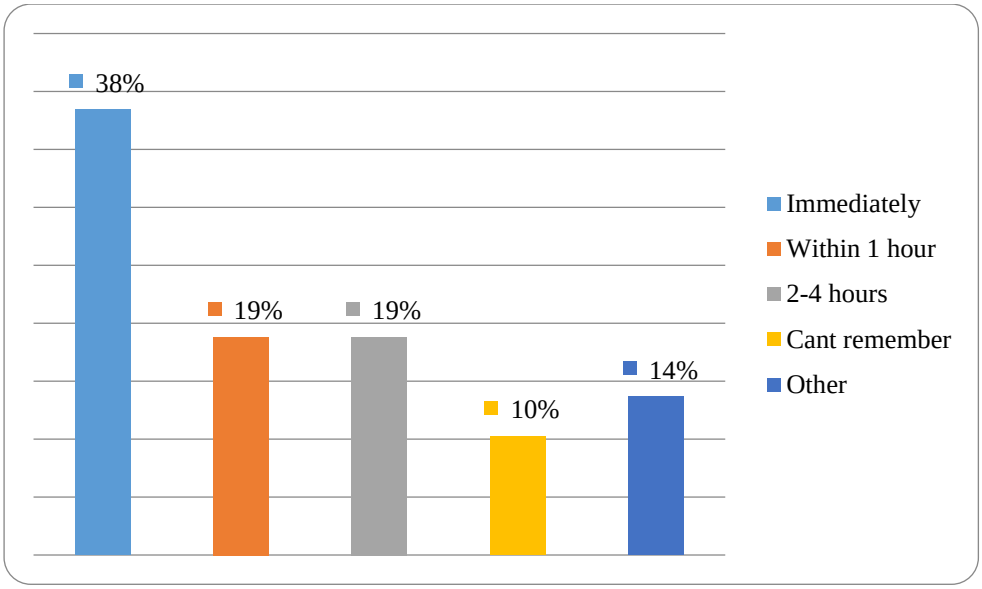

Figure 4.3: Timing of Breastfeeding Initiation

Delivery complications or Caesarean was the major reason for delay in child breastfeeding at 32.8% followed by delayed milk secretion by the mother at 31.1% (Figure 4.4).

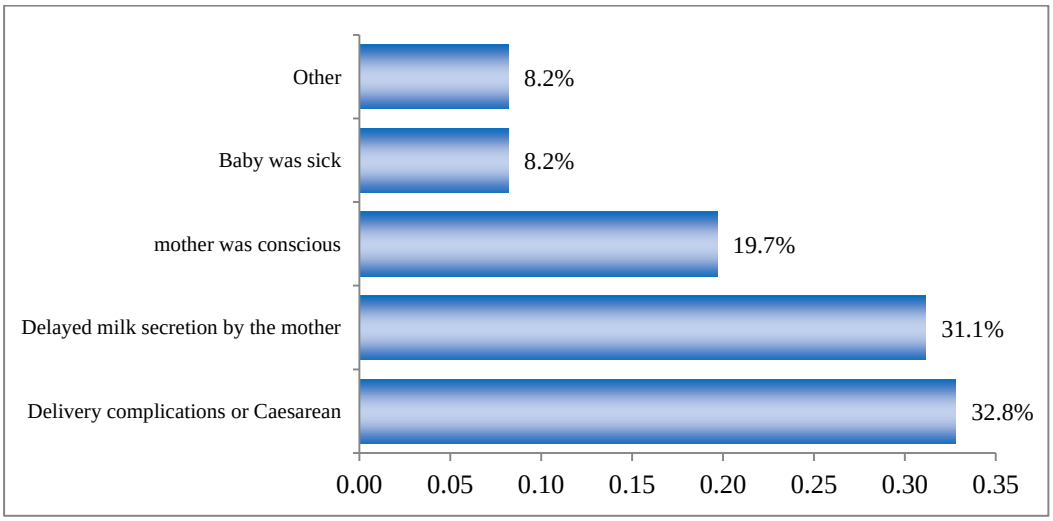

Figure 4.4: Reasons for Breastfeeding Delay

Nearly more than half of mothers cited that they had given their children other complementary foods other than breast milk. Figure 4.5 shows that 56.0% of the mothers had given their babies other foods and fluids apart from breast milk, while the rest 44.0% exclusively breastfeed their babies. Mothers also indicated that milk

was the major alternative given to children accounting for 84.9% followed by water at 9.4% (Fig 4.5).

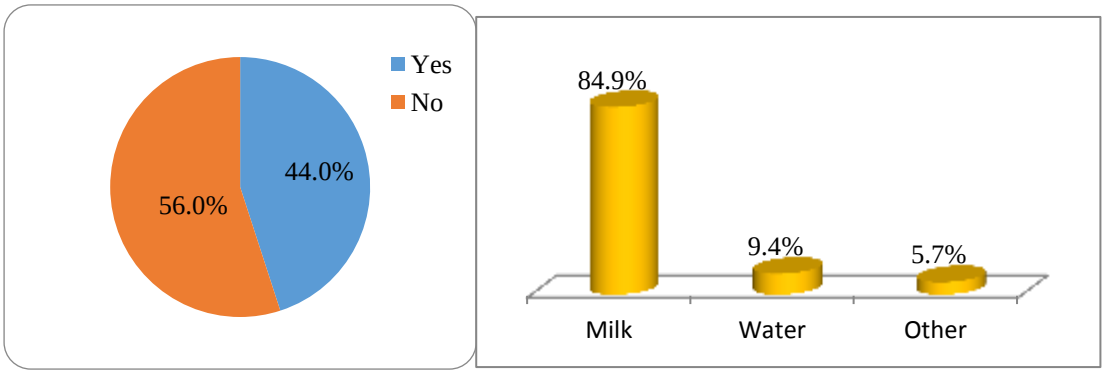

Figure 4.5: Proportion of infants given food other than breast milk and the Alternatives foods given to the infant

Exclusive breastfeeding which was define by feeding infant with breast milk only for the first six month of life was practised by 44% of the study participants, the remaining mothers 56% didn't breastfed exclusively as shown above. This is lower than what was reported in KDHS, 2014-15 in which 61% of children less than six month are reported to have been exclusively breastfed. The prevalence of exclusive breastfeeding since birth decline with the age of the child, the prevalence of exclusive breastfeeding was 64% at 0-1 months, 44.0% at 1 month, 41.2% at 2 month, 28% at 3 month, 22% at 4 months, 15.1% at 5 month and 8% at 6 months. Other literature views have reported similar result where the rate is high during the first month of the child but decline as the child grew. The same was also reported in the KDHS 2014 in which breastfeeding was regarded as nearly universal during the first month of life, but the proportion dropped to 42% by the time a child is 4-5 months old.

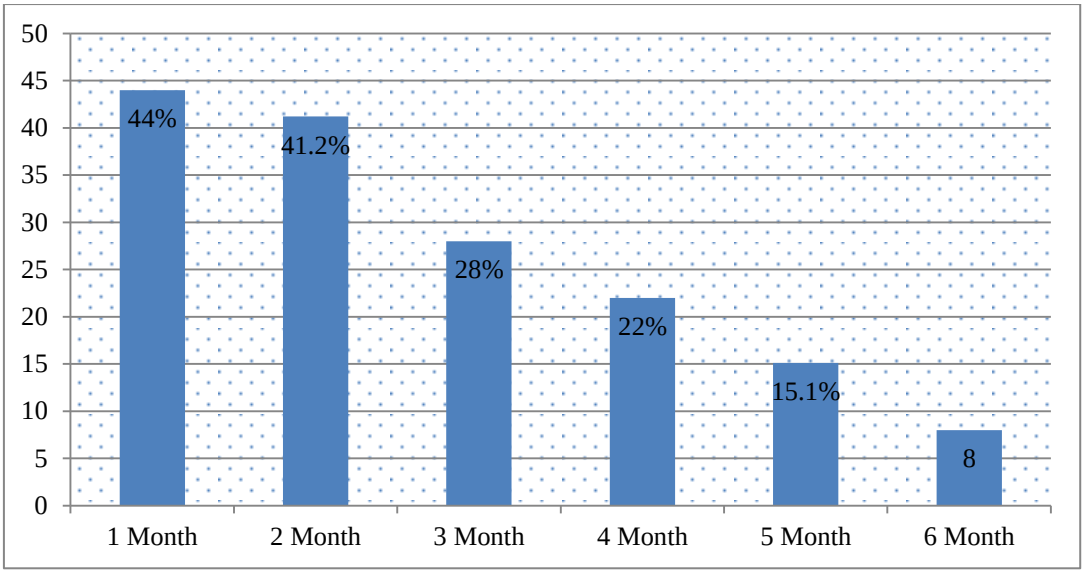

Figure 4.6: Percentage of Infants Exclusively Breastfed by Age

4.3.2 Factors that Contributed to Mixed Feeding of Infants

A small proportion of mothers reported that their decision to give foods other than breast milk was influenced by a health worker (21.4%). Most women gave alternative foods to the baby as a result of their parents (baby's grandmother) advice and out of their own decision these were represented by (37.5%) and (39.3%) respectively.

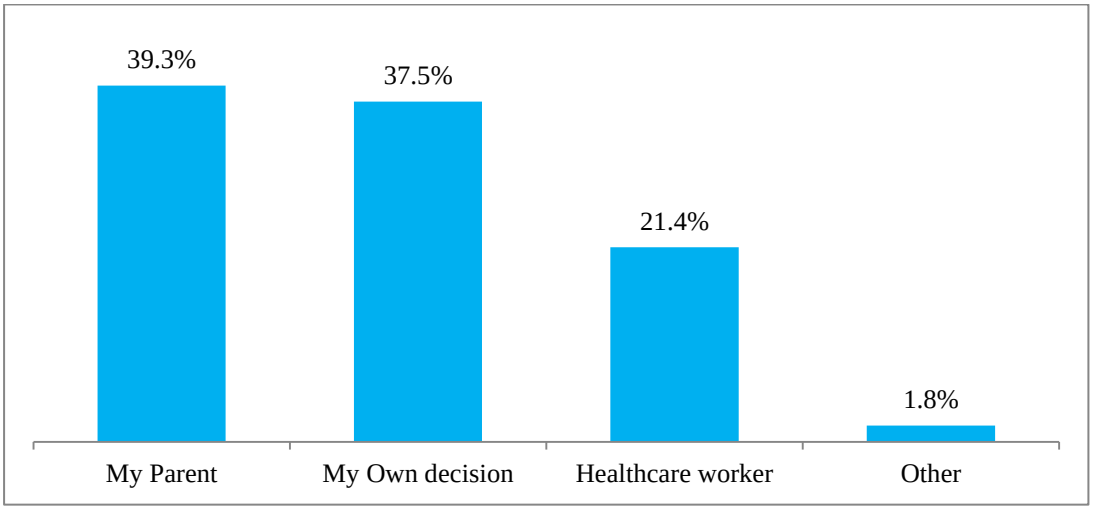

Figure 4.7: Person who Advised Mother for the Mixed Feeding

Mother's illness and delayed milk secretion were the two major reasons for the alternative foods given to the children represented by 26% and 22% respectively in Table 4.3.

Table 4.3: Reason for Giving the Infant other Food or Liquid

Reasons	Frequency	Percentage
The Mother was unwell	13	26.0%
The child was unwell	5	10.0%
Delayed production of milk by the mother	11	22.0%
Other	21	42.0%
Total	50	100.0%

It was also clear from the results that most mothers gave these complementary foods as early as the first month of delivery and second month. Almost half (56%) were given other food or liquid as early as first month as shown in Table 4.4.

Table 4.4: Duration before Giving other Foods to Infant

Duration	Frequency	Percentage
1 Month	22	44.0%
2-3 Months	14	28.0%
4-5 Months	10	20.0%
6 Months	4	8.0%
Total	50	100.0

4.3.4 Previous Breastfeeding Practices

The study was aimed to cover early feeding practices of mother based on previous children the mother has had. More than half of the mothers (61.3%) indicated that the children they were breastfeeding was between second and third born. Only 13% of the mothers reported to be breast feeding their fourth child and above while the mothers who indicated to be breastfeeding their first born were twice this figure at 26%.

Table 4.5: Birth ranking

		Frequency	Percent	Valid percent
	1ST Born	32	26	26%
	2nd to 3rd Born	76	61	61%
	4th born and above	16	13	13%
	Total	124	100.0	

More than half of the mothers (53.6%) indicated to have breastfed their first child for a period between six months and one year. Mothers who had breastfed for a period of one and a half years to two years had 20.2% representation while just 4.8% of the mothers indicated that they breastfed their first child for less than six months. Of the mothers who reported not to have breastfed their first child 28.6% of them cited delay in production of breast milk as the cause. About 14.3% of the mothers were working and they that they had no time for breastfeeding.

Table 4.6: Duration of first child breastfeeding

		Frequency	Percentage
	Less than 6 months	4	4.8%
	6months - 1yr	45	53.6%
	1yr - 1.5yrs	11	13.1%
	1.5yrs - 2yrs	17	20.2%
	Above 2years	7	8.3%
	Total	84	100.0

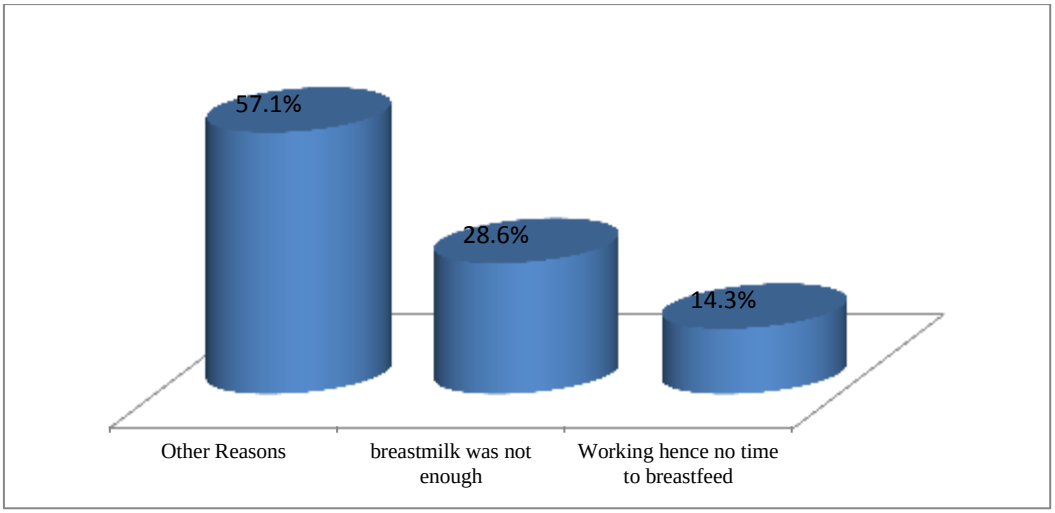

Figure 4.8: Reasons for not Breastfeeding First Child

4.4 Mothers Knowledge about Exclusive Breastfeeding Practices

Most of the mothers knew that exclusive breastfeeding could sustain a baby in a healthy condition for six months. Almost all the mothers (96.0%) knew the importance of colostrum as healthy for the baby while 58% stated that breast milk alone was sufficient for the baby in the first six months. This finding is similar with study carried out by (Shirma, 2001) which showed good knowledge of mother on the importance of colostrum to the infant. The study is also related to (Njeri, 2012) which reported 95.3 % of the study participant stated the importance of colostrum. The study generally reported that most mothers had good knowledge on breastfeeding.

Figure 4.9: Importance of Colostrum and Breast Milk for the first 6 Months

In addition, a third of the mothers (29.3%) reported that a child should be breastfed at least five times in a day, those of the opinion that the child should be breastfed each time he or she cries were 21.1% while just 0.8% reported that the child should be breastfed less than twice in a day.

Table 4.7: Number of times baby should be breastfed per day

		Frequency	Percent
	Less than 2 Times	1	0.8%
	2-4 Times	3	2.4%
	3-4 Times	30	24.4%
	5 Times and above	36	29.3%
	When he/she cries	26	21.1%
	Other	27	22.0%
	Total	123	100.0%

More than three quarters of the mothers (80.3%) cited that it was important to start giving complementary foods to the child only after six months and 17.2% reported that complementary foods could be given to the child after just three months from delivery.

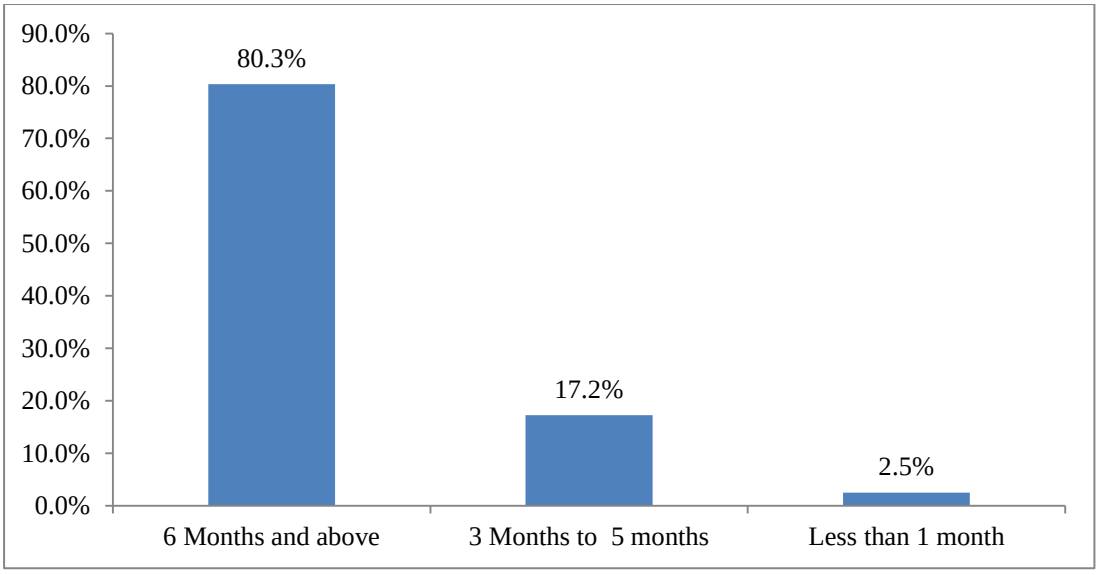

Figure 4.10: Right Time to Start Complementary Foods

4.4.1 Pre-natal Healthcare and Breastfeeding Education

Majority of mothers (96%) have visited ante natal clinics for regular check-up and advice from health practitioners. However, 4% of the mothers did not visit any ante natal clinic at all during pregnancy. Those attended the ante natal clinic got health education which included exclusive breastfeeding and other infant feeding practices.

4.4.1.1 Information on Breastfeeding Received during ANC visits

Nearly all the mothers (93%) had at least been advised by someone on breastfeeding. Of these mothers, 48% of them mentioned that the information they obtained was regarding exclusive breastfeeding while 41.5% of the mothers indicated they obtained information on the importance of breastfeeding. Figure 4.12 represent these findings.

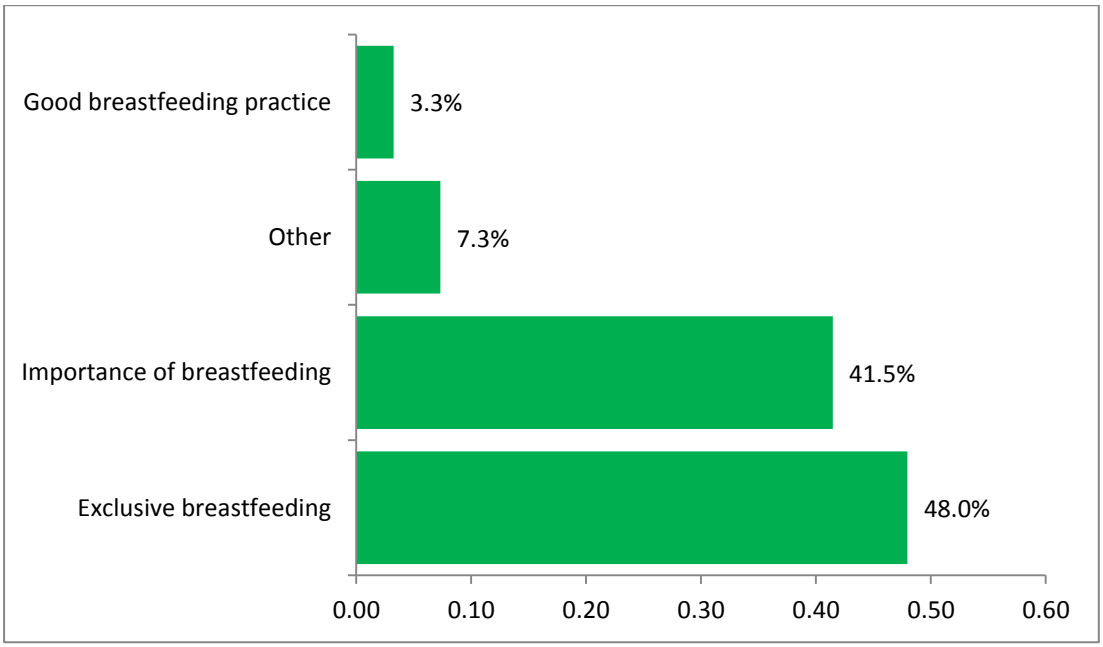

Figure 4.11: The Information Obtained About Breastfeeding.

4.4.1.2 Awareness about Exclusive Breastfeeding

Majority of the mothers (71%) had heard about exclusive breastfeeding and had good knowledge about it. This information was largely obtained from health practitioners

as indicated by 94.4% of mothers in Figure 4.13. The media had accounted for just 2.2% of creating this awareness

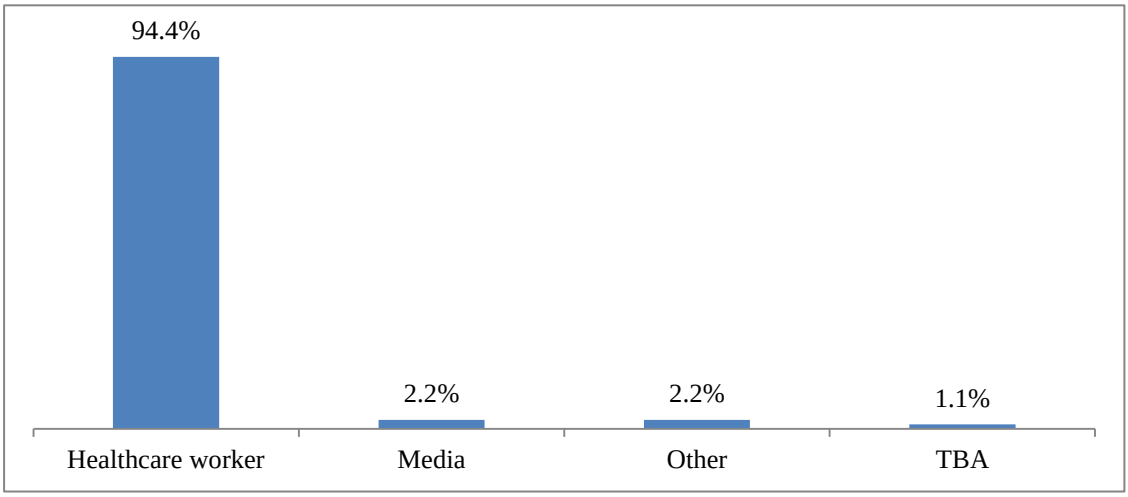

Figure 4.12: Source of Information about EBF

4.4.1.3 Education on how to Breastfed the Infant

In this aspect of education on breastfeeding, mothers mentioned the people who influence on how to breastfeed infants. The findings reveal Parents (baby's grandmother) played major role in education as 41.8% of the educated mothers cited that they were educated on breastfeeding by their mothers. Only 25.3% were educated by health works.

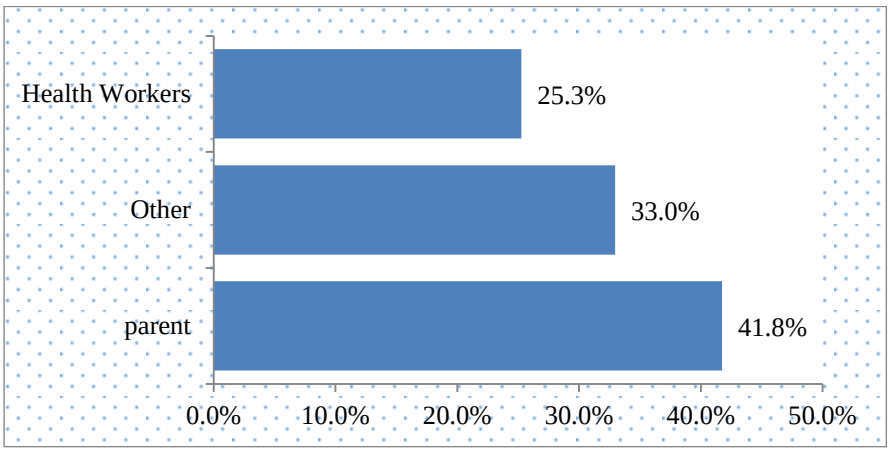

Figure 4.14: Person who Taught Mother on how to Breastfeed the Infant

4.4.1.4 Knowledge of the Correct Attachment of the Infant while Breastfeeding.

More than half of the mothers (54%) reported that they had knowledge on how to attach a baby while breastfeeding. Similarly for this case, parents were reported to have major roles in disseminating such information as 36.6% of mothers received information from them. Health workers were least mentioned in this role as they had a representation of 24.7%.

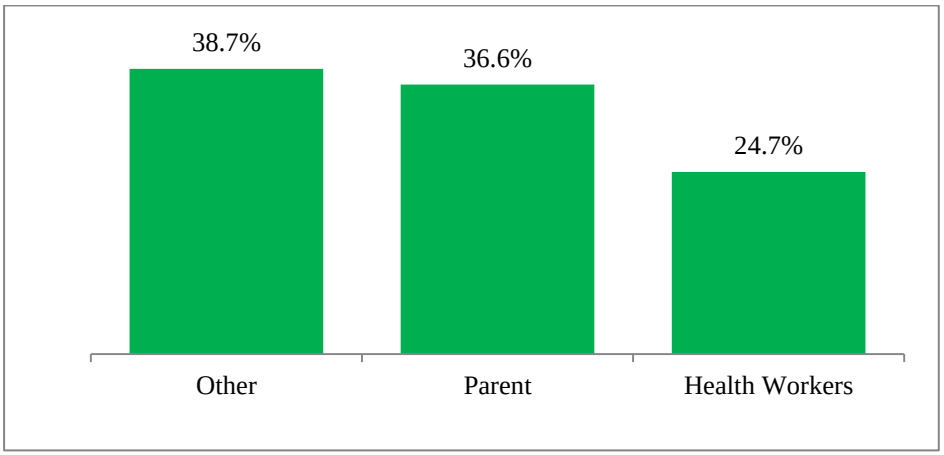

Figure 4.14: Person who Taught Mother the Correct Attachment and Positioning of the Infant

4.5 Factors Associated with Adherence to Exclusive Breastfeeding among Study Participants

Bivariate analysis was done using Chi-square to test the relation of the independent variables with exclusive breastfeeding. Maternal social- demographic; marital status, occupation, education, place and type of delivery, infant sex and maternal knowledge were all investigated. Some of the independent variables were shown to have significant association with exclusive breastfeeding. The results of the bivariate analyses have shown that maternal socio-demographic characteristics (education and number of children), maternal knowledge practice and place of delivery were

significantly associated with exclusive breastfeeding. The results of the analysis are presented in Table 4.8

4.5.1 Maternal Socio-Demographic Factors of the Respondents and their Relation with Exclusive Breastfeeding

Maternal socio-demographic such us education, occupation and marital status were all investigated and their significant relationship with exclusive breastfeeding was tested with chi-square. The study finding in Table 4.8 below shows the relationship between education level and exclusive breastfeeding. The results show that education had influence on exclusive breastfeeding. The study found that most mothers who had attained higher education levels practice exclusive breastfeeding. The relationship between education level and exclusive breastfeeding was tested at 5% level of significance with a 2-tailed significance test. The chi square test revealed a x^2 value of 1.52 and significant value of P=0.02 indicating that there was a positive significant relationship between education level and exclusive breastfeeding. Almost all (90%) of the mothers with education level of secondary and above among the study participants had practiced exclusive breastfeeding. The findings of this study showed no significant relationship between maternal occupations and exclusive breastfeeding (chi square test; P= 0.75) as presented in Table 4.8

Table 4.8: Maternal Socio-Demographic Characteristics of the Respondents and their Relation with Exclusive Breastfeeding

Variable	Responses	Do you breastfeed your child now?		X^2	P-value
		Yes (%)	No (%)		
Education level	Non formal education	77(71.3)	4(36.5)		
	Primary	12(11.1)	4(36.5)	1.52	0.02
	Secondary	8(7.4)	1(9.0)		
	College	7(6.5)	1(9.0)		
	University and above	4(3.7)	1(9.0)		
Mother's Occupation	House wife	72(64.3)	6(85.7)		
	Pastoralist	3(2.7)	0		
	Business woman	19(16.9)	0	1.90	0.75
	Employed	17(15.1)	1(15.2)		
	Student	1(1.0)	0		
Mother's marital status	Married	100(89.2)	6(85.7)		
	Divorce	6(5.4)	0	1.277	0.528
	Widow	6(5.4)	1(14.3)		

Marital status was also found not significantly associated with exclusive breastfeeding. The chi square test showed P-value of 0.58, value greater than the critical value of 0.05 indicating no significant relationship.

4.5.2 Child Sex, Place and Mode of Delivery and Initiation of Exclusive Breastfeeding

Other factors such as place of delivery home or health facility, mode of delivery; caesarean or normal delivery and child sex were also examined to establish their relationship and influence with exclusive breastfeeding. The result of the Chi-square analysis is presented in the Table 4.9. The results of the analysis showed that most mothers who delivered in the hospital and breastfeed their children. While a small proportion of mothers deliver at home but breastfeed their children too. The

relationship between place of delivery and exclusive breastfeeding was tested at 5% level with 2-tailed significance test. The chi square test revealed a significant value of x^2= 0.08 and p value of 0.03 which is a value less than 0.05 thus indicating that there was significant relationship between place of delivery and exclusive breastfeeding as shown Table 4.9. In the in-depth interview a mother reported "The *nurses told us to immediately put the infant on the breast if you deliver in the hospital so that he/she sucks the first milk".* Mothers who gave birth in the hospital were found to begin breastfeeding their infants immediately and will probably practise selective breastfeeding than mothers who delivered at home. The results have further showed that delivery mode has no influence on exclusive breastfeeding practice. The relationship between delivery type and exclusive breastfeeding was tested at 5% level with 2-tailed significance test. The Chi square test revealed a value of x^2= 4.36 and p value of 0.11 which is a value greater than 0.05 thus indicating that there was no significant relationship between delivery type and exclusive breastfeeding.

Table 4.9: Child Sex, Place and Mode of Delivery and Initiation of Exclusive Breastfeeding

Variable	**Responses**	**Do you breastfeed your child now?**		**X^2**	**P-value**
		Yes (%)	No (%)		
Place of delivery	Health facility/hospital	100(89.2)	6(85.7)		
	Home	12(10.8)	1(14.3)	0.086	0.039
	Traditional birth attendant	0	0		
	Others	0	0		
Delivery type	Caesarean	12(10.7)	1		
	Assisted delivery	2(1.8)	1	4.357	0.113
	Normal delivery	98(87.5)	5		
	Elective caesarean	0	0		
Infant Sex	Female	63(56.2)	1(14.3)	4.667	0.031
	Male	49(43.8)	6(85.7)		

Infant sex was also investigated to establish it is relation with exclusive breastfeeding. Binary logistic regression was used to test the association between infant's gender and exclusive breastfeeding. The result of logistic regression has revealed significant relationship between infant gender and exclusive breastfeeding(X^2= 4.667, P=0.03). Infant female was more likely to be exclusively breastfed than infant male, 56.2% of the female infant were exclusively breastfed compared to 43.8% of the male. The information between mother's and child characteristic is presented in the Table 4.9.

4.5.3 Relation between Maternal Knowledge on Exclusive Breastfeeding and the Practice of EBF.

Majority of the mothers (71%) have heard about exclusive breastfeeding and had knowledge about it. The information related to excusive breastfeeding was mainly obtained from health practitioners during ante-natal and post-natal visit. Mothers were asked during the data collection to define exclusive breastfeeding and grouped into two categories; those who define exclusive breastfeeding as feeding the baby with only breast milk without liquid or food for six were considered as having EBF knowledge and those who couldn't state the period of EBF and how it is done were put into another group. The aspect of the knowledge being sought includes importance of colostrum, timely initiation of breastfeeding, breast milk alone for six months and introduction of complementary for six month. The results show that majority (81.3%) knew exclusive breastfeeding, while 18.7% didn't know it.

Table 4.10: Mothers Knowledge on Exclusive Breastfeeding Practices

Response	Percentage%
Feeding the baby breast milk only without giving any liquid or food for the first 6 months	81.3
Breastfeeding infant without giving any liquid or food For the first 4-5months	9.2
Breastfeeding infant without giving any liquid or food for the first 3 months	3.8
Breastfeeding the infant without giving any liquid or food for a month only	1.5
I don't know	4.2

Majority (89%) of the mother who exclusively breastfed their infants knew that exclusive breastfeeding could make their infant healthy. A chi-square test was done to

test the significance for the significant relation of exclusive breastfeeding and maternal knowledge on EBF.

Table 4.11: Factor Associated with Exclusive Breastfeeding-Chi-Square Test

Variable	**Responses**	**Do you breastfeed your child now?**		**X^2**	**P-value**
		Yes (%)	No (%)		
Education on breastfeeding	Yes	57(50.9)	3(42.8)	0.57	0.64
	No	55(49.1)	4(57.2)		
ANC attendance	Yes	91(98.2)	97(99)	4.667	0.11
	No	3(1.8)	2(85.7)		
EBF Knowledge	Yes	88(95.2)	37(25.7)	10.27	0.041
	No	6 (5.4)	19 (98)		

The results of the Chi-square analysis showed that there positive association between maternal knowledge and exclusive breastfeeding. The relationship between EBF knowledge and exclusive breastfeeding was tested at 5% level with 2-tailed significance test. The chi square test revealed a P value of 0.04, a value less than 0.05 thus indicating that there was significant relationship between EBF knowledge and exclusive breastfeeding by mothers.

4.6 Perceived Barriers to Exclusive Breastfeeding Practice

Mothers face various challenges in regard to practising exclusive breastfeeding. Such barriers include poor uptake of the knowledge on the importance of exclusive breastfeeding and continuous breastfeeding and cultural practices. These barriers were found to influence in even situations where the mother decided to exclusively breastfed. A total of 10 in-depth interviews were conducted to investigate further the barriers to exclusive breastfeeding. There were similarities and variation in regard to

quantitative and qualitative data in regards to the factor that influenced exclusive breastfeeding.

4.6.1 Mothers Knowledge on the Benefits of Exclusive Breastfeeding

Overall, the mothers have knowledge about breastfeeding. The mothers mentioned getting breastfeeding information during their visit to the health centre either for ANC, vaccination or other sickness, the message was relayed by nurse, midwife or doctors in the health centre as some mentioned in in-depth interviews. In regard to colostrum some mothers mentioned there is no difference between colostrum and other breast milk. One respondent in the in-depth interviews did not perceived colostrum as important to the infant:

''The health care workers told us the first milk is good for the baby but according to our culture we give infant camel or cow milk after birth, this is my third child and all of them were given camel or cow milk in first two days before starting breastfeeding''

(**Informant No. 8, 23 year old, house wife with no formal education**)

However almost all the mothers 96% acknowledge the importance of colostrum as healthy for the baby, while 58% stated that breast milk alone is sufficient for the baby in the first six month. In addition, a third of the mothers (29.3%) reported that a child should be breastfed at least five times in a day and More than three quarters of the mothers (80.3%) cited that it was important to start giving complementary foods to the child only after six months.

In the Chi-square analysis, results show significant relation between exclusive breastfeeding knowledge and exclusive breastfeeding. The results of the analysis showed (P= 0.04) a value less 0.05 indicating statistically significant relationship. This is consistent with the in-depth interview in which a mother reported that she is

exclusively breastfeeding her child because she was told the importance of exclusive breastfeeding during her ANC visit.

"*Importance exclusive breastfeeding to the child and mother was one of the topics that I was taught during my ANC visit, the nurse told me that I should not give the child any other drink or food during my last visit to the ANC, am exclusively breastfeeding my child now she is 2 and half month. My child is healthy now and exclusive breastfeeding is good for the baby and I will continue practicing***"** (**Informant No. 3, 31 year old mother with no education)**

In regard to the sufficiency of the breast milk, the data showed 58.1% of the respondents said that breast milk is sufficient for the infant for the initial six month of life and 49.9% revealed it is not adequate. Asked about if breast milk alone is sufficient **"***The health workers told me breast milk is enough for the baby during the first six month, they also told me the importance of giving the baby breastmilk alone during the first six month that is why am not giving the baby other fluids"*

(Informant No.1, a 24 years old mother with secondary education)

4.6.2 Perceptions, Attitudes and Beliefs on Exclusive Breastfeeding

Other factors that influence mother's decision on exclusive breastfeeding were noted. Even in situation where the mother decided to exclusively breastfeed, there was influence from other members of the family that can change her idea on how infants should be fed. In this study baby's grandmother are reported to have bigger influence on how infant are fed than health practitioners. For example 41.8% of the participants reported they were educated by their mother on how to breastfeed while just 25.3% of the respondent were educated by health care workers. Similarly parents were also seen to have major role on teaching the attachment of the baby during breastfeeding, 36.6% of the respondent received information from. While only 24.7% received the

information from health workers. Also 39.3% of the mother gave alternative food to the child due to advice from their parent (mother). In the in-depth interview one of respondents cited that her mother had influenced her to give water to the baby at the age of one month.

"*My mother advised me to give some water when the baby was one months old, she said it is hot and the child can't survive without water, I always take her words because she is my mother and she has also better experience on child caring"*

(**Informant No. 6, 27 year old with no formal education)**

Husbands also tend to influence how their children are fed and they tend to take greater responsibility especially in feeding. Also mothers seem to respect the decision of their husbands in regard to breastfeeding. One of the respondents narrated the way her husband had an influence on her decision to exclusively breastfeed:

"*My husband always told me to exclusively breastfeed when I give birth. He was working in Garissa and he always told me not to give the baby water when I give birth. This was my first born and I had to respect my husband because he had other children and was much experienced''*

(Informant no. 7, mother aged 19 years; primary level).

4.6.3 Cultural and Traditional Beliefs

Some of cultural practices and beliefs we found to be negatively associated with exclusive breastfeeding. Although mothers were taught the importance of exclusive breastfeeding and importance of other feeding and baby health, they couldn't translate the knowledge to successful exclusive breastfeeding practice due to some socio-cultural practice. Of the practices that were found an impediment to exclusive breastfeeding introduction of camel or cow milk after infant delivery. According to a TBA cow or camel milk should be given to the infant immediately it is delivered for

two reasons; first mother milk secretion take longer and infant must be given hot camel or cow milk after delivery, introduction of animal milk is community practices and belief in this society.

Although most mothers acknowledge the importance of colostrum there are some who don't recognize the importance of colostrum. For example a mother had reported that breastfeeding should be started after one or two days after infant delivery and the first milk must be remove from the mother as they are not good for the infant. Some beliefs such as breast milk is never enough as infant advances in age and infant must be given water as they can't survive without it were also found to hinder adherence to exclusive breastfeeding.

4.6.4 Summary of the Factors that Influence Exclusive Breastfeeding among the Study Participants

According to this study some of independent variables were found to influence exclusive breastfeeding. The factors that were significantly associated with exclusive breastfeeding were; maternal knowledge on exclusive breastfeeding, education, place of delivery and child sex all revealed to have significant relation to exclusive breastfeeding. Mother maternal knowledge on when to start commentary and semisolid food was a good predictor of mother`s adherence to exclusive breastfeeding. The result of the bivariate amylases has shown a significant P value of 0.04, mothers who have a good knowledge on the importance of exclusive breastfeeding were more likely to breastfeed than their counterpart. This is in support of the in-depth interview which some mother reported that they started the exclusive breastfeeding when they were told the importance by the health care workers.

The other strong predictors of exclusive breastfeeding in this study were education and place of delivery, both factors has shown positive significant to the practice of exclusive breastfeeding with P- value of (P= 0.02) and (P=0.03) for education and place of delivery receptively. Mother with secondary and higher education level were found to practice exclusive breastfeeding than the one with non-formal education. Delivery in the health facility was associated with early initiation of breastfeeding and subsequent exclusive breastfeeding practice. The findings of quantitative and qualitative data have very good similarity although some difference was reported in some variables.

Some traditional practices and beliefs such us breast milk not enough for the infant, lack of knowledge of secretion of breast milk and child must quench water or camel or cow milk after birth all negatively influence to practice of exclusive breastfeeding. Baby's grandmother, mother`s own decision and husband were also found to greatly influence the adherence to exclusive breastfeeding and other infant feeding practices.

This study is in consistent with some other studies in the world and Kenya in which some cultural practice and beliefs have shown to negatively affect practice of exclusive breastfeeding for example a study which was carried out by (Keverenge-Ettang et al, 2009) has reported insufficient breastmilk as one of the barrier to the practice of exclusive breastfeeding.

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Discussion

The study aimed at determining the factors that influence exclusive breastfeeding among mothers of 0-6 months old attending Wajir County Referral Hospital. The findings of this study highlight the proportion of mothers of children 0-<6 months practicing exclusive breastfeeding, with and identify factors that are associated with exclusive breastfeeding.

The findings have revealed that exclusive breastfeeding is practiced by 44% of mothers of children aged less than six months in Wajir County. The findings also show that exclusive breastfeeding among mothers of children aged less than six months is more commonly influenced by parent (grandmother of child), mothers own decision and husband than by health care workers. Breastfeeding practices and complementary feeding following six months are critical determinants of the nutritious status of children especially children under two years. With enhanced nutritious status, the danger of child mortality and morbidity is decreased thus expanding the rate of child survival and improvement.

The findings on the EBF rate in our study are similar to those of a study conducted in the same study area (Wajir County) in 2014 by Islamic Relief Kenya using the same definition of EBF as used in our study in which low rate of EBF was reported. The rate reported in this study is lower than the national prevalence reported in the KDHS 2014 at 61% the study showed that, the proportion of exclusively breastfed children decline with age, the study has seen that exclusive breastfeeding is nearly universal in the first month of life but decrease as the age of the children increase. The same was reported by KDHS 2014 and Tanzania demographic and health survey 2010. In

addition to breast milk, 56% of infants aged 0–5 months are given other foods and fluids. Mothers also indicated that milk was the main alternative given to children accounting for 84.9% followed by water at 9.4%.

In this study a significant positive association between mother`s education level and exclusive breastfeeding was reported. This is consistent with some other study around the world for instance in Canada (Al Sahab *et al*, 2010) in which high level of maternal education has been associated with good adherence to exclusive breastfeeding. On the other hand, there was no association between mother's occupation, marital status and exclusive breastfeeding.

(Banu, 2012) in his report on the effects of education level of mothers and the importance of colostrum cited that 91% of the graduate mothers were likely to give colostrum to their babies while only 39% of the illiterate mothers were likely to give colostrum to their babies. The report further states that the illiterate mothers would give alternative fluids due to cultural demands or influence. This report was consistent with the status in Wajir where 96% of educated mothers cited that colostrum was healthy for the baby and thus were likely to give colostrum to the baby. In this report, an illiterate mother cited that she would rather give camel milk than colostrum to the baby because her parent approved the camel milk as healthy.

Findings of this study are consistent with studies carried out in Kasarani informal settlement Molo district, Kenya (Njeri, 2012) and (Ochola, 2008) in which maternal demographic characteristics were not associated with exclusive breastfeeding.

The study showed maternal knowledge has a significant positive association with exclusive breastfeeding (P=0.04). Mothers who had good knowledge on duration of

exclusive breastfeeding, importance of colostrum, and knowledge of complementary feeding were more likely to practice exclusive breastfeeding. In the in-depth interviews, mothers reported that they were exclusively breastfeeding because they were told the importance of exclusive breastfeeding when they visited the health facility for ANC. The same was also reported by (Njeri, 2012) in her report. The finding confirms that maternal knowledge on breastfeeding is a critical element to correct infant feeding practices. (Oche, 2011) on their findings on knowledge and practice of exclusive breastfeeding revealed that only 30% of mothers in Kware, Nigeria had adequate knowledge on exclusive breastfeeding.

Health care workers were found to have good influence on infant feeding choices. More than two thirds (69.7%) of the study participants cited that they were impacted on how they breastfeed by health workers. Furthermore, mothers were reported to make their own decision (37.5%) regarding their infant feeding which is good practice since they are more likely to adhere to their own decision. In this study most of the mothers knew that exclusive breastfeeding could sustain a baby in a healthy condition for six months. More than three quarters of the mothers (80.3%) cited that it was important to start giving complementary foods to the child only after six months. Almost all (96%) acknowledged the importance of colostrum as healthy for the baby while 58% stated breast milk alone was sufficient for the baby in the first six months.

Socio-cultural factors such as maternal perception on insufficient milk production and advice from mother contributed to early introduction of complementary feeding since birth. The findings are similar to a study conducted by (Njeri, 2012) in Kasarani informal settlement in Molo Kenya where negative attitudes and beliefs influence exclusive breastfeeding and (Kimani-Murage, 2014) in which poor knowledge, myths

and misconceptions were reported to negatively affect exclusive breastfeeding. Most women cited having given complementary food to their babies, some as early as the first month (56%) because the breast milk alone was not enough. The same was also reported by (Crocetti, 2004) in the USA. The finding is also related to one carried out in Eldoret by (Kaverenge-Ettyang, 2009) which reported breast milk unsatisfying to the infant as one of the barriers to EBF.

In this study, antenatal care clinic attendance was high (96%) among the study respondents where they receive health education including exclusive breastfeeding and infant feeding practices, however antennal care visit was not associated with exclusive breastfeeding, this is contrary to a study carried out in Namibia by (Amadhila, 2005) on Factors that influence exclusive breastfeeding in which ANC attendance was associated with EBF.

Place of delivery home and health facility were also investigated to establish their influence to exclusive breastfeeding. The result showed significant association between health facility deliver and exclusive breastfeeding since birth. The finding is in agreement with Al-sahab *et al.* 2010 in Ethiopia in which place of delivery and type of delivery were both associated with exclusive breastfeeding. However Al-sahab reported mothers giving births at home were more likely to practice exclusive breastfeeding than mother delivering in hospital. In the current study mothers who deliver at hospital were found to initiate breastfeeding immediately and continue practicing exclusive breastfeeding in case they don't get problems. In the current study caesarean was found to delay early initiation of breastfeeding hence affecting exclusive breastfeeding. In Nepal chanderashekhar*et al..*, 2007 reported that mother who had vaginal delivery were more likely to adhere exclusive breastfeeding than

those who deliver in caesarean. In China mode of delivery was also significantly associated with the practice of exclusive breastfeeding practices (XU et al.,2007) Contrary to the finding of this study previous literature showed no association between exclusive breastfeeding and place of delivery, for example a study conducted by Njeri, 2012 has shown no association between the two factors.

In this study as reported in many other studies, infant age was associated with exclusive breastfeeding. The rate of exclusive breastfeeding was found to decrease as the infant advances in age. The rate is high at month 92% and decline to 23.7% at 4-5 months. The finding is consistent with those of Njeri, 2012 and Agho*et al* 2011 in which increasing age of infant was negatively associated with exclusive breastfeeding.

The study, addressing the first research question (proportion of mothers in Wajir County who breastfeed exclusively for the first six months) established that 56% of mothers in Wajir county had not carried out effective breastfeeding practices by giving complementary foods to the children. UNICEF, 2010 reported that in Central and West Africa, only 4% of mothers exclusively breastfed their babies for the first six months in Niger, 2% in Chad and 7% in Burkina Faso This report attributed the high mortality rate of children on this poor proportion on exclusive breastfeeding.

This study established that Caesarean section and delayed secretion or productions of milk by the mother were the major factors that influence the exclusive breastfeeding for the first six months. It was also clear from the results that parents especially respondents' mothers' played significant roles in discontinuing exclusive breastfeeding practices among mothers.

The study findings have some limitations: the results cannot be generalized due to the fact that it was a facility based study. Most of the participants had visited health facilities and received infant feeding counselling, which could have influenced their responses. This bias may have overestimated the rate of exclusive breastfeeding. Regardless of some this limitation, the study findings provide crucial inputs to policy makers and researchers on infant feeding practices. To ensure quality control of data the necessary attention was given thorough training of the enumerators, and close supervision of all the study activities when conducting this study.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Summary of the Findings

The study was a facility based cross-sectional study that was carried out to identify the factors that influence exclusive breastfeeding practice and establish the prevalence among mothers with infants 0-<6 months in Wajir County. Both quantitative and qualitative data collection was used to get information.

The rate of exclusive breastfeeding in Wajir County is only 44% according to the results of this study. The study found that exclusive breastfeeding is nearly universal in the first month of life but decrease as the age of the children increases.

In this study, maternal knowledge on duration and importance of EBF, education level, and place of delivery were all found to have significant association with exclusive breastfeeding. However mother's occupation, marital status and delivery type was not significantly associated with exclusive breastfeeding.

The study demonstrated maternal information and baby age to have positive relationship with exclusive breastfeeding. Mothers who had great information on span of exclusive breastfeeding, significance of colostrum, and knowledge of complementary feeding were likely to practice exclusive breastfeeding. The finding confirms that maternal knowledge on breastfeeding is a critical element to correct infant feeding practices. Health care workers were found to have great influence on infant feeding choices. More than two thirds (69.7%) of the study participants cited that they were impacted on how they breastfeed by health workers. Besides, mothers were accounted for to settle on their own choice in regards to their baby sustaining which is great practice since they will probably hold fast to their own particular

choice. In this study most of the mothers knew that exclusive breastfeeding could sustain a baby in a healthy condition for six months.

Our study also aimed at finding out the mothers' knowledge on exclusive breastfeeding. It emerged from the findings that more than half of the women (58%) were well conversant with the fact that breast milk alone was sufficient for the first six months.

The findings of this study reject the hypothesis that maternal demographic have no association with exclusive breastfeeding; whereas the hypotheses that maternal knowledge, belief, attitude and practices have no much association with the practice of exclusive breastfeeding were rejected.

6.2 Conclusions

From the findings of the study, the main factors that influence exclusive breastfeeding were maternal attitudes and perception such as delayed milk production, insufficient milk, and that the baby cannot survive without water. These were found to influence negatively the adherence to exclusive breastfeeding. Other factors that influenced exclusive breast feeding in the study were infant age; maternal knowledge on exclusive breastfeeding and maternal education. The finding also revealed that exclusive breastfeeding was more influenced by parent (grandmother of the child) and husband than health care workers. Mothers had good knowledge on breastfeeding benefits and received advice on infant feeding from health care workers but still practiced mixed feeding. The strongest predictor of exclusive breastfeeding for this study was therefore parent (grandmother of the child), husband, mother own decision and other social cultural factors.

It is also clear based on the findings that milk secretion was a major constraint to breastfeeding at 31% so it is important that health workers are trained on how to manage milk production when mothers deliver to minimize such problem in the future.

The rate (44%) of exclusive breastfeeding in Wajir County is far below the international standard threshold recommended by WHO of 90% and even below the national prevalence of 61%. Exclusively breastfeeding was high at early infant age and declined with age. The lowest rate was seen at six month and the highest rate of exclusive breastfeeding was recorded at one month. In light of the findings, breastfeeding mothers are confronted with many difficulties as they battle to practice selective breastfeeding. Along these lines, scaling up of exclusive breastfeeding among mothers requires coordinated endeavours at the large scale in Wajir County. It can be deduced that creating more awareness on exclusive breastfeeding is necessary because it is evident from the research that even though most mothers cited having information on breastfeeding, only 44% of the mothers had exclusively breastfed their children well for the first six months.

It was also evident from the findings that respondents' mothers had the highest influence on breastfeeding practices in Wajir County. Efforts to promote exclusive breastfeeding should focus on the identification of factors that influence the practice and how they can be addressed in a participatory manner by all stakeholders in the County and National government. The finding recommends a requirement for comprehensive approach on breastfeeding strategy more so exclusive breastfeeding in Wajir County.

6.3 Recommendations

6.3.1 Recommendation for Policy

The study revealed that some of the major factors that caused delay in breastfeeding were due to either no milk production or delay in milk secretion. Health workers need to counsel mothers on how to manage lactation and clear the perception that some mothers have less milk so that these mothers are well informed and psychologically prepared to exclusively breastfeed their children. In this study, a large number of the study participants received breastfeeding messages from health care workers than from any other source; therefore there is need to improve on this initiative to ensure it reaches out to all mothers who are pregnant. It is therefore necessary for medical experts to reach out with breastfeeding counselling and support to the community level which includes all mothers and family members. This will lead to a concerted effort to realizing proper practices in exclusive breastfeeding and eliminate early deaths.

6.3.2 Recommendations for further Research

Additional research is required to establish ways of improving breastfeeding counselling at the health facility level in order to make it more effective and also identify ways to sustain optimal infant feeding practices in the community. The researcher therefore calls for a further study to be conducted which shall cover a wider coverage of the maternal health centres to evaluate the role of health workers in comparison to the grandmothers of the children delivered and critically examine the factors that influence exclusive breastfeeding like education.

6.3.3 Recommendation for Practice

Advertisements on exclusive breastfeeding in the local language should be placed at the health centres including pictures portraying messages on exclusive breastfeeding, breast positioning and attachment etc. Fathers and grandmothers of the children should also be included in the counselling and health education on breastfeeding as they are key influencers.

6.3.4 Family and Community Support for Exclusive Breastfeeding

Respondents were strongly influenced by those around them, especially their parents and the husband. Therefore, understanding the influences being exerted by the family and other community members is key to improving practices. Barriers and motivations from these groups must be identified and addressed or promoted depending on their nature. The networks they create can be capitalized in order to increase and promote positive practices and beliefs. If a mother is especially overbearing, a father can be leveraged to support the wife in her desire to practice optimal behaviours.

6.3.5 Invest more on Breastfeeding through Support of Breastfeeding Mothers

Ministry health in Wajir County should solicit for funds and set a program that empowers exclusively breastfeeding mothers. Most programs targeting breastfeeding concentrate on education of mothers and breastfeeding education as a public health goal rather than looking at how breastfeeding women live and circumstances that hinder their breastfeeding support. There is need to encourage mothers that are exclusively breastfeeding as such may encourage the non-exclusively breastfeeding women.

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APPENDICES

Appendix I: Informed Consent Form

CONSENT FORM

ID NO._____

Consent to participate in study:

Hello, my name is Issack Yakub, doing research on Prevalence and Factors influencing exclusive breastfeeding among mothers of infant 0-<6 months of age attending Wajir County Referral hospital in Wajir County.

Aim of the study

To determine factors that influence exclusive breastfeeding practices among mothers of aged 0-< 6 month old infants.

What participation Involves

If you agree to participate in this study, you will be required to answer some questions that are prepared for the study through interview in order to obtain the intended information for this study. The interview will take 40-50 minutes.

Confidentiality

All information that will be collected will be kept in confidential and private and will only be used only for this study. The form will not bear any name but identification number.

Rights to Withdraw

Participating in this study is completely voluntary and the will of the participant. You can choose not to participate in this study and even if you have already accepted to participated in the study you can quit at any time and stage.

Who to contact

If you have some concerns or questions about this study and the process involve, you should contact the Principal Investigator of this study Mr Issack Yakub**,** from School of Public Health Moi University Nairobi campus; cell phone number: 0723971058

Do you agree?

Yes, I agree to participate in this study…… Signature:…….

I read/ hear the contents read for me the contents in this form.

Signature of Participant _____ Date of signed consent _____

Appendix II: Questionnaire for the Interview (English)

Prevalence and factors influencing exclusive breastfeeding among mothers of infants under six month of age attending Wajir County Referral Hospital

1. Date of interview ___/__/ 2015

2. Interviewer's no. _____

3. Questionnaire no. _____

4. Respondents No. _____

5. Name of health facility_____

SECTION A: SOCIO – DEMOGRAPHIC INFORMATION OF THE MOTHER AND THE BABY (Tick the correct Answer or fill in space provided)

Section A. Mother's information

A1. How old are you? Years; ----------

A2. What is you marital status?

1) Married ( )

2) Single ( )

3) Divorce ( )

4) Widow ( )

5) Separated ( )

A3. What is your occupation?

1) Housewife ( )

2) Pastoralist ( )

3) Business ( )

4) Employed ( )

5) Student ( )

6) Farmer ( )

7) Others specify……

A4.What is your highest education level?

1) No formal education ( )

2) Primary ( )

3) Secondary ( )

4) College (certificate and diploma) ( )

5) University and above ( )

6) Others specify…….

A5. How many children do you have?

1) One ( )

2) Two and more state_____

A6 Do you breastfed your baby?

1) Yes ( )

2) No ( )

Section B: Baby's information

B1. What is the sex of your child?

1) Female ( )

2) Male ( )

B2. How old is you baby? …… (Months)

B3. Where have you delivered this child?

1) Health facility/hospital ( )

2) Traditional birth attendant (TBA) ( )

3) Home ( )

4) Other specify……

B4. Who assisted you during delivery?

1) Health worker (nurse, midwife etc) ( )

2) TBA ( )

3) Relatives ( )

4) Other specify……

B5 How was the delivery of this baby?

1) Caesarean ( )

2) Elective caesarean ( )

2) Assisted delivery ( )

3) Normal delivery ( )

Section C: Infants feeding and Early Breastfeeding practices

C1 Is this your 1st, 2nd, 3rd or 4th born?

If first child go to Q C6 Specify……

C2 If not the first child did u breastfed the first child?

1) Yes ( )

2) No ( )

C3 If yes, for how long? ……months/year/days

C4 If No for C3, why

1) Breast milk was not enough ( )

2) I have been working and had no time for the baby ( )

3) Others specify……

C5 Have you ever breastfeed this child? (If no go to Q C10

1) Yes ( )

2) No ( )

C6 How soon did you start breastfeeding for the first time after delivery?

1) Immediately after delivery ( )

2) Within 1 hr ( )

3) 2-4 Hrs ( )

4) Don't remember ( )

5) Others specify…….

C7 If not put in the breast for the first 1 hr, what were reasons that cause the delay?

1) Delivery complication or caesarean ( )

2) Mother was conscious ( )

3) Baby was sick ( )

4) Delayed milk secretion of mothers ( )

5) Others specify……

C8 Do you breast feed your child now?

1) Yes ( )

2) No ( )

C9 If the baby is still breastfeeding; do you give other food or fluids other than your breast milk?

1) Yes ( )

2) No ( )

C10 After birth, have you given your baby anything other than the breast milk?

1) Yes ( )

2) No ( )

C11 If Yes, what have you given?

1) Milk ( )

2) Water ( )

3) Juice ( )

4) Porridge ( )

5) Others specify……..

C12 Who advise you to give your baby such food/fluid?

1) My parent ( )

2) Friends ( )

3) My own decision ( )

4) Health care worker ( )

5) Others mention…….

C13 What were the reason for giving the baby such food or fluid

1) The mother was unwell ( )

2) The child was unwell ( )

3) Delay production of milk from the mother ( )

4) Others specify……..

C14 When have you started giving other foods/drink to the baby?

1) one month ( )

2) 1 to 3 months ( )

3) 4 to 5 months ( )

4) 6 months ( )

C15 If not breastfeeding now, when have you stopped breastfeeding?

1) Few weeks ( )

2) one month ago ( )

3) two months ago ( )

4) Others specify……

C16 Why have you stopped breastfeeding?

1) No enough milk ( )

2) Breast problems ( )

3) I don't stay with baby ( )

4) Others specify…….

C17 Who has influence your decision on how you breastfeed?

1) Husband ( )

2) Parent ( )

3) Mother ( )

4) Grandmother ( )

5) Health care worker ( )

6) Other specify……..

Section D: Mother knowledge about exclusive breastfeeding

D1 What is the importance of colostrum to the baby (first milk)?

1) Healthy for the baby ( )

2) Good for the mother ( )

2) I don't know ( )

3) Others specify……..

D2 Is the breast milk only is enough for baby for the first 6 months

1) Yes ( )

2) No ( )

D3 If the answer is no for D2, for how long is breast milk sufficient for the baby?

1) Less than a month ( )

2) 1-2 months ( )

3) 3 Months ( )

4) 4 months ( )

5) 5-6 months ( )

6) Others specify……..

D4 How many times should the baby breastfed (per day)

1) 2 times ( )

2) 2-4 times ( )

3) 3-4 times ( )

4) 5 times ( )

5) When he cries ( )

6) Others specify…….

D5 When is the right time to start other foods (complementary foods) with the baby?

1) Less than one month ( )

2) 1 month ( )

3) 2 months ( )

3) 3 months ( )

4) 4 month ( )

5) 5 months ( )

6) 6 months ( )

Section E: Sources of information on exclusive breastfeeding

E1 During the time of your pregnancy have visited ante natal clinic (if no go to Q E3)

1) Yes ( )

2) No ( )

E2 Have anyone advice you about breastfeeding

1) Yes ( )

2) No ( )

E3 What were you told about breastfeeding

1) Importance of breastfeeding ( )

2) Exclusive breastfeeding ( )

3) Good breastfeeding practice ( )

4) Others mention……..

E4 Have you ever heard of exclusive breastfeeding (if no go to QE7?

1) Yes ( )

2) No ( )

E5 If yes where did you get the information from?

1) Health care workers ( )

2) TBA ( )

3) Parent ( )

4) Husband ( )

5) Media ( )

6) Others specify……...

E6 What does exclusive breastfeeding mean to you? ……

E7 Did anyone teach you how to breastfeed

1) Yes ( )

2) No ( )

E8 Who showed you how to breastfeed?

1) Parent ( )

2) Husband ( )

3) Health workers ( )

4) Other (Specify)……..

E9 Have anyone showed you how to attach the baby to the breast?

1) Yes ( )

2) No ( )

E10 Who showed you how to attach the baby to the breast?

1) Parent ( )

2) Husband ( )

3) Health workers ( )

4) Others specify……

Appendix III: In-depth interview (IDI) form

This will be conducted to reveal the fundamental motives of the interviewee's, attitudes, awareness and behaviour about the topic.

Ask question and record

A. Introduction:

The interviewer will welcome the participant(s) to the interview room and make a quick introduction including the main purpose of the study.

B. Background information

Participant Number: _____

Date of the interview: _____

Age of the participant: _____

Education level (highest):_____

Sex of the infant: _____

Age of the infant being breastfed: _____

C. Knowledge on exclusive breastfeeding

1. What does exclusive breastfeeding mean to YOU?

2. When have you started breastfeeding after delivery of this baby?

If delayed why? And if started at the right time, who advise for?

3. If breastfeeding now, was their anything given to this baby since birth?

If yes what and why?

4. Do you think you would like to exclusively breastfeed your baby? Why and Why not

5. How long should the baby be breastfed for breast milk only?

6. Do you think breast milk alone is enough for the baby during the first six months?

7. Do you know the importance of colostrum (probe mother knowledge on colostrum)?

8. What will influence you or mothers to exclusively breastfeed their baby?

9. Did you face any problem in initiation or continuation of breastfeeding?

Probe the problem and the solution for it?

E. observation – the interview should observe the environment and the reaction of the interviewee and take notes where possible without interrupting the interview flow such observation should include; participant response to the question, mood, body language etc

F. conclusion and close up

We surely appreciate you for voluntarily taking part in this study. Your ideas and viewpoint will be of great help to this study and thank you for all the information you have provided today.

Thank you once again for your cooperation and time.

Appendix IV: Institute of Research and Ethics Committee Approval Letter

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/2015/56.
Approval Number: 0001454.

10th August, 2015

INSTITUTIONAL RESEARCH & ETHICS COMMITTEE
10 AUG 2015
APPROVED
P.O. Box 4606-30100 ELDORET

Mr.Issack Yakub Jamaa,
Moi University,
School of Public Health,
P.O. Box 4606-30100,
ELDORET-KENYA.

Dear. Mr.Jamaa,

RE: FORMAL APPROVAL

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

"Prevalence and Factors Affecting Exclusive Breastfeeding among Mothers of Infants under Six Months of Age Attending Wajir Referral Hospital in Wajir County."

Your proposal has been granted a Formal Approval Number: ***FAN: IREC 1454*** on 10th August, 2015. You are therefore permitted to begin your investigations.

Note that this approval is for 1 year; it will thus expire on 9th August, 2016. 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 Director - MTRH Dean - SOP Dean - SOM
Principal - CHS Dean - SON Dean - SOD